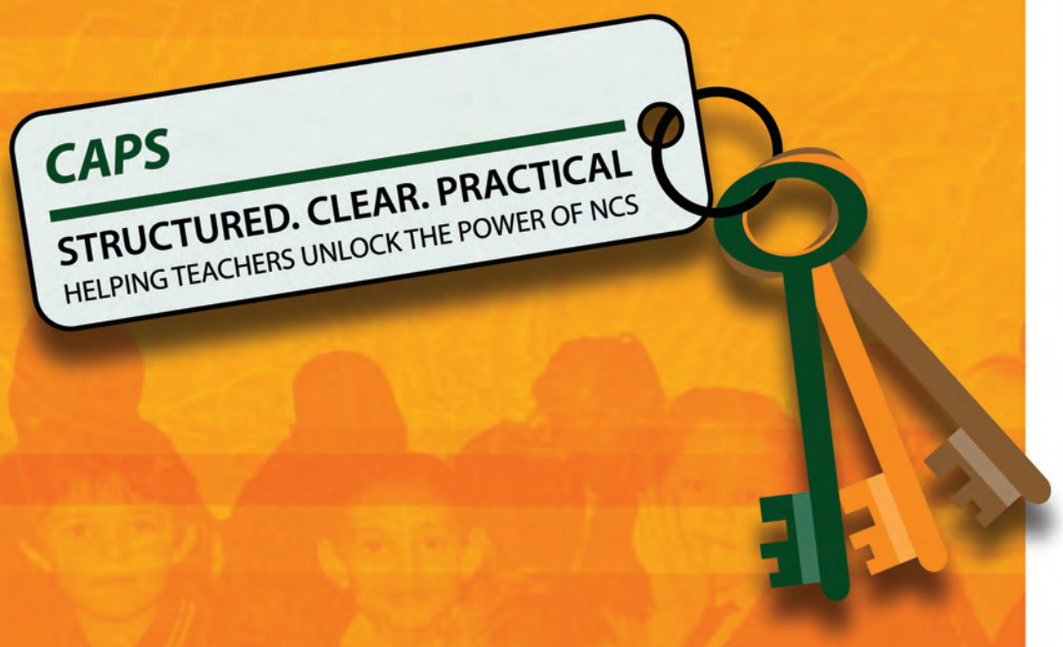
SISWATI MATHEMATICS

National Curriculum Statement (NCS)

Curriculum and Assessment Policy Statement



Foundation Phase
Grades 1-3

basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SITATIMENDE SENCHUBOMGOMO YEKHARIKHULAMU NEKUHLOLA

LIBANGA 1-3

TIBALO

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FOREWORD BY THE MINISTER



Our national curriculum is the culmination of our efforts over a period of seventeen years to transform the curriculum bequeathed to us by apartheid. From the start of democracy we have built our curriculum on the values that inspired our Constitution (Act 108 of 1996). The Preamble to the Constitution states that the aims of the Constitution are to:

- heal the divisions of the past and establish a society based on democratic values, social justice and fundamental human rights;
- improve the quality of life of all citizens and free the potential of each person;
- lay the foundations for a democratic and open society in which government is based on the will of the people and every citizen is equally protected by law; and
- build a united and democratic South Africa able to take its rightful place as a sovereign state in the family of nations.

Education and the curriculum have an important role to play in realising these aims.

In 1997 we introduced outcomes-based education to overcome the curricular divisions of the past, but the experience of implementation prompted a review in 2000. This led to the first curriculum revision: the *Revised National Curriculum Statement Grades R-9* and the *National Curriculum Statement Grades 10-12* (2002).

Ongoing implementation challenges resulted in another review in 2009 and we revised the *Revised National Curriculum Statement* (2002) and the *National Curriculum Statement Grades 10-12* to produce this document.

From 2012 the two National Curriculum Statements, for *Grades R-9* and *Grades 10-12* respectively, are combined in a single document and will simply be known as the *National Curriculum Statement Grades R-12.* The *National Curriculum Statement for Grades R-12* builds on the previous curriculum but also updates it and aims to provide clearer specification of what is to be taught and learnt on a term-by-term basis.

The *National Curriculum Statement Grades R-12* represents a policy statement for learning and teaching in South African schools and comprises of the following:

(a) Curriculum and Assessment Policy Statements (CAPS) for all approved subjects listed in this document;

(b) *National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R-12*; and

(c) *National Protocol for Assessment Grades R-12.*

MRS ANGIE MOTSHEKGA, MP
MINISTER OF BASIC EDUCATION

CONTENTS

SIBANGA 1: ISINGENISO NESENDLALELO 3

1.1 Sendlalelolwati 3

1.2 Sibutsetelo 3

1.3 Tinhlosojikelele tekharikhulamu yaseningizimu afrika 4

1.4 Kwabiwa kwesikhatsi 6

1.4.1 Sigaba sabokhewane 6

1.4.2 Sigaba lesisemkhatsini 6

1.4.3 Sigaba lesiphakeme 7

1.4.4 Emabanga 10-12 7

SIGABA 2: INCHAZELO, TINJONGO, EMAKHONO NALOKUCUKETFWE 8

2.1 Singeniso 8

2.2 Tiyini tibalo? 8

2.3 Tinjongongco 8

2.4 Emakhonongco 8

2.5 Imikhakha yalokucuketfwe lekutawugcilwa kuko 8

2.6 Sisindvo semikhakha yalokucuketfwe 11

2.7 Tibalo esigabeni sabokhewane 11

2.7.1 Ticondziso letiphakanyisiwe tekuphatsa indlu yekufundzela 11

2.7.2 Bafundzi labahlangabetana netihibe ekufundzeni tibalo 13

2.7.3 Tibalo tenhloko 13

2.8 LiBanga R 14

2. 9 Tinsita letiphakanyisiwe teliklasi leTibalo teSigaba Sabokhewane 17

SIGABA 3: LOKUCONDZENENGCO NALOKUCACISAKO KWALOKUCUKETFWE 19

3.1 Singeniso 19

3.2 Kunika lokucuketfwe kukhonjiswe incubelembili 19

- Tinombolo, timphawu tekubala nebudlelwane 20
- Emaphethini, emafangishini ne-aljebra 27
- Sikhala nabobunjwa (ijomethri) 28
- Silinganiso 32
- Kusebenta ngedatha 37

3.3 Kuchaza lokutawufundvwa 39

3.4 Kulandzelanisa tihloko kanye nekuhlela tihloko ngekwesikhatsi 40

3.41 Linani letifundvo letiphakanyisiwe temkhakha walokucuketfwe ngethemu yelibanga 3 44

3.4.2 Sibutsetelo selibanga -2 sethemu ngayinye 60

3.4.3 Sibutsetelo selibanga -3 sethemu ngayinye 81

3.5 Emanotsi lacacisako netinkhombandlela tekufundzisa 102

3.5.1 Kucaciswa kwalokucuketfwe kwelibanga 1 103

3.5.2 Kucaciswa kwalokucuketfwe ebangeni 2 240

3.5.3 Kucacisa lokucuketfwe: libanga 3 385

SIGABA 4: LUHLOLO 552

4.1 Singeniso 552

4.2 Luhlolo lolungakahleleki nobe luhlolo lwamalanga onkhe 552

4.3 Luhlolo lokuhlelekile 552

4.4 Luhlelo lwekuhlola lokuhlelekile 453

4.5 Kurekhoda nekubika 554

4.6 Luhlolokulinganisa lwekuhlola 554

4.7 Lokunye jikelele 555

4.8 Luhlelo lweluhla lwekuhlola loluhlelekile loluphakanyisiwe 555

SIBANGA 1: ISINGENISO NESENDLALELO

1.1 SENDLALELOLWATI

Sitatimende seKharikhulamu yaVelonkhe emaBanga R-12 (i-NCS) sinika inchubomgomo yekharikhulamu nekuhlola etikolweni.

Kute kwentiwe ncono kusebenta kwaso leSitatimende seKharikhulamu yaVelonkhe sichitjiyelwe, kwentelwa kutsi letichibiyelo ticale kusebenta ngaBhimbidvwane 2012. Kwakhiwe umculu munye weNchubomgomo yeKharikhulamu neKuhlola kwaleso naleso sifundvo lotawusebenta esikhundleni seTitatimende Tetifundvo, Ticondziso Tetinhlelo Tekufundza neTicondziso Tekuhlolwa Kwetifundvo kumaBanga R-12.

1.2 SIBUTSETELO

(a) *LeSitatimende seKharikhulamu Savelonkhe emaBanga R-12 (Bhimbidvwane 2012)* simele sitatimende senchubomgomo yekufundza nekufundzisa etikolweni taseNingizimu Afrika, kantsi sicuketse loku lokulandzelako:

(i) Sitatimende seNchubomgomo yeKharikhulamu neKuhlola leso naleso sifundvo lesisemtsetfweni;

(ii) Umculu wenchubomgomo i-*National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R-12* kanye

(iii) Nemculu wenchubomgomo, i-*National Protocol for Assessment Grades R-12 (Bhimbidvwane 2012).*

(b) *LeSitatimende seKharikhulamu yaVelonkhe emaBanga R-12 (Bhimbidvwane 2012)* singena esikhundleni saleTitatimende teKharikhulamu yaVelonkhe letimbili lekungito letisebenta nyalo, letatiwa ngekutsi:

(i) *Sitatimende Lesibuketiwe seKharikhulamu yaVelonkhe emaBanga R-9 lesishicilelwe kuGazethi yaHulumende nombolo 23406 mhlaka - 31 Inkhwekhweti 2002, kanye ne-*

(ii) *Sitatimende seKharikhulamu yaVelonkhe emaBanga 10-12 lesishicilelwe kuGazethi yaHulumende Nombolo 25545 mhlaka - 6 Imphala 2003 kanye nakuGazethi yaHulumende Nombolo 27594 mhlaka - 17 Inkhwekhweti 2005.*

(c) Letitatimende tekharikhulamu yavelonkhe letibekwe ngalokucacile endzinyaneni (b) (i) na (ii) ngenhla tifaka ekhatsi letinchubomgomo letilandzelako lokutawuya ngekuya kwandze kutikhweshisela eceleni *Sitatimende seKharikhulamu yaVelonkhe emaBanga R-12 (Bhimbidvwane 2012)* emkhatsini waleminyaka 2012-2014:

(i) Titatimende teTinkhundla teKufundza,/teTifundvo, Ticondziso Tetinhlelo Tekufundza neTicondziso Tekuhlolwa kweTifundvo temaBanga R-9 nemaBanga R-12 ;

(ii) Umculu wenchubomgomo, i-*National Policy on Assessment and Qualifications for schools in the General Education and Training Band, leyashicilelwa emculwini weSatiso saHulumende Nombolo 124 kuGazethi yaHulumende Nombolo 29626* yashicilelwa mhlaka-12 Indlovana 2007.

(iii) Umculu wenchubomgomo, i-*National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF), leyashicilelwa kuGazethi yaHulumende Nombolo 27819 mhlaka* 20 Kholwane 2005;

(iv) Umculu wenchubomgomo, *An addendum to the policy document, the National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF), regarding learners with special needs, leyashicilelwa kuGazethi yaHulumende Nombolo 29466* mhlaka-11 Ingongoni 2006, ifakwe kumculu wenchubomgomo, i-*National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R-12; kanye ne-*

(v) Umculu wenchubomgomo, *An addendum to the policy document, the National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF), regarding the National Protocol for Assessment (Grades R-12)*, leshicilelwe *emculwini weSatiso saHulumende Nombolo 1267* kuGazethi *yaHulumende Nombolo 29467* mhlaka-11 Ingongoni 2006.

(d) Umculu wenchubomgomo, *i-National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R-12*, netigaba teSitatimende seNchubomgomo yeKharikhulamu nekuHlola njengobe tibukisisiwe kuTehluko 2, 3 na-4 talomculu, leticuketse timiso nemigomo *yeSitatimende seKharikhulamu yaVelonkhe emaBanga R-12.* Ngako-ke, kutawutsi *ngekwesigaba 6A semtsetfo i-South African Schools Act, 1996 (Act No. 84 wa-1996)* Indvuna Yetemfundvo Lesisekelo ikwati kubona bungako bemiphumela nemacophelo kanye netindlela netinchubo tekuhlola imphumelelo yemfundzi etikolweni tembuso naleto letitimele.

1.3 TINHLOSOJIKELELE TEKHARIKHULAMU YASENINGIZIMU AFRIKA

(a) *Sitatimende seKharikhulamu Yavelonkhe emaBanga R-12* sinika inchazelo yaloko lokumele kufundvwe etikolweni taseNingizimu Afrika ngalokuphatselene nelwati, emakhono nemagugu ekuphila. Lekharikhulamu itawucinisekisa kutsi bafundzi batfola babuye basebentise lwati nemakhono ngetindlela letitawubonakala etimphilweni tabo. Ngaloko-ke lekharikhulamu igcugcutela lwati ngesimongcondvo semmango wangakubo, ibe icikelela loko lokumcoka lokwentiwa emhlabeni jikelele.

(b) *Sitatimende seKharikhulamu yaVelonkhe emaBanga R-12* siphumelelisa letinhloso letilandzelako:

- kuhlomisa bafundzi ngelwati, emakhono nemagugu ekuphila lafanele, kute banetiseke baphindze babambe lichaza emmangweni njengetakhamuti telive lelikhululekile. Loku kutawentiwa ngaphandle kwekunaka simonhlalo setemnotfo, buve, bulili, simo semtimba, nobe likhono lekuhlakanipha labanalo;
- kutsi batfole imfundvo lephakeme;
- kulungiselela bafundzi kutsi bakwati kumela timo letehlukile kuleto tasetikolweni temfundvo lephakeme naleto tasemsebentini; kanye
- nekunika bacashi imininingwane leyenele mayelana nemakhono ebafundzi.

(c) *Sitatimende seKharikhulamu yaVelonkhe emaBanga R-12* senganyelwe ngulemigomo lelandzelako:

- Ingucuko kutenhlalo: kucinisekisa kutsi kungafani kwemfundvo lokwakwentiwa esikhatsini lesengca kuyalungiswa, nekutsi tonkhe takhamuti titfola ematfuba emfundvo lalinganako kuto tonkhe tigaba.
- Kufundza gekutimisela nangalokujulile: kugcugcutela tindlela tekufundza ngekutimisela nangalokujulile kunekutsi bafundze ngekuhlabelela ngaphandle kwekuvisisa loko labafundziswa kona.
- Lwati lolusetulu nemakhono lasetulu: linanincane lemacophelo elwati nemakhono lekumele azuzwe kulelo nalelo Banga amisiwe abuye abekwa ezingeni lelisetulu lekungenteka kutsi azuzwe bafundzi kuto tonkhe tifundvo.

- Inchubekelembili: lokucuketfwe kanye nesimongcondvo saleso naleso sifundvo kukhombisa inchubekelembili kusuka kulokulula kufika kulokulukhuni.

- Emalungelo ebantfu, khukhulelangoco, bulungiswa betemvelo netenhlalo: kungeniswa kwemitsetfomgomo nenchubo yebulungiswa betenhlalo netemvelo kanye nemalungelo ebantfu njengekubekwa kweMtsetfosisekelo waseNingizimu Afrika. *Sitatimende seKharikhulamu yaVelonkhe emaBanga R-12 (Jikelele)* sibonisa luvelo esimeni sekwehlukahlukana njengebuphuya, kungalingani, buve, bulili, lulwimi, budzala, kukhubateka, naletinye timo.

- Kuhlonipha lwati lwendzabuko: kwemukela umlandvo lonotsile nemagugu emdzabu alelive lokungito tintfo letibalulekile ekuphumeleliseni emagugu ekuphila lamiswe kuMtsetfosisekelo; kanye ne-

- Kwetsembeka, lizinga lelifanele, nelikhono lekwenta: kunika imfundvo lenelizinga lelicatsanisekako neyalamanye emave ngebubanti nangekujula.

(d) *Sitatimende seKharikhulamu yaVelonkhe emaBanga R-12* sihlose kukhicita bafundzi labakhona ku-

- bona nekusombulula tinkinga bese batsatsa tincumo ngekutakhela imicabango lejulile

- sebenta ngekubambisana nalabanye njengelilunga lelicembu, lenhlangano nelemmango ngemphumelelo;

- hlelembisa, nekutiphatsa ngalokunetibopho kuko konkhe labakwentako ngendlela lenemphumelelo;

- gcogca, hlatiya, hlela nekuhlola lwati ngalokujulile

- chumana ngemphumelelo ngekusebentisa tibonwa, timphawu ne /nobe bugagu bekusebentisa lulwimi ngetindlela letinyenti;

- sebentisa isayensi nebuchwepheshe ngemphumelelo nangalokujulile bakhombise kutibophelela kutendzawo netemphilo yalabanye; kanye neku-

- khombisa kuvisisa umhlaba njengeluchungechunge lwetehlakalo ngekubona kutsi timongcondvo tekusonjululwa kwetinkinga atihambi todvwa.

(e) *Khukhulelangoco* kufanele kube ngiyo incenye lemcoka kulomkhakha, ngekuhlela nekufundzisa kuleso naleso sikolo. Loku kungenteka kuphela uma bonkhe bafundzisi bangaba nekuvisisa ngalokujulile indlela yekubona tihibe tekufundza kanye nendlela yekutivikela kanye nendlela yekuhlelela kwehlukahlukana.

Lokuhamba embili ekulawuleni khukhulelangoco kwenta siciniseko sekutsi tihibe tibonwe, kuliwe nato, kuto tonkhe tinhlaka tekwesekela ummango wesikolo, lokufaka ekhatsi bafundzisi, Emacembu Ekwesekela Latinte Etigodzini *(District-based)*, Emacembu laSesigabeni Sekwesekela Tikhungo, batali, kusetjentiswe Tikolo Letikhetsekile kutsi tibe Tikhungo letinguMtfombo welusito. Nangabe bafundzisi bafuna kulwa netihibe eklasini bafanele basebentise emasu lehlukene ekwehlukanisa ikharikhulamu, lafana nalawo latfolakala emculwini weLitiko Letemfundvo Lesisekelo lowatiwa ngekutsi i-*Guidelines for Inclusive Teaching and Learning (2010).*

1.4 KWABIWA KWESIKHATSI

1.4.1 Sigaba Sabokhewane

(a) Sikhatsi sekufundzisa tifundvo eSigabeni saboKhewane sendlalwe kulelithebula lelingentasi:

SIFUNDVO	LIBANGA R (EMA-AWA)	LIBANGA 1-2 (EMA-AWA)	LIBANGA 3 (EMA-AWA)
Lulwimi Lwasekhaya	10	7/8	7/8
Lulwimi Lwekucala Lwekwengeta		2/3	3/4
Tibalo	7	7	7
Emakhono eKuphila	**6**	**6**	**7**
• Lwatinchanti	(1)	(1)	(2)
• Tebuciko Bekuticambela	(2)	(2)	(2)
• Sifundvo Sekutivocavoca	(2)	(2)	(2)
• Sifundvo Senhlalomphilo lenhle	(1)	(1)	(1)
SAMBA	**23**	**23**	**25**

(b) Sikhatsi sekufundzisa emaBanga R, 1 na 2 ngema-awa lange-23. Libanga 3, ngema-awa lange-25.

(c) Etilwimini, lishumi (10) lema-awa labelwe emaBanga R-2, ema-awa la-11 abelwa liBanga lesitsatfu (3). Linanikhulu lema-awa lasiphohlongo (8) nelinanincane lema-awa lasikhombisa (7) abelwe Lulwimi Lwasekhaya, kwatsi linanincane lema-awa lama-2 nelinanikhulu lema-awa lamatsatfu (3) abelwa Lulwimi Lwekucala Lwekwengeta emaBangeni 1-2. Ebangeni lesitsatfu (3) linanikhulu lema-awa lasiphohlongo (8) nelinanincane lema-awa lasikhombisa (7) abelwe Lulwimi Lwasekhaya, nelinanincane lema-awa lamatsatfu (3) nelinanikhulu lema-awa lamane (4) abelwa Lulwimi Lwekucala Lwekwengeta.

(d) Esifundvweni Semakhono Ekuphila Lwatinchanti lwabelwe li-awa linye (1) emaBanga R - 2, kantsi Libanga le-3 lona labelwe ema-awa lamabili (2) lokungawo lafakwe kubakaki.

1.4.2 Sigaba Lesisemkhatsini

(a) Sikhatsi sekufundzisa Esigabeni Lesisemkhatsini simiswe ngalendlela lelandzelako:

SIFUNDVO	EMA-AWA
Lulwimi Lwasekhaya	6
Lulwimi Lwekucala Lwekwengeta	5
Tibalo	6
Isayensi yeTemvelo neThekhnoloji	3,5
Isayensi yeTenhlalo	3
Emakhono eKuphila	**4**
• Tebuciko Bekuticambela	(1,5)
• Sifundvo Sekutivocavoca	(1)
• Sifundvo Senhlalompmhilo lenhle	(1,5)
SAMBA	**27,5**

1.4.3 Sigaba Lesiphakeme

(a) Sikhatsi sekufundzisa Sigaba Lesiphakeme sime ngalendlela lelandzelako

SIFUNDVO	EMA-AWA
Lulwimi Lwasekhaya	5
Lulwimi Lwekucala Lwekwengeta	4
Tibalo	4,5
Isayensi yeTemvelo	3
Isayensi yeTenhlalo	3
Ithekhnoloji	2
Isayensi YekuphatsaTemnotfo	2
Tekuphila	2
Buciko bekuticambela	2
SAMBA	**27,5**

1.4.4 EmaBanga 10-12

(a) Sikhatsi sekufundzisa emaBanga 10-12 sihleleke ngalendlela lelandzelako:

SIFUNDVO	KWABIWA KWESIKHATSI NGELIVIKI (EMA-AWA)
Lulwimi Lwasekhaya	4.5
Lulwimi Lwekucala Lwekwengeta	4.5
Tibalo	4.5
Tekuphila	2
Linanincane lanobe ngutiphi tifundvo letintsatfu latikhetsile **Ecenjini B** Sichibiyelo B, Emathebula B1-B8 emculwini wenchubomgomo, i-*National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R-12*, lokutawuya ngekwetimiso letibekwe endzimeni 28 yalomculu wenchubomgomo loshiwo ngenhla	12 3x4 ema-awa

Sikhatsi lesibekelwe liviki ngalinye simiselwe kutsi sisetjentiselwe kuphela ngekwelinanincane kuleto tifundvo letibalwe ku-NCS njengobe kushiwo lapha ngenhla, empeleni akukafaneli kutsi sisetjentiselwe kufundzisa nobe ngutiphi tifundvo letengetiwe kuloluhla lwelinanincane letifundvo. Nangabe kwenteka kutsi umfundzi afise kwenta tifundvo letengetiwe, kumele kwengetwe sikhatsi sekwenta leto tifundvo.

SIGABA 2: INCHAZELO, TINJONGO, EMAKHONO NALOKUCUKETFWE

2.1 SINGENISO

Kusahluko 2, Sitatimende Senchubomgomo Yavelonkhe Yekharikhulamu Nekuhlola yeSigaba Sabokhewane inika bothishela inchazelo yetibalo, tinhlosongco, emakhonongco, imikhakha yalokucuketfwe lekugcilwe kuyo, sisindvo semikhakha yalokucuketfwe, tinsita letiphakanyisiwe tetifundvo teTibalo teSigaba Sabokhewane, ticondziso letiphakanyisiwe tekusekela bafundzi labahlangabetana netihibe ekufundzeni-tibalo, tibalo tenhloko nekugcugcutela emakhono etibalo ebangeni R.

2.2 TIYINI TIBALO?

Tibalo lulwimi lolusebentisa timphawu netinkhomba kuchaza budlelwane betinombolo, be-Jomethri nemagrafu.Ngulokwentiwa bantfu lokufaka kubuka, kumela nekuphenya emaphethini nebunjalo bebudlelwane besimo semtimba nesimonhlalo emkhatsini wetintfo tetibalo ngekwato. Kuyasita kutfutfukisa inchubo yengcondvo lengeta kucabanga lokuhlelekile nalokuhlolisisako, lokucikelelako nalokucatulula inkinga lengasita ekutsatseni tincumo.

2.3 TINJONGONGCO

Kufundzisa nekufundza Tibalo kuhlose kutfutfukisa loku lokulandzelako kumfundzi:

- Kwati kabanti kutsi budlelwane beTibalo busetjentiswa njani tikwebudlelwane betenhlalo; temvelo, emasiko kanye netemnotfo.
- Kuba nekutetsemba kubukana netimo tetibalo ngaphandle kwekwesaba kuhlulwa tibalo;
- Kuba nemoya wekufuna kwati nekutsandza Tibalo;
- Kubona buhle beTibalo;
- Kwati kutsi Tibalo tiyincenye yemsebenti webantfu wekusungula;
- Kuba nelwati lolujulile lwekuvisisa tibalo;
- Kutfola lwati ngco nemakhono lafanele ku:
  - sebentisa Tibalo etinkingeni letiphatselene netemtimba, tenhlalo neTibalo.
  - fundza lokuphatselene naletinye tifundvo;
  - chubeka netifundvo teTibalo.

2.4 EMAKHONONGCO

Kutfutfukisa emakhono eTibalo labalulekile umfundzi kufanele:

- atfutfukise kusebenta lokungiko kwelulwimi lwetibalo;
- atfutfukise silulumagama setinombolo, lwati wetinombolo, kubala nemakhono ekutisebentisa tinombolo;

- afundze kulalela, kuchumana, kucabanga nekucabangisisa lokuhlelekile nekusebentisa lwati lwetibalo lolutfolakele;
- afundze kucwaninga, kuhlatiya, kubhala nekuhumusha lwati;
- afundze kwetfula nekucatulula tinkinga tetibalo;
- abone kubaluleka kwendzima ledlalwa Tibalo emphilweni kufaka ekhatsi kutfutfuka kwemfundzi lokucondzene naye.

2.5 IMIKHAKHA YALOKUCUKETFWE LEKUTAWUGCILWA KUKO

Tibalo teSigaba Sabokhewane ticuketse tihloko letisihlanu. Sihloko ngasinye sisita ekutfoleni emakhono latsite. Lithebula lelingentasi likhombisa lokutawugcilwa kuko lokuphatselene nemikhakha yalokucuketfwe kanye nemcondvojikelele nemcondvongco walokutawufundziswa nalekufanele kugcilwe kuko eSigabeni Sabokhewane.

Lithebula 2.1 Imikhakha yalokucuketfwe yetibalo teSigaba Sabokhewane

LWATI LOLUCUKETFWE LWETIBALO		
Imikhakha yolokucuketfwe	**Imicondvo jikelele lokugcilwe kuyo**	**Lokucuketfwe lokutawugcilwa kuko esigabeni sabokhewane**
Tinombolo, timphawu tekubala nebudlelwane	Kutfutfukisa lokuphatselene netinombolo kufaka loku lokulandzelako: • Kutsi tinombolo letehlukene tisho kutsini; • Kutsi tinombolo letehlukene tihlobene njani; • Bukhulu betinombolo letehlukene; • Kutsi tinombolo tingakhonjiswa njani ngetindlela letehlukene • Umtselela wekusebenta ngetinombolo.	Linani letinombolo lekumele libe litfutfukile ekupheleni kweliBanga 3 lifaka ekhatsi tinombolo letiphelele letifika kulokungenani ku-1000 netincetu letetayelekile. Kulesigaba, lwati lwetinombolo lutfutfikiswa ngekusebenta ngetintfo lucobo lwato kubala tintfo leticokelelwe, kuhlukanisa nekuhlanganisa linani, kubala ngekweca ngetindlela letinyenti, kusombulula tibalo temagama, kwakha nekubhidlita tinombolo • Kubala kutfutfukisa lwati lwetinombolo, tibalo tenhloko, kucombela, emakhono ekubala nekubona emaphethini. • Kutfutfuka kwelwati lwetinombolo kusita bafundzi kutsi bafundze ngetimphawu tetinombolo nekutfutfukisa emasu langenta kubala kube malula. • Kusombulula tinkinga tetibalo ngekwengcikitsi kusita bafundzi kutsi bachumanise lebakucabangako ngemlomo nangekubhala ngemidvwebo nangetimphawu • Bafundzi bavisisa timphawu tekubala letisisekelo: kuhlanganisa, kususa, kuphindzaphindza nekuhlukanisa. • Lwati lwetincetu lutfutfukiswa ngekusombulula tinkinga tetibalo letifaka kwabelana tintfo lucobo nangekusebentisa imidvwebo. Tinkinga tetibalo kufanele tibe netisombululo letitinombolo letiphelele, tinsalela noma tincetu. Kwabelana kufaka ekhatsi kubona incenye yalokuphelele kanye nekutfola tincenye tetintfo letigcogciwe. Bafundzi balesigaba abakafaneli kufundza nekubhala timphawu tetincetu.

Emaphethini, emafangishini ne-Aljebra	I-Aljebra lulwimi lwekucubungula nekuchumanisa lokunyenti kweTibalo ingasetjentiswa futsi kufundza imisebenti nalobunye budlelwane emkhatsini wetinombolo. Ingcikitsi yalokutawufundvwa kutsi bafundzi bagogodze emakhono abo ekusebentisa i-Aljebra. Ibuye igcile: • Kuchaza emaphethini nebudlelwane ngekusebentisa kuvetwa kwetimphawu, emagrafu nemathebula. • Kubona nekuhlatiya kuntjintja kwemaphethini nebudlelwane lobenta bafundzi bakwati kucombela nekusombulula tinkinga tetibalo.	Kulesigaba bafundzi basebenta ngaloku lokubili • Emaphethini etinombolo (sib. Kubala wece) • Emaphethini e-Jomethri (sib. Titfombe) Bafundzi kufanele basebentise tintfo cobo, imidvwebo netimphawu kutsatsela, kungeta, kuchaza nekwakha emaphethini. Kutsatsela emaphethini kusita bafundzi kutsi babone indlela leyakheke ngayo iphethini Kungeta iphethini kusita umfundzi kutihlola kutsi uvisise kahle kulandzelana kwephethini. Kuchaza iphethini kusita kutfutfukisa emakhono elulwimi lwemfundzi. Kugcila ekulandzelaneni kwemaphethini kwenta sisekelo sekutfutfuka kwemakhono e-Aljebra Emaphethini etinombolo asekela kutfutfuka kwelwati lwetinombolo nekusetjentiswa kwato lekwakhelwe kutinombolo, emafangishini nebudlelwane. Emaphethini e-Jomethri afaka ekhatsi imigca lelandzelanako, bobunjwa, tintfo nemaphethini laseveni. Kumaphethini e-Jomethri bafundzi basebentisa lwati sikhala nabobunjwa.
Sikhala nabobunjwa (iJomethri)	Kufundza ngesikhala nabobunjwa kwengeta kwati nekutsandza emaphethini, kwenta kahle, kuzuza nebuhle bemvelo nemasiko. Kugcila ku: • timphawu, budlelwane; • kuma, indzawo; • kugucuka kwabobunjwa labangemada-yimenshini lamabili (2-D) netintfo letingemadayimenshini lamatsatfu (3-D)	Kulesigaba bafundzi bagcila kutintfo letingemadayimenshini lamatsatfu (3-D) nabobunjwa labangemada-yimenshini lamabili (2-D), kuma nenkhombandlela. • Bafundzi bacubungula timphawu tetintfo letingemadayimenshini lamatsatfu (3-D) nabobunjwa laba lamabili (2-D) ngekutihlunga, kutihlelembisa, kutichaza nekutibala. • Bafundzi badvweba babuye bakhe bobunjwa ngetintfo. • Bafundzi babona babuye bachaze bobunjwa labasendzaweni yabo labafana nabobunjwa netintfo teTibalo. • Bafundzi bachaza kutsi tintfo tikuphi ngekusebentisa silulumagama lesifanele. • Bafundzi balandzela babuye banikete tinkhombandlela.
Silinganiso	Kukala kucondzise ekukhetseni nasekusetjentisweni kwetintfo letifanele nemafomula kubala timphawu tetehlakalo, bobunjwa, tintfo nendzawo. Kuhlobene ngco nelikhono lemfundzi kuteSayensi, ithekhinoloji netemnotfo. Kusita umfundzi: • Kucombela • Kwati kahle ngeKukala nemiphumela yako.	• Kulesigaba umcondvo wesilinganiso utfutfukiswa ngekusebenta ngetintfo letiphatsekako nabobunjwa, kufundza timphawu tebudze, umtsamo, sisindvo, bungakondzawo nesikhatsi. • Bafundzi balinganisa timphawu tabobunjwa netintfo ngekusebentisa tinsita letingakahleleki lakufanele khona njengetandla, tinyatselo, tintfo tekuphatsa njll. • Bafundzi bacatsanisa linani ngekusebentisa emagama ekucatsanisa njenga (-dze kuna/ -fisha kuna, -sindza kuna/ -lula kuna njll) • Bafundzi bangeniswa kutinsita letihlelekile njengemagremu, emekhilogremu, emamililitha, emalitha, emasentimitha nemamitha. Imisebenti lephatselene nesikhatsi kufanele ihleleke ngekunaka kutsi kuhamba kwesikhatsi kufanele kutfutfukiswe kucala ngembi kwekutsi bafundze ngesikhatsi.
Kusebenta ngedatha	Kufundza ngekusebenta ngedatha kutfutfukisa likhono lemfundzi le: • kugcogca • kuhlela • kubukisa • kuhlatiya nekuhumusha idatha leniketiwe	Lekugcilwa kuko nakufundziswa noma kufundvwa ngekusebenta kwedatha eSigabeni Sabokhewane; kuhlela tintfo nedatha ngetindlela letehlukene ngekubuka timphawu letehlukene tentfo noma idatha. • Bafundzi balindzeleke kutsi bahumushe babuye bakhe emagrafutitfombe nemabhagrafu lakhombisa 1 ku 1 kucondzanisa emkhatsini wetintfo nekuvetwa kwato basebentisa idatha leniketiwe.

2.6 SISINDVO SEMIKHAKHA YALOKUCUKETFWE

Sisindvo semikhakha yalokucuketfwe sisebenta tinhloso letimbili letibalulekile: kwekucala lesisindvo sicondzisa ngebungako besikhatsi lesidzingekako kufundzisa lokucuketfwe kumkhakha ngamunye ngalokunelisako; kwesibili lesisindvo sicondzisa ngekusabalaliswa kwalokufundvwako eluhlolweni. Sisindvo semikhakha yalokucuketfwe asifanani kuliBanga ngalinye eSigabeni Sabokhewane.

Lithebula 2.2 Sisindvo semikhakha yalokucuketfwe esigabeni sabokhewane

SISINDVO SEMIKHAKHA YALOKUCUKETFWE			
Lokucuketfwe	**LiBanga 1**	**LiBanga 2**	**LiBanga 3**
Tinombolo, timphawu tekubala nebudlelwane*	65%	60%	58%
Emaphethini, emafangishini ne-Aljebra	10%	10%	10%
Sikhala nabobunjwa (lJomethri)	11%	13%	13%
Silinganiso	9%	12%	14%
Kusebenta ngedatha (Sitatistiki)	5%	5%	5%
	100%	**100%**	**100%**

*Emabangeni R-3, kubalulekile kwati kutsi Tibalo tigcile kulomkhakha wetinombolo, timphawu tekubala nebudlelwane. Bafundzi kufanele baphume esigabeni sabokhewane banelwati lobanti ngetinombolo nekutisebentisa ngalokushelelako. Inhloso kutsi bafundzi baphumelele babuye babe nekutetsemba ngetinombolo nangekubala. Ngalesizatfu sikhatsi sekufundza lesabelwa Tinombolo, emafangishini nebudlelwane sengetiwe. Umsebenti lomnyenti wemaphethini kufanele ugcile kumaphethini etinombolo kuchubeka kwengeta likhono letinombolo.

2.7 TIBALO ESIGABENI SABOKHEWANE

Tibalo teSigaba Sabokhewane takha kuchumana kwemphilo yemntfwana yasenkhulisa nemphilo yakhe sekangaphandle kwesikolo, netibalo letilukhuni temabanga latawuchubeka awafundze. Emabangeni ekucala bafundzi kufanele bahlangabetane netimo letitabanika ematfuba ekwenta, kukhuluma nekurekhoda imicabango yabo ngetibalo.

Sikhatsi lesisetjentiswa nakwentiwa tibalo sinemtselela loncumako ngekutfutfuka kwemakhono nelwati lwetibalo. Imisebenti lebayentako bafundzi kufanele ingabi nguleyo yekucitsa nje sikhatsi kepha kufanele igcile ngalokucacile kutibalo njengoba kuhlelekile kukharikhulamu.

2.7.1 Ticondziso letiphakanyisiwe tekuphatsa indlu yekufundzela

Ngelilanga linye Tibalo tibekelwe sikhatsi lesincunyiwe. Ngesikhatsi seTibalo lesincunyiwe kufanele kwenteke loku lokulandzelako:

- Umsebenti weliklasi lonkhe
  - Tibalo tenhloko
  - Kuhlanganiswa kwelwati
  - Kuphatfwa kweliklasi (kunika umsebenti ngekutimela njll)
- Kufundzisa emacembu lamancane
  - Kubala
  - Kutfutfukisa lwati lwetinombolo (imisebenti yetemlomo nekwenta)

- Kusombulula tinkinga tetibalo (imisebenti yetemlomo nekwenta)
- Kubhala
- Kutfutfukisa emasu ekubala (imisebenti yetemlomo nekwenta)
- Emaphethini
- Sikhala nabobunjwa
- Kukala
- Kusebenta ngedatha

- **Umsebenti lebawenta ngekutimela**

Bafundzi balolonga babuye bahlanganise lwati lolutfutfukisiwe ngalesikhatsi bafundza bonkhe nangalesikhatsi bafundza ngemacembu lamancane.

*Umsebenti weliklasi lonkhe***:** uma kugcilwe etibalweni tenhloko, kuhlanganiswa kwelwati nekunika imisebenti yemfundzi ngamunye kutsatsa lokungenani emaminithi la 20 ngelilanga ekucaleni kwesifundvo seTibalo. Kuso lesikhatsi thishela angabuye asebente nelikilasi lonkhe kutfola nekurekhoda ligama lelilanga leliviki, lusuku, linani lebafundzi labakhona nalabangekho, nesimo selitulu. Tibalo tenhloko tifaka ekhatsi tibalo tenhloko letisheshisako (sib. Inombolo lesemuva/ ngembi Kwe 8; njll). Thishela angabuye ahlanganise nelwati loluya ngekushuba. Kubalulekile futsi kutsi thishela anikete bafundzi imisebenti jikelele nemisebenti lebayenta ngamunye uma yena asachubeka nemacembu lamancane.

Imisebenti legcile emacenjini lamancane: Imisebenti leba yimphumelelo nguleyo letsatsa licembu lelincane lebafundzi (8-12) labanemakhono lafanako ahlale nabo esiyilweni noma ematafuleni abo ngalesikhatsi labanye bafundzi batisebentela ngamunye. Thishela usebenta nebafundzi **ngemlomo nangekwenta**, benta imisebenti yekubala, kucombela, kutfutfukisa lwati lwetinombolo, imisebenti yekusombulula tinkinga tetibalo nemisebenti lephatselene nemaphethini, sikhala nabobunjwa, silinganiso nekusebenta ngedatha.Lemisebenti kumele ihlelwe ngekucophelela.

Umsebenti lobhalwako (incwadzi yekusebentela, emaphepha ekusebentela, emakhadi emsebenti njll) kufanele ube yincenye yemsebenti welicembu lapho kungenteka khona kute kusekelwe kufundza. Bafundzi kufanele babe netintfo tekubhala (emabhuku emsebenti wasekilasini, njll) kute babhale imisebenti yekusombulula tinkinga tetibalo. Tikhatsi temacembu kufanele tibe nekusebentisana lokukhulu, bafundzi kufanele bagcugcutelwe kwenta, kukhuluma, kukhombisa nekurekhoda imicabango yabo ngetibalo.

Bothishela kufanele bangabatsatseli phansi bafundzi labatsatsa kancane, kufanele nabo babanikete umsebenti lofana newalabanye. Kuba lula kumatanisa lizinga lebulukhuni bemsebenti ulicatsanisa nebafundzi, uma thishela asebenta nelicembu lebafundzi labati kwenta ngalokufanako. Emacembu lahlanganise bafundzi labenta ngetindlela letehlukene asebenta kahle kwakha, Kukala, kwakha emaphethini noma imisebenti yekuhlunga noma imidlalo.

Imisebenti lebayenta ngekutimela: Ngalesikhatsi thishela enta tifundvo letigcile emacenjini lamancane, bafundzi labanye kufanele babe batibandzakanye naleminye imisebenti leyehlukene yeTibalo legcile ekuciniseni nasekuhlanganiseni lwati nemakhono lafundzisiwe ngesikhatsi setifundvo letigcile emacenjini lamancane. Lemisebenti lebayenta ngekutimela kufanele ingafani kute bafundzi labenta tintfo ngetindlela letehlukene bakwati kwenta. Imisebenti lebayenta ngekutimela ingafaka loku lokulandzelako:

- kusebenta ngetincwadzi temsebenti
- emaphepha/emakhadi emsebenti ekubala, kusebenta ngetinombolo, tinkinga tetibalo letilula letihambisana nengcikitsi (tibalo temagama) abe ahlelwe ngetigaba.
- Imidlalo yeTibalo lefana neLudo, emadomino, emaphazili ne
- misebenti lefaka ekhatsi kwakha lokutsite, kuhlunga, emaphethini neKukala.

- Sikhatsi setibalo kufanele sisekele nebafundzi labahlangabetana netihibe tekufundza, imisebenti lesita bafundzi labahamba embili, imisebenti yeluhlolo, njll
- Imisebenti legcile kumfundzi ngamunye neyemacembu lamancane kufanele kutsi thishela ayibuke (leyentiwako, yemlomo) ayimake abuye abuke bafundzi nababhala njengencenye yeluhlolo lolungakahleleki naloluhlelekile.
- Kulandzelela timphendvulo letiniketwa bafundzi (ngemlomo, ngekwenta, ngekubhala) uma bafundza nobe thishela afundzisa kusita thishela kutsi akwati kuhlola bafundzi ngalokuchubekako, kulandzelela inchubekelembili yebafundzi nekuhlela lusito lolufanele bafundzi labahlangabetana netihibe ekufundzeni.

2.7.2 Bafundzi labahlangabetana netihibe ekufundzeni Tibalo

Kubalulekile kutsi bafundzi labahlangabetana netihibe ekufundzeni Tibalo baniketwe imisebenti letsite lekumele bayente nabafundza.Kumele kusetjentiswe tibonelo labatatibona, kusetjentiswe netintfo lucobo lwato kanye nemisebenti lephatsekako sikhatsi lesidze kubafundzi labanetihibe ngobe kwenta umsebenti lolukhuni ngekusheshisa kungenta kutsi bafundzi bacakeke babuye bangachubekeli embili.Labafundzi kumele baniketwe sikhatsi lesinyenti:

- Sekucedzela umsebenti weluhlolo
- Sekutfola emakhono ekucabanga(netindlela takhe)

Linani lemisebenti lekumele icedzelwe kumele ihambisane nesimo semfundzi ngaphandle kwekulahlekelwa ngumcondvo kanye nemakhono lafundziswako.

2.7.3 Tibalo tenhloko

Tibalo tenhloko tidlala indzima lebalulekile kuKharikhulamu.Tinombolo lekumele tihlanganiswe kanye nelithebula lekuphindzaphindza, lekumele bafundzi balati nobe batikhumbule liniketiwe ebangeni ngalinye.Kungeta kuloku,tibalo tenhloko tisentjentiselwa kutfola tinombolo letisetulu letehlukene ngekutsi babale bece letinye tinombolo kanye nekutsi bente leminye imisebenti yekukhuphuka wehle sicanco setinombolo.Thishela weliBanga lesitsatfu angahle abute imibuto lelandzelanako lefana nalena:Cala ngalenombolo 796, yingete nge- 7 = 803, yehlise nge-5 = 798. Ngeta nge- 10... nga- 2... nge- 90..., yehlise nge- 5... njll. Lemisebenti lefana nalena isita bafundzi kutsi bakwati kuticambela imigcatinombolo yenhloko.

Tibalo tenhloko tivela kakhulu kusahluko semsebenti wekubala kanye newekutfutfukisa tinombolo, lophatselene nesihloko lesitsi Tinombolo kanye neMaphethini,kantsi futsi ingabuye yenteke ngesikhatsi sesilinganiso nesikhatsi semisebenti lephatselene neDatha.Nangabe benta sifundvo seTibalo tenhloko bafundzi bangacindzetelwa kutsi bente tibalo tenhloko lebangeke batikhone- tintfo tekubhala nobe tintfo tekubala kumele kutsi bafundzi labatidzingako batitfole ngaso sonkhe sikhatsi.

2.8 LIBANGA R

Indlela yekufundza tibalo kumele igcile kumgomo wekuhlanganisa tifundvo kanye nekufundza badlala. Thishela kumele kube nguye lohamba embili, angenelele lapho kufanele khona. Thishela longenelelako uveta ematfuba lamanyeti ekufundza lokungakahlelwa lokuvela ngalesikhatsi umfundzi atentela umsebenti ekhoneni lapho atakhela khona umfanekisomcondvo, ngesikhatsi sekudlala bakhululekile nobe ngesikhatsi sekudlala ngemanti nesanti kanye nangesikhatsi semsebenti loholwa nguthishela lesigcile kumagama lasetjentiswa esifundvweni seTibalo, lafana nekubala, kutfutfukisa tinombolo,sikhala nabobunjwa, emaphethini, sikhatsi kanye naleminye imisebenti yetibalo. Umbala awusiso sihloko lesitimele, kepha ungasetjentiswa nakutfutfukiswa umcondvo lotsite wetibalo, emsebentini lofana nekuhlunga, kugcogca nekuhlela tintfo ngetigaba tato.

Tonkhe tinhlangotsi ebangeni R, lokufaka ekhatsi simo seliklasi, kufundzisa nekufundza kumele kutfutfukise kukhula kwemfundzi ngalokuphelele. Kutfutfuka lokuyincenye yeTibalo letifaka ekhatsi kutfutfuka kwengcondvo (kucatulula tinkinga tetibalo, umcondvo lohlelekile kanye nekucabanga lokuhlelekile), kutfutfuka kwelulwimi (lulwimi lweTibalo) kanye nendlela labona ngayo tintfo umfundzi,kutfutfuka ngekwemoya,kutfutfuka ngetenhlalo. Tonkhe letinhlangotsi tingatfutfukiswa ngesikhatsi setindzaba, semculo,semlolotelo, ngesikhatsi semidlalo yeminwe, ngesikhatsi sekudlala ngemanti, kusebentisa emathoyizi ekufundza,lafaka ekhatsi imidlalo yembhodi,tintfo lebatakhela tona kanye nemisebenti lephatselene (nesisindvo,sikhatsi,umtsamo, silinganiso, njll), umdlalo wekutakhela umfanekiso engcondvweni,imidlalo ledlalwa ngaphandle kanye nemidlalo ledlalwa enkhundleni.Tinhlobo letihlukene temidlalo titawufaka ekhatsi tincenye letitsite teTibalo, letifana Kukala ngalesikhatsi bapheka nobe kubala ngalesikhatsi batsenga.

Ngalamanye emagama kucala kufundza Tibalo kanye nebudlelwane lobukhona emkhatsini welwati lweTibalo kumele kuhambisane nemigomo yekufundza lapho bafundzi batawudlula etigabeni letintsatfu tekufundza letifana naleti:

- Sigaba lapho bafundzi basebentisa kunyakata kwemtimba kanye nemiva
- Sigaba lapho basebentisa tintfo lucobo lwato, sib.timbonyo temabhodlela kanye naletinye tintfo letikhona endzaweni lebakuyo
- Sigaba lapho bakhombisa umsebenti ngekubhala basebentisa liphepha nepeniseli,(sib.kusebentisa imidvwebo, nekufananisa emakhadi)

Ebangeni R luhlelo lwetikhatsi tekufundzisa lubitwa ngekutsi **luhlelo lwemalanga onkhe** (*buka* Umfanekiso 1) kantsi futsi lucuketse tincenye letintsatfu letifana naleti:

- Imisebenti leholwa nguthishela
- Imisebenti yemalanga onkhe
- Imisebenti umntfwana laticalela yona nobe kudlala lokukhululekile

Umfanekiso 1: LiBanga R Luhlelo lwemalanga onkhe

(Kusuka ku: ± 7:30-13:00)

Kufika nekudlala ngekukhululeka

36 emaminithi — Kubingelela, Lusuku lwekutalwa, Kubhalisa, Tindzaba, Lishadi lesimo selitulu

KUFUNDZA BASITWA NGUTHISHELA
Lulwimi, Tibalo, Emakhono ekuphila

50 emaminithi

- Imisebenti yebuciko (emalanga onkhe) kukhululeka ngekhatsi
- Umdlalo lokhululekile waseklasini
- Kukhweta liklasi

30 emaminithi — Kufundza Lulwimi basitwa nguthishela Emakhono ekuphila Tibalo

10 ema-minithi — Sikhatsi sendlu lencane
Lulwimi, Tibalo, Emakhono ekuphila

20 ema-minithi — Sikhatsi sekudla
Lulwimi, Tibalo, Emakhono ekuphila

60 emami-nithi

Sikhatsi sekudlala ngekukhululeka ngaphandle
Kukhweta emathoyizi

- Emanti ekudlala
- Isanti yekudlala
- Kulingisa\
- Emabhola
- Umjinko
- Emavili ekudlala
- Emathoyisi ekufundza
- Tinsita tekutivocavoca
- Emavili etimoto
- Sifundvo Sekutivocavoca
- Imidlalo

10 emami-nithi — Tikhatsi tekuya endlini lencane
Tibalo, Lulwimi, Emakhono ekuphila

30 emami-nithi — IMISEBENTI YEKUSITA THISHELA
Tibalo, Lulwimi, Emakhono ekuphila

30 emami-nithi — Tindzaba temalanga onkhe

Sikhatsi sekuphumula kanye nesikhatsi sekuhamba uye ekhaya

LulwimiTibalo
Emakhono ekuphila

- Umdlalo- wekulingisa
- Kulingisa
- Kwakha lokutsite
- Umdlalo lofundzisako
- Kudlala
- Emabhuloki
- Emathoyizi- ekufundza
- Imidlalo yekucondza
- Emaphazili
- Likhona letincwadzi
- Sikhatsi sekubindza
- Indzawo lethulile

TIBALO
Imisebenti lesuselwa eSitatimendeni Senchubomgomo yaVelonkhe yeKharikhulamu Nekuhlola (Tibalo)

- Imisebenti yetingoma nemculo
- Imisebenti yekucondza
- Imilolotelo yekubala
- Tingcikitsi tekucoca
- Kulinga kweSayensi
- Kudlala ngekukhululeka
- Lokwentiwa ngalokuvamile

LULWIMI
Imisebenti lesuselwa eSitatimendeni Senchubomgomo yaVelonkhe yeKharikhulamu Nekuhlola (Lulwimi Lwasekhaya)

- Tindzaba leticocwako
- Kwenta samdlalo
- Tincwadzi/ titfombe
- Kufundza titfombe
- Kucoca ngetitfombe
- Imisebenti yekucondza
- Iphosta yebatali
- Incwadzi yebatali
- Tindzaba
- Tinkondlo/ imilolotelo
- Umculo/tingoma/imilolotelo
- Emathephu
- Tingcikitsi tekucoca
- Imisebenti yekunyakatisa-umtimba
- Lokwentiwa ngalokuvamile
- Kudlala ngekukhululeka

EMAKHONO EKUPHILA

- Imisebenti lesuselwa eSitatimendeni Senchubomgomo yaVelonkhe yeKharikhulamu Nekuhlola (Emakhono)
- Imisebenti yekunyakatisa umtimba
- Tingoma nemaculo
- Tinkondlo nemilolotelo
- Tingcikitsi tekucoca
- Lusuku lwekutalwa
- Lokwentiwa ngalokuvamile
- Kudlala ngekukhululeka

Lokumele kugcizelelwe ngasosonkhe sikhatsi akube kusetjentiswa kwetincenye teluhlelo lwemalanga onkhe kute kutfutfukiswe kucala kufundza Tibalo ngendlela lejabulisako naletentakalelako.Sib. ematfuba ekufundza tibalo babe baholwa nguthishela ayaniketwa ngesikhatsi saleminye imisebenti.Tikhatsi letinyenti kumele tigcile esifundvweni seTibalo.Esikhatsini sasekuseni ngalesikhatsi bafundzi babingelelwa, bahlolwa kutsi bakhona yini esikoleni, kuvela ematfuba ekudlala ngetinombolo, sib.kubala. Letinye tikhatsi letifana nesikhatsi seTibalo, sikhatsi lapho umfundzi aveta indlela labona ngayo tintfo, sikhatsi sekunyakatisa umtimba, sikhatsi semculo, sikhatsi seteSayensi nato tingagcila etibalweni.

Imisebenti lephatselene nebuciko bekuticambela nayo ingagcizelela tifundvo teTibalo, sib.bobunjwa be-Jomethri njengendilinga nesikwele, kwenta ikholagi nekutakhela emaphethini laphatselene nesitfombe.Lishadi lesimo selitulu, ikhalenda kanye nesikhatsi sekubungata lusuku lwekutalwa, konkhe loku kubanika ematfuba ekufundza Tibalo.Sib. lwati lwathishela ngulo lolungenta kufundza kube yimphumelelo.

- *Tintfo letenteka malanga onkhe*, lapho bafundzi babamba lichaza ngesikhatsi sekudla, ngesikhatsi sekufika, ngesikhatsi sekuya ekhaya kanye nesikhatsi sekuya endlini lencane,sonkhe lesikhatsi singasetjentiswa kugcilwe eTibalweni.Bafundzi labagcoke lokubovu, sib.batawuba bokucala kuya endlini lencane (ungasebentisa umbala kanye netinombolo letitayelekile), umntfwana ngamunye utawutfola indishi nesinkhwa (1 ku 1 kuhambelana kwetintfo), Thandi utawufuna sinkhwa sesibili,Sipho yena akasakufuni lokunye.Loku kusho kutsi thishela kufanele abone abuye asebentise ematfuba lavelako ekufundzisa njengoba angumcumanisi wekufundza.

- Ngalesikhatsi semdlalo lokhululekile thishela angatfutfukisa sikhatsi sekucala kufundza Tibalo ngekutsi ahlele kahle indzawo yekudlala bakhululekile.Kudlala ngaphandle lokukhululekile lokufana nekucanca luhlaka lolwakhiwe ngetingodvo nobe kugibela libhayisikili, kungatfutfukisa kusetjentiswa kwesilulumagama setibalo lesibalulekile lesifana nalesi, etulu/ phasi, ngekusheshisa/ kancane, kuphakeme/kuphasi, njll. Kudlala ngemanti nangesanti kutawenta bafundzi kutsi bavisise emagama lafana nalawa, sisindvo, bungako kanye nemtsamo. Yonkhe lemisebenti lekukhulunywe ngayo itawutfutfukisa emakhono endlela yekubona tintfo letitawuba yincenye letawuphumelelisa kufundvwa kweLulwimi kanye neTibalolokuhlelekile.Tibonelo talamakhono nguleti:

    - Kutfutfukisa kuvisisa indzawo yakho esikhaleni, sib.ngemuva, ngaphambili, ngaphasi, dvutane nentfo (loku singakuchumanisa nesimelibungako eTibalweni.

    - Tinkhombandlela kanye netinhlangotsi (loku singakuchumanisa netinombolo kanye nekwakhiwa kwetinhlavu, nekufundza ucale esandleni sesancele uye esandleni sekudla)

Lendlela lechazwe ngenhla, indlela lekumele ilandzelwe ebangeni R letawutfutfukisa kucatululwa kwetinkinga tetibalo, kucabanga lokuhlelekile kanye nekucabangisisa, kanye nekufundzisa ngebuve bakho ngobe igcile ekufundziseni, nasekucocisaneni ngekubambisana.Ngekutsi basebentise ematfuba ekufundzisa lokungakahlelwa, thishela angakwati kugcugcutela bafundzi kutsi bavete tinchumo tabo babuye bacombele ngaloko lokungenteka, sib.Ngabe bacabanga kutsi sitja lebasisebentisa ngalesikhatsi badlala ngemanti singamumatsa emanti lamanyenti kudlula lesinye.

Ngekwenta tiphakamiso letilusito kanye nekucela bafundzi kutsi bacabange ngaletinye tindlela tekucatulula tinkinga tetibalo, thishela angakwati kugcugcutela bafundzi kutsi bacabange ngalokujulile bese banika tizatfu letifanele letiphatselene netincumo lebatitsetse.Loku akusho Tibalo kuphela kodvwa kutfutfuka ngalokuphelele nako kuyabukwa, tindzawo letibalulekile letiphatselene neSitatimende Senchubomgomo yaVelonkhe yeKharikhulamu neKuhlola nato tiyabukwa.

Inchubo yekuhlola ebangeni R kumele ibe ngulengakahleleki kantsi bafundzi kumele bangabi sesimeni sekubhaliswa sivivinyo.Ngalesizatfu lesi imsebenti yekuhlola ayikafakwa eSitatimendeni Senchubomgomo yaVelonkhe yeKharikh-

ulamu neKuhlola seliBanga R. Umsebenti ngamunye lotawusetjentiselwa kuhlola kumele uhleleke kahle kute uhlanganise tinhlobo letihlukene temakhono.

Ebangeni R kuhlola lokunyenti kwenteka ngekutsi bafundzi bacashelwe, lapho thishela arekhoda imiphumela yekuhlola asebentisa tinhla tekutikhumbuta. Uma umnyaka uchubeka, sitfombe lesiphelele semfundzi ngamunye, tinkinga tetibalo lanato kanye nalapho aphumelela khona kuyakheka kancane kancane. Loko kunika litfuba lekusombulula tinkinga tetibalo letikhona kanye nekukhulisa loko lakwati kukwenta.

Luhlelo lwekufundza loluhlelekile lwakadzeni lolugcile eklasini, lolwenta umntfwana afundze angakakhululeki kufanele balugweme ngobe kwenta umfundzi weliBanga R angatifundzi ngalokufanele tibalo.

Liklasi leliBanga R kumele lingafani neliklasi leliBanga 1.Linetimphawu talo letihlukile letiphatselene nekutsi bafundzi labanaleminyaka balivisisa njani live lebakulo kanye nekutfola lwati, emakhono kanye nemagugu latabavumela kutsi bangete ematfuba labaniketwe wona eminyakeni yekufundza ngalokuhlelekile

2. 9 TINSITA LETIPHAKANYISIWE TELIKLASI LETIBALO TESIGABA SABOKHEWANE

- Tibali
- Lidayizi lelikhulu
- Ifulemu lenkhulu yekubala
- Lishadi lebudze
- 1-100 kanye na 101-200 iphosta yetinombolo lenkhulu (100 wemashadi)
- Tinhlobo letihlukene temugcatinombolo
- Emakhadi lakhulisako
- Imali yekudlala-imali lebuhehlu kanye nemali yemaphepha
- Ikhalenda yangalowomnyaka
- Liwashi letinsi laselubondzeni lelikhulu
- Sikali sekusimamisa
- Emabhuloki ekwakha
- Lubumba lwekudlala
- Tinhlobo letihlukene temabhokisi labobunjwa labahlukene lababuya ekhaya
- Tinhlobo letihlukene temabhodlela eplasitiki kanye netintfo letitawuchaza nobe ticatsanise umtsamo
- Sibonelo lesihle lesiyimbulungu (ibhola), iphrizimu lengucalandze (libhokisi), ikyubhu, ikhoni, iphiramidi kanye nesilinda.Thishela angatentela loku.
- Linani lemaplasitiki nobe emabhodi lasikwele, indilinga, tinhlobo letihlukene tabocalantsatfu letingemasayizi lahlukene.

- Imidlalo yeTibalo,emaphazili, emathanigramu, nalokunye
- Loku kubalulekile eBangeni R kanye naseBangeni 1:
  - Indzawo yekudlala ngesanti nemanti
  - Tinsita tekucanca, tekusima, tekujinka kanye nekuzuba
  - Sitolo sekudlala lesinetintfo lekumele batitsenge kanye nemali yekudlala
  - Tinhlobo letihlukene temidlalo lefanele
  - Emabhuloki

SIGABA 3: LOKUCONDZENENGCO NALOKUCACISAKO KWALOKUCUKETFWE

3.1 SINGENISO

Tibalo ka-GET ticuketse letihlokwana letilandzelako:

- Tinombolo, timphawu and budlelwane
- Emaphethini, emafangishini ne-Aljebra
- Sikhala nabobunjwa (iJomethri)
- Kulinganisa
- Kusebenta ngedatha

Ngakunye kwaloko lokucuketfwe kuyahlukaniswa kube tihloko etibalweni, sib.sikhala netibunjwa emabangeni abokhewane sihloko sinye singubobunjwa labangu-2-D. Lwati nemakhono aniketiwe esihlokweni ngasinye. Sahluko 3 seSitatimende Senchubomgomo Yekharikhulamu Nekuhlola (SISEYENE) seTibalo sesigaba sabokhewane sinika sibuye sichaze lokucuketfwe kwetibalo

3.2 KUNIKA LOKUCUKETFWE KUKHONJISWE INCUBELEMBILI

Lelithebula lalesigaba likhombisa tihlokwana nemakhono laniketiwe nekutfutfuka kusukela eBangeni R -3. Lelithebula lesibutsetelo seliBanga sikhombisa kutfutfuka kwelwati nemakhona kuwo omane emathemu emnyaka

Kodvwa-ke kuletinye tihloko letihlokwana/imicondvvo nemakhono kuyafana emabangeni lamabili lalandzelanako. Lokuchazwa kwalokucuketfwe kutawunika ticondziso kwekutsi kutfutfuka kungentiwa kanjani kulesimo. Lokuniketwa kwalokucuketfwe kumele kufundvwe kanye nekuchazwa kwalokucuketfwe.

Sibutsetelo sesiGaba sabokhewane saloko lokucuketfwe; timphawu nebudlelwane, emaphethini, emafangishini ne-Aljebra, sikhala nabobunjwa, kulinganisa nekusebenta ngedatha emabangeni R-3 njengoba kucacisiwe kulelithebula lelingentasi:

SIBUTSETELO SESIGABA SABOKHEWANE

1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE

Kutfutfuka kwetinombolo, timphawu tekubala nebudlelwane

- Kutfutfuka lokumcoka etinombolweni, kutimphawu tekubala nebudlelwane kwenteka ngetindlela letintsatfu:
  - Kungenteka kuhleleka kwetinombolo.
  - Kungeniswa tinhlobo letehlukene tetinombolo.
  - Kugucuka kwetindlela tekubala.
- Njengoba linani lekuhleleka kwetinombolo lingeteka kufika eBangeni 3, bafundzi kumele batfutfukise tindlela letisebentisekako tekubala .
- Tinkinga tetibalo tesimongcondvo kumele ticaphele kuhleleka kwetinombolo talelobanga kanye nendlela bafundzi labakhona ngayo kubala

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
KUTFUTFUKISWA KWEBALA TINOMBOLO: Bala ngetinombolo letiphelele				
1.1 **Bala tintfo**	**Bala tintfo letiphatsekako** Combela ubuye ubale ngekwetsembeka. lokungenani tintfo leti -10 temalanga onkhe	**Bala tintfo letiphatsekako** Combela ubuye ubale ngekwetsembeka. lokungenani tintfo leti -50 temalanga onkhe Kubala ngetincumbi kuyakhutsatwa.	**Bala tintfo letiphatsekako** Combela ubuye ubale ngekwetsembeka. lokungenani tintfo leti -200 temalanga onkhe Kubala ngetincumbi kuyakhutsatwa.	**Bala tintfo letiphatsekako** Combela ubuye ubale ngekwetsembeka. lokungenani tintfo leti -1000 temalanga onkhe Kubala ngetincumbi kuyakhutsatwa.

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
1.2 **Bala uye phambili nasemuva**	**Bala uye phambili nasemuva ngakunye nga -1 kusukela ku -1 uye-10.** Kusebentisa imilolotelo nemaculo etinombolo	**Bala uye phambili nasemuva ngabo-1 kusukela kunobe nguyi-phi inombolo emkhatsini we -0 ne -100** **Bala uye phambili:** • ngema-10 kusukela kunobe nguyiphi imalithiphuli ye -10 emkhatsini we-0 ne -100 • ngeti -5 kusukela kunobe nguy-iphi imalithiphuli ye -5 emkhatsini we-0 ne -100 • ngabo -2 kusukela kunobe nguy-iphi imalithiphuli ye -2 emkhatsini we-0 ne -100	**Bala uye phambili nasemuva nge**: • ngabo-1 kusukela nobe kuyiphi inombolo emkhatsini we 0 ne 200 • ngema-10 kusukela kunobe nguyiphi imalithiphuli ye -10 emkhatsini we-0 ne -200 • ngeti -5 kusukela kunobe nguy-iphi imalithiphuli ye -5 emkhatsini we-0 ne -200 • ngabo -2 kusukela kunobe nguy-iphi imalithiphuli ye -2 emkhatsini we-0 ne -200 • ngabo -3 kusukela kunobe nguy-iphi imalithiphuli ye -3 emkhatsini we-0 ne -200 • ngabo -4 kusukela kunobe nguy-iphi imalithiphuli ye -4 emkhatsini we-0 ne -200	**Bala uye phambili nasemuva nge**: • ngabo-1 kusukela nobe kuyiphi inombolo emkhatsini we 0 ne 1000 • ngema-10 kusukela kunobe nguyiphi imalithiphuli ye -10 emkhatsini we-0 ne -1000 • ngeti -5 kusukela kunobe nguy-iphi imalithiphuli ye -5 emkhatsini we-0 ne -1000 • ngabo -2 kusukela kunobe nguy-iphi imalithiphuli ye -2 emkhatsini we-0 ne -1000 • ngabo -3 kusukela kunobe nguy-iphi imalithiphuli ye -3 emkhatsini we-0 ne -1000 • ngabo -4 kusukela kunobe nguy-iphi imalithiphuli ye -4 emkhatsini we-0 ne -1000 • ngema 20,25,50,10 lokungenani uye kuye kulokungenani e-1000
KUTFUTFUKA KWELWATI LWETINOMBOLO: Kuveta tinombolo letiphelele				
	Shano ubuye usebentise emagama etinombolo engcikitsini leyetayele-kile.			
1.3 **Tinombolo nemagama etinom-bolo**	**Bona, utfole ubuye ufundze tinom-bolo** • Bona, utfole ubuyeufundze tinombolo -1 uye eli-10. • Bona, utfole ubuye ufundze emagama etinombolo -1 uye eli-10.	**Bona, utfole ubuye ufundze tinom-bolo** • Bona, utfole ubuye ufundze tinombolo -1 uye e-100. • Bhala tinombolo -1 uye -20 • Bona, utfole ubuye ufundze emagama etinombolo -1 uye -10 • Bhala emagama etinombolo etinombolo -1 uye -10	**Bona, utfole ubuye ufundze tinom-bolo** • Bona, utfole ubuye ufundze tinombolo -0 uye 200. • Bhala tinombolo -0 uye -100 • Bona, utfole ubuye ufundze emagama etinombolo -0 uye -100 • Bhala emagama etinombolo -0 uye e-100	**Bona, utfole ubuye ufundze tinom-bolo** • Bona, utfole ubuye ufundze tinombolo -0 uye 1000. • Bhala tinombolo -0 uye -1000 • Bona, utfole ubuye ufundze emagama etinombolo -0 uye -1000 • Bhala emagama etinombolo -0 uye-1 000

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
KUTFUTFUKA KWELWATI LWETINOMBOLO: Chaza, catsanisa bese uhlela tinombolo letiphelele				
1.4 **Chaza, catsanisa ubuye uhlele tinombolo**	**Chaza, catsanisa ubuye uhlele tintfo letigcogciwe tifike -10.** • Chaza tinombolo letiphelele tifike eli-10 • Catsanisa kutsi nguyiphi yet-intfo kuleti letimbili letigcogciwe lenkhulu, lencane, lencane kuna, lenkhulu kuna, lenyenti kuna, kulingana na, lokunyenti, llokuncayane, letimbalwa ufike eli-10. • Hlela tintfo letindlula kuletimbili ticale kulokuncane kakhulu kuye kulokukhulu kakhulu ufike eli-10 **Sebentisa tinombolo te-odinali, indzawo nobe kubekeka** • Tfutfukisa lwati lwetinombolo te -odinali, sib. Kwekucala, kwesibili, kwesitsatfu kuye kukwesitfupha nekwekugcina	**Chaza, catsanisa ubuye uhlele tintfo tifike -20.** • Chaza ubuye ucatsanise tintfo letigcociwe ngalokunyenti, lokuncane nalokufana nje. • Chaza ubuye uhlele tintfo letigcogciwe ticale kulokunyenti kuye kulokuncane nakulokuncane kuye kulokunyenti **Chaza, catsanisa ubuye uhlele tinombolo uye -20** • Chaza ubuye ucatsanise tinombolo letiphelele naloku ncane kuna, lokukhulu kuna, nalokunyenti kuna, kuncane kuna, kulingana. • Chaza ubuye uhlele tinombolo kusuka kulencane kakhulu uye kulenkhulu kakhulu nalkulenkhulu kakhulu uye kulekuncane kakhulu. **Sebentisa tinombolo te-odinali, indzawo nobe kubekeka** • Beka tintfo emgceni ticale ngeyekucala tifike kuyelishumi nobe ekucala uye ekugcineni, sib. Yekucala, yesibili, yesitsatfu … yelishumi.	**Chaza, catsanisa ubuye uhlele tinombolo uye -99** • Chaza ubuye ucatsanise tinombolo letiphelele ufike -99 usebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna, nakulingana. • Chaza ubuye tinombolo letiphelele ufike -99 kusuka kulencane uye kulenkhulu nekusuka kulenkhulu uye kulencane. **Sebentisa te-odinali, indzawo nobe kubekeka** • Beka tintfo emgceni ticale ngeyekucala tifike kuyelishumi nobe ekucala uye ekugcineni, sib. *yekucala, yesibili, yesitsatfu … yemashumi lamabili*	**Chaza, catsanisa ubuye uhlele tinombolo uye -999** • Chaza ubuye ucatsanise tinombolo letiphelele ufike -999 ngekusebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna, nakulingana. • Chaza ubuye tinombolo letiphelele ufike -999 kusuka kulencane uye kulenkhulu nekusuka kulenkhulu uye kulencane. **Sebentisa tinombolo te-odinali,, indzawo nobe kubekeka** • Sebentisa, ufundze ubuye ubhale tinombolo te-odinali ngalendlela Yekucala, yesibili, yesitsatfu ufike emashumini lamatsatfu nakunye.
KUTFUTFUKA KWELWATI LWETINOMBOLO: Simelibungako				
1.5 **Simelibungako**		**Cala kubona lokungenani simelibungako setinombolo letingemadijithi lamabili uye- 20** • Hlahlela tinombolo letingemadijithi la-2 tibe ngema malithiphuli e -10 nemivo/emayunithi	**Cala kubona lokungenani simelibungako setinombolo letingemadijithi lamabili uye- 99** • Hlahlela tinombolo letingemadijithi la-2 tibe ngema malithiphuli e -10 nemivo ifike -99 tibe ngema malthiphuli e -10 nemivo/emayunithi • Tfola ubuye unike bungako bedigithi ngayinye.	**Cala kubona lokungenani simelibungako setinombolo letingemadijithi lamabili uye- 999** • Hlahlela tinombolo letingemadijithi la-3 tufike -999 tibe ngema maltiphuli e -100, emamalthiphuli e -10 nemivo/emayunith • Tfola ubuye unike bungako bedijithi ngayinye

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
SOMBULULA TIBALO ENGCIKITSINI				
1.6 **Emasu ekusombulula tinkinga tetibalo.**	**Sebentisa lamasu lalandzelako uye e- 10**: • Tinsita letiphatsekako sib. tibali • Sicanco lesibonakalako setinombolo	**Sebentisa lamasu lalandzelako nangabe kusonjululwa tinkinga tetibalo nekuchaza tisombululo taletinkinga tetibalo:** • Tinsita letiphatsekako, sib. Tibali • Kusebentisa titfombe kwetfu latibalo tendzaba. • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Umugcatinombolo	**Sebentisa lamasu lalandzelako nangabe kusonjululwa tinkinga tetibalo nekuchaza tisombululo taletinkinga tetibalo:** • Imidvwebo nobe tinsita letiphatsekako, sib. Tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Umugcatinombolo	**Sebentisa lamasu lalandzelako nangabe kusonjululwa tinkinga tetibalo nekuchaza tisombululo taletinkinga tetibalo:** • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Umugcatinombolo • Kusondzeta eshumini
1.7 **Kuhlanganisa nekususa**	Sombulula tinkinga tetibalo temagama (tibalo tetindzaba) ngengcikitsi bese uchaza tisombululo tenkinga tabo kufaka ekhatsi kuhlanganisa nekususa etimphendvulweni ufike -10.	Sombulula tinkinga tetibalo temagama (tibalo tetindzaba) ngengcikitsi bese uchaza tisombululo tenkinga tabo kufaka ekhatsi kuhlanganisa nekususa etimphendvulweni ufike -20.	Sombulula tinkinga tetibalo temagama (tibalo tetindzaba) ngengcikitsi bese uchaza tisombululo tenkinga tabo kufaka ekhatsi kuhlanganisa nekususa etimphendvulweni ufike -99.	Sombulula tinkinga tetibalo temagama (tibalo tetindzaba) ngengcikitsi bese uchaza tisombululo tenkinga tabo kufaka ekhatsi kuhlanganisa nekususa etimphendvulweni ufike -999
1.8 **Phindza kuhlanganisa lokutawuholela ekuphindzaphindzeni**		Sombulula tinkinga tetibalo temagama ngengcikitsi bese uchaza tisombululo tenkinga tabo kufaka ekhatsi kuphindza nekuhlanganisa lekuholela ekuphindzaphindzeni netimphendvulo letifika -20	Sombulula tinkinga tetibalo temagama ngengcikitsi bese uchaza tisombululo tenkinga tabo kufaka ekhatsi kuphindza nekuhlanganisa lekuholela ekuphindzaphindzeni nekuphindzaphindza ngetimphendvulo letifika -50	Sombulula tinkinga tetibalo temagama ngengcikitsi bese uchaza tisombululo tenkinga tabo kufaka ekhatsi kuphindza nekuhlanganisa lekuholela ekuphindzaphindzeni nekuphindzaphindza ngetimphendvulo letifika -100
1.9 **Kugcogcela ndzawonye lokuholela ekwahlukaniseni**	Sombulula ubuye uchaze tisombululo tetinkinga tetibalo temagama (tibalo tetindzaba) engcikitsini lekufaka ekhatsi kwabelana ngalokulinganako, kugcogcela ndzawonye ngetinombolo letiphelele ufike -10 netimphendvulo letingatifaka tinsalela.	Sombulula ubuye uchaze tisombululo tetinkinga tetibalo temagama (tibalo tetindzaba) engcikitsini lekufaka ekhatsi kwabelana ngalokulinganako, kugcogcela ndzawonye ngetinombolo letiphelele ufike -20 netimphendvulo letingatifaka tinsalela.	Sombulula ubuye uchaze tisombululo tetinkinga tetibalo temagama (tibalo tetindzaba) engcikitsini lekufaka ekhatsi kwabelana ngalokulinganako, kugcogcela ndzawonye ngetinombolo letiphelele ufike -50 netimphendvulo letingatifaka tinsalela.	Sombulula ubuye uchaze tisombululo tetinkinga tetibalo temagama (tibalo tetindzaba) engcikitsini lekufaka ekhatsi kwabelana ngalokulinganako, kugcogcela ndzawonye ngetinombolo letiphelele ufike -100 netimphendvulo letingatifaka tinsalela.

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
1.10 **Kwabelana lokuhole-la etincetwini**			Sombulula ubuye uchaze tisombulu-lo tetinkinga tetibalo letifaka ekhatsi kwabelana lokulinganako lokuholela etisombululweni letifaka tincetu leti-hamba ngakunye	Sombulula ubuye uchaze tisombulu-lo tetinkinga tetibalo letifaka ekhatsi kwabelana lokulinganako lokuholela etisombululweni letifaka tincetu leti-hamba ngakunye.
1.11 **Imali**	Cikelela kutfutfukisa lwati lwemali lebuhhehlu neyemaphepha yaseNin-gizimu Afrika.	• Bona ubuye utfola imali lebuheh-lu yaseNingizimu Afrika (5c, 10c, 20c, 50c, R1, R2, R5) neyema-phepha (R10 ne R20) • Sombulula tinkinga tetibalo te-mali lefaka emanani nentjintji uye R20 nesenti lafinyelela ku-20c	• Bona ubuye utfola imali lebuheh-lu yaseNingizimu Afrika (5c, 10c, 20c, 50c, R1, R2, R5) neyema-phepha (R10 ne R20) • Sombulula tinkinga tetibalo temali lefaka emanani nentjintji uyeR99 nesenti lafinyelela ku .90c.	• Bona ubuye utfola imali lebuheh-lu neyemaphepha yaseNingizimu Afrika • Sombulula tinkinga tetibalo temali lokufaka samba nentjintji ngemarandi nangemasenti.
KUTIBALELA NGEKUKHULULEKA				
1.12 **Emasu** **(Tindlela nobe tindle-lanchubo)**		Sebentisa lamasu lalandzelako nangabe ubala: • Imidvwebo nobe tinsita letiphat-sekako, sib. tibali • Kwakha nekuhlahlelea • Kuphindza nekuhhafula • Umugcatinombolo losekelwe tintfo letiphatsekako	Sebentisa lamasu lalandzelako nangabe ubala: • Imidvwebo nobe tinsita letiphat-sekako, sib. tibali • Kwakha nekuhlahlela • Kuphindza nekuhhafula • Umugcatinombolo	Sebentisa lamasu lalandzelako nangabe ubala: • Imidvwebo nobe tinsita letiphat-sekako, sib. tibali • Kwakha nekuhlahlela • Kuphindza nekuhhafula • Umugcatinombolo • Kusondzeta elishumini
1.13 **Kuhlanganisa neku-susa**	Sombulula tinkinga tetibalo tekuh-langanisa nekususa ngemlomo letinetisombululo letifika e-10	• Hlanganisa uye-20 • Susa kusukela-20 • Sebentisa timphawu letifanele (+,–, =, ☐) • Kutetayeta ngekuhlanganisa tinombolo uye-10	• Hlanganisa uye-99 • Susa kusukela-99 • Sebentisa timphawu letifanele (+,–, =, ☐) • Kutetayeta ngekuhlanganisa tinombolo uye-20	• Hlanganisa uye 999 • Susa kusukela 999 • Sebentisa timphawu letifanele (+,–, =, ☐) • Kutetayeta ngekuhlanganisa tinombolo uye-30
1.14 **Kuphindza kuhlan-ganisa lekuholela ekuphindzaphindzeni**		• Hlanganisa inombolo yinye nga-lokuphindzaphindziwe uye -20 • Sebentisa timphawu letifanele (+, =, ☐)	• Phindzaphindza tinombolo-1uye-10 nga 2, 5, 3 na 4 uye kusamba sema-50. • Sebentisa timphawu letifanele (+, x, =, ☐)	• Phindzaphindza nobe nguyiphi inombolo nga 2, 3, 4, 5, 10 kwente samba seli100 • Sebentisa timphawu letifanele (x, ☐)
1.15 **Kuhlukanisa**				• Hlukanisa tinombolo tifike e-100 nga-2, 3, 4, 5, 10 • Sebentisa timphawu letifanele (+, =, ☐)

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhleleka-10** Umsebenti ngamunye ucala nget-ibalo tenhloko • Kubala tintfo letisetjentiswa ma-langa onkhe • Kubala uye phambili nasemuva • Kubala ngetinombolo te-odinali • Shaya tandla tikhatsi letinyenti/ letimbalwa • Ngukuphi kushaya lokunyenti/ lokuncane • Nguyiphi inombolo leta kucala/ ngemuva/emkhatsini	**Lwati lwetinombolo: Kuhleleka-20** • Shano inombolo lengembi kwaleniketiwe naletangemuva kwaleniketiwe • Hlela luhla lwetinombolo letikhet-siwe letiniketiwe • Catsanisa tinombolo ufike ema-20 ubuye usho kutsi nguyiphi lenkhulu nobe lencane ngaku-1 nobe ku-2 **Khumbula ngekusheshisa:** • Emaciniso ekuhlanganisa neku-susa u ye-10	**Lwati lwetinombolo: Kuhleleka -99** • Hlela luhla lwetinombolo letikhet-siwe letiniketiwe • Catsanisa tinombolo ufike-99 usho kutsi nguyiphi lenkhulu nobe lencane ngaku-1,2,3,4,5 nobe li-10 **Khumbula ngekusheshisa:** • Emaciniso ekuhlanganisa neku-susa u ye -20 • Hlanganisa nobe ususa emamalthiphuli e -10 kusuka -0 kuye -100	**Lwati lwetinombolo: Kuhleleka -1000** • Hlela luhla lwetinombolo letikhet-siwe letiniketiwe. • Catsanisa a tinombolo ufike-1000 bese utsi nguyiphi lenkhulu nobe lencane ngaku-1,2,3,4,5 nobe li-10 **Khumbula ngekusheshisa:** • Emaciniso ekuhlanganisa neku-susa u ye -20 • Hlanganisa nobe ususa emamalthiphuli e -10 kusuka - 0 uye -100 • Emaciniso ekuphindzaphindza tinombolo: - Lithebula lekuphindzaphindza ngaku -2 netimphendvulo ufike -20 - Lithebula lekuphindzaphindza ngaku-10 netimphendvulo ufike -100 - Emaciniso ekuhlukanisa tinombolo: - Hlukanisa ngaku -2 ufike -20 - Hlukanisa ngeli 10 ufike -100

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
1.16 **Tibalo tenhloko**		**Tindlela tekubala** Sebentisa tindlela tekubala yekuhlanganisa nekususa letihle: • Cala ngekubeka inombolo lenkhulu kute uchubeke ubale nobe ubale uye emuva. • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula	**Tindlela tekubala** Sebentisa tindlela tekubala yekuhlanganisa nekususa letihle: • Cala ngekubeka inombolo lenkhulu kute uchubeke ubale nobe ubale uye emuva. • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa	**Tindlela tekubala** Sebentisa tindlela tekubala yekuhlanganisa nekususa letihle: • Cala ngekubeka inombolo lenkhulu kute uchubeke ubale nobe ubale uye emuva. • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa • Sebentisa budlelwane emkhatsini wekuphindzaphindza nekuhlukanisa
1.17 **Tincetu**			• Sebentisa nekuphimisa tincetu letingemayunithi engcikitsini leyetayelekile kufake ekhatsi bohhafu, emakota, kunye kulokutsatfu, kunye kulokusihlanu • Bona tincetu esimeni semidvwebo • Bhala tincetu tibe nguhhafu-1	• Sebentisa nekuphimisa tincetu letingemayunithi naletingewona emayunithi engcikitsini leyetayelekile kufake ekhatsi bohhafu, emakota, kunye kulokutsatfu, kunye kulokusiphohlongo, kunye kulokusitfupha,kunye kulokusihlanu • Bona tincetu esimeni semidvwebo • Bona tincetu letisesimeni semdvwebo • Kucala kubona kwekutsi emahhafu lamabili nobe kunye kulokutsatfu kube kutsatfu kwenta lokugcwele nekwekutsi ihhafu nemakota lamabili kuyalingana. • Bhala tincetu tibe nguhhafu -1, kunye kulokutsatfu 2

SIBUTSETELO SESIGABA SABOKHEWANE

2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBRA

Kutfutfuka kwemaPhethini, Emafangishini ne-Aljebra

- KumaPhethini, Emafangishini ne-Aljebra, bantfwana batfola ematfuba eku:
  - Cedzela babuye bachubekisele phambili emaphethini lavela ngetimo letehlukene; ne
  - Bona ubuye uchaze emaphethini.
- Kuchaza emaphethini kwenta sendlalelo sekutsi bantfwana labaseSigabeni lesiseMkhatsini bachaze imitsetfo yemaphethini. Loku kuye kutfutfukiswe ku- Aljebra eSigabeni leSiphakeme.

TIHLOKO	LIBANGA R	LIBANGA1	LIBANGA2	LIBANGA 3
2.1 **Emaphethini e-Jomethri**	**Tsatsela ubuye uchubekisele phambili** Tsatsela uchubekisele phambili emaphethini lalula usebentisa tintfo letiphatsekako nemidvwebo (sibonelo: usebentisa imibala nabobunjwa)	**Tsatsela, uchubekisele phambili bese uyachaza** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letiphatsekako • Emaphethini lalula lentiwe ngemidvwebo yemigca, bobunjwa nobe tintfo. **Takhele emaphethini** Takhele emaphethini e-Jomethri • Ngetintfo letimbambekako • Ngekudvweba imigca, bobunjwa, netintfo letiphatsekako. **Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini e-Jomethri • emvelweni • emphilweni yemalanga onkhe, • kumagugu emasiko etfu	**Tsatsela, uchubekisele phambili bese uyachaza** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letiphatsekako • Emaphethini lalula lentiwe ngemidvwebo yemigca, bobunjwa nobe tintfo. **Takhele ubuye uchaze emaphethini** • Ngetintfo letimbambekako • Ngekudvweba imigca, bobunjwa, netintfo letiphatsekako. **Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini e-Jomethri • emvelweni • emphilweni yemalanga onkhe, • kumagugu emasiko etfu	**Tsatsela, uchubekisele phambili bese uyachaza** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula kakhulu lentiwe ngetintfo letiphatsekako • Emaphethini lalula lentiwe ngemidvwebo yemigca, bobunjwa nobe tintfo. **Takhele ubuye uchaze emaphethini** • Ngetintfo letimbambekako • Ngekudvweba imigca, bobunjwa, netintfo letiphatsekako. **Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini e-Jomethri • emvelweni • emphilweni yemalanga onkhe, • kumagugu emasiko etfu
2.2 **Emaphethini etinombolo**		**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye kulandzelana kwetinombolo lokulula kufika ku-100 **Takhele emaphethini ubuye uwachaze.**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye kulandzelana kwetinombolo lokulula kufika ku-200 **Takhele emaphethini ubuye uwachaze.**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye kulandzelana kwetinombolo lokulula kufika ku-999 **Takhele emaphethini ubuye uwachaze.**

SIBUTSETELO SESIGABA SABOKHEWANE

3. SIKHALA NABOBUNJWA (IJOMETHRI)

Kutfutfuka ngekwesikhala nabobunjwa

Kutfutfuka lokumcoka ngekwesikhala nabobunjwa kutfolakala ngeku:

- Kugcila kutimphawu tabobunjwa netintfo letitsite kuleso naleso sigaba;
- Kuyekela kufundza lulwimi loluphatselene nendzawo nekumatanisa imibono lehlukene yetintfo letifanako nekufundza ulandzele tinkhombandlela telibalavemcondvo.

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
3.1 **Kubekeka, kutetayeta nekubukeka**	**Lulwimi lwekubekeka** Chaza kubekeka kwentfo letsite nawuyicatsanisa nalenye, (sibonelo: etukwe, ngembi kwe, ngasesancele se, sekudla se, etulu, phasi, eceleni ne. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela nawu-hambahamba eklasini.	**Lulwimi lwekubekeka** Chaza kubekeka kwentfo letsite nawuyicatsanisa nalenye, sibonelo: etukwe, ngembi kwe, ngasesancele se, sekudla se, etulu, phasi, eceleni ne. **Kubekeka nekubukeka** • Bona umatanise emacala lahl-ukene entfo lefanako yamalanga onkhe **Kubekeka netinkhombandlela** • Landzela tinkhombandlela nawu-hambahamba eklasini. • Landzela ticondziso kubeka intfo letsite ihambisane nalenye, sibonelo; beka ipeniseli ngemuva kwelibhokisi	**Lulwimi lwekubekeka** Chaza kubekeka kwentfo letsite nawuyicatsanisa nalenye, sibonelo: etukwe, ngembi kwe, ngasesancele se, sekudla se, etulu, phasi, eceleni ne. **Kubekeka nekubukeka** • Bona umatanise emacala lahl-ukene entfo lefanako yamalanga onkhe **Kubekeka netinkhombandlela** Landzela tinkhombandlela nawu-hambahamba eklasini.	**Lulwimi lwekubekeka** Chaza kubekeka kwentfo letsite nawuyicatsanisa nalenye, sibonelo: etukwe, ngembi kwe, ngasesancele se, sekudla se, etulu, phasi, eceleni ne. **Kubekeka nekubukeka** • Bona umatanise emacala lahl-ukene entfo lefanako yamalanga onkhe • Nika ligama lentfo lesetjentiswa malanga onkhe nakukhonjiswa licele lelingaketayeleki layo • Fundza, chaza bese udvweba libalavemcondvo nome licala langetulu lelicoco letintfo. • Tfola tintfo kubalavemcondvo. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela nawuhambahamba eklasini. Nasesikolweni • Landzela tinkhombandlela kusu-ka endzaweni tsite kuya kulenye kubalavemcondvo. • Nika tinkhombandlela tekuhamba eklasini nasesikolweni.

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
3.2 **Tintfo letingemaday-imenshini lamatsatfu (3-D)**	**Kuhleleka kwetintfo** Bona wati emabito etintfo letinge-madayimenshini lamatsatfu(3-D) eklasini • Bobunjwa labayibhola, • Bobunjwa bemabhokisi **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamat-satfu (3-D) ngekubuka loku: • Isayizi • umbala • tintfo letigicikako • tintfo letishelelako **Imisebenti leyentiwako** • Sebentisa tintfo letingema-dayimenshini lamatsatfu (3-D) njengemabhuloki ekwakha, ku-setjentiswa kabusha, njll kwacha tintfo letitsite, sibonelo: imibhos-hongo, emabhuloho, njll	**Kuhleleka kwetintfo** Bona wati emabito etintfo letinge-madayimenshini lamatsatfu(3-D) eklasini nasetitfombeni • Bobunjwa labayibhola, • Bobunjwa bemabhokisi **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamat-satfu (3-D) ngekubuka loku: • Isayizi • umbala • tintfo letigicikako • tintfo letishelelako **Imisebenti leyentiwako** • Bona ubuye wakhe tintfo letinge-madayimenshini lamatsatfu (3-D) usebentisa tintfo letifana nemabhuki ekwakha, kuvuselela kabusha, tinsita tekwakha.	**Kuhleleka kwetintfo** Bona wati emabito etintfo letinge-madayimenshini lamatsatfu(3-D) eklasini nasetitfombeni • Bobunjwa labayibhola, (tindilinga) • Bobunjwa bemabhokisi • (emaphrizimu) • Emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamat-satfu (3-D) ngekubuka loku: • Isayizi • tintfo letigicikako • tintfo letishelelako **Imisebenti leyentiwako** • Bona ubuye wakhe tintfo letinge-madayimenshini lamatsatfu (3-D) usebentisa tintfo letiphatsekako njengabobunjwa labangemada-yimenshini lamabili (2-D), emab-hiloki, kuvuselela tintfo kabusha, tinsita tekwakha naletinye tintfo letingemadayimenshini lamatsa-tfu (3-D)	**Kuhleleka kwetintfo** Bona wati emabito etintfo letinge-madayimenshini lamatsatfu(3-D) eklasini nasetitfombeni • Bobunjwa labayibhola, (tindilinga) • Bobunjwa bemabhokisi • (emaphrizimu) • Emasilinda • emaphiramidi • emakhoni **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamat-satfu (3-D) ngekubuka loku: • bobunjwa labangemada-yimen-shini lamabili-(2-D) labenta buso bentintfo letingemadayimnshini lamatsatfu (3-D) indzawo lendla-lekile nalegobekile **Imisebenti leyentiwako** • Bona ubuye wakhe tintfo letingemadayimenshini lamat-satfu (3-D) usebentisa tintfo letiphatsekako njengabobunjwa labangemada-yimenshini lama-bili (2-D), lubumba,luvungulo, simunyangaso,letinye tintfo letingemadayimenshini lamatsa-tfu (3-D) te-Jomethri

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
3.3 **Bobunjwa labange-ma-dayimenshini lamabili (2-D),**	**Bona, utfola abuye anike emagama abobunjwa be-madayimenshini lamabili eklasini nasetitfombeni kufaka ekhatsi:** • Timphawu tebafundzi • Ligama leliklasi	**Kuhleleka lwabobunjwa** Bona ubuye unike bobunjwa letinge-madayimenshini lamabili (2-D) • Indilinga • Calantsatfu • sikwele **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemada-yimenshini lamabili (2-D) ngekubuka loku: • isayizi • umbala • emacala lacondzile • emacala layindilinga	**Kuhleleka lwabobunjwa** Bona ubuye unike bobunjwa letinge-madayimenshini lamabili (2-D) • indilinga • calantsatfu • sikwele • calandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemada-yimenshini lamabili (2-D) ngekubuka loku: • isayizi • umbala • emacala lacondzile • emacala layindilinga	**Kuhleleka lwabobunjwa** Bona ubuye unike bobunjwa letinge-madayimenshini lamabili (2-D) • indilinga • calantsatfu • sikwele • calandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemada-yimenshini lamabili (2-D) ngekubuka loku: • kubunjwa • emacala lacondzile • emacala layindilinga **Dvweba bobunjwa** • indilinga • calantsatfu • sikwele • calandze

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
3.4 **Umugca lohlukanisa emkhatsini ngalokufanako nangalokulinganako**	**Umugca lohlukanisa emkhatsini ngalokufanako nangalokulinganako** • Bona lokuhlukana emkhatsini kulingane kufanane emtimbeni wakho	**Umugca lohlukanisa emkhatsini ngalokufanako nangalokulinganako** • Bona lokuhlukana emkhatsini kulingane kufanane emtimbeni wakho • Bona ubuye udvwebe umugca lohlukanisa emkhatsini ngalokufanako nangalokulinganako kubobunjwa be-Jomethri nalabo labangasibo be-Jomethri labangemada-yimenshini lamabili (2-D)	**Umugca lohlukanisa emkhatsini ngalokufanako nangalokulinganako** • Bona ubuye udvwebe umugca lohlukanisa emkhatsini ngalokufanako nangalokulinganako kubobunjwa be-Jomethri nalabo labangasibo be-Jomethri labangemada-yimenshini lamabili (2-D)	**Umugca lohlukanisa emkhatsini ngalokufanako nangalokulinganako** • Bona ubuye udvwebe umugca lohlukanisa emkhatsini ngalokufanako nangalokulinganako kubobunjwa be-Jomethri nalabo labangasibo be-Jomethri labangemada-yimenshini lamabili (2-D) • Tfola umugca lohlukanisa emkhatsini ngalokufanako nangalokulinganako ngekugoca liphepha nekukhomba

SIBUTSETELO SESIGABA SABOKHEWANE

4. SILINGANISO

Kutfutfuka ekulinganiseni

- Kutfutfuka lokusemcoka ekulinganiseni kuto tonkhe tiigaba kuphumeleliswa singeniso saloku:
  - Tindlela letinsha tekulinganisa;
  - Emathulusi lamasha ekulinganisa, ucala ngemathulusi langakahleleki bese uya kulahlelekile ebangeni lesibili nelesitsattfu;
  - Emayunithi lamasha ekulinganisa, latfolakala emaBangeni lesi-2 nelesi -3.
- Kubala nesombululula tinkinga tetibalo ngekulinganisa kufanele kucaphele umsebenti wetinombolo lesewentiwe.

TIHLOKO	LIBANGA R	LIBANGA1	LIBANGA 2	LIBANGA 3
4.1 **Sikhatsi**	**Kundlula kwesikhatsi** Khuluma ngekundlula kwesikhatsi • Khuluma ngetintfo letentekako emini naletenteka ebusuku. • Bafundzi balandzelanisa tigameko letenteka kubo emini. • Hlela tigameko letivamile temphilo yabo.	**Kundlula kwesikhatsi** Khuluma ngekundlula kwesikhatsi • Hlela tigameko letivamile temphilo yabo. • Catsanisa budze besikhatsi ngekusebentisa lulwimi sib. lokudze, lokufisha, lokugijimako, lokuhamba kancane. • Landzelanisa tigameko usebentisa lulwimi sib.itolo, namuhla, kusasa **Kusho sikhatsi** • Chaza kwenteka kwetintfo ngekusebentisa lolulwimi sib. ekuseni, emini, ntsambama ebusuku, ngesikhatsi, nasemuva kwesikhatsi. • Nika ngekulandzelanisa emalanga eliviki netinyanga temnyaka. • Faka emalanga ekutalwa ekhalendeni.	**Kusho sikhatsi** • Nika ubuye ulandzelanise emalanga eliviki netinyanga temnyaka. • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko lemlandvo, tigameko tesikolo ekhalendeni. • Shano sikhatsi sema-awa lalishumi nakubili ngema-awa, ngema-awa lahhafu, ngekota yeli-awa nangemaminithi.	**Kusho sikhatsi** • Fundza tinsuku ekhalendeni. • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko lemlandvo, tigameko tesikolo ekhalendeni. • Shano sikhatsi sema-awa lalishumi nakubili nge: - ma-awa - hhafu yema-awa - kota yema-awa - maminithi usebentisa liwashi letintsi neliwashi letinombolo naletinye tinsita letikhombisa sikhatsi ngetinombolo njengabomakhalekhikhini.

TIHLOKO	LIBANGA R	LIBANGA1	LIBANGA 2	LIBANGA 3
			Bala budze nekundlula kwesikhatsi • Sebentisa ikhalenda kubala nekuchaza budze besikhatsi: - ngemalanga, - ngemaviki • Sebentisa liwashi kubala budze besikhatsi: - ngema-awa. - ngehhafu yeli-awa	**Bala budze nekundlula kwesikhatsi** • Sebentisa ikhalenda kubala budze besikhatsi. - ngemalanga, - ngemaviki - ngetinyanga • Gucula emkhatsini wemalanga nemaviki • Gucula emkhatsini wemaviki netinyanga • Sebentisa liwashi kubala budze besikhatsi: - ngema-awa. - ihhafu yema-awa . - ikota yema-awa.
4.2 **Budze**	**Kukala lokungakahleleki** • Catsanisa ubuye uhlole budze, kuphakama nobe bubanti, betintfo letimbili nobe letinyenti ngekutibeka edvute nalenye. Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokudze, lokufisha, lokuphakeme, lokubanti.	**Kukala lokungakahleleki** • Catsanisa ubuye uhlole budze, kuphakama nobe bubanti, betintfo letimbili nobe letinyenti ngekutibeka edvute nalenye. Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokudze, lokufisha, lokuphakeme, lokubanti. • Combela, linganisa, catsanisa, landzelanisa ubuye ubhale budze besilinganiso lesingakahleleki sib. Impama, lizinga lekwenta, ipeniseli lendze netintfo tekubala. • Chaza budze betintfo ngekubala usho budze ngemayunithi langakahleleki.	**Kukala lokungakahleleki** • Combela, linganisa, catsanisa, landzelanisa ubuye ubhale budze besilinganiso lesingakahleleki sib. Impama, lizinga lekwenta, ipeniseli lendze netintfo tekubala. • Chaza budze betintfo ngekubala usho budze ngemayunithi langakahleleki.	**Kukala lokungakahleleki** • Combela, linganisa, catsanisa, landzelanisa ubuye ubhale budze besilinganiso lesingakahleleki sib. Impama, lizinga lekwenta, ipeniseli lendze netintfo tekubala. • Chaza budze betintfo ngekubala usho budze ngemayunithi langakahleleki.

TIHLOKO	LIBANGA R	LIBANGA1	LIBANGA 2	LIBANGA 3
			Kungenisa kukala lokuhlelekile Combela, kala, catsanisa, hlela ubuye urekhode budze usebentisa emamitha (kungaba yindvuku ley-imitha, tintsambo letilingana imitha) njengeyunithi lehlelekile yekukala budze.	**Kungenisa kukala lokuhlelekile** Combela, kala, catsanisa, hlela ubuye urekhode budze usebentisa emamitha (kungaba yindvuku ley-imitha, tintsambo letilingana imitha) njengeyunithi lehlelekile yekukala budze. • Combela ubuye ukale budze ngemasentimitha. (Awuntjintji emasentimitha uwayise emamitheni).
4.3 **Sisindvo**	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele sisindvo setintfo letimbili noma letinyenti ngekutiva nobe usebentisa sikali sekulinganisa. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kulula, ku-yasindza nobe kusindza kakhulu.	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode sisindvo useben-tisa sikali sekulinganisa netilin-galinganiso letingakabekelwa umtsetfo sib. titini, nemabhuloki. • Chaza sisindvo setintfo ngeku-bala nekusho sisindvo ngemayu-nithi langakahleleki. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kulula, ku-yasindza nobe kusindza kakhulu.	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode sisindvo useben-tisa sikali sekulinganisa netilin-galinganiso letingakabekelwa umtsetfo sib. titini, nemabhuloki. • Chaza sisindvo setintfo ngeku-bala nekusho sisindvo ngemayu-nithi langakahleleki. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kulula, ku-yasindza nobe kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa uhlele ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. Emakhi-logremu lama -2 elayisi, ikhilo-gremu yafulawa. • Kala sisindvo sakhe ngemagre-mu asebentisa sikali sasendlini lencane.	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode sisindvo useben-tisa sikali sekulinganisa netilin-galinganiso letingakabekelwa umtsetfo sib. titini, nemabhuloki. • Chaza sisindvo setintfo ngeku-bala nekusho sisindvo ngemayu-nithi langakahleleki. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kulula, ku-yasindza nobe kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa uhlele ubuye urekhode sisindvo setintfo letipakelwe kut-sengiswa letiveta sisindvo - ngemakhilogremu sib. Emakhilogremu lama -2 elayisi, ikhilogremu yafulawa. - ngemagremu sib. 500 emagremu asawoti • Kala sisindvo sakhe ngemagre-mu asebentisa sikali sasendlini lencane. (Awuntjintji emasentimitha uwayise kumamitha)

TIHLOKO	LIBANGA R	LIBANGA1	LIBANGA 2	LIBANGA 3
4.4 **Umtsamo/Bungako**	**Kulinganisa lokungakahleleki** • Catsanisa ubuye uhlele umtsamo walokusamanti (bungako) etintfweni tekuphatsa letimbili letihlalelene. Bafundzi bahlola ngekutsela entfweni yekuphatsa yesitsatfu nakudzingekile. • Catsanisa ubuye uhlele umtsamo walokusamanti longatfwalwa tintfo tekuphatsa letimbili natigcwalisiwe (umtsamo) • Sebentisa lulwimi kukhulume ngekucatsanisa sib. Kukhulu kuna, kuncane kuna, kugcwele, akunalutfo.	**Kulinganisa lokungakahleleki** • Catsanisa ubuye uhlele umtsamo walokusamanti (bungako) etintfweni tekuphatsa letimbili letihlalelene. Bafundzi bahlola ngekutsela entfweni yekuphatsa yesitsatfu nakudzingekile. • Catsanisa ubuye uhlele umtsamo walokusamanti longatfwalwa tintfo tekuphatsa letimbili natigcwalisiwe (umtsamo) • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kukhulu kuna, kuncane kuna, kugcwele, akunalutfo. • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa ngekusebentisa tilinganiso letingakabekelwa umtsetfo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekusho kutsi mangaki emayunithi langakahleleki longawasebentisa nawugcwalisa lentfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine.	**Kulinganisa lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (letingakumumatsa uma tigcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umtsetfo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekusho kutsi mangaki emayunithi langakahleleki longawasebentisa nawugcwalisa lentfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine.	**Kulinganisa lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (letingakumumatsa uma tigcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umtsetfo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekusho kutsi mangaki emayunithi langakahleleki longawasebentisa nawugcwalisa lentfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine.

TIHLOKO	LIBANGA R	LIBANGA1	LIBANGA 2	LIBANGA 3
			Kungenisa kulinganisa lokuhlele-kile • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ngekukala usebentisa emalitha • Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa lovetwe ngemalitha sib. emalitha lama -2 elubisi, ilitha yesinatfo lesibandzako, emalitha la -5 ependi.	**Kungenisa kulinganisa lokuhlele-kile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ngekukala usebentisa emalitha, ihhafu yelitha, nekota yelitha. • Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa lovetwe ngemalitha sib. Emalitha lama -2 elubisi, ilitha yesinatfo lesibandzako, emalitha la -5 ependi nobe ku-vetwe ngemamililitha sib. 500 emamililitha elubisi, 340 emami-lilitha esinatfo lesibandzako, 750 emamililitha e-oyila. • Yati kutsi inkomishi lelingene ingemamililitha la -250 • Yati kutsi ithisipunu lelingene ingemamililitha la -5 (Awuntjintji emasentimitha uwayise kumamitha)
4.5 **Ipherimitha nebun-gako bendzawo**				**Ipherimitha** Cwaninga libanga nawujikeleta bobunjwa labangemada-yimenshini lamabili (2-D) netintfo letingemadayi-menshini lamatsatfu (3-D) useben-tisa kucatsanisa lokucondzile nobe emayunithi langakahleleki. **Bungako bendzawo** Cwaninga bungako bendzawo ngekuyifaka emathayilisi.

SIBUTSETELO SESIGABA SABOKHEWANE

5. KUSEBENTA NGEDATHA

Kutfutfuka eKusebenteni ngeDatha

- Kutfutfuka lokumcoka ekusebenteni ngedatha emabangeni onkhe kwentiwa nguloku:
  - Kwedlula ekusebenteni ngetintfo kufinyelele ekusebenteni ngedatha, ne
  - Kusebenta ngetimo letisha letimele idatha/imidvwebo
- Bafundzi kumele basebente ngedathaa lejikeletako lephelele lokungenani kanye ngemnyaka-loku kufaka kugcogca nekuhlela idatha, kuveta idatha ngemdvwebo, kuhlatiya idatha, kuhumusha idatha nekwetfula umbiko.
- Letinye taletintfo letingenhla tekusebenta ngedatha tingabuye tisetjentwe tibe imisebenti leyehlukene.

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
5.1 **Gcogca ubuye uhlunge tintfo**	**Gcogca ubuye uhlela tintfo** Gcogca ubuye uhlunge tintfo letiphatsekako temalanga onkhe.	**Gcogca ubuye uhlela tintfo** Gcogca ubuye uhlunge tintfo letiphatsekako temalanga onkhe.		
5.2 **Veta lugcogco lwetintfo letihlungiwe**	**Veta lugcogco lwetintfo letihlungiwe** Dvweba sitfombe setintfo letigcogciwe	**Veta lugcogco lwetintfo letihlungiwe** Kudvweba sitfombe setintfo letigcogciwe		
5.3 **Coca ubuye ubike ngetintfo letigcogcwe tabuye tahlungwa**	**Coca ubuye ubike ngetintfo letigcogcwe tabuye tahlungwa** **Kuphendvula imibuto mayelana naloku** Phendvula imibuto ngaloku • Kuhlungwe njani lokugcogciwe • Umdvwebo walokugcogciwe	**Coca ubuye ubike ngetintfo letigcogcwe tabuye tahlungwa** • Nika tizatfu kwekutsi kuhlungwe njani lokugcogciwe • Phendvula imibuto ngaloku: - Kuhlungwe njani (indlelan-cubo) - Loko lokugcogciwe kwahlungwa kunjengani (umkhicito) • Chaza ngalokugcogciwe na/umdvwebo • Chaza kutsi lokugcogciwe kwahlungwa njani		

TIHLOKO	LIBANGA R	LIBANGA 1	LIBANGA 2	LIBANGA 3
5.4 **Gcogca ubuye uhlele idatha**		**Gcogca ubuye uhlele idatha** • Gcogca idatha mayelana neliklasi nobe nesikolo kute uphendvule imibuto lebutwe nguthishela.	**Gcogca ubuye uhlele idatha** • Gcogca idatha mayelana neliklasi nobe nesikolo kute uphendvule imibuto lebutwe nguthishela	**Gcogca ubuye uhlele idatha** • Gcogca idatha mayelana neliklasi nobe nesikolo kute uphendvule imibuto lebutwe nguthishela • Hlela idatha lenikwe nguthishela nobe libhuku lemsebenti/incwadzi yemfundzi • Hlela lwati nge: - Tinhla - Timphawu - Temathali - emathebula
5.5 **Veta idatha**		**Veta idatha** • Veta idatha ngegrafutitfombe • Kwenteka kuphela kuma-grafutitfombe lanekucondzana kwalokunye nalokunye	**Veta idatha** • Veta idatha ngegrafutitfombe • Kwenteka kuphela kuma-grafutitfombe lanekucondzana kwalokunye nalokunye	**Veta idatha** Veta idatha nge: • Ngegrafutitfombe (Kwenteka kuphela kumagrafutitfombe lanekucondzana kwalokunye nalokunye) • i-bha grafu
5.6 **Hlatiya ubuye uhumushe idatha**		**Hlatiya ubuye uhumushe idatha** Phendvula imibuto lemayelana nedatha lesegrafinititfombe • Kwenteka kuphela kumagrafutitfombe lanekucondzana kwalokunye nalokunye	**Hlatiya ubuye uhumushe idatha** Phendvula imibuto lemayelana nedatha lesegrafinititfombe • Kwenteka kuphela kuma-grafutitfombe lanekucondzana kwalokunye nalokunye	**Hlatiya ubuye uhumushe idatha** Phendvula imibuto lemayelana nedatha lesegrafinititfombe • Kwenteka kuphela kuma-grafutitfombe lanekucondzana kwalokunye nalokunye

3.3 KUCHAZA LOKUTAWUFUNDVWA

Kulesahluko lesitawuchaza lokutawufundvwa, bothishela batawuniketwa loku lokulandzelako:

- Sibutsetelo sethemu yeliBanga R kuya ku-3
- Tihloko letilandzelanako letiphakanyisiwe letihlukaniswe ngetigamu: Akusito tonkhe tincenye taletihloko letitawufundziswa ngethemu ngayinye; letinye tincenye taletinye tihloko tindzinga kufundziswa ngembikwaletinye ticenye taletotihloko.
- Kuhleleka kahle kwetihloko letiphakanyisiwe ngekwemnyaka.Tihloko talokucuketfwe letinye tidzinga sikhatsi lesinyenti kwengca letinye, ngako-ke letinye tihloko tidzinga sikhatsi lesinyenti kunaletinye
- Emanotsi lachaza lokutsite kanye netindlela tekufundzisa letihamba netibonelo lapho kudzingeke khona.

Loko lokutawufundziswa ngakunye kuhlukaniswe ngetihloko.Loko lokutawufundziswa kumele kufundziswe kutotonkhe tigamu.Kulandzelaniswa kwetihloko ngekwemathemu kusinika umbono wekutsi tihloko tingasabalaliswa njani tibuye tibuketwe umnyaka wonkhe. Akukabaluleki kufundzisa tonkhe tihloko letiphatselene neSikhala nabobunjwa, Silinganiso kanye nekusebentisa Idatha kutotonkhe tigamu.Ngako- ke tonkhe tihloko kumele tifundziswe ekhatsini wemnyaka.

Esahlukeni sesibili (sicephu 2.6) sisindvo semikhakha yalokucuketfwe siniketiwe.Uma loku kungahlanganiswa nema a-awa lakhona emnyakeni umuntfu angakhona kubala ema-awa emkhakha walokucuketfwe ngamunye.

Bothishela bangakhetsa kulandzelanisa kanye nekuhlela sikhatsi salokucuketfwe ngendlela lehlukile kuletiphakamiso letikhona kulesahluko.Bothishela bangakhetsa kuhlela sikhatsi salokucuketfwe ngendlela lehlukile kuletiphakamiso letikhona kulesahluko.Noma kunjalo kumele bangakhohlwa sisindvo kanye nema a-wa laphatselene nemkhakha walokucuketfwe kweTibalo tesigaba Sabokhewane.

- Tibalo letifundvwa **ebangeni R** tisesimeni setibalo leticala kufundvwa ngako-ke atikahlukaniswa ngekwesikhatsi setifundvo.Thishela weliBanga R kumele ahlanganise tibalo naleminye imisebenti yemntfwana yemalanga onkhe, nanobe sikhatsi kumele sibekwe eceleni lapho thishela atawugcila emsebentini wetibalo ngelilanga. Nangabe sikhatsi singeke sibekwe eceleni bafundzi angeke bacaphele nobe babe nelutsandvo lwelwati kanye nemakhono.
- Sikhatsi lesiniketiwe emabangeni 1-3 singalendlela:
    - Ema-awa langu-7 kumele asetjentiselwe Tibalo ngeliviki (10 wemaviki x 4 wethemu x 7 wema-awa = 280 wema awa ngemnyaka
    - Sifundvo seTibalo kumele sibe li-awa linye nemaminithi langema-24 ngelilanga emabangeni 1- 3
    - Loku kusho kutsi kunetigamu letine temaviki lalishumi kanye netifundvo letisihlanu ngeliviki

(NgeMsombuluko kuya kulesihlanu)

- Kumele kube neliviki lokubetayeta kanye nekuhlanganisa lokutawufundvwa ekucaleni kwethemu, njengoba bafundzi baye bakhohlwe lokunyenti lokufundziwe ngesikhatsi semaholide. Ekupheleni kwethemu ngayinye kumele kube neliviki lapho kutawuhlanganiswa lokufundziwe.Loku kutasinika tifundvo letingu 160, 8 x 4 x 5 = 160

3.4 KULANDZELANISA TIHLOKO KANYE NEKUHLELA TIHLOKO NGEKWESIKHATSI

Lamathebula lalandzelako aniketiwe esigabeni ngasinye kusigaba R -3:

- Kuhlelwa kwetihloko ngekwesikhatsi umnyaka wonkhe (loku kukhombisa kusabalalisa tihloko kutotonkhe tigamu bese kubekwa bungako besikhatsi lokumele sicitfwe esihlokweni ngasinye lesiphatselene nemkhakha walokucuketfwe.

- Kulandzelanisa tihloko ngekwemnyaka (loku kukhombisa kutsi tihloko tabiwe njani kuthemu ngayinye kanye nekutfutfuka kwelwati nemakhono kuwo onkhe emathemu).

- Emanotsi lachaza lokutsite ngekwesihloko ngasinye-lamathebula asinika lwati lolucacisiwe kanye netindlela tekufundzisa tesihloko ngasinye njengoba tilandzelana kuwo onkhe emathemu.

Luhlelo Sifundvo-Kwabiwa kwetihloko ethemini ngayinye

Tinombolo sihloko lesibalulekile esifundvweni seTibalo esigabeni saboKhewane.Esikhatsini lesinyenti evikini ngalinye, kuthemu kanye nasemnyakeni wonkhe kusuke kugcilwe kuTinombolo,Timphawu tekubala kanye Nebudlelwane. Tifundvo tetibalo letintsatfu nobe letingetulu evikini ngalinye kumele tigcile esifundvweni seTinombolo,Timphawu tekubala kanye Nebudlelwane.Sikhatsi lesisele kumele sihlukaniselwe leminye imikhakha yalokucuketfwe.

Sikhala naBobunjwa kanye neSilinganiso kudzinga sikhatsi lesinyenti kanye nekunakwa kwendlula Kusebenta ngeDatha kanye nemaPhethini, eMafangishini kanye ne Aljebra.Lamathebula langentasi asinika lwati lwekutsi tingaki tifundvo lekumele sitabele umkhakha walokucuketfwe ngamunye kanye netihloko ebangeni ngalinye kuMaphethini,eMafangishini kanye ne-Aljebra,Sikhala nabobunjwa,Silinganiso kanye nekusebentisa Idatha.

Kwabiwa kwemikhakha yalokucuketfwe kanye netihloko tetifundvo eBangeni R

Njengoba Tibalo teliBanga R tisesimeni setibalo leticala kufundvwa, leSikhatsi lesiphakanyisiwe sekufundza lesitawabiwa lesilandzelako sitawusetjentiselwa sifundvo seTibalo lekugcilwe kuso kanye nemisebenti lengakahlelwa. Loku kutawenta siciniseko sekutsi wonkhe umsebenti lokhona wentiwe.Umsebenti wetibalo leticala kufundvwa, ungaba kubala linani letindishi kanye netinkomishi labatatisebentisa ngesikhatsi sekudla, kubala linani lemidlalo ledlalwe ngaphandle, imidlalo ledlalwe ngekhatsi endlini yekufundzela, lefana nemaphazili, emadominosi, njll. Thishela kumele ahlele imisebenti yakhe ngekwetidzingo tebafundzi bakhe kanye netinsita letikhona endlini yakhe yekufundzela.

- **Bobunjwa kanye nesikhala** yincenye lebalulekile yekutfutfuka kwetibalo temfundzi losemncane, lekumele isabalaliswe liviki lonkhe, kanye naleminye imisebenti lekugcilwe kuyo lesesandleni sathishela, kanye nematfuba ekwakha tintfo letitsite, kudlala ngemanti nesanti kwebafundzi.

- **Silinganiso** kumele sihlanganiswe nemisebenti yekubala, kucombela nekubala nangabe ulinganisa budze ngetandla, ngetinyawo kanye netinyatselo.

- Irejista yeliklasi kanye nelishadi lesimo selitulu kusinika sikhatsi lesanele sekusebenta ngeDatha.

Lithebula 3.1: Sikhatsi lesiniketiwe semkhakha walokucuketfwe ngeliviki

Umkhakha walokucuke tfwe	Sihloko	Sikhatsi lesiphakanyisiwe
Tinombolo, timphawu tekubala nebudlelwane	Kubala Kubona tinombolo Kubona nekuchaza tinombolo letiphe-lele Kwati tinombolo Kucatulula tinkinga tetibalo	**120 emaminithi**
Emaphethini,emafangishini ne-Aljebra	kutsatsela, kucedzela nekutakhela emaphethini akhe	**80 emaminithi**
Sikhala nabobunjwa (iJomethri)	Kubona nekubita bobunjwa 2-D netit-fombe Bobunjwa be-Jomethri Kwakha tintfo letingemadayimen-shini lamatsatfu (3-D) usebentisa tintfo letiphatsekako Budlelwane bendzawo Inkhombandlela	**80 emaminithi**
Silinganiso	Sikhatsi Budze Siindvo Umtsamo	**80 emaminithi**
Kusebenta ngeDatha	Kugcogca, kuhlunga, kudvweba, kufun-dza nekukhombisa idatha	**60 emaminithi**
SAMBA		**420 emaminithi** **7 ema-awa ngeliviki**

- **Kwabiwa kwemkhakha walokucuketfwe netihloko etifundvweni teLiBanga 1 kuye ku -3**

Ngalokulingene, tifundvo letintsatfu (emkhatsini wa 4 na $4\frac{1}{2}$ wema-awa) ngeliviki tisetjentiswa kutinombolo, tim-phawu tekubala nebudlelwane emaBangeni 1, 2 na 3. Tifundvo letimbili letisele (sib. Emkhatsini wa $2\frac{1}{2}$ na 3 wema-awa) tihlukaniswa emkhatsini wetihloko taleminye imikhakha yalokucuketfwe ngendlela lephakanyiswe ngentasi.

Lithebula 3.2: Linani letifundvo letiphakanyisiwe temkhakha walokucuketfwe ngethemu yeLiBanga 1

UMKHAKHA WALOKUCUKET-FWE	SIHLOKO	Inombolo yetifundvo				
		Ithemu 1	Ithemu 2	Ithemu 3	Ithemu 1	Linani
Tinombolo, timphawu tekubala nebudlelwane	Tonkhe tihloko tetinombolo, imisebenti nebudlelwane	**22**	**30**	**28**	**25**	**105**
Emaphethini, emafangishini ne-Aljebra	Emaphethini etinombolo	**3**	**3**	**3**	**3**	12
	Emaphethini e-Jomethri	**1**	**1**	**1**	**1**	4
Sikhala nabobunjwa (iJome-thri)	Bobunjwa be 2-D		**3**		**3**	6
Tintfo letingemadayimenshini lamatsatfu (3-D)		**3**		**2**	**1**	6
	Indzawo, kubekeka nemacala	**2**			**1**	3
	Kuhlukanisa emkhatsini kulin-gane, kufanane			**1**	**1**	2
Silinganiso	Sikhatsi	**2**				2
	Budze	**2**		**2**		4
	Sisindvo	**2**			**2**	4
	Umtsamo	**1**	**2**		**1**	4
Kusebenta ngedatha	Kugcogca, kuhlunga, kuveta nekuhluta tintfo	**2**	**1**			3
	Umjikeleto wedatha legcwele			**3**		3
	Tincenye temjikeleto wedatha				**2**	2
	Linani letifundvo	**40**	**40**	**40**	**40**	**160**

Lithebula 3.3: Linani letifundvo letiphakanyisiwe temkhakha walokucuketfwe ngethemu yeLiBanga 2

UMKHAKHA WALOKUCUKETFWE	SIHLOKO	Inombolo yetifundvo				
		Ithemu 1	Ithemu 2	Ithemu 3	Ithemu 4	Linani
Tinombolo, timphawu tekubala nebudlelwane	Tonkhe tihloko tetinombolo, imisebenti nebudlelwane	24	25	24	26	99
Emaphethini, emafangishini ne-Aljebra	Emaphethini etinombolo	3	3	3	3	12
	Emaphethini e-Jomethri	1	1	1	1	4
Sikhala nabobunjwa (iJomethri)	Bobunjwa labangemadayimenshini lamabili (2-D)		3		3	6
	Tintfo letingemadayimenshini lamatsatfu (3-D)	3		2	1	6
	Indzawo, kubekeka nemacala		2	1		3
	Kuhlukanisa emkhatsini kulingane, kufanane		1		1	2
Silinganiso	Sikhatsi	3	1	3	1	8
	Budze	3			1	4
	Sisindvo		3		1	4
	Umtsamo			3	1	4
Kusebenta ngedatha	Umjikeleto wedatha legcwele	3		3		6
	Tincenye temjikeleto wedatha		1		1	2
	Linani letifundvo	**40**	**40**	**40**	**40**	**40**

3.41 Sibutsetelo Selibanga -1 Sethemu ngayinye

SIBUTSETELO SELIBANGA 1 1. TINOMBOLO,TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
KUTFUTFUKA KWELWATI LWETINOMBOLO: Bala ngetinombolo letiphelele				
1.1 **Bala tintfo**	**Bala tintfo letiphatsekako eli-10** **Nika kucombela lokwamukelekako kwelinani letintfo letingahlolwa ngekubala.**	**Bala tintfo letiphatsekako ngekwetsembeka uye-20** **Nika kucombela lokwamukelekako kwelinani letintfo letingahlolwa ngekubala.** **Kubala ngatincumbi kuyakhutsatwa**	**Bala tintfo letiphatsekako ngekwetsembeka uye-40** **Nika kucombela lokwamukelekako kwelinani letintfo letingahlolwa ngekubala.** **Kubala ngatincumbi kuyakhutsatwa**	**Bala tintfo letiphatsekako ngekwetsembeka uye-50** **Nika kucombela lokwamukelekako kwelinani letintfo letingahlolwa ngekubala.** **Kubala ngatincumbi kuyakhutsatwa**
1.2 **Bala uye phambili nasemuva**	**Bala uye phambili nasemuva nga:** • Kunye kusukela kunobe nguyiphi inombolo emkhatsini wa -1 nema-20	**Bala uye phambili nasemuva nga:** • nga-1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -50 **Bala uye phambili nga:** • ngema-10 kusukela kunobe nguyiphi imalithiphuli ye -10 emkhatsini we-0 ne -50 • ngeti -5 kusukela kunobe nguyiphi imalithiphuli ye -5 emkhatsini we-0 ne-50 • nga-2 kusukela kunobe nguyiphi imalithiphuli ye -2 emkhatsini we-0 nema-20	**Bala uye phambili nasemuva nga:** • nga-1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -80 **Bala uye phambili nga:** • ngema-10 kusukela kunobe nguyiphi imalithiphuli ye -10 emkhatsini we -0 ne -80 • ngeti -5 kusukela kunobe nguyiphi imalithiphuli ye -5 emkhatsini we-0 ne-80 • nga-2 kusukela kunobe nguyiphi imalithiphuli ye -2 emkhatsini we-0 ne-20	**Bala uye phambili nasemuva nga:** • nga-1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -100 **Bala uye phambili nga:** • ngema-10 kusukela kunobe nguyiphi imalithiphuli ye -10 emkhatsini we -0 ne -100 • ngeti -5 kusukela kunobe nguyiphi imalithiphuli ye -5 emkhatsini we-0 ne-100 • nga-2 kusukela kunobe nguyiphi imalithiphuli ye -2 emkhatsini we-0 ne-20
KUTFUTFUKISA LWATI LWETINOMBOLO: Kumela tinombolo letiphelele				
1.3 **Tinombolo nemagama etinombolo**	**Kubona, kutfola nekufundza tinombolo** • Bona, tfola ubuye ufundze tinombolo ku-1 uye ema-20 • Bhala tinombolo -1 uye-5 • Bona, tfola ubuye ufundze emagama etinombolo ku-1 uye ku-5 • Bhala emagama etinombolo ku-1 uye -5	**Kubona, kutfola nekufundza tinombolo** • Bona, tfola ubuye ufundze tinombolo-1 uye ema-50 • Bhala tinombolo -1 uye e-10 • Bona, tfola ubuye ufundze emagama etinombolo ku-1 uye e-10 • Bhala emagama etinombolo ku-1 uye e-10	**Kubona, kutfola nekufundza tinombolo** • Bona, tfola ubuye ufundze tinombolo-1 uye e -80 • Bhala tinombolo -1 kuye -20 • Bona, tfola ubuye ufundze emagama etinombolo -1 uye -10 • Bhala emagama etinombolo -1 uye-10	**Kubona, kutfola nekufundza tinombolo** • Bona, tfola ubuye ufundze tinombolo-1 uye e-100 • Bhala tinombolo -1 uye ema -20 • Bona, tfola ubuye ufundze emagama etinombolo -1 uye e -10 • Bhala emagama etinombolo ku-1 uye e-10

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
KUTFUTFUKISA LWATI LWETINOMBOLO: Chaza, catsanisa ubuye uhlele tinombolo				
1.4 Chaza, catsanisa ubuye uhlele tinombolo	**Chaza, catsanisa ubuye uhlele tintfo ufike ku-5** • Catsanisa ligcogco letintfo ngalokunyenti, lokumbalwa, lokunyenti kakhulu, lokuncane kakhulu, lokunyenti kuna, lokuncane kuna, kufana na, lokungaba kunyenti njenge, umehluko • Hlela ligcogco letintfo kusukela kulokunyenti kuye kulokuncane nekusukela kulokuncane kuye kulokunyenti. **Chaza, catsanisa ubuye uhlele tinombolo uye ku-5** • Chaza ubuye ucatsanise tinombolo letiphelele ngakuncane kuna, kukhulu kuna, kulingana • Chaza ubuye uhlele tinombolo: - Kusukela kulencane uye kulenkhulu nekusukela kulenkhulu uye kulencane. - ngekusebentisa umugcatinombolo 1- 5	**Chaza, catsanisa ubuye uhlele tintfo ufike e-10** • Catsanisa ligcogco letintfo ngalokunyenti, lokumbalwa, lokunyenti kakhulu, lokuncane kakhulu, lokunyenti kuna, lokuncane kuna, kufana na, lokungaba kunyenti njenge, umehluko • Hlela ligcogco letintfo kusukela kulokunyenti kuye kulokuncane nekusukela kulokuncane kuye kulokunyenti. **Chaza, catsanisa ubuye uhlele tinombolo uye e-10** • Chaza ubuye ucatsanise tinombolo letiphelele ngakuncane kuna, kukhulu kuna, kulingana na • Chaza ubuye uhlele tinombolo: - kusukela kulencane uye kulenkhulu nekusukela kulenkhulu uye kulencane. - ngembi-, ngemuva, emkhatsini - ngekusebentisa umugcatinombolo 0-10	**Chaza, catsanisa ubuye uhlele tintfo ufike ku-15** • Catsanisa ligcogco letintfo ngalokunyenti, lokumbalwa, lokunyenti kakhulu, lokuncane kakhulu, lokunyenti kuna, lokuncane kuna, kufana na, lokungaba kunyenti njenge, umehluko • Hlela ligcogco letintfo kusukela kulokunyenti kuye kulokuncane nekusukela kulokuncane kuye kulokunyenti. **Chaza, catsanisa ubuye uhlele tinombolo uye e-15** • Chaza ubuye ucatsanise tinombolo letiphelele ngakuncane kuna, kukhulu kuna, kulingana na • Chaza ubuye uhlele tinombolo: - kusukela kulencane uye kulenkhulu nekusukela kulenkhulu uye kulencane. - ngembi-, ngemuva, emkhatsini - ngekusebentisa umugcatinombolo 0 - 15	**Chaza, catsanisa ubuye uhlele tintfo ufike ema- 20** • Catsanisa tintfo letigcogcelwe ngalokunyenti, lokumbalwa, lokunyenti kakhulu, lokuncane kakhulu, lokunyenti kuna, lokuncane kuna, kufana na, lokungaba kunyenti njenge, umehluko • Hlela ligcogco letintfo kusukela kulokunyenti kuye kulokuncane nekusukela kulokuncane kuye kulokunyenti **Chaza, catsanisa ubuye uhlele tinombolo uye ema-20** • Chaza ubuye ucatsanise tinombolo letiphelele ngakuncane kuna, kukhulu kuna, kulingana na • Chaza ubuye uhlele tinombolo: - kusukela kulencane uye kulenkhulu nekusukela kulenkhulu uye kulencane. - ngembi-, ngemuva, emkhatsini - ngekusebentisa umugcatinombolo 0-20 **Kusebentisa tinombolo te-odinal kukhombisa kuhleleka, indzawo nobe kubekeka** • Hlela tintfo emgceni ticale kuyekucala kuya kuyelishumi nobe kusukela kuyekucala kuye kuyekugcina. • Tinombolo te-odinali tihleleke kusukela kuyekucala uye kuyelishumi

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
KUTFUTFUKISA LWATI LWETINOMBOLO: SIMELIBUNGAKO				
1.5 Simelibungako			Bona simelibungako setinombolo li-11 kuye e-15 • Hlahlela tinombolo letinemadijithi lamabili tibe ngemashumi nemivo, sib. li-12 wakhiwa 10 na 2	Buka simelibungako saletinombolo 11 uye -19. • Hlahlela tinombolo letinemadijithi lamabili tibe ngemashumi nemivo, sib. 18 wakhiwa 10 ne 8
KUSOMBULULA TINKINGA TETIBALO KUSIMONGCONDVO				
1.6 Emasu ekusombulula tinkinga tetibalo.	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo tetinkinga: • tinsita letiphatsekako, sib. tibali • titfombe letidvweba indzabasibalo • umugcatinombolo losekelwa tinsita letiphatsekako, sib. buhlalu bekubala.	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo tetinkinga: • tinsita letiphatsekako, sib. tibali • titfombe letidvweba indzabasibalo • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula • umugcatinombolo losekelwa tinsita letiphatsekako, sib. buhlalu bekubala.	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo tetinkinga: • tinsita letiphatsekako, sib. tibali • titfombe letidvweba indzabasibalo • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula • umugcatinombolo losekelwa tinsita letiphatsekako, sib. buhlalu bekubala.	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo tetinkinga: • tinsita letiphatsekako, sib. tibali • titfombe letidvweba indzabasibalo • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula • umugcatinombolo losekelwa tinsita letiphatsekako, sib. buhlalu bekubala.
1.7 Kuhlanganisa nekususa	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuhlanganisa, kususa, netimphendvulo kufika ku-5.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuhlanganisa, kususa, netimphendvulo kufika e -10.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuhlanganisa, kususa, netimphendvulo kufika e -15.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuhlanganisa, kususa, netimphendvulo kufika ema -20.
1.8 Kuphindza kuhlanganisa lokuholela ekuphindza phindzeni		Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kuphindza kuhlanganisa lokunetimphendvulo kufika e -10.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kuphindza kuhlanganisa lokunetimphendvulo kufika e -15.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo sakho setinkinga letifaka ekhatsi kuphindza kuhlanganisa lokunetimphendvulo kufika ema -20.
1.9 Kugcogcela ndzawonye nekwabelana lokuholela ekuhlukaniseni	Sombulula tinkinga tetibalo temagama ngekwenta kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye tinombolo letiphelele ufike ku-5 netimphendvulo letifaka ekhatsi tinsalela.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye tinombolo letiphelele ufike e-10 netimphendvulo letifaka ekhatsi tinsalela.	Sombulula tinkinga etibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye tinombolo letiphelele ufike e-15 netimphendvulo letifaka ekhatsi tinsalela.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye tinombolo letiphelele ufike -20 netimphendvulo letifaka ekhatsi tinsalela.

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
1.11 Imali		• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu 5c, 10c, 20c, 50c, R1, R2, R5 • Sombulula tinkinga tetibalo temali letifaka samba nentjintji ngemasenti ufike-R10 nemasenti uye 20c	• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu 5c, 10c, 20c, 50c, R1, R2, R5 • Sombulula tinkinga tetibalo temali letifaka samba nentjintji ngemasenti ufike-R20 nemasenti uye 20c	• Bona ubuye utfole imali yaseNingizimu Afrika • lebuhhehlu 5c, 10c, 20c, 50c, R1, R2, R5 yemaphepha R10 na R20 • Sombulula tinkinga tetibalo temali letifaka samba nentjintji ngemasenti ufike-R20 nemasenti uye 20c
KUBALA NGEKUKHULULEKA				
1.12 Emasu (tindlela nobe tindlelan-chubo)	Sebentisa lamasu lalandzelako uma ubala: • Tinsita letiphatsekako, sib. tibali • Dvweba titfombe • Imigcatinombolo lesekelwa tintfo letiphatsekako sib. buhlalu bekubala	Sebentisa lamasu lalandzelako uma ubala: • Tinsita letiphatsekako, sib. tibali • Dvweba titfombe • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo lesekelwa tinsita letiphatsekako, sib. buhlalu bekubala	Sebentisa lamasu lalandzelako uma ubala: • Tinsita letiphatsekako, sib. tibali • Dvweba titfombe • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo lesekelwa tinsita letiphatsekako, sib. buhlalu bekubala	Sebentisa lamasu lalandzelako uma ubala: • Tinsita letiphatsekako, sib. tibali • Dvweba titfombe • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo lesekelwa tinsita letiphatsekako, sib. buhlalu bekubala
1.13 Kuhlanganisa nekususa	**Kuhleleka kwetinombolo: 1 - 5** • Hlanganisa ufike ku-5 • Susa ku -5 • Tetayete kuhlanganisa tinombolo ku-5	**Kuhleleka kwetinombolo: 1 – 10** • Hlanganisa ufike e-10 • Susa e-10 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo ku- 7	**Kuhleleka kwetinombolo: 1 - 15** • Hlanganisa ufike e-15 • Susa e -15 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo kufika ku -9	**Kuhleleka kwetinombolo: 1 - 20** • Hlanganisa ufike e-20 • Susa e -20 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo kufika e- 10
1.14 Kuphinza kuh-langanisa loku-holela ekuphind-zaphindzeni		• Kuhlanganisa lokuphindzako (inombolo lefanako) kuye e -10 • Sebentise timphawu letifanele (+, –, =, ☐)	• Kuhlanganisa lokuphindzako (inombolo lefanako) kuye -15 • Sebentisa timphawu letifanele (+, –, =, ☐)	• Kuhlanganisa lokuphindzako (inombolo lefanako) kuye -20 • Sebentisa timphawu letifanele (+, –, =, ☐)

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhleleka kwetinombolo 5** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe • Catsanisa tinombolo kufike ku- 5 usho kutsi nguyiphi lenkhulu nobe lencane nga-1 na ku-2.	**Lwati lwetinombolo: Kuhleleka kwetinombolo 10** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe • Catsanisa tinombolo kufike e-10 usho kutsi nguyiphi lenkhulu nobe lencane nga-1 na-2.	**Lwati lwetinombolo: Kuhleleka kwetinombolo 15** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe • Catsanisa tinombolo kufike e-15 usho kutsi nguyiphi lenkhulu nobe lencane nga-1 na ku-2. **Khumbula ngekusheshisa:** • Kuhlanganisa tinombolo ufike ku -5 • Khumbula imigomo yekuhlanganisa nekususa ufike ku -5 **Emasu ekubala** Sebentisa emasu ekubala kute uhlanganise ubuye ususe ngalokufanele: • Cala ngenombolo lenkhulu kute ubale uchubeke nobe ubale uye emuva • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela	**Lwati lwetinombolo: Kuhleleka kwetinombolo 20** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe • Catsanisa tinombolo kufike e -20 usho kutsi nguyiphi lenkhulu nobe lencane nga-1 na ku-2. **Khumbula ngekusheshisa:** • Kuhlanganisa tinombolo ufike e -10 • Khumbula imigomo yekuhlanganisa nekususa ufike e -10 **Emasu ekubala tibalo tenhloko** Sebentisa emasu ekubala kute uhlanganise ubuye ususe ngalokufanele: • Cala ngenombolo lenkhulu kute ubale uchubeke nobe ubale uye emuva • umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela

TINHLOBO TETINKINGA TETIBALO TELIBANGA 1

Leti tibonelo tetinhlobo tetinkinga letibalulekile lekumele thishela atetfule kanyenti eklasini lakhe.Uma thishela asebenta ngemacembu lamancane, kumele avete inkinga ngemlomo. Uma bafundzi bakhona kufundza, thishela angabuye abanikete nenkinga lebhaliwe kepha kufanele abuye ayetfule ngemlomo. Tinkinga letikusimongcondvo tingafakwa emaphepheni ekusebentela, kepha kumele tibe timfisha, ticondze ngco tibuye tibe nguletetayelekile futsi thishela kumele ente siciniseko sekutsi bonkhe bafundzi bayativisisa.

Kugcogcela ndzawonye

Kugcogcela ndzawonye, ulahle insalela

Stela utsengisa tikhwama temahhabhula, sinye sikhwama sitfwala emahhabhula la -3.Yena unemahhabhula la -14. Angenta tingaki tikhwama letinemahhabhula lamatsatfu, sikhwama ngasinye?

Kugcogcela ndzawonye, ufake insalela ekhatsi emphendvulweni

Ben ufuna kutsatsa emacandza la -15 awayise kugogo wakhe. Mangaki emabhokisi langatfwala emacandza lasitfupha, libhokisi ngalinye lalindzingako kute afake onkhe lamacandza.

Kwabelana

Kwabelana, ulahle insalela

Aba emaswidi la -14 wabele bangani labatsatfu kute bonkhe batfole inombolo lelinganako yemaswidi.

Kuphindza kuhlanganisa

Emabhayisikili lamane anemasondvo lamangaki?

Kuhlanganisa nekususa

Kunetinhlobo letintsatfu tetinkinga tekuhlanganisa nekususa letisisekelo kantsi luhlobo ngaluyinye lungetfulwa ngetindlela letinyenti. Letinhlobo letisisekelo ngunati:

Ntjintja

Noluthando bekanemahhabhula lasihlanu. Silo umnike lamanye lasiphohlongo. Mangaki emahhabhula lasekanawo?

Noluthando bekanemahhabhula la -13. Unike Silo emahhabhula lasihlanu. Mangaki emahhabhula lasekanawo nyalo?

Hlanganisa

Nosisi unetimabuli letisihlanu letiluhlata netimabuli letisiphohlongo letiluhlata sasibhakabhaka. Unetimabuli letingaki?

Nosisi unetimabuli leti -13. Letisihlanu tiluhlata satjani kantsi letinye tiluhlata sasibhakabhaka. Tingaki timabuli letiluhlata sasibhakabhaka lanato Nosisi?

Catsanisa

Nosisi unemabhanana la -13. Themba unemabhanana lasihlanu. Nosisi unemabhanana lamanyenti ngamangaki kunaThemba?

Kuveta inkinga ngayinye ngetindlela letehlukene.

Tinkinga tetibalo kumele tivetwe ngetindlela letehlukene. Sibonelo, totimbili titinkinga tekuntjintja, kodvwa “tinkinga letingatiwa” tisetindzaweni letehlukile.

Noluthando unemahhabhula.Silo umnika lamanye lasiphohlongo.Nyalo sewunemahhabhula la -13. Bekanamangaki emahhabhula Noluthando ekucaleni?

Noluthando unemahhabhula lasihlanu.Silo umnika lamanye. Nyalo sewunemahhabhula la -13.Mangaki emahhabhula lekamnike wona Silo?

Timongcondvo letinebudlelwane lobehlukene bekusebenta

Heyila utsengisa emahothidogi nge R4, 00 lilinye.Yenta lithebula lekumsita atfole linani lema-oda lamakhulu.

Inombolo yemahothidogi	1	2	3	4	5	6	7
Intsengo ngemaRandi	4	8					

Sebentisa lelithebula kutfola imali yemahothidogi layinkhotsa.

Letinkinga tetibalo taloluhlobo tiniketwe kute tihole thishela. Bafundzi abangakhatsatwa ngetinhlobo temagama etinkinga tetibalo.

Caphela kutsi bafundzi bavamise kusebentisa tindlela letehlukene tekusombulula tinkinga letingakalindzelwa nguthishela.

SIBUTSETELO SELIBANGA 1 2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBRA				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
2.1 **Emaphethini eJomethri**	**Tsatsela ubuye uchubekisele phambili** Tsatsela ubuye uchubekise le phembili emaphethini lalula usebentisa: • Tintfo letibonakalako • Imidvwebo (kusetjentiswa imibala nabobunjwa) **Kulandzelana kwemisebenti lokuphakanyisiwe** Cala kutsatsela nekuchubekisela phambili emaphethini usebentisa tintfo letibonakalako kantsi futsi uma bafundzi sebakwati kusebentisa emakhilayoni nemapeniseli, kumele ucale kutsatsela nekuchubekisela embili emaphethini ngekuwadvweba	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako letilula • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo **Ticambele ubuye uchaze emaphethini akho** • Ticambele emaphethini eJomethri - Ngetintfo letibonakalako - Ngekudvweba imigca, bobunjwa netintfo • Chaza emaphethini akho	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo **Ticambela ubuye uchaze emaphethini akho** • Ticambele emaphethini eJomethri - Ngetintfo letibonakalako - Ngekudvweba imigca, bobunjwa netintfo • Chaza emaphethini akho	**Emaphethini ndzawotonkhe** Bona ubuye uchaze ngemagama, ubuye utsatsele emaphethini eJomethri kuloku lokulandzelako • Etintfweni temvelo • Emphilweni yemphucuko yamalanga onkhe • Kumagugu emasiko **Ticambele ubuye uchaze emaphethini akho** • Ticambele emaphethini eJomethri - Ngetintfo letibonakalako - Ngekudvweba imigca, bombunjwa netintfo Chaza emaphethini akho

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye ukuchaze kulandzelana kwetinombolo letilula kuye kulokungenani ema -20 Kulandzelana kumele kukhombe kubala uye phambili nasemuva: • Ngakunye kusukela nobe kuyiphi inombolo lesemkhatsini wa-1 ne- 20	**Tsatsela, chubekisele phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye ukuchaze kulandzelana kwetinombolo letilula kuye kulokungenani ema -50 Kulandzelana kumele kukhombe kubala uye phambili nasemuva: • Ngakunye kusukela nobe kuyiphi inombolo lesemkhatsini wa- 1 ne- 50 **Kubala uye phambili:** • Ngema-10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we- 0 nena-50 • Ngaku -5 nobe nguyiphi imalthiphuli ye- 5 emkhatsini we 0 nema-50 • Ngaku-2 nobe nguyiphi imalthipuli ya -2 emkhatsini we- 0 ne -50 **Ticambele ubuye uchaze emaphethini akho** • Ticambele ubuye uchaze emaphethini akho etinombolo	**Tsatsela, chubekisele phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye ukuchaze kulandzelana kwetinombolo letilula kuye kulokungenani ema -80 Kulandzelana kumele kukhombe kubala uye phambili nasemuva: • Ngakunye kusukela nobe kuyiphi inombolo lesemkhatsini wa- 1 ne-80 **Kubala uye phambili:** • Ngema-10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we- 0 nema-80 • Ngaku -5 nobe nguyiphi imalthiphuli ye- 5 emkhatsini we 0 nema -80 • Ngaku-2 nobe nguyiphi imalthipuli ya -2 emkhatsini we- 0 ne -80 **Ticambele ubuye uchaze emaphethini akho** • Ticambele ubuye uchaze emaphethini akho etinombolo	**Tsatsela, chubekisele phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye ukuchaze kulandzelana kwetinombolo letilula kuye kulokungenani e- 100 Kulandzelana kumele kukhombe kubala uye phambili nasemuva: • Ngakunye kusukela nobe kuyiphi inombolo lesemkhatsini wa- 1 ne -100 **Kubala uye phambili:** • Ngema-10 kusukela kunobe nguyiphi imaltiphuli ye 10 emkhatsini we 0 ne 100 • Ngaku -5 nobe nguyiphi imalthiphuli ye -5 emkhatsini we 0 ne100 • Ngaku-2 nobe nguyiphi imalthipuli ya 2 emkhatsini we 0 ne 100 **Ticambele ubuye uchaze emaphethini akho** • Ticambele ubuye uchaze emaphethini akho etinombolo

SIBUTSETELO SELIBANGA 1 3. SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
3.1 **Kubekeka, kwetayeta nekubukeka**	**Lulwimi lwekubekeka** Chaza indzawo yentfo yinye nawuyicatsanisa nalenye, sib: etukwe, phambi kwe, ngemuva, ngasesancele, sekudla, etulu, phasi, edvute kwe. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela nawuhambahamba eklasini. • Landzela ticondziso kubeka intfo yinye icondzane nalenye sib.beka ipeniseli ekhatsi ebhokisini. **Tiphakamiso lokugcilwa kuto nakulandzelaniswa imisebenti eThemini ye -1** • Lulwimi lolukhomba kubekeka kumele lungeniswe ngemisebenti leyentiwako letawenta bafundzi bente iminyakato. • Loku kungahlanganiswa njengemsebenti lobhaliwe lofana nekudvweba, kufaka umbala nobe kumatanisa imidvwebo nemagama • Sebentisa lulwimi lwekukhomba kubekeka lolufundvwe nakulandzelwa tinkhombandlela • Tinkhombandlela kumele tentiwe ngekwenta imisebenti yekwenta lapho bafundzi batawutinyakatisa nobe banyakatise tintfo ngekulandzela ticondziso.			**Lulwimi lwekubekeka** Chaza indzawo yentfo yinye nawuyicatsanisa nalenye, sib: etukwe, phambi kwe, ngemuva ngasesancele, sekudla, etulu, phasi, edvute kwe. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela nawuhambahamba eklasini. • Landzela ticondziso kubeka intfo yinye icondzane nalenye sib.beka ipeniseli ekhatsi ebhokisini. **Tiphakamiso lokugcilwa kuto nakulandzelaniswa imisebenti eThemini ye -4** • Umsebenti lophatselene nekubekeka, netinkhombandlela ungahlanganiswa njengemsebenti lobhaliwe lofana nekudvweba, kufaka umbala nobe kumatanisa sitfombe neligama. • Lulwimi lolusha lolukhomba kubekeka kumele lungeniswe ngemisebenti yekwenta ledzinga bafundzi bente iminyakato. • Tinkhombandlela kumele tentiwe ngekwenta imisebenti yekwenta lapho bafundzi batawutinyakatisa nobe banyakatise tintfo ngekulandzela ticondziso. **Kubekeka nekubukeka** • Matanisa kubukeka lokwehlukile kwentfo yinye yemalanga onkhe.

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
3.2 **Tintfo letingema-dayimeshini lamatsatfu (3-D)**	**Tinhlobo letehlukene tetintfo** Bona ubuye unike emagama etintfo letingemadayimeshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (tindilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimeshini lamatsatfu (3-D) ngekubuka loku: • isayizi • umbala **Imisebenti lekugcilwa kuyo** • Bona ubuye wakhe tintfo letingemadayimeshini lamatsatfu (3-D) usebentisa tintfo letiphatsekako letifana nemabhulokhi ekwakha, tintfo letivuselelwe kabusha, ikhithi yetintfo tekwakha **Tiphakamiso lokugcilwa kuto nekulandzelanisa imisebenti eThemini ye- 1** • Kudlala lokukhululekile ngetintfo letehlukene letingemadayimeshini lamatsatfu (3-D.) Kwakha tintfo lotikhetsele tona usebentisa emabhuloki ekwakha, ikhithi yetintfo tekwakha nobe tintfo letivuselelwe kabusha.Loku kungentiwa ngesikhatsi sekutisebentela. • Tsatsela umfanekiso walokutsite lokunikwa nguthishela. Loku kungentiwa ngesikhatsi sekutisebentela • Catsanisa isayizi yetintfo letifanako sib. shano kutsi nguyiphi ibhola lenkhulu.		**Tinhlobo letehlukene tetintfo** Bona, nika emagama etintfo letingemadayimeshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (tindilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimeshini lamatsatfu (3-D) ngekubuka loku: • isayizi • umbala • tintfo letigicikako • tintfo letishelelako **Tiphakamiso lokugcilwa kuto nekulandzelanisa imisebenti eThemini ye -3** • Sebenta ngemabhola netintfo letibunjwe njengemabhola, nemabhokisi lehlukene naletinye tintfo letibunjwe njengemaphrizimu labocalandze nobe emakhiyubhu • Cwaninga kutsi nguyiphi intfo lengagicika, lengashelela, ngutiphi letingapakwa tiye etulu. • Bona ubuye uchaze tintfo teJomethri netemalanga onkhe ngekusho kutsi ngabe tibunjwe njengebhola nobe njengelibhokisi • Umsebenti uhlanganiswa ngemisebenti lebhalwako.	**Tinhlobo letehlukene tetintfo** Bona ubuye unike emagama etintfo letingemadayimeshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (tindilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimeshini lamatsatfu (3-D) ngekubuka loku: • isayizi • umbala • tintfo letigicikako • tintfo letishelelako **Tiphakamiso lokugcilwa kuto nekulandzelanisa imisebenti eThemini ye -4** Umsebenti uhlanganiswa ngemisebenti lebhalwako

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
3.2 **Tintfo letingema-dayimeshini lamatsatfu (3-D)**	• Khuluma ngemibala yetintfo bese utihlunga ngekwemibala yato • Bona ubuye uchaze tintfo teJomethri netemalanga onkhe ngekusho kutsi ngabe tibunjwe njengebhola nobe njengelibhokisi • Umsebenti uhlanganiswa ngemisebenti lebhalwako			
3.3 **Bobunjwa labangema-dayimeshini lamabili (2-D)**		**Tinhlobo letehlukene tabobunjwa** Bona ubuye unike emagama abobunjwa labangemadayimeshini lamabili (2-D) • Tindilinga • Bocalantsatfu • Tikwele **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimeshini lamabili (2-D) ngekubuka loku: • isayizi • umbala • emacala lacondzile • emacala layindilinga **Tiphakamiso lokugcilwa kuto nekulandzelanisa imisebenti eThemini ye -2** • Cala kudlala ngekukhululeka ngabobunjwa labehlukahlukene kufake ekhatsi kwenta titfombe ngabobunjwa beJomethri labajutjiwe. Loku kungentiwa ngesikhatsi tekutisebentela. Loku kungabuye kwentiwe etifundvweni Temakhono Ekuphila. • Tsatsela sitfombe lesakhiwe ngabobunjwa beJomethri.		**Tinhlobo letehlukene tabobunjwa** Bona ubuye unike emagama abobunjwa labangemadayimeshini lamabili (2-D) • Tindilinga • Bocalantsatfu • Tikwele **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimeshini lamabili (2-D) ngekubuka loku: • isayizi • umbala • emacala lacondzile • emacala layindilinga **Tiphakamiso lokugcilwa kuto nekulandzelanisa imisebenti eThemini ye -4** • Sebenta ngetindilinga netikwele letingemasayizi lehlukene nabocalantsatfu lababunjwe ngendlela lehlukile. Hlunga bobunjwa ngekubuka kutsi banemacala lacondzile nobe layindilinga.

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
		• Catsanisa isayizi yetintfo letifanako sib. Hlela tikwele ucale kulesincane kakhulu kuye kulesikhulu kakhulu ubuye usebentise lulwimi lwesayizi kuchaza bobunjwa. • Khuluma ngemibala yabobunjwa bese uhlunga bobunjwa ngekwemibala • Sebenta ngetindilinga netikwele letingemasayizi lehlukene nabocalantsatfu labakheke ngetindlela letingafani. Tihlunge ngekwemacala lacondzile nobe layindilinga • Hlunga ubuye ubeke bobunjwa ngetincumbi kuye ngekutsi babocalantsatfu, batikwele, babocalandze nobe batindilinga. • Umsebenti uhlanganiswa ngemisebenti lebhalwako		• Hlunga ubuye ubeke bobunjwa ngetincumbi kuye ngekutsi babocalantsatfu, batikwele, babocalandze nobe batindilinga. • Umsebenti uhlanganiswa ngemisebenti lebhalwako
3.4 **Kuhlukanisa emkhatsini kulingane ngalokufa-nako**			**Kuhlukanisa emkhatsini kulingane ngalokufanako** • Bona umugca lowehlukanisa umtimba wakho ulingane ngalokufanako. • Bona ubuye udvwebe umugca lowehlukanisa emkhatsini ngalokulinganako kubobunjwa labangemadayimeshini lamabili (2-D) beJomethri nakubobunjwa labangasibo beJomethri. **Tiphakamiso temsebenti lekugcilwa kuwo eThemini ye -3** • Buka imigca lehlukanisa emkhatsini kulingane ngalokufanako etintfweni letiphatsekako nasetitfombeni • Imisebenti lebhalwako akukameli kutsi “ifake imidvwebo yalokuyihhafu kuphela” kepha kumele ifake tibonelo lapho bafundzi badvweba umugca lowehlukanisa emkhatsini kulingane ngalokufanako.	**Kuhlukanisa emkhatsini kulingane ngalokufanako** • Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimenshini lamabili (2-D) ngabobunjwa beJomethri nalabangasibo beJomethri. **Tiphakamiso temsebenti lekugcilwa kuwo eThemini ye - 4** • Imisebenti lebhalwako kumele ifake tibonelo lapho umugca lowehlukanisa emkhatsini kulingane ngalofanako ungabi ngulovundlako kuphela

SIBUTSETELO SELIBANGA 1 4. SILINGANISO				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
4.1 Sikhatsi	**Kwendlula kwesikhatsi** Khuluma ngekwendlula kwesikhatsi • Bahlela tigameko letetayelikile temphilo yabo. • Catsanisa budze besikhatsi ngekusebentisa lulwimi sib.lokudze kuna, lokufisha kuna, sivinini, kancane kuna. • Landzelanisa tigameko usebentisa lulwimi njenga: itolo, namuhla, kusasa. **Kusho sikhatsi** • Chaza kutsi lokutsite kwenteka nini usebentisa lulwimi sib. ekuseni, emini, ntsambama, ebusuku, ngembi kwesikhatsi, ngemva kwesikhatsi. • Nika ubuye ulandzelanise emalanga eliviki netinyanga temnyaka. • Faka emalanga ekutalwa ekhalendeni	Sikhatsi sisetjentiswa njalo ngesikhatsi sekufundzisa liklasi lonkhe.	Sikhatsi sisetjentiswa njalo ngesikhatsi sekufundzisa liklasi lonkhe.	Sikhatsi sisetjentiswa njalo ngesikhatsi sekufundzisa liklasi lonkhe.
4.2 Budze	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele budze, kuphakama nobe bubanti betintfo letimbili nobe letinyenti ngekubeka yinye edvute kwalenye. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kudze, kufisha, kuphakeme, kubanti kuna-. • Combela, kala, catsanisa, hlela ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. budze besandla, tinyatselo, budze bepeniseli, tibali njll.		**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode budze usebentisa tintfo tekukala letingakahleleki sib. budze besandla, tinyatselo, budze bepeniseli, tibali njll.	

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
4.3 Sisindvo	**Kukala lokungakahleleki** • Combela, kala, hlela, ubuye urekhode sisindvo usebentisa sikali sekulinganisa netilinganiso letingakabekelwa umgomo sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokulula, lokusindzako, lokulula kuna, lokusindza kuna.			**Kukala lokungakahleleki** • Combela, kala, hlela, ubuye urekhode sisindvo usebentisa sikali sekulinganisa netilinganiso letingakabekelwa umgomo sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokulula, lokusindzako, lokulula kuna, lokusindza kuna.
4.4 Umtsamo/ Bungako	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele linani lemtsamo wetintfo letisamanti (bungako) etintfweni letimbili tekuphatsa letibekwe eceleni kwalenye. Bafundzi batawuhlola ngekutsela entfweni yekuphatsa yesitsatfu uma kudzingekile.	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele linani lemtsamo walokusamanti longamumatfwa tintfo tekuphatsa letimbili uma tigcwalisiwe (umtsamo) • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokunyenti kuna, lokuncane kuna, lokugcwele lokungenalutfo. • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi.		**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi.

SIBUTSETELO SELIBANGA 1 5. KUSEBENTA NGEDATHA				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
5.1 **Gcogca ubuye uhlunge tintfo** **5.2** **Veta ligcogco letintfo letihlungiwe** **5.3** **Coca ubuye ubike ngeligcogco letintfo letihlungiwe**	Gcogca ubuye uhlunge tintfo letiphatsekako temalanga onkhe. Dvweba sitfombe setintfo letihlungiwe. • Nika tizatfu tekutsi ligcogco lihlungwe njani. Phendvula imibuto ngaloku: - Kuhlungwe njani?(inchubo) - Ligcogco libukeka njani? (umkhicito) • Chaza ligcogco lelihlungiwe.	Gcogca ubuye uhlunge tintfo letiphatsekako temalanga onkhe. Dvweba sitfombe setintfo letihlungiwe. • Nika tizatfu tekutsi ligcogco lihlungwe njani. Phendvula imibuto ngaloku: - Kuhlungwe njani?(inchubo) - Ligcogco libukeka njani? (umkhicito) • Chaza ligcogco lelihlungiwe.		
5.4 **Gcogca ubuye uhlele idatha** **5.5** **Veta idatha** **5.6** **Hlatiya ubuye uhumushe idatha**			**Lokuphakamisiwe** Umjikeleto lophelele wedatha kwenta igrafutitfombe yeliklasi. • Gcogca ubuye uhlele idatha - Ngeliklasi nobe sikolo - Timphendvulo temibuto lebutwa nguthishela • Veta idatha ngegrafutitfombe. • Phendvula imibuto ngedatha lekugrafutitfombe.	Hlatiya idatha levetiwe Lokumisiwe: Lokungenani emagrafutitfombe lamabili.

3.4.2 Sibutsetelo Selibanga -2 Sethemu ngayinye

SIBUTSETELO SELIBANGA 2 1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
KUTFUTFUKISA LWATI LWETINOMBOLO: Bala ngetinombolo letiphelele				
1.1 **Bala tintfo**	• Bala tintfo letisetjentiswa malanga onkhe ufike lokungenani e -100 ngalokutsembekile • Nika kucombela ngalokwamukelekile linani letintfo letingahlolwa ngekubala • Lisu lekugcogcela ndzawonye liyakhutsatwa.	• Bala tintfo letisetjentiswa malanga onkhe ufike lokungenani e -150 ngalokutsembekile • Nika kucombela ngalokwamukelekile linani letintfo letingahlolwa ngekubala • Lisu lekugcogcela ndzawonye liyakhutsatwa.	• Bala tintfo letisetjentiswa malanga onkhe ufike lokungenani e -180 ngalokutsembekile • Nika kucombela ngalokwamukelekile linani letintfo letingahlolwa ngekubala • Lisu lekugcogcela ndzawonye liyakhutsatwa.	• Bala tintfo letisetjentiswa malanga onkhe ufike lokungenani e -200 ngalokutsembekile • Nika kucombela ngalokwamukelekile linani letintfo letingahlolwa ngekubala • Lisu lekugcogcela ndzawonye liyakhutsatwa.
1.2 **Bala uye phambili nasemuva**	**Bala uye phambili nasemuva:** • Ngaku -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -100 • Ngema -10 kusukela kunobe nguyiphi imaltiphuli ye -10 emkhatsini we -0 ne -100 • Ngaku -5 kusukela kunobe nguyiphi imaltiphuli ye -5 emkhatsini we -0 ne -100 • Ngaku -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -100	**Bala uye phambili nasemuva:** • Ngaku -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -150 • Ngema -10 kusukela kunobe nguyiphi imaltiphuli ye -10 emkhatsini we -0 ne -150 • Ngaku -5 kusukela kumaltiphuli ye -5 emkhatsini we -0 ne -150 • Ngabo -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -150 • Nga -3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne -99 • Ngaku-4 kusukela kunobe nguyiphi imalthiphuli yaku - 4 emkhatsini we -0 ne -100	**Bala uye phambili nasemuva:** • Ngaku -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -180 • Ngema -10 kusukela kunobe nguyiphi imaltiphuli ye -10 emkhatsini we -0 ne -180 • Ngaku -5 kusukela kumaltiphuli ye -5 emkhatsini we -0 ne -180 • Ngaku -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -180 • Ngaku 3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne -180 • Ngaku-4 kusukela kunobe nguyiphi imalthiphuli yaku - 4 emkhatsini we -0 ne -180	**Bala uye phambili nasemuva:** • Ngaku -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -200 • Ngema -10 kusukela kunobe nguyiphi imaltiphuli ye -10 emkhatsini we -0 ne -180 • Ngaku -5 kusukela kumaltiphuli ye -5 emkhatsini we -0 ne -180 • Ngaku -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -180 • Ngaku -3 kusukela kunobe nguyiphi imalthiphuli ya emkhatsini we -0 ne -200 • Ngaku-4 kusukela kunobe nguyiphi imalthiphuli yaku - 4 emkhatsini we -0 ne -200

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
KUTFUTFUKISA LWATI LWETINOMBOLO: Veta tinombolo letiphelele				
1.3 Timphawu tetinombolo nemagama etinombolo	**Tfola, bona ufundze tinombolo** • Kutfola,kubona nekufundza tinombolo - 0 uye-100 • Kubhala tinombolo - 0 uye-100 • Tfola, bona nekufundza emagama etinombolo -0 uye e-25 • Bhala emagama etinombolo -0 uye ema- 25	**Tfola, bona ufundze tinombolo** • Kutfola,kubona nekufundza tinombolo - 0 uye-150 • Kubhala tinombolo - 0 uye-150 • Kutfola,kubona nekufundza emagama etinombolo -0 uye ema-50 • Bhala emagama etinombolo -0 uye ema- 50	**Tfola, bona ufundze tinombolo** • Kutfola,kubona nekufundza tinombolo - 0 uye-180 • Kubhala tinombolo - 0 uye -180 • Tfola, bona nekufundza emagama etinombolo -0 uye ema-75 • Bhala emagama etinombolo -0 uye ema-75	**Tfola, bona ubuye ufundze tinombolo** • Kutfola,kubona nekufundza tinombolo - 0 uye-200 • Kubhala tinombolo - 0 uye -200 • Tfola, bona nekufundza emagama etinombolo -0 uye e-100 • Bhala emagama etinombolo -0 uye ema-100
KUTFUTFUKISA LWATI LWETINOMBOLO: Chaza, catsanisa ubuye uhlele tinombolo letiphelele				
1.4 Chaza, catsanisa ubuye uhlele tinombolo	**Chaza, catsanisa ubuye uhlele tinombolo uye e -25** • Catsanisa tinombolo letiphelele ngekusebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna kanye nalokulingana na. • Hlela tinombolo letiphelele kusukela kuletincane kuya kuletinkhulu naletinkhulu kuye kuletincane	**Chaza, catsanisa ubuye uhlele tinombolo uye e-50** • Catsanisa tinombolo letiphelele ngekusebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna kanye nalokulingana na. • Hlela tinombolo letiphelele kusukela kuletincane kuya kuletinkhulu naletinkhulu kuye kuletincane	**Chaza, catsanisa ubuye uhlele tinombolo uye e-75** • Catsanisa tinombolo letiphelele ngekusebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna kanye nalokulingana na. • Hlela tinombolo letiphelele kusukela kuletincane kuya kuletinkhulu naletinkhulu kuye kuletincane **Sebentisa tinombolo te –odinali kukhombisa kuhleleka, indzawo nekubekeka** • Hlela tinombolo emgceni ticale ngeyekucala kuye kuyemashumi nakubili nobe kusukela kuyekucala kuye kuyekugcina sib.kwekucala, kwesibili, kwesitsatfu.... lishumi	**Chaza, catsanisa ubuye uhlele tinombolo uye e- 99** • Catsanisa tinombolo letiphelele ngekusebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna kanye nalokulingana na. • Hlela tinombolo letiphelele kusukela kuletincane kuya kuletinkhulu naletinkhulu kuye kuletincane **Sebentisa tinombolo te –odinali kukhombisa kuhleleka, indzawo nekubekeka** • Hlela tinombolo emgceni ticale ngeyekucala kuye kuyemashumi nakubili nobe kusukela kuyekucala kuye kuyekugcina sib. kwekucala, kwesibili, kwesitsatfu uye emashumini lamabili.

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
KUTFUTFUKISA LWATI LWETINOMBOLO: Simelibungako				
1.5 Simelibungako	**Bona simelubungako setinombolo li-11 uye ema-25** • Hlahlela tinombolo letingemadijithi lamabili tibe ngemamalthiphuli elishumi nemivo • Tfola ubuye unike bungako bedijithi ngayinye	**Bona simelubungako setinombolo li-11 uye ema-50** • Hlahlela tinombolo letingemadijithi lamabili tibe ngemamalthiphuli elishumi nemivo • Tfola ubuye unike bungako bedijithi ngayinye	**Bona simelubungako setinombolo li-11 uye ema-75** • Hlahlela tinombolo letingemadijithi lamabili tibe ngemamalthiphuli elishumi nemivo • Tfola ubuye unike bungako bedijithi ngayinye	**Bona simelubungako setinombolo li-11uye ema-99** • Hlahlela tinombolo letingemadijithi lamabili tibe ngemamalthiphuli elishumi nemivo • Tfola ubuye unike bungako bedijithi ngayinye
KUSOMBULULA TINKINGA TETIBALO KUSIMONGCONDVO				
1.6 Emasu eku-sombulula tink-inga tetibalo	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo tetinkinga: • imidvwebo nobe tintfo letiphatsekako, sib. tibali • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula • imigcatinombolo lesekelwa tintfo letiphatsekako.	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo tetinkinga: • imidvwebo nobe tintfo letiphatsekako, sib. tibali • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula • imigcatinombolo lesekelwa tintfo letiphatsekako	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo tetinkinga: • imidvwebo nobe tintfo letiphatsekako, sib. tibali • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula • imigcatinombolo	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo tetinkinga: • imidvwebo nobe tintfo letiphatsekako, sib. tibali • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula • imigcatinombolo
1.7 Kuhlanganisa nekususa	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuhlanganisa, kususa, ngetimphendvulo kufike ema-20	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuhlanganisa, kususa, ngetimphendvulo kufike ema-50	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuhlanganisa, kususa, ngetimphendvulo kufike ema-75	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuhlanganisa, kususa, ngetimphendvulo kufike ema-99
1.8 Kuphindza kuhlanganisa lokuholela ekuphindza-phindzeni	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuphindza kuhlanganisa lokuholela ekuphindzaphindzeni netimphendvulo kufika ema-20	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuphindza kuhlanganisa lokuholela ekuphindzaphindzeni netimphendvulo kufika ema-30	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuphindza kuhlanganisa lokuholela ekuphindzaphindzeni netimphendvulo kufika ema-40	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo letifaka ekhatsi kuphindza kuhlanganisa lokuholela ekuphindzaphindzeni netimphendvulo kufika ema-50

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
1.9 **Kugcogcela ndzawonye nekwabelana lokuholela ekuhlukaniseni**	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye tinombolo letiphelele ufike ema-20 netimphendvulo letifaka ekhatsi tinsalela.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye tinombolo letiphelele ufike ema-50 netimphendvulo letifaka ekhatsi tinsalela.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye tinombolo letiphelele ufike ema-75 netimphendvulo letifaka ekhatsi tinsalela.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye tinombolo letiphelele ufike ema-100 netimphendvulo letifaka ekhatsi tinsalela.
1.10 **Kwabelana lokuholela etincetwini**		Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako lokuholela etisombululweni etimphendvulweni letifaka ekhatsi tincetu letingemayunithi Sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$, njll	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako lokuholela etisombululweni etimphendvulweni letifaka ekhatsi tincetu letingemayunithi Sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$, njll	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo lokufaka ekhatsi kwabelana lokulinganako lokuholela etisombululweni etimphendvulweni letifaka ekhatsi tincetu letingemayunithi Sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$, njll
1.11 **Imali**	• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu 5c, 10c, 20c, 50c, R1, R2, R5, kanye nemali yemaphepha R10, R20, R50 • Sombulula tinkinga tetibalo temali letifaka samba nentjintji yemasenti lefika ku-50c nemarandi ufike -R20	• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu 5c, 10c, 20c, 50c, R1, R2, R5, kanye nemali yemaphepha R10, R20, R50 • Sombulula tinkinga tetibalo temali letifaka samba nentjintji yemasenti lefika ku-50c nemarandi ufike –R50	• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu 5c, 10c, 20c, 50c, R1, R2, R5, kanye nemali yemaphepha R10, R20, R50 • Sombulula tinkinga tetibalo temali letifaka samba nentjintji yemasenti lefika ku-50c nemarandi ufike –R75	• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu 5c, 10c, 20c, 50c, R1, R2, R5, kanye nemali yemaphepha R10, R20, R50 • Sombulula tinkinga tetibalo temali letifaka samba nentjintji yemasenti lefika ku-50c nemarandi ufike –R99
KUTIBALELA NJE				
1.12 **Emasu** **(Tindlelanchubo nobe inchubo)**	Sebentisa lamasu lalandzelako nangabe ubala: • Imidvwebo nobe tinsita letiphatsekako, sib.tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Imigcatinombolo lesekelwa tinsita letiphatsekako	Sebentisa lamasu lalandzelako nangabe ubala: • Imidvwebo nobe tinsita letiphatsekako, sib.tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Imigcatinombolo lesekelwa tinsita letiphatsekako	Sebentisa lamasu lalandzelako nangabe ubala: • Imidvwebo nobe tinsita letiphatsekako, sib.tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Imigcatinombolo lesekelwa tinsita letiphatsekako	Sebentisa lamasu lalandzelako nangabe ubala: • Imidvwebo nobe tinsita letiphatsekako, sib.tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Imigcatinombolo lesekelwa tinsita letiphatsekako
1.13 **Kuhlanganisa nekususa**	• Hlanganisa ufike e -20 • Susa e -20 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo uye e- 10	• Hlanganisa ufike e -50 • Susa e -50 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo uye e- 15	• Hlanganisa ufike e -75 • Susa e -75 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo uye e- 20	• Hlanganisa ufike e -99 • Susa e -99 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo uye e- 20

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindza-phindzeni**	• Hlanganisa inombolo lefanako ngalokuphindziwe kute uye e-20. • Phindzaphindza tinombolo -1 uye e-10 ngaku -2. • Kusebentisa timphawu letifanele (+, –, =, ☐)	• Kuphindzaphindza tinombolo -1 uye e-10 ngaku 2, ne 5 na 4 • Kusebentisa timphawu letifanele (+, –, =, ☐)	• Kuphindzaphindza tinombolo -1 uye e-10 ngaku 2, ne 5 na 4 • Kusebentisa timphawu letifanele (+, –, =, ☐)	• Kuphindzaphindza tinombolo -1 uye e-10 ngaku 2, ne 5 na 4 • Kusebentisa timphawu letifanele (+, –, =, ☐)
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhleleka kwetinombolo 25** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe. • Catsanisa tinombolo kuye ema-25 nekusho kutsi nguyiphi: - Lenyenti nga-1 nobe lencane nga-1 - Lenyenti nga-2 nobe lencane nga-2 - Lenyenti nge-10 nobe lencane nge-10 **Khumbula ngekusheshisa:** • Khumbula imigomo yekuhlanganisa nekususa uye e-10	**Lwati lwetinombolo: Kuhleleka kwetinombolo 50** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe. • Catsanisa tinombolo ufike ema-50 ubuye usho kutsi nguyiphi: - Lenyenti nga-1 nobe lencane nga-1 - Lenyenti nga-2 nobe lencane nga-2 - Lenyenti nga-3 nobe lencane nga-3 - Lenyenti nga-4 nobe lencane nga-4 - Lenyenti nge-5 nobe lencane nge-5 - Lenyenti nge-10 nobe lencane nge-10 **Khumbula ngekusheshisa:** • Khumbula imigomo yekuhlanganisa nekususa uye e-10	**Lwati lwetinombolo: Kuhleleka kwetinombolo 75** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe • Catsanisa tinombolo ufike ema- 75 ubuye usho kutsi nguyiphi: - Lenyenti nga-1 nobe lencane nga-1 - Lenyenti nga-2 nobe lencane nga-2 - Lenyenti nga-3 nobe lencane nga-3 - Lenyenti nga-4 nobe lencane nga-4 - Lenyenti nge-5 nobe lencane nge-5 - Lenyenti nge-10 nobe lencane nge -10 **Khumbula ngekusheshisa:** • Khumbula imigomo yekuhlanganisa nekususa uye e-15 • Kuhlanganisa nekususa emamaltiphuli e -10 kusukela e- 0 uye ema-50	**Lwati lwetinombolo: Kuhleleka kwetinombolo 99** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe • Catsanisa tinombolo ufike ema- 99 ubuye usho kutsi nguyiphi: - Lenyenti nga-1 nobe lencane nga-1 - Lenyenti nga-2 nobe lencane nga-2 - Lenyenti nga-3 nobe lencane nga-3 - Lenyenti nga-4 nobe lencane nga-4 - Lenyenti nga-5 nobe lencane nga-5 - Lenyenti nge-10 nobe lencane nge-10 **Khumbula ngekusheshisa:** • Khumbula imigomo yekuhlanganisa nekususa uye ema -20 • Kuhlanganisa nekususa emamaltiphuli e-10 kusukela e- 0 uye e-100

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
1.16 **Tibalo tenhloko**	**Emasu ekubala** Sebentisa emasu ekubala kuhlanganisa nekususa ngalokufanele: • Cala ngenombolo lenkhulu kucala kute ubale uchubeke nobe ubale uye emuva • Umugcatinombolo wetenhloko • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa	**Emasu ekubala** Sebentisa emasu ekubala kuhlanganisa nekususa ngalokufanele: • Cala ngenombolo lenkhulu kucala kute ubale uchubeke nobe ubale uye emuva • Umugcatinombolo wetenhloko • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa	**Emasu ekubala** Sebentisa emasu ekubala kuhlanganisa nekususa ngalokufanele: • Cala ngenombolo lenkhulu kucala kute ubale uchubeke nobe ubale uye emuva • Umugcatinombolo wetenhloko • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa	**Emasu ekubala** Sebentisa emasu ekubala kuhlanganisa nekususa ngalokufanele: • Cala ngenombolo lenkhulu kucala kute ubale uchubeke nobe ubale uye emuva • Umugcatinombolo wetenhloko • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa
1.17 **Tincetu**		• Sebentisa ubuye unike emagama etincetu lokufaka ekhatsi emahhafu, emakota, kunye kwalokutsatfu nakunye kwalokusihlanu • Bona tincetu letivetwe ngemdvwebo • Bhala tincetu tibe yihhafu, lokubili kwalokutsatfu	• Sebentisa ubuye unike emagama etincetu lokufaka ekhatsi emahhafu, emakota, kunye kwalokutsatfu nakunye kwalokusihlanu • Bona tincetu letivetwe ngemdvwebo • Bhala tincetu tibe yihhafu, lokubili kwalokutsatfu	• Sebentisa ubuye unike emagama etincetu lokufaka ekhatsi emahhafu, emakota, kunye kwalokutsatfu nakunye kwalokusihlanu • Bona tincetu letivetwe ngemdvwebo • Bhala tincetu tibe yihhafu, lokubili kwalokutsatfu

TINHLOBO TETINKINGA TETIBALO TELIBANGA 2

Leti tinhlobo tetinkinga tetibalo lokufanele thishela ativete kanyenti eklasini. Nangabe thishela asebenta ngemacembu lamancane kumele atfule tinkinga ngekutisho. Nangabe umfundzi akwati kufundza anganiketwa inkinga lebhaliwe kodvwa kufanele thishela aphindze ayisho lenkinga.

Tinkinga letikusimongcondvo tingafakwa ephepheni lekusebentela kodvwa kufanele tibe timfisha, tetayeleke, tishaye emhlolweni tibuye tivakale kantsi nathishela kumele acinisekise kutsi bafundzi bayativisisa.

Kugcogcela ndzawonye

Kugcogcela ndzawonye*, ulahle insalela*

Stella utsengisa emahhabhula lasemasakeni, linye lisaka litfwala emahhabhula la -10.Yena unemahhabhula la -81. Angenta mangaki emasaka lanemahhabhula la -10, lisaka ngalinye?

Kugcogcela ndzawonye

Kugcogcela ndzawonye, ufake insalela ekhatsi emphendvulweni.

Umfuyi unemacandza la -47. Mangaki emabhokisi langatfwala emacandza lasitfupha, libhokisi ngalinye lawadzingako kute afake onkhe lamacandza.

Kwabelana

Kwabelana, ulahle insalela

Aba emaswidi la -54 wabele bangani labayinkhotsa kute bonkhe batfole inombolo lelinganako yemaswidi.

Kwabelana lokuholela etincetwini

Aba tincentu teshokolethi le -11 wabele bangani labane kute bonkhe batfole inombolo lelinganako yetincetu teshokolethi.

Lucetu lweligcogco

Gogo uphe Kiki emawolintji la -12. Kiki wente ijuzi ngemawolintji la -1/3. Mangaki emawolintji lawasebentisile?

Loluhlobo lwenkinga yetibalo kumele lwetfulwe kuphela ngemuva kwekuba bafundzi sebasombulule tinkinga letine nobe letisihlanu tekwaba lokuholela etinhlobeni tetincetu babuye bati emagama etincenye tetincetu.

Kubeka tincetu ndzawonye

Umceceshi wenethibhola unika umdlali ngamunye ihhafu yeliwolintji. Kunebadlali laba -14. Mangaki emawolintji lawadzingako?

Loluhlobo lwenkinga kumele lwetfulwe kuphela ngemuva kwekuba bafundzi sebasombulule tinkinga letine nobe letisihlanu tekwaba lokuholela etinhlobeni tetincetu babuye bati emagama etincenye tetincetu.

Kuphindza kuhlanganisa

Emabhayisikili lange -20 anemasondvo lamangaki?

Linani

Thami uhamba emabhuloki lasitfupha ngelilanga. Uhamba emabhuloki lamangaki ngeliviki?

Emagridi

Mnu. Khumalo uhlanyela emalayini emaklabishi layinkhotsa. Kunemaklabishi lasiphohlongo elayinini ngalinye. Mangaki emaklabishi sekawonkhe?

Kuhlanganisa nekususa

Kunetinhlobo letintsatfu tetinkinga tekuhlanganisa nekususa letisisekelo kantsi luhlobo ngaluyinye lungetfulwa ngetindlela letinyenti. Letinhlobo letisisekelo ngunati:

Kuhlanganisa nekususa

Kunetinhlobo lokungenani letintsatfu tetinkinga tekuhlanganisa nekususa kantsi luhlobo ngalunye lungatfulwa ngetindlela letehlukene. Letinhlobo nguleti:

Ntjintja

Noluthando bekanemaswidi lange -25. Silo wamupha emaswidi la -18. Unamangaki emaswidi nyalo?

Noluthando bekanemaswidi langema -53. Wapha Silo emaswidi lange -32. Unamangaki emaswidi nyalo?

Hlanganisa

Liklasi leLibanga le -2 linabocalantsatfu labaluhlata satjani labange -37 nabocalantsatfu labaluhlata sasibhakabhaka laba -19. Banabangaki bocalantsatfu?

Banetindilinga letinge -63. letinge -27 tiluhlata satjani kantsi letinye tiluhlata sasibhakabhaka. Tingaki tindilinga letiluhlata sasibhakabhaka labanato?

Catsanisa

Nosisi unemabhanana lali -13. Themba unemabhanana lasihlanu. Unemabhanana lamanyenti ngamangaki Nosisi kwendlula Themba?

Kuveta inkinga ngayinye ngetindlela letehlukene

Tinkinga kumele tetfulwe ngetindlela letihlukene, sib. totimbili titinkinga tekutjintja, kodvwa lokungatiwa kusetindzaweni letehlukene kulenkinga.

Noluthando bekaneswidi. Silo wamupha lamanye emaswidi lali -18. Nyalo sewunemaswidi langema -43. Bekanamangaki emaswidi Noluthando ekucaleni?

Noluthando bekanemahhabhula lange -25. Silo wamupha lamanye emahhabhula. Nyalo unemahhabhula langema -43. Mangaki emahhabhula lawaphiwe ngu Silo?

Timongcondvo letinebudlelwane lobehlukene bekusebenta

Heila utsengisa emahothidogi ngemali lengu R4 ngalinye. Enta lithebula kute umsite atfole imali yeli-oda lelikhulu.

Inombolo yemahothidogi	1	2	3	4	5	6	7	8	9	10
Linani ngema R	4	8								

Sebentisa lelithebula kute utfole kwekutsi emahothidogi layinkhotsa abita malini nalamanye lali -15 emahothidogi.

Sedick ugadza bantfwana. Ubita ema R20 etindleko tekuhamba, abuye abite ema R5 ngeli-awa kugadza bantfwana. Cedzela lelithebula lakhe.

Inombolo yema-awa	1	2	3	4	5	10
Linani ngema R	25	30				

Caphela kwekutsi inkinga ya Heila neya Sedick tisebenta ngalokwehlukile.

Letinhlobo tetinkinga letingenhla tiniketwe kute tihole thishela. Bafundzi abangakhatsatwa ngemagama etinhlobo tetinkinga tetibalo.

Caphela kwekutsi bafundzi bavame kusebentisa tindlela letehlukile tekusombulula inkinga lokungenteka kungabi ngiko lokulindzelwe nguthishela. Sibonelo, inkinga yekuhlukanisa ingacatululwa ngekuphindza kususa, kuhlanganisa nobe kuphindzaphindza. Tindlelanchubo tebafundzi titawugucuka ngekuhamba kwemnyaka njengoba kuvisisa nekwetayela kwabo letinhlobo tetinkinga kuyatfutfuka, njengobe lwati lwabo lwetinombolo lutfutfuka.

SIBUTSETELO SELIBANGA 2 2. EMAPHETHINI, EMAFANGISHINI NEALJEBRA				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili uchaze ngemagama. • emaphethini lalula lentiwe ngetintfo letibonakalako • emaphethini lalula lentiwe ngemidvwebo yemigca, bobunjwa nobe tintfo. **Tinhlobo letehlukene temaphethini** Emaphethini lalula lapho bobunjwa nobe tincumbi tabobunjwa tiphindzeke ngendlela lefanako. **Yakha ubuye uchaze emaphethini akho** • Takhele emaphethini eJomethri - ngetintfo letibonakalako - ngekudvweba imigca, bobunjwa nobe tintfo • Chaza emaphethini akho	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili uchaze ngemagama. • Emaphethini lalula lentiwe ngetintfo letibonakalako • Emaphethini lalula lentiwe ngemidvwebo yemigca, bobunjwa nobe tintfo. **Tinhlobo letehlukene temaphethini** Emaphethini lalula lapho bobunjwa nobe tincumbi tabobunjwa tiphindzeke ngendlela lefanako. Emaphethini lapho inombolo nobe isayizi yabobunjwa intjintja esigabeni ngasinye ngendlela lelindzelekile njengemaphethini lakhula njalo. **Yakha ubuye uchaze emaphethini akho** • Takhele emaphethini eJomethri - ngetintfo letibonakalako - ngekudvweba imigca, bobunjwa nobe tintfo • Chaza emaphethini akho	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili uchaze ngemagama. • Emaphethini lalula lentiwe ngetintfo letibonakalako • Emaphethini lalula lentiwe ngemidvwebo yemigca, bobunjwa nobe tintfo. **Tinhlobo letehlukene temaphethini** Emaphethini lapho inombolo nobe isayizi yabobunjwa intjintja esigabeni ngasinye ngendlela lelindzelekile njengemaphethini lakhula njalo. **Yakha ubuye uchaze emaphethini akho** • Takhele emaphethini eJomethri - ngetintfo letibonakalako - ngekudvweba imigca, bobunjwa nobe tintfo • Chaza emaphethini akho	**Tsatsela, chubekisela phambili ubuye uchaze** Bona, chaza emaphethini eJomethri ngemagama ubuye utsatsele emaphethini ejomethri. • Etintfweni temvelo • Emphilweni yemphucuko yamalanga onkhe • Kumagugu emasiko

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili, ubuye uchaze kulandzelana kwetinombolo lokulula kuye kulokungenani e-100 Kulandzelana kumele kukhombe kubala uye phambili nasemuva: • Ngaku-1 kusukela kunobe nguyiphi inombolo emkhatsini we-0 ne-100 • ngema-10 kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 ne-100 • ngaku-5 kusukela kunobe nguyiphi imalthiphuli ye 5 emkhatsini we-0 ne-100 • ngaku-2 kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 ne-100	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili, ubuye uchaze kulandzelana kwetinombolo lokulula kuye kulokungenani e-150 Kulandzelana kumele kukhombise Bala uye phambili kanye nasemuva: • Ngaku-1 kusukela kunobe nguyiphi inombolo emkhatsini we-0 ne-150 • ngema-10 kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 ne-150 • ngaku-5 kusukela kunobe nguyiphi imalthiphuli ye 5 emkhatsini we-0 ne-150 • ngaku-2 kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 ne-150 • ngaku-3 kusukela kunobe nguyiphi imalthiphuli ya-3 emkhatsini we-0 ne-150 • ngaku-4 kusukela kunobe nguyiphi imalthiphuli ya-4 emkhatsini we-0 ne-150	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili, ubuye uchaze kulandzelana kwetinombolo lokulula kuye kulokungenani e-180 Kulandzelana kumele kukhombise Bala uye phambili kanye nasemuva: • Ngaku-1 kusukela kunobe nguyiphi inombolo emkhatsini we-0 ne-180 • ngema-10 kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 ne-180 • ngaku-5 kusukela kunobe nguyiphi imalthiphuli ye 5 emkhatsini we-0 ne-180 • ngaku-2 kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 ne-180 • ngaku-3 kusukela kunobe nguyiphi imalthiphuli ya-3 emkhatsini we-0 ne-180 • ngaku-4 kusukela kunobe nguyiphi imalthiphuli ya-4 emkhatsini we-0 ne-180 **Takhele emaphethini.**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili, ubuye uchaze kulandzelana kwetinombolo lokulula kuye kulokungenani e-200 Kulandzelana kumele kukhombise Bala uye phambili kanye nasemuva: • Ngaku-1 kusukela kunobe nguyiphi inombolo emkhatsini we-0 ne-200 • ngema-10 kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 ne-200 • ngaku-5 kusukela kunobe nguyiphi imalthiphuli ye 5 emkhatsini we-0 ne-200 • ngaku-2 kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 ne-200 • ngaku-3 kusukela kunobe nguyiphi imalthiphuli ya-3 emkhatsini we-0 ne-200 • ngaku-4 kusukela kunobe nguyiphi imalthiphuli ya-4 emkhatsini we-0 ne-200 **Takhele emaphethini.**

SIBUTSETELO SELIBANGA 2 3. SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
3.1 **Kubekeka, kwetayeta nekubukeka**		**Lulwimi lwekubekeka** • Chaza indzawo yentfo yinye nawuyicatsanisa nalenye, sib: etukwe-, phambi kwe-, ngemuva, ngasesancele, ngasekudla, etulu, phasi, edvute ne. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela nawuhambahamba eklasini.	**Kubekeka nekubukeka** • Matanisa emacala lahlukene entfo lesetjentiswa malanga onkhe **Kubekeka netinkhombandlela** • Landzela tinkhombandlela nawuhambahamba eklasini	

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
3.2 **Tintfo letinge-madayimeshi-ni lamatsatfu (3D)**	**Tinhlobo letehlukene tetintfo** Bona ubuye unike emagama etintfo letingemadayimeshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (tindilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimeshini lamatsatfu (3-D) ngekubuka loku: • isayizi • tintfo letigicikako • tintfo letishelelako **Imisebenti lekugcilwa kuyo** • Bona ubuye wakhe tintfo letingemadayimeshini lamatsatfu (3-D) usebentisa tintfo letiphatsekako letifana nabobunjwa labangemadayimenshini lamabili (2-D) labajutjiwe, emabhulokhi ekwakha, kuvuselela kabusha, ikhithi yetintfo tekwakha naletinye tintfo teJomethri letingemadayimeshini lamatsatfu (3-D) **Tiphakamiso lokugcilwa kuto nakulandzelaniswa imisebenti eThemini ye-1** • Tsatsela umfanekiso walokutsite lokuniketwe nguthishela. Imifanekiso nobe takhiwo tingentiwa ngekusebentisa emabhuloki ekwakha, kuvuselela kabusha, emakhithi ekwakha, letinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D), nabobunjwa labangemadayimenshini lamabili (2-D) lajutjiwe. Loku kungentiwa ngesikhatsi sekutisebentela. • Catsanisa ubuye uchaze isayizi yetintfo letifanako sib. paka emabhokisi kusukela kulamakhulu uye kulamancane.		**Tinhlobo letehlukene tetintfo** Bona ubuye unike emagama etintfo letingemadayimeshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (tindilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimeshini lamatsatfu (3-D) ngekubuka loku: • isayizi • tintfo letigicikako • tintfo letishelelako **Tiphakamiso lokugcilwa kuto nakulandzelaniswa imisebenti eThemini ye -3**	**Tinhlobo letehlukene tetintfo** Bona ubuye unike emagama etintfo letingemadayimeshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (tindilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimeshini lamatsatfu (3-D) ngekubuka loku: • isayizi • tintfo letigicikako • tintfo letishelelako **Tiphakamiso lokugcilwa kuto eThemini ye -4** Umsebenti uhlanganiswa ngemisebenti lebhalwako

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
3.2 **Tintfo letinge-madayimeshi-ni lamatsatfu (3D)**	Sebenta: • ngemabhola netintfo letibunjwe njengemabhola. • ngemabhokisi lehlukene naletinye tintfo letibunjwe njengemaphrizimu labocalandze nobe emakhiyubhu. Cwaninga kutsi ngutiphi tetintfo letingagicika, letishelelako, letingapakwa tiye etulu Tfola ubuye uchaze tintfo teJomethri temalanga onkhe ngekusho kutsi ngabe tibunjwe njengebhola, njengelibhokisi, njengesilinda. Umsebenti uhlanganiswa ngemisebenti lebhalwako.		**Sebenta:** • ngemabhola netintfo letibunjwe njengemabhola. • emasilinda netintfo letibunjwe njengemasilinda. • ngemabhokisi lehlukene naletinye tintfo letibunjwe njengemaphrizimu labocalandze nobe emakhiyubhu. Cwaninga kutsi ngutiphi tetintfo letingagicika, letishelelako, letingapakwa tiye etulu Tfola ubuye uchaze tintfo teJomethri temalanga onkhe ngekusho kutsi ngabe tibunjwe njengebhola, njengelibhokisi, njengesilinda. Umsebenti uhlanganiswa ngemisebenti lebhalwako.	

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
3.3 **Bobunjwa labangema-dayimeshini lamabili (2-D)**		**Tinhlobo letehlukene tabobunjwa** Bona ubuye unike emagama abobunjwa labangemadayimeshini lamabili (2-D) • tindilinga • bocalantsatfu • tikwele • bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimeshini lamabili (2-D) ngekubuka loku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga **Tiphakamiso lokugcilwa kuto nekulandzelanisa imisebenti eThemini ye -2** • Umdlalo lokhululekile ngabobunjwa labehlukahlukene kufaka ekhatsi kwakha titfombe ngabobunjwa beJomethri labajutjiwe. Loku kungentiwa ngesikhatsi sekutisebentela. • Tsatsela sitfombe lesakhiwe ngabobunjwa beJomethri. • Catsanisa isayizi yabobunjwa labafanako sib. hlela bocalandze kusukela kulomncane kakhulu kuye kulomkhulu kakhulu ubuye usebentise lulwimi lwesayizi kuchaza bobunjwa. • Khuluma ngemibala yabobunjwa ubuye ubahlunge ngekwemibala • Hlunga bobunjwa kuye ngekutsi banemacala lacondzile nobe layindilinga. Sebenta ngetindilinga netikwele letingemasayizi lehlukene nabocalantsatfu nabocalandze lababunjwe ngendlela lehlukile.		**Tinhlobo letehlukene tabobunjwa** Bona ubuye unike emagama abobunjwa labangemadayimeshini lamabili (2-D) • tindilinga • bocalantsatfu • tikwele • bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimeshini lamabili (2-D) ngekubuka loku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga **Tiphakamiso lokugcilwa kuto nekulandzelanisa imisebenti eThemini ye -4** Hlunga bobunjwa kuye ngekutsi banemacala lacondzile nobe layindilinga. Sebenta ngetindilinga netikwele letingemasayizi lehlukene nabocalantsatfu nabocalandze lababunjwe ngendlela lehlukile. Bafundzi bahlunga bese bagcogcela ndzawonye bobunjwa ngekubuka kutsi babocalantsatfu, tikwele, bocalandze nobe tindilinga. • Umsebenti ungahlanganiswa ngemisebenti lebhalwako

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
3.3 **Bobunjwa labangema-dayimeshini lamabili (2-D)**		• Hlunga bobunjwa ubuye ubabeke ngetincumbi kuye ngekutsi babocalantsatfu, tikwele, bocalandze nobe tindilinga. • Umsebenti uhlanganiswa ngemisebenti lebhalwako		
3.4 **Kuhlukanisa emkhatsini kulingane ngalokufanako**		**Kuhlukanisa emkhatsini kulingane ngalokufanako** Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimenshini lamabili (2-D) nalabo labangesibo beJomethri. **Tiphakamiso temisebenti lokugcilwa kuyo eThemini ye -2** • Imigca leyehlukanisa emkhatsini kulingane ngalokufanako etintfweni letiphatsekako nasetitfombeni • Imisebenti lebhalwako kumele ifake tibonelo letikhombisa lapho umugca lowehlukanisa emkhatsini kulingane ngalokufanako ungabi ngulovundlile ngasosonkhe sikhatsi.		**Kuhlukanisa emkhatsini kulingane ngalokufanako** Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimenshini lamabili (2-D) nalabo labangesibo beJomethri. **Tiphakamiso temisebenti lokugcilwa kuyo eThemini ye - 4** Imigca leyehlukanisa emkhatsini kulingane ngalokufanako etintfweni letiphatsekako nasetitfombeni Imisebenti lebhalwako kumele ifake tibonelo letikhomba lapho umugca lowehlukanisa emkhatsini kulingane ngalokufanako ungabi ngulovundlile.

SIBUTSETELO SELIBANGA 2 4. SILINGANISO				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
4.1 **Sikhatsi**	**Kusho sikhatsi** • Nika emagama ubuye ulandzelanise emalanga eliviki. • Nika emagama ubuye ulandzelanise tinyanga temnyaka • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la-12 ngema-awa nangehhafu yema-awa emawashini etintsi **Bala budze nekwendlula kwesikhatsi** • Sebentisa emawashi kubala budze besikhatsi ngema-awa nobe ihhafu yema-awa	**Kusho sikhatsi** • Shano sikhatsi sema-awa la -12 ngema-awa nangehhafu yema-awa emawashini etintsi **Bala budze nekwendlula kwesikhatsi** • Sebentisa emawashi kubala budze besikhatsi ngema-awa nobe ihhafu yema-awa	**Kusho sikhatsi** • Nika emagama ubuye ulandzelanise emalanga eliviki • Nika ubuye ulandzelanise tinyanga temnyaka • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la-12 ngema-awa, ihhafu yema-awa nekota yema-awa emawashini etintsi **Bala budze nekwendlula kwesikhatsi** • Sebentisa emakhalenda kubala budze besikhatsi ngemalanga nobe ngemaviki • Sebentisa emawashi kubala budze besikhatsi ngema-awa nobe ihhafu yema-awa.	**Kusho sikhatsi** • Shano sikhatsi sema-awa la -12 ngema-awa, ihhafu yema-awa nekota yema-awa emawashini etintsi **Bala budze nekwendlula kwesikhatsi** • Sebentisa emawashi kubala budze besikhatsi ngema-awa nobe ihhafu yema-awa.

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
4.2 **Budze**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-. **Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo.			**Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo.

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
4.3 **Sisindvo**		**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode sisindvo usebentisa sikali tilinganiso letingakabekelwa umgomo sib. emabhuloki, titini. • Chaza sisindvo setintfo ngekubala ubuye usho sisindvo ngemayunithi langakahleleki. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa uhlele ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa. • Uma kunesikali sasendlini yekugezela, bafundzi bakala sisindvo sabo. Lokulindzelekile kutsi bafundzi bafundze inombolo lesondzele lapho lutsi lume khona. Bachaza sisindvo sabo ngekutsi cishe/kusondzele ku-/kunyenti kancane kuna-/ alingana ncamashi (emakhilogremu) lebawafundza esikalini		**Kungenisa kukala lokuhlelekile** Bafundzi benta imisebenti lebhalwako kuhlanganisa loku lokulandzelako kufaka ekhatsi kufundza titfombe • Tetintfo letibhalwe sisindvo • Tikali tasendlini lencane lapho lutsi lukhombe umugca losesikalini.

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
4.4 Umtsamo			**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ubuye ubhale umtsamo ngekukala ngemalitha usebentisa: - emabhodlela lanemtsamo loyilitha - lijeke lekukala lelikhombisa imigca yekukala ngemalitha • Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi.	**Kungenisa kukala lokuhlelekile** Bafundzi benta imisebenti lebhalwako kuhlanganisa loku lokulandzelako kufaka ekhatsi kufundza titfombe • tetintfo letibhalwe umtsamo kute tihlelwe ngekulandzelana. • temajeke lanemtsamo locishe ufike elitheni yinye nobe emalitheni lamabili • bafundza basondzete emgceni wekukala losedvute, bachaza bungako babo ngekutsi: cishe / kusondzele ku-/ kulingana ncamashi nemalitha.

SIBUTSETELO SELIBANGA 2 5. KUSEBENTA NGEDATHA				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
5.4 **Kugcogca ubuye uhlele idatha**	**Lokuphakanyisiwe:** Umjikeleto wedatha lophelele wekwenta igrafutitfombe lokhombisa kucondzana kwakunye nalokunye • Gcogca idatha lemayelana neliklasi nome sikolo kute uphendvule imibuto lebutwe nguthishela. • Veta idatha kugrafutitfombe lekhombisa kucondzana kwakunye nalokunye • Phendvula imibuto lemayelana nedatha lekugrafutitfombe lekhombisa kucondzana kwakunye nalokunye		**Lokuphakanyisiwe:** Dvweba igrafutitfombe lekhombisa kucondzana kwakunye nalokunye kudatha levetwe ngesimo sesitfombe nobe ithebuli • Gcogca idatha lemayelana neliklasi nome sikolo kute uphendvule imibuto lebutwe nguthishela. • Veta idatha kugrafutitfombe lekhombisa kucondzana kwakunye nalokunye. Phendvula imibuto lemayelana nedatha lekugrafutitfombe lekhombisa kucondzana kwalokunye nalokunye	
5.5 **Veta idatha**				
5.6 **Hlatiya ubuye uhumushe idatha**		Hlatiya idatha lekhonjiwe Lokuphakanyisiwe: • Lokungenani yinye igrafutitfombe lekhombisa kucondzana kwakunye nalokunye		Hlatiya idatha lekhonjiwe **Lokuphakanyisiwe:** Lokungenani yinye igrafutitfombe lenekucondzana kwalokunye nalokunye

3.4.3 Sibutsetelo Selibanga -3 Sethemu ngayinye

SIBUTSETELO SELIBANGA 3 1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**ITHEMU1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
KUTFUTFUKA KWELWATI LWETINOMBOLO: BALA NGETINOMBOLO LETIPHELELE				
1.1 Bala tintfo	Gcogcela ndzawonye tintfo lokungenani letinge -200 kute ucombele ubuye ubale ngekutetsemba. Kucombela lokwamukelekako lokungahlolwa ngekubala. Indlela yekugcogcela ndzawonye iyakhutsatwa	Gcogcela ndzawonye tintfo lokungenani letinge -500 kute ucombele ubuye ubale ngekutetsemba Kucombela lokwamukelekako lokungahlolwa ngekubala Indlela yekugcogcela ndzawonye iyakhutsatwa	Gcogcela ndzawonye tintfo lokungenani letinge -700 kute ucombele ubuye ubale ngekutetsemba Kucombela lokwamukelekako lokungahlolwa ngekubala. Indlela yekugcogcela ndzawonye iyakhutsatwa	Gcogcela ndzawonye tintfo lokungenani letinge-1000 kute ucombele ubuye ubale ngekutetsemba Kucombela lokwamukelekako lokungahlolwa ngekubala. Indlela yekugcogcela ndzawonye iyakhutsatwa.
1.2 Bala uye phambili nasemuva	**Bala uye phambili nasemuva:** • nga-1, kusukela kunobe nguyiphi inombolo emkhatsini we - 0 ne -200 • nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we - 0 ne -200 • nge-5 kusukela kunobe nguyiphi imaltiphuli ye -5 emkhatsini we -0 ne -200 • nga -2 kusukela kunobe nguyiphi imaltiphuli ya -2 emkhatsini we -0 ne -200 • nga -3 kusukela kunobe nguyiphi imaltiphuli ya -3 emkhatsini we -0 ne -200 • nga -4 kusukela kunobe nguyiphi imaltiphuli ye nga -4 emkhatsini we -0 ne -200 • nge -100 lokungenani kuya e -500	**Bala uye phambili nasemuva:** • nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -500 • nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 ne -500 • nge-5 kunobe kunobe nguyiphi imaltiphuli ye- 5 emkhatsini we -0 ne -500 • nga -2 kusukela kunobe nguyiphi imaltiphuli ya -2 emkhatsini we -0 ne -500 • nga -3 kusukela kunobe nguyiphi imaltiphuli ya -3 emkhatsini we -0 ne -500 • nga -4 kusukela kunobe nguyiphi imaltiphuli ya -4 emkhatsini we -0 ne -500 • nge -50,-100 lokungenani kuye e -1000	**Bala uye phambili nasemuva:** • nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -700 • nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 ne -700 • nge-5 kusukela kunobe nguyiphi imaltiphuli ye -5 emkhatsini we -0 ne -700 • nga -2 kusukela kunobe nguyiphi imaltiphuli ya -2 emkhatsini we -0 ne -700 • nga-3 kusukela kunobe nguyiphi imaltiphuli ya -3 emkhatsini we -0 ne -700 • nga -4 kusukela kunobe nguyiphi imaltiphuli ya 4 emkhatsini we -0 ne -700 • nge -20, -25, -50,-100 lokungenani kuye e 1000	**Bala uye phambili nasemuva:** • nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -1000 • nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 ne -1000 • nge-5 kusukela kunobe nguyiphi imaltiphuli ye -5 emkhatsini we -0 ne -1000 • nga -2 kusukela kunobe nguyiphi imaltiphuli ya -2 emkhatsini we -0 ne -1000 • nga -3 kusukela kunobe nguyiphi imaltiphuli ya -3 emkhatsini we 0 ne 1000 • nga -4 kusukela kunobe nguyiphi imaltiphuli ya -4 emkhatsini we -0 ne 1000 • nge -20,-25, -50,-100 lokungenani kuye e -1000

TIHLOKO	ITHEMU1	ITHEMU 2	ITHEMU 3	ITHEMU 4
KUTFUTFUKISA LWATI LWETINOMBOLO: VETA TINOMBOLO LETIPHELELE				
1.3 Timphawu tetinombolo nemagama etinombolo	**Bona, tfola ubuye ufundze tinombolo** • Bona, tfola ubuye ufundze timphawu tetinombolo kusukela e -0 kuye e -500 • Bhala timphawu tinombolo kusukela e -0 kuye e - 500 • Bona, tfola ubuye ufundze emagama etinombolo kusukela e -0 kuye ema -250 • Bhala emagama etinombolo kusukela e -0 kuye e -100	**Bona, tfola ubuye ufundze tinombolo** • Bona, tfola bese ufundza timphawu tetinombolo kusukela e -0 kuye e -1000 • Bhala timphawu tinombolo kusukela e -0 kuye e -1000 • Bona, tfola ubuye ufundze emagama e tinombolo kusukela e -0 kuye ema-250 • Bhala emagama etinombolo kusukela e -0 kuye e -250	**Bona, tfola ubuye ufundze tinombolo** • Bona, tfola ubuye ufundze timphawu tetinombolo kusukela e -0 kuye e -1000 • Bhala timphawu tinombolo kusukela e -0 kuye e -1000 • Bona, tfola ubuye ufundze emagama e tinombolo kusukela e -0 kuye ema-500 • Bhala emagama etinombolo kusukela e -0 kuye e -500 • Bhala emagama etinombolo kusukela e -0 kuye ema-500	**Bona, tfola ubuye ufundze tinombolo** • Bona, tfola ubuye ufundzetimphawu tetinombolo kusukela e -0 kuye e -1000 • Bhala timphawu tinombolo kusukela e -0 kuye e -1000 • Bona, tfola ubuye ufundze emagama etinombolo kusukela e -0 kuye ema -250 • Bona, tfola ubuye ufundze tinombolo kusukela e -0 kuye e -1000 • Bhala emagama etinombolo kusukela e -0 kuye e -1000
Kutfutfukisa lwati tinombolo: Chaza, catsanisa ubuye uhlela tinombolo letiphelele				
1.4 Chaza, Catsanisa ubuye uhlele tinombolo	**Chaza, catsanisa ubuye uhlele tinombolo kuye ema-99** • Catsanisa tinombolo letiphelele kuye ema-99 usebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna, lokuncane kuna, kulingana na • Hlela tinombolo letiphelele kuye ema-99 ucale kulokuncane kakhulu uye kulokukhulu kakhulu usuke kulokukhulu kakhulu kuye kulokuncane kakhulu	**Chaza, catsanisa ubuye uhlele tinombolo kuye ema-500** • Catsanisa tinombolo letiphelele kuye ema-500 usebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna, lokuncane kuna, kulingana na • Hlela tinombolo letiphelele kuye ema-500 ucale kulokuncane kakhulu uye kulokukhulu kakhulu usuke kulokukhulu kakhulu kuye kulokuncane kakhulu	**Chaza, catsanisa ubuye uhlele tinombolo kuye ema-700** • Catsanisa tinombolo letiphelele kuye ema-700 usebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna, lokuncane kuna, kulingana na • Hlela tinombolo letiphelele kuye ema-700 ucale kulokuncane kakhulu uye kulokukhulu kakhulu usuke kulokukhulu kakhulu kuye kulokuncane kakhulu **Sebentisa tinombolo te - odinali kukhombisa kuhleleka, indzawo nobe kubekeka** • Sebentisa, fundza ubuye ubhale tinombolo te – odinali.	**Chaza, catsanisa ubuye uhlele tinombolo kuye ema-999** • Catsanisa tinombolo letiphelele kuye ema-99 usebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna,lokuncane kuna, kulingana na • Hlela tinombolo letiphelele kuye ema -999 ucale kulokuncane kakhulu uye kulokukhulu kakhulu usuke kulokukhulu kakhulu kuye kulokuncane kakhulu

TIHLOKO	ITHEMU1	ITHEMU 2	ITHEMU 3	ITHEMU 4
KUTFUTFUKISA LWATI LWETINOMBOLO: Simelibungako				
1.5 Simelibun-gako	**Bona simelibungako setinombolo kuye e -99** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamabili kuye e- 99 tibe ngemamalthiphuli emashumi nemivo • Tfola ubuye usho bungako bedijithi ngayinye	**Bona simelibungako setinombolo kuye e -500** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamatsatfu kuye e -500 tibe ngemamalthiphuli elikhulu, emashumi nemivo • Tfola ubuye usho bungako bedijithi ngayinye	**Bona simelibungako setinombolo kuye e -700** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamatsatfu kuye e- 700 tibe ngemamalthiphuli elikhulu, emashumi nemivo • Tfola ubuye usho bungako bedijithi ngayinye	**Bona simelibungako setinombolo kuye e -999** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamatsatfu kuye e- 999 tibe ngemamalthiphuli emakhulu, emashumi nemivo • Tfola ubuye usho bungako bedijithi ngayinye
SOMBULULA TINKINGA KUSIMONGCONDVO				
1.6 Emasu eku-sombulula tinkinga	Sebentisa lamasu lalandzelako nawusombulula tinkinga: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo	Sebentisa lamasu lalandzelako nawusombulula tinkinga: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo • Kusondzeta eshumini	Sebentisa lamasu lalandzelako nawusombulula tinkinga: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo • Kusondzeta eshumini	Sebentisa lamasu lalandzelako nawusombulula tinkinga bese uchaza tisombululo tetinkinga • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo • Kusondzeta eshumini
1.7 Kuhlangani-sa nekususa	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo sakho setinkinga letifaka ekhatsi kuhlanganisa nekususa lokunetimphendvulo letifika e -99.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo sakho setinkinga letifaka ekhatsi kuhlanganisa nekususa lokunetimphendvulo letifika e -400	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo sakho setinkinga letifaka ekhatsi kuhlanganisa nekususa lokunetimphendvulo letifika e -800	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze sisombululo sakho setinkinga letifaka ekhatsi kuhlanganisa nekususa lokunetimphendvulo letifika e -999
1.8 Kuphindza kuhlanganisa lokuholela ekuphindza-phindzeni	Bala tibalo tetinombolo kusimongcondvo ubuye uchaze sisombululo sakho setibalo letifaka ekhatsi kuphindzaphindza lokunetimphendvulo letifika ema-50	Bala tibalo tetinombolo kusimongcondvo ubuye uchaze sisombululo sakho setibalo letifaka ekhatsi kuphindzaphindza lokunetimphendvulo letifika ema-75	Bala tibalo tetinombolo kusimongcondvo ubuye uchaze sisombululo sakho setibalo letifaka ekhatsi kuphindzaphindza lokunetimphendvulo letifika e -75	Bala tibalo tetinombolo kusimongcondvo ubuye uchaze sisombululo sakho setibalo letifaka ekhatsi kuphindzaphindza lokunetimphendvulo letifika e -100

TIHLOKO	ITHEMU1	ITHEMU 2	ITHEMU 3	ITHEMU 4
1.9 Kugcogcela ndzawonye nekwabelana lokuholela ekuhlukaniseni	Bala tibalo tetinombolo kusimongcondvo ubuye uchaze tisombululo takho tetibalo letifaka ekhatsi kwabelana ngakulinganako nekugcogcela ndzawonye kuye e -50 lokunetimphendvulo letingafaka tinsalela	Bala tibalo tetinombolo kusimongcondvo ubuye uchaze sisombululo sakho setibalo letifaka ekhatsi kwabelana ngakulinganako nekugcogcela ndzawonye kuye e -75 lokunetimphendvulo letingafaka tinsalela	Bala tibalo tetinombolo kusimongcondvo ubuye uchaze sisombululo sakho setibalo letifaka ekhatsi kwabelana ngalokulinganako nekugcogcela ndzawonye kuye e -75 lokunetimphendvulo letingafaka tinsalela	Bala tibalo tetinombolo kusimongcondvo ubuye uchaze sisombululo sakho setibalo letifaka ekhatsi kwabelana ngalokulinganako nekugcogcela ndzawonye kuye e -100 lokunetimphendvulo letingafaka tinsalela
1.10 Kwabelana lokuholela etincetwini	Bala tibalo ubuye uchaze tisombululo tetibalo tekwenta letifaka ekhatsi kwabelana ngalokulinganako lokuholela etisombululweni letifaka ekhatsi tincetu letihamba ngakunye naleto letingahambi ngakunye sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{3}$, njll.	Bala tibalo ubuye uchaze tisombululo tetibalo tekwenta letifaka ekhatsi kwabelana ngalokulinganako lokuholela etisombululweni letifaka ekhatsi tincetu letihamba ngakunye naleto letingahambi ngakunye sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$,njll	Bala tibalo ubuye uchaze tisombululo tetibalo tekwenta letifaka ekhatsi kwabelana ngalokulinganako lokuholela etisombululweni letifaka ekhatsi tincetu letihamba ngakunye naleto letingahambi ngakunye sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{5}$, njll.	Kusombulula ubuye uchaze tisombululo tetibalo tekwenta letifaka ekhatsi kwabelana ngekulingana lokuholela etisombululweni letinetincetu letitimele naletingakatimeli sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{5}$, njll.
1.11 Imali	• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu neyemaphepha • Sombulula tinkinga tetibalo temali letifaka samba nentjintji ngemarandi nobe emasenti	• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu neyemaphepha • Sombulula tinkinga tetibalo temali letifaka samba nentjintji • ngemarandi nobe emasenti	• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu neyemaphepha • Sombulula tinkinga temali letifaka samba nentjintji ngemarandi nobe emasenti • Gucula emarandi nemasenti	• Bona ubuye utfole imali yaseNingizimu Afrika lebuhhehlu neyemaphepha • Sombulula tinkinga tetibalo temali letifaka samba nentjintji ngemarandi nobe emasenti • Gucula emarandi nemasenti
KUTIBALELA NJE				
1.12 Emasu (Tindlela)	Sebentisa lamasu lalandzelako nawenta tibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo	Sebentisa lamasu lalandzelako nawenta tibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo • Kusondzeta eshumini	Sebentisa lamasu lalandzelako nawenta tibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo • Kusondzeta eshumini	Sebentisa lamasu lalandzelako nawenta tibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo • Kusondzeta eshumini
1.13 Kuhlanganisa nekususa	• Hlanganisa kuye ema-99 • Susa ema -99 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo uye ema-20	• Hlanganisa kuye ema-400 • Susa ema-400 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo uye ema- 30	• Hlanganisa kuye ema-800 • Susa ema-800 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo uye ema- 30	• Hlanganisa kuye ema-999 • Susa ema-999 • Sebentisa timphawu letifanele (+, –, =, ☐) • Tetayete kuhlanganisa tinombolo uye ema-30

TIHLOKO	ITHEMU1	ITHEMU 2	ITHEMU 3	ITHEMU 4
1.14 Kuphindza kuhlanganisa lokuholela ekuphindza-phindzeni	• Phindzaphindza tinombolo ku- 1 kuye e -10 nga-2, 5, 3, 4 • Sebentisa timphawu letifanele (x, =, ☐)	• Phindzaphindza 2, 4, 5, 10, 3 kuye kusamba lesi- 50 • Sebentisa timphawu letifanele (x, =, ☐)	• Phindzaphindza 2, 3, 4, 5, 10 kuye kusamba lesi -100 • Sebentisa timphawu letifanele (x, =, ☐)	• Phindzaphindza 2, 3, 4, 5, 10 kuye kusamba lesi -100 • Sebentisa timphawu letifanele (x, =, ☐)
1.15 Kuhlukanisa	• Hlukanisa tinombolo kuye e-50 nga 2, 5, 10 • Sebentisa timphawu letifanele (÷, =, ☐)	• Hlukanisa tinombolo kuye e -50 nga 2, 4, 5, 10, 4 • Sebentisa timphawu letifanele (÷, =, ☐)	• Hlukanisa tinombolo kuye e -99 nga 2, 4, 5, 10, 3, • Sebentisa timphawu letifanele (÷, =, ☐)	• Hlukanisa tinombolo kuye e -99 nga 2, 3, 4, 5,10 • Sebentisa timphawu letifanele (÷, =, ☐)
1.16 Tibalo tenhloko	**Lwati lwetinombolo: Kuhleleka kwetinombolo kuye e-200** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe. Kuhleleka kwetinombolo kuye e-200 • Catsanisa tinombolo kufike e-200 ubuye usho kutsi nguyiphi: - Lenyenti nga-1 nobe lencane nga-1 - Lenyenti nga-2 nobe lencane nga-2 - Lenyenti nga-3 nobe lencane nga-3 - Lenyenti nga-4 nobe lencane nga-4 - Lenyenti nge-5 nobe lencane nge-5 - Lenyenti nge-10 nobe lencane nge-10 **Khumbula ngekusheshisa:** • Khumbula imigomo yekuhlanganisa nekususa uye e-20 • Hlanganisa nobe ususe emamalthiphuli e-10 kusukela e-0 kuye e-100	**Lwati lwetinombolo: Kuhleleka kwetinombolo kuye e-500** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe. Kuhleleka kwetinombolo kuye e-500 • Catsanisa tinombolo kufike e-500 ubuye usho kutsi nguyiphi: - Lenyenti nga-1 nobe lencane nga-1 - Lenyenti nga-2 nobe lencane nga 2 - Lenyenti nga-3 nobe lencane nga-3 - Lenyenti nga-4 nobe lencane nga-4 - Lenyenti nge-5 nobe lencane nge-5 - Lenyenti nge-10 nobe lencane nge-10 **Khumbula ngekusheshisa:** - Khumbula imigomo yekuhlanganisa nekususa uye e-20 - Hlanganisa nobe ususe emamalthiphuli e-10 kusukela e-0 kuye e-100	**Lwati lwetinombolo: Kuhleleka kwetinombolo kuye e-700** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe • Catsanisa tinombolo kufike e-200 ubuye usho kutsi nguyiphi: - Lenyenti nga-1 nobe lencane nga-1 - Lenyenti nga-2 nobe lencane nga-2 - Lenyenti nga-3 nobe lencane nga-3 - Lenyenti nga-4 nobe lencane nga-4 - Lenyenti nga-5 nobe lencane nga-5 - Lenyenti nobe nge-10 lencane nge-10 **Khumbula ngekusheshisa:** • Khumbula imigomo yekuhlanganisa nekususa uye e-20 • Hlanganisa nobe ususe emamalthiphuli e-10 kusukela e-0 kuye e-100	**Lwati lwetinombolo: Kuhleleka kwetinombolo kuye e-999** • Hlela lisethi leliniketiwe letinombolo letikhetsiwe • Catsanisa tinombolo kufike e-1000 ubuye usho kutsi nguyiphi: - Lenyenti nga-1 nobe lencane nga-1 - Lenyenti nga-2 nobe lencane nga-2 - Lenyenti nga-3 nobe lencane nga-3 - Lenyenti nga-4 nobe lencane nga-4 - Lenyenti nga-5 nobe lencane nga-5 - Lenyenti nge-10 nobe lencane nge-10 **Khumbula ngekusheshisa:** • Khumbula imigomo yekuhlanganisa nekususa uye e-20 • Hlanganisa nobe ususe emamalthiphuli e-10 kusukela e-0 kuye e-100 • Imigomo yekuphindzaphindza nekuhlukanisa yaloku: - lithebula; lekuphindzaphindza ngakubili kuye 2 x 10 - lithebula lekuphindzaphindza ngelishumi kuye 10 x 10

TIHLOKO	ITHEMU1	ITHEMU 2	ITHEMU 3	ITHEMU 4
1.16 **Tibalo tenhloko**	**Emasu ekubala ngenhloko** Sebentisa lamasu ekubala lalandzelako: • Cala ngenombolo lenkhulu kucala bese ubala uyachubeka nobe uya emuva. • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa	**Emasu ekubala ngenhloko** Sebentisa lamasu ekubala lalandzelako: • Cala ngenombolo lenkhulu kucala bese ubala uyachubeka nobe uya emuva. • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa	**Emasu ekubala ngenhloko** Sebentisa lamasu ekubala lalandzelako: • Cala ngenombolo lenkhulu kucala bese ubala uyachubeka nobe uya emuva. • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa • Sebentisa budlelwane emkhatsini wekuphindzaphindza nekuhlukanisa	**Emasu ekubala ngenhloko** Sebentisa lamasu ekubala lalandzelako: • Cala ngenombolo lenkhulu kucala bese ubala uyachubeka nobe uya emuva. • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa • Sebentisa budlelwane emkhatsini wekuphindzaphindza nekuhlukanisa
1.17 **Tincetu**	• Sebentisa ubuye unikete emagama etincetu letikutimongcondvo letetayelekile letifaka emahhafu, emakota, kunye kwalokutsatfu, kunye kwalokusihlanu • Bona tincetu letivetwe ngemdvwebo. • Bhala tincetu njengakunye kwalokubili, kunye kwalokutsatfu	• Sebentisa ubuye unikete emagama etincetu letikutimongcondvo letetayelekile letifaka emahhafu, emakota, kunye kwalokusiphohlongo, kunye kwalokusitfupha, kunye kwalokusihlanu • Bona tincetu letivetwe ngemdvwebo. • Bhala tincetu njengakunye kwalokubili, kunye kwalokutsatfu	• Sebentisa ubuye unikete emagama etincetu letikutimongcondvo letetayelekile letifaka emahhafu, emakota, kunye kwalokusiphohlongo, kunye kwalokusitfupha, kunye kwalokusihlanu • Bona tincetu letivetwe ngemdvwebo. • Kucala kubona kutsi emahhafu lababili nobe lokutsatfu kwalokutsatfu kwenta intfo yinye lephelele nekutsi ihhafu yinye ilingana nemakota lamabili • Bhala tincetu njengakunye kwalokubili, kunye kwalokutsatfu	• Sebentisa ubuye unikete emagama etincetu letikutimongcondvo letetayelekile letifaka emahhafu, emakota, kunye kwalokusiphohlongo, kunye kwalokusitfupha, kunye kwalokusihlanu • Bona tincetu letivetwe ngemdvwebo. • Kucala kubona kutsi emahhafu lababili nobe lokutsatfu kwalokutsatfu kwenta intfo yinye lephelele nekutsi ihhafu yinye ilingana nemakota lamabili • Bhala tincetu njengakunye kwalokubili, kunye kwalokutsatfu

TINHLOBO TETINKINGA TE TIBALO TELIBANGA 3

Leti tinhlobo tetinkinga tetibalo lekufanele kutsi thishela ativete kanyenti eklasini Uma thishela asebenta ngemacembu lamancane kumele avete tinkinga ngetemlomo.. Uma umfundzi angafundza anganiketwa umbhalo lenalenkinga kodvwa kufanele aphiinndze avete tinkinga ngetemlomo, Inkinga etihlokweni ingafkwa ephepheni lekusebentela kodvwa kufanele ibe imfisha, itayeleke ibuye ivakale.Thishela kufanele ati kutsi bafundzi bayavisisa.

Kugcogcela ndzawonye

Kugcogcela ndzawonye*, asiyivumeli insalela*

Ibhekhari itsengisa emabhanisi ngetikhwama leti 12.Emabhanisi ali 108.Tingaki tikhwama temabhanisi uma sinye sikhwama sinebhanisi la 12?

Kugcogcela ndzawonye lokushiya nensalela.

Umnini pulazi unmacandza la 227.Utawupaka mangaki emabhokisi emacandza lahamba nge 6

Kuhlukanisa

Kuhlukanisa kulahla insalela.

Bangani labasihlanu buhlukaniselana emaswidi la 184 batfola emaswidi lalnganako munye utawutfola mangaki?

Kuhlukanisa lokukuyisa etincetwini

Hlukanisa emashokolethi 15 kubangane la 6 ngalokulinganako kungasali luttfo.

Tincetu talokugcogciwe

Gogo unika Kiki R12. Kiki ufuna kubeka 1 kulo 3 kwalemali yakhe. Utawubeka malini?

Lenhlobo yenkinga yeBala tibalo kufanele ivetwe emva kokuba umfundzi sekakhona kusombulula tinkinga le 4 nobe le 5 tekuhlukanisa letiya etinhlotjeni tetincetu negama etincetu.

Kubeka tincetu ndzawonye

Umceceshi webhola letandla unika badlali ihhatfu yeli wolintji ngamunye. Kunebadlali laba 14. Mangaki emawolintji latawuniketwa ebadlali?

Lenhlobo yenkinga yeBala tibalo kufanele ivetwe emva kokuba umfundzi sekakhona kusombulula tinkinga le 4 nobe le 5 tekuhlukanisa letiya etinhlotjeni tetincetu negama etincetu..

Kuhlukanisa lokucatsanisako

Peter udla lokuncane kuna Rhulani. Uma Peter adla linye liphisi lesinkhwa Rhulani udla mabili. Emva kwemalanga latsite badla emaphisi la12.Badle mangaki emaphisi ngamunye?

BoSue na Greg benta umsebenti ndzawonye. Sue usebent ema aw lamatsatfu,Greg usebente li-awa linye. Bababhadale R60. Batayihlukanisa njani lemali?

Kuhlanganiswa lokuphindziwe

Timoto leti 36 tinamangaki emasondvo?

Linani

Thami ubeka 35c ngeliviki. Unamalini ngemavi la 8?

Igridi

Babe Khumalo uhlanyela emalayini etihlahla temawolintji le 20. Kunetihlahla le12 kulinye lilayini. Tingaki tonkhe tihlahla?

Kuhlanganisa nekukhipha

Kunetinhlobo letintsatfu tetinkinga ekukhipheni nasekuhlanganiseni,yinnye inhlobo ivela ngetindlela letehlukene

letinhlobo nguleti.

Ntjintja

Noluthando ugcogce titikha leti 234. Silo umuphe leti 80. Sewunatingaki titikha?

Esitimeleni kunebagibeli laba 500,kwase kwehla laba 176. Bangaki bagibeli labasele esitimeleni?

Hlanganisa

Nosisi ugcogca tintfo teprojethi yekuvusa lokulahiwe. Utfolele emapulasitiki nebhodlela la 124 netikotela liti 268. Ugcogce tingaki tintfo? Esitolo kunephakethi emashibisi la 368; 82 angema chippos lalamanye angema Ziksnacks. Mangaki emaphakethe Zicksnacks lasesitolo?

Catsanisa

Bafundzi belibanga 2 bagcogce R446. belibanga 3 bagcogce R729. Bafundzi belibanga 3 babadlule ngamalini bafundzi belibanga 2?

Kuveta yinye yetinkinga tekufundza tibalo ngetindlela letinyenti

Tinkinga tekufundza tibalo timele tivetwe ngetindlela letinyenti.sib.tonkhe titinkinga letintjintjako,kodvwa leti letingatiwa tisetindzaweni letehlukile kulenkinga

Esitolo kunephakethe emapuphu base ba oda lamanye langema-55. Nyalo sebanephakethe lali-170 emapuphu. Bebanamangaki ekucaleni.?

Esitolo kunephakethe ashukela langema-500. Emva kwekutsengisa emaphakethe langema-324 ashukela. Batsengise mangaki emaphakethe ashukela?

Noluthando une -hhabhula. Silo umnika lasiphohlogo. Nyalo una 13 wema-hhabhula. Bekanamangaki ema-hhabhula Noluthando?

Noluthando una 5 ema-hhabhula. Silo umnika lamanye. Nyalo una 13 wema-hhabhula. Bekanamangaki ema-hhabhula Silo?

Simo setinkinga netindlela letinyenti letinebudlelwane tekutisebenta

Hela utsengisa linye libhanisi nga R4,00. Entalithebula kutfola imali yeli oda lelikhulu.

Inimbolo yemabhanisi	1	2	3	4	5	10	20
Intsengo ngema R	4	8					

Sebentisa lelithebula kutfola imali yemabhanisi langu 7

Letinkinga tekufundzisa tibalo tisita thishela. Bafundzi akukafaneli batikhatsate ngemagama aletinhlobo taletinkinga tekufundza tibalo.Kufanele wat kutsi bafundzi baye batisebentise tindlela letinyenti tekusombulula tinkinga letingeke taba nguletilindzelwe nguthishela.

Indzawo yaSedick yekunakekela ebantfwana. Ubita e R20 imali yekuhamba, bese utsi e R5 kunakekela ngeli—awaCedzela lelithebula laSedick

Inombolo ngema-awa	1	2	3	4	5	10
Intsengo ngema R	25	30				

Caphela kutsi tindlela tekusebenta tinkinga taSedick naHeila's atifanani.

Letinkinga tekufundzisa tibalo tentiwa ngelusito lwathishela. bafundzi akukafaneli batikhatsate ngemagama aletinhlobo taletinkinga tekufundza tibalo. Kufanele wat kutsi bafundzi baye batisebentise tindlela letinyenti tekuchacha tinkinga letingeke taba nguletilindzelwe nguthishela sib. kinkinga yekuhlukanisa ngekukhipha uphindzaphindze,kuhlanganisa nobe kuphindzaphindza. Tindlela lebasebenta ngato bafundzi titawuntjintja ekuhambeni kwemnyaka njengobe tinhlobo tetinkinga tekufundza tibalo titawukhula nelwati lwetinombolo lutawutfutfuka.

SIBUTSETELO SELIBANGA 3 2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBRA				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
2.1 Emaphethini eJomethri	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • emaphethini lalula lentiwe ngetintfo letibonakalako. • emaphethini lalula lentiwe ngemidvwebo yemigca, bobunjwa nobe tintfo. **Tinhlobo temaphethini:** • Emaphethini lalula lapho bobunjwa nobe tincumbi tabobunjwa tiphindzeke ngendlela lefanako. **Yakha ubuye uchaze emaphethini akho** • Yakha emaphethini akho eJomethri - ngetintfo letibonakalako. - ngekudvweba imigca, bobunjwa netintfo. • Chaza emaphethini akho.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • emaphethini lalula lentiwe ngetintfo letibonakalako. • emaphethini lalula lentiwe ngemidvwebo yemigca, bobunjwa nobe tintfo. **Tinhlobo temaphethini:** • Emaphethini lalula lapho bobunjwa nobe tincumbi tabobunjwa tiphindzeke ngendlela lefanako. • Emaphethini lapho inombolo nobe isayizi yabobunjwa esigabeni ngasinye intjintja ngendlela lebangayicombela, njengemaphethini langeteka njalo. **Yakha ubuye uchaze emaphethini akho** • Yakha emaphethini akho eJomethri - ngetintfo letiphatsekako. - ngekudvweba imigca, bobunjwa netintfo. • Chaza emaphethini akho.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama. • emaphethini lalula lentiwe ngetintfo letibonakalako. • emaphethini lalula lentiwe ngemidvwebo yemigca, bobunjwa nobe tintfo. **Tinhlobo temaphethini:** • Emaphethini lalula lapho bobunjwa nobe tincumbi tabobunjwa tiphindzeke ngendlela lefanako. **Yakha ubuye uchaze emaphethini akho** • Yakha emaphethini akho eJomethri - ngetintfo letibonakalako. - ngekudvweba emalayini, bobunjwa netintfo. • Chaza emaphethini akho.	**Emaphethini ndzawotonkhe.** Bona, chaza ngemagama ubuye utsatsele emaphethini eJomethri. • emvelo • etintfweni temphucuko temalanga onkhe. • etitfweni temasiko etfu letingemagugu.

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
2.2 Emaphethini etinombolo	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e-200. Kulandzelana kufanele kukhombise kubala uye phambili nasemuva nge: • kulandzelanisa ngetigamu lebakuvete ebangeni le- 2 nekukhulisa kuhleleka kwetinombolo. • Li- 100 kuya ema-500	**Tsatsela, chubekisela phambili ubuye uchaze.** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e-500. Kulandzelana kufanele kukhombise kubala uye phambili nasemuva nge: • kulandzelanisa ngetigamu lebakuvete ebangeni 2 nekukhulisa kuhleleka kwetinombolo. • Ema -50, li-100 kuye lokungenani e-1 000	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e-750. Kulandzelana kufanele kukhombise kubala uye phambili nasemuva nge: • kulandzelanisa ngetigamu lebakuvete ebangeni 2 nekukhulisa kuhleleka kwetinombolo. • Ngema -20, ema-25, ema- 50 kuye lokungenani e-1 000 **Yakha ubuye uchaze emaphethini akho etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye ulandzelanise tinombolo letilula lokungenani kuye e-1 000. Kulandzelana kufanele kukhombe Bala uye emuva nge: • kulandzelanisa ngetigamu lebakuvete ebangeni 2 nekukhulisa kuhleleka kwetinombolo. • Nge-20, e-25, e -50, li-100 kuye lokungenani e- 1 000 **Yakha uchaze emaphethini akho etinombolo**

SIBUTSETELO SELIBANGA 3 3. SIKHALA NABUNJWA (IJOMETHRI)				
SIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
3.1 **Kubekeka, kwetayeta nekubukeka.**		**Kubekeka nekubukeka** • Matanisa kubukeka lokwehlukile kwetintfo letifanako letisetjentiswa malanga onkhe. • Nika intfo lesetjentiswa malanga onkhe nayikhonjiswe ngekubukeka kwayo lokungakavami. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela kute uhambahambe utungelete liklasi nesikolo • Nika inkhombandlela yekuhambahamba utungelete liklasi nesikolo.	**Kubekeka nekubukeka** • Fundza, humusha ubuye udvwebe emabalave langakahleleki nobe kubekeka kwangetulu kweligcogco letintfo. • Tfola tintfo emabalaveni. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela kusukela endzaweni yinye uye kulenye indzawo ebalaveni lelingakahleleki.	
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**		**Tinhlobo tetintfo** Bona ubuye usho tintfo letiseklasini kanye nasetitfombeni. • letisabhola, (tindilinga) • letisabhokisi (emaphrizimu) • emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) ngaloku: • bobunjwa labangemadayimenshini lamabili (2-D) labenta buso betintfo letingemadayimenshini lamatsatfu (3-D). • tindzawo letisicaba nobe letigobekile.	**Tinhlobo tetintfo** Bona ubuye usho tintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • letisabhola, (tindilinga) • letisabhokisi (emaphrizimu) • emasilinda • emaphiramidi • emakhoni **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) ngaloku: • bobunjwa labangemadayimenshini lamabili (2-D) labenta buso betintfo letingemadayimenshini lamatsatfu (3-D). • tindzawo letisicaba nobe letigobekile.	**Tinhlobo tetintfo** Bona tintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni • letisabhola, (tindilinga) • letisabhokisi, (emaphrizimu) • emasilinda • emaphiramidi • emakhoni **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) ngaloku: • bobunjwa labangemadayimenshini lamabili (2-D) labenta buso betintfo letingemadayimenshini lamatsatfu (3-D). • tindzawo letisicaba nobe letigobekile.

SIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**		**Imisebenti lokugcilwa kuyo** • Buka ubuye wakhe tintfo letiniketiwe letingemadayimenshini lamatsatfu (3-D) usebentisa tintfo letiphatsekako letinjengekusika bobunjwa labangemadayimenshini lamabili (2-D), lubumba, tintsi tekuvungula ematinyo, lutsi lwekunatsa naletinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D). • tindzawo letisicaba nobe letigobekile. **Tiphakamiso temisebenti lokutawugcilwa kuyo nekulandzelaniswa kwayo eThemini 2.** Sebenta ngetindilinga, emaphirizimu nemasilinda njengoba benta ebangeni le-2; washo ngemagama ubuye uwagcogcele ndzawonye. Gcila etinhlobeni tebuso betintfo kulolo nalolohlobo lwentfo. Hlukanisa buso betintfo ngekutsi busicaba nobe bugobekile. Sebentisa likhadibhodi lelijutjiwe/ lelisikwe laba tikwele kwenta libhokisi. Khuluma ngebuso bendzawo lesicaba kumaphrizimu kanye nemasilinda ubuye uchaze kutsi ngabe buyindilinga, busikwele nobe bungucalandze. Umsebenti uhlanganiswa ngemisebenti lebhalwako.	**Imisebenti lokugcilwa kuyo** • Buka ubuye wakhe tintfo letiniketiwe letingemadayimenshini lama-3 usebentisa tintfo letiphatsekako letinjengekusika bobunjwa labangemadayimenshini lamabili (2-D), lubumba, tintsi tekuvungula ematinyo, lutsi lwekunatsa naletinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D). • tindzawo letisicaba nobe letigobekile. **Tiphakamiso temisebenti lokutawugcilwa kuyo nekulandzelaniswa kwayo eThemini 3.** Sebenta ngetindilinga, emaphirizimu, emasilinda, emaphiramidi nemakhoni. Gcila etinhlobeni tebuso betintfo kulolo nalolohlobo lwentfo. Hlukanisa buso betintfo ngekutsi tisicaba nobe bugobekile. Khuluma ngebuso bendzawo lesicaba kumaphrizimu kanye nemasilinda ubuye uchaze kutsi ngabe buyindilinga, busikwele, bungucalandze nobe bungucalantsatfu. Nika emagama ubuye ugcogcele ndzawonye letintfo teJomethri letingetulu. Sebentisa tintsi tekuvungula ematinyo, tintsi tekunatsa nobe liphepha leligociwe lenta iphiramidi. Umsebenti uhlanganiswa ngemisebenti lebhalwako.	**Tiphakamiso temisebenti lokutawugcilwa kuyo nekulandzelaniswa kwayo eThemini 4.** Umsebenti uhlanganiswa ngemisebenti lebhalwako.

SIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
3.3 **Bobunjwa labangemadayimenshini lamabili (2-D)**	**Tinhlobo tabobunjwa** • Tindilinga • Bocalantsatfu • Tiikwele • Bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) ngekubuka loku: • simo • emacala lacondzile • emacala layindilinga **Tiphakamiso temisebenti lokutawugcilwa kuyo eThemini 1.** Nika emagama ubuye ugcogcele ndzawonye bobunjwa. Gcila eluhlotjeni lwemacala latfolakala kubunjwa ngamunye. Hlukanisa bobunjwa ngekukhuluma ngekutsi emacala ayindilinga nobe acondzile. Dvweba tindinga, tikwele bocalandze nabocalantsatfu. Umsebenti uhlanganiswa ngemisebenti lebhalwako.		**Tinhlobo tabobunjwa** • Tindilinga • Bocalantsatfu • Tiikwele • Bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) ngekubuka loku: • simo • emacala lacondzile • emacala layindilinga **Tiphakamiso temisebenti lokutawugcilwa kuyo eThemini 3.** Nika ubuye ugcogcele ndzawonye bobunjwa. Gcila eluhlotjeni lwemacala latfolakala kubunjwa ngamunye. Hlukanisa bobunjwa ngekukhuluma ngekutsi emacala ayindilinga nobe acondzile. Dvweba tindilinga, tikwele bocalandze nabocalantsatfu. Umsebenti uhlanganiswe ngemisebenti lobhalwako.	

SIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
3.4 **Umkhatsi lolinganisa ngalokufanako**		**Umkhatsi lolinganisa ngalokufanako** Tfola umugca lowehlukanisa emkhatsini kulingane ngalokufanako ngekusebentisa liphepha leligociwe nekukhombisa. **Tiphakamiso lokugcilwa kuto eThemini 2** Imisebenti yekugoca liphepha letfutfukisa kuvisisa kwemkhatsi lolinganisa ngalokufanako lokufaka ekhatsi: • imisebenti lapho ipendi lemanti ibekwa ephepheni ngembi kwekutsi ligocwe. • Imisebenti lapho liphepha lijutjwa nobe lidzatjulwa emgceni logociwe.		**Umkhatsi lolinganisa ngalokufanako** • Bona ubuye udvwebe umugca lolinganisako kubobunjwa beJomethri nalabangasibo beJomethri labangemadayimenshini lamabili (2-D). **Tiphakamiso lokugcilwa kuto eThemini 2** Imisebenti kumele ifake tibonelo lapho: • umugca lowehlukanisa emkhatsini kulingane ngalokufanako awubi ngulomile ngasosonkhe sikhatsi. • kunemigca leminyenti lehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa nobe tintfo.

SIBUTSETELO SELIBANGA 3 4. SILINGANISO				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
4.1 **Sikhatsi**	**Kusho sikhatsi** • Fundza tinsuku emakhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi edijithi lakhombisa sikhatsi sib. bomakhalekhikhini.	**Kusho sikhatsi** • Fundza tinsuku emakhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi edijithi lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa emakhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe emaviki nobe tinyanga. • Sebentisa emawashi kubala budze besikhatsi ngema-awa nobe ihhafu yema-awa	**Kusho sikhatsi** • Fundza tinsuku emakhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi edijithi lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa emakhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe emaviki nobe tinyanga kufaka ekhatsi • kuntjintja emalanga nemaviki. • kuntjintja emaviki neminyaka. Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nobe ikota yema-awa	**Kusho sikhatsi** • Fundza tinsuku emakhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi edijithi lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa emakhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe emaviki nobe tinyanga kufaka ekhatsi • kuntjintja emalanga nemaviki. • kuntjintja emaviki neminyaka. Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nobe ikota yema-awa

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
4.2 **Budze**		**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-. **Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi lebekelwe umgomo yebudze. • Combela ubuye ukale budze ngemasentimitha usebentisa irula. (Asikho sidzingo sekugucula emamitha nemasentimitha)	**Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo yebudze. • Combela, ukale ubuye urekhode budze ngemasentimitha usebentisa irula.	

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
4.3 **Sisindvo**		**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode sisindvo usebentisa sikali tilinganiso letingakabekelwa umgomo sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa, hlela ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa nobe ngemagremu sib. 500 emagremu asawoti. • Uma kunesikali sasendlini yekugezela, bafundzi bakala sisindvo sabo. Lokulindzelekile kutsi bafundzi bafundze inombolo lesondzele lapho lutsi lume khona. Bachaza sisindvo sabo ngekutsi cishe/kusondzele ku-/kunyenti kancane kuna-/alingana ncamashi (emakhilogremu) lebawafundza esikalini. • Lapho kunesikali sekulinganisa lesinesisindvo lesibhalwe ngemagremu, bafundzi bangakala sisindvo nobe tintfo letehlukene. (Asikho sidzingo sekugucula emagremu nemakhilogremu).		**Kungenisa kukala lokuhlelekile** Bafundzi benta umsebenti kuhlanganisa loku lokufaka kufundvwa kwetitfombe • tetintfo letibhalwe sisindvo kuto. • tetikali tasendlini yekugezela lapho tintsi tikhombe imigca lesedvute netinombolo.

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
4.4 **Umtsamo/ bungako**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekubala nekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ubuye ubhale umtsamo ngekukala ngemalitha, ihhafu yemalitha nekota yemalitha usebentisa: - Emabhodlela lanemtsamo loyilitha nobe tintfo tekuphatsa letinemtsamo lokhonjiswe ngemamililitha sib. tikotela tesinatfo lesibandzako. - Emajeke ekukala lakhombisa imigca yekukala ngemamililitha. - Tinkomishi tekukala nemathisipunu lakhombisa umtsamo wawo. • Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi nobe ngemamililitha sib. 500 emamililitha elubisi, 340 emamililitha esinatfo lesibandzako, 750 emamililitha e-oyila.			**Kungenisa kukala lokuhlelekile** Imisebenti lebhaliwe yekuhlanganisa lokulandzelako lokufaka ekhatsi kufundza titfombe • imikhicito lebhalwe umtsamo kute ihlelwe ngekulandzelana. • emajeke lanebungako lobusedvute nemugca lokhombisa ilitha nobe emalitha la -2 nobe ihhafu yelitha nobe ikota yelitha. • emajeke lanebungako lobusedvute nemugca wemamililitha. • Lokulindzelekile kutsi bafundzi bafundze kuphela inombolo lesedvute nemugca. Bachaza bungako ngekutsi cishe/ kusedvute na-/ kunyenti kancane kuna-/ kunyenti kuna- nobe kuncane kuna-/ kungilo mbamba linani (lemalitha) lebalifundze ejekeni. (Asikho sidzingo sekugucula emamililitha nemalitha).

TIHLOKO	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4
4.4 **Umtsamo/ bungako**	• Yati kutsi inkomishi lelingene ingemamililitha la -250 • Yati kutsi ithisipunu ingemamililitha la -5 (Asikho sidzingo sekugucula emamililitha nemalitha).			
4.5 **Ipherimitha**			**Ipherimitha** Cwaninga libanga lekujikeleta bobunjwa labangemadayimenshini lamabili (2-D) netintfo letingemadayimenshini lamatsatfu (3-D) ngekusebentisa kucatsanisa ngco nobe emayunithi langakahleleki.	
4.6 **Bungako bendzawo**				**Bungako bendzawo** Cwaninga bungako bendzawo ngekufaka emathayilisi.

SIBUTSETELO SELIBANGA 3 5. KUSEBENTA NGEDATHA				
TIHLOKO	**ITHEMU 1**	**ITHEMU 2**	**ITHEMU 3**	**ITHEMU 4**
5.1 **Gcogca ubuye uhlele idatha**	**Lokuphakanyisiwe:** Umjikeleto wedatha lophelele wekwenta ibhagrafu.		**Lokuphakanyisiwe:** Hlela kabusha idatha leniketwe ngeluhla nobe ithali nobe lithebula kubhagrafu. Veta idatha kubhagrafu. Phendvula imibuto ngedatha lekubhagrafu.	
5.2 **Veta idatha**	Gcogca idatha lemayelana neliklasi nome sikolo kute uphendvule imibuto yathishela.			
5.3 **Hlatiya ubuye uhumushe idatha**	Sebentisa emathali kurekhoda idatha ngetigaba loniketwe tona. Veta idatha: • kumathebula • kumabhagrafu Khuluma ngedatha ubuye **uphendvule** imibuto yedatha ngemathebula nangemabhagrafu.	Hlatiya idatha kulokuvetiwe lokuniketiwe. **Lokuphakanyisiwe:** • Lokungenani yinye igrafutitfombe lekhombisa 1 – 1 kuhambisana. • Lokungenani yinye ibhagrafu		Hlatiya idatha kulokuvetiwe lokuniketiwe. **Lokuphakanyisiwe:** • Lokungenani yinye igrafutitfombe lekhombisa 1 – 1 kuhambisana. • Lokungenani yinye ibhagrafu

3.5 EMANOTSI LACACISAKO NETINKHOMBANDLELA TEKUFUNDZISA

Lelithebula lelingentasi linika thishela loku:

- Lokucuketfwe netihloko ngelibanga ngalinye nangethemu ngasinye;
- Lwati nemakhono laphakanyisiwe lokumele kugcilwe kuwo ngethemu;
- Emanotsi ekucacis laneticondziso tekufundzisa;
- Budze besikhatsi lesibekwe ngesihloko ngasinye etifundvweni lletiniketwe li-awa neminithi langema 24.

3.5.1 KUCACISWA KWALOKUCUKETFWE KWELIBANGA 1

LIBANGA 1 ITHEMU 1

1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE

Ethemini yekucala, sikhatsi sekucala sisetjentiselwa kutfutfukisa lwati lebanalo ngetinombolo. Emakhono latfolakala ekucaleni laphatselene nemaphethini, bunjwa nendzawo, silinganiso nedatha kwakha sisekelo semakhono asesikolweni ngalokuvamile ikakhulukati emakhono etinombolo.

Kumatanisa

Kumatanisa lokuholela ekuvisiseni lwati lwetinombolo tekumatanisa ngekucondzanisa kunye nalokunye, lokubuye kube sisekelo sekucatsanisa tinombolo tetintfo letisencunjini.

Uma umfundzi akwati kubona 'lokufanako', kuba lula kumatanisa emasethi lamabili. Lokufanako kusidzingo sekulondvolota. Kulondvolota kulikhono lelibalulekile lekukala, tinombolo nendzawo kanye nabobunjwa.

Kuhlunga

Uma sihlunga, bafundzi babuka kufanana nekuhlukana. Bafundzi batfutfukisa lwati lwekuchaza nekutfola. Kuchaza kusho kutsi bafundzi babona babuye basho tintfo letisedvute nabo.

Kutfola kusho kutsi bafundzi bangakhetsa intfo lechaziwe kuletinye. Bafundzi batfola ngekusebentisa timphawu letitsite. Bafundzi bahlunga tintfo ngekwesayizi, umbala, bunjwa, budze, sisindvo, umtsamo nebungako. Kuhlunga kwentiwa

- ngetintfo letisetjentiswa malanga onkhe nakusetjentiswa idatha;
- bobunjwa beJomethri netintfo kusikhala nabunjwa; ne
- timphawu tetintfo kusilinganiso.

Kucatsanisa

Uma bafundzi bacatsanisa tintfo bagcila kumehluko lokhona emkhatsini wetintfo.

Bafundzi bangagcila kuloku:

- lokukhulu nobe lokuncane;
- lokusindzako nobe lokulula;
- lokudze nobe lokufisha;
- lokushisako nobe lokubandzako;
- lokungenalutfo nobe lokugcwele;
- lokunyenti nobe lokumbala; kanye
- nekwekucala, kwekugcina nobe lokusemkhatsini.

Kufundza kucatsanisa kuyincenye lekugcilwa kuyo

- emisebentini yekulinganisa leyentiwa ekucaleni;
- emisebentini lekucalwa ngayo kubunjwa nendzawo (kufaka ekhatsi kusebenta ngekubekeka);
- nasemisebentini yekucala yemaphethini.

Emisebentini yetinombolo, bafundzi bamatanisa tintfo etincunjini letehlukene. Bafudza kutfola incumbi lenenombolo lefananako yetintfo, babuye bahlukanise tincumbi letinetintfo letinyenti nobe letimbalwa kunaletinye tincumbi.

Kuhlela

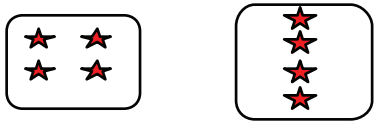
Kuhlela kubaluleka eluhlelweni lwetinombolo. Kubeka nekubala tintfo kute kusitakale bafundzi labancane kutsi babenesiciseko sekutsi babala intfo yinye kanye. Kubeka tintfo ngekuhleleka nababala, kusisekelo sekuvisisa kutsi tinombolo tingahlelwa njani. Umsebenti wemaphethini lekucalwa ngawo lofaka ekhatsi bobunjwa nobe tintfo kusita bafundzi kutsi bagcile ekuhleleni. Emva kwesikhatsi bafundzi basebentisa lelikhono nabasebenta ngemaphethini etinombolo.

Kucombela

Kucombela kusho kukwati kubona linani letintfo letisencunjini ngekusheshisa, ngaphandle kwekutibala tintfo encunjini

Kucombela kusita bafundzi kutsi babone ligcogco letinfto letincane njengeyunithi yinye. Loku kunika bafundzi litfuba lekubona sisekelo sekusebenta ngetinombolo kusenesikhatsi.

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.1 **Bala tintfo**	Bala tintfo ngekwetsembeka uye e-50. Nika kucombela lokungiko kwelinani letintfo letingahlolwa ngekubala.	Bala tintfo ngekutsembeka uye e-10. Nika kucombela lokungiko kwelinani letintfo letingahlolwa ngekubala.	Kubala kusita kutfutfukisa lwati lwebafundzi lwesayizi yetinombolo kubuye kube sisekelo sekubala ngetinombolo letiphelele. Ngesikhatsi sethemu 1, likhono lebafundzi liyatfutfuka kuloku lokulandzelako: • Kubala konkhe • Kubala uchubeke • Umgomo welinani letintfo • Kusebenta ngemathemeksthi labhaliwe Kubala Ethemini ye-1 kugcile ekutfutfukiseni emakhono ebafundzi ekubala. Kutfutfuka kwemakhono ekubala kubavumela kutsi • babale tintfo letibekwe ngetincumbi naletingasito tincumbi; • kubala uye phambili nasemuva; • kubala iminyakato; • kubala ngekulandzelanisa kumugcatinombolo; • kutfutfuka kwelwati lwesayizi yetinombolo ngekutihlela ubuye uticatsanise; ne • kucombela. Kubala tintfo Ngembi kwekutsi bafundzi babale badzinga ematfuba ekutetayeta kubala ngemlomo. Bafundzi badzinga kuba neluhla lwemagama etinombolo lahlelekile lashiwo ngemlomo: kunye, kubili nakutsatfu uye e-20. Gcugcutela bafundzi kusho imilolotelo yetinombolo babuye badlale imidlalo legcizelela kubala ngemlomo. Lelikhono lekubala ngemlomo nobe kubala ngenhloko libalulekile kutfutfukisa lwati lwemagama etinombolo nesigci/ emaphethini etinombolweni. Bafundzi babuye babale intfo ngayinye babuye bamatanise emagama etinombolo nemasethi etintfo. Loku kufaka ekhatsi kutsintsa nekunyakatisa intfo nekusho ligama lenombolo. Kubalulekile kutsi bafundzi bavisise kutsi inombolo yekugcina lebitiwe imele intfo yekugcina lebaliwe encunjini. Kumele bati kutsi lenombolo yekugcina lebitiwe isho linani esethini nobe ikhadinalinombolo encunjini.	2 Tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.1 **Bala tintfo**			Akusibo bonkhe bafundzi labangabala ngemlomo babuye basho emagama etinombolo ngekulandzelana, labatawuniketa inshokutsi ekubaleni kwabo. Bangabala bece letinye tinombolo babuye basho kutsi kunetibali letine kube kunetibali letisihlanu. Kubalulekile kutsi bafundzi babale inombolo lefanako yetintfo letehlukene. Sibonelo: • Bala tibali letisitfupha • Nginikete emapeniseli lasitfupha • Bala emakinobho lasitfupha Kulondvolota Bafunndzi batawucala kubona nababala linani letintfo, kutsi inombolo ayiphazanyiswa isayizi nobe kubekeka. Munye angabuta loku: Tingaki tinkhanyeti ekhadini ngalinye?  Kubekeka nobe nobe kuhleleka kwetinkhanyeti kwehlukile kodvwa linani letinkhanyeti ekhadini ngalinye lifanana ncamashi. Kubalulekile kutsi nakubalwa tintfo letiphatsekako, bafundzi babone linani letintfo letincane ngaphandle kwekutibala. Sibonelo, kubona • Sihlanu, njengenombolo yeminwe esandleni sinye. • Tibali letintsatfu, letihleleke nobe ngayiphi indlela • Kunye kuye kulokusitfupha, kusukela ekuhlelweni kwemacashati edayizini. Loko kubuye kwatiwe ngekutsi kucombela. Ngaloko-ke: Lwati lolusisekelo setinombolo lutfutfukiswa kubala tintfo mbamba. Bafundzi bafundza: • kuhlobanisa emagama etinombolo netintfo letigcogcelwe ndzawonye;	

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1.1 **Bala tintfo**			• kwakha sitfombe sengcondvo kutsi inombolo isho kutsini njengekutsi, yinkhulu kangakanani; nekutsi • ligama lenombolo yentfo lebitwe ekugcineni nakubalwa imele linani letintfo letisencunjini. Ticondziso nemibuto kusekela kubala tintfo. • Bala tindvuku tekubala le-10. Tihlele ngemugca. • Phindza uhlele tindvuku bese uyabala futsi. Ngabe inombolo isafana? • Bala timbonyo temabhodlela ngaphandle kwekutitsintsa. • Ngabe kusanelinani lelifanako ngakunye? • Mangaki emakhilayoni locabanga kutsi akhona? • Ngabe manyenti nobe ambalwa kunaloko lokucabangile? • Wati ngani kutsi unaleyo nombolo? • Wati ngani kutsi ubale onkhe emakhilayoni? • Ungayihlola njani imphendvulo yakho? Kuchubekela emathekstini labhalwako Bafundzi badzinga kunikwa ematfuba ekubala imifanekiso yetintfo. Sibonelo: Kungaki?  **Kubala uchubeke** Uma bafundzi sebangabala ngekutetsemba tonkhe tintfo kusukele kukunye, kumele babale bachubeke kusukela elugcogcweni lebanalo. Sibonelo, tjela bafundzi kutsi babale tintfo letiyinkhotsa bese bacala kulentfo yenkhotsa, babala lokunye lokutsatfu baze babe netintfo leti -10. Kubala uchubeke, kulisu leletsembekile kunekubala konkhe kantsi bafundzi batawubala batawusebentisa kubala bachubeke uma benta tibalo.	

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1.1 **Bala tintfo**			**Tinsita:** Kulusito kwakha ligcogco letinhlobo tetintfo letehlukene letingasetjentiswa bafundzi njengetibali. **Sibonelo:** • Tintsi temetjiso • Tintsi te-ayisikhilimu • Tindvumbu temapentjisi. • Emabhontjisi • Timbonyo temabhodlela.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.2 **Bala uye phambili nasemuva**	**Bala uye phambili nasemuva** ngakunye usuke kunobe nguyiphi inombolo emkhatsini we -0 ne -100 **Bala uye phambili:** • Nge-10 usuke kunobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 neli -100 • Nge- 5 usuke kunobe nguyiphi imalthiphulii ye-$_{55}$ emkhatsini we-0 ne-100 • Nga -2 usuke kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne - 100	**Bala uye phambili nasemuva** ngakunye usuke kunobe nguyiphi inombolo emkhatsini waku –1 ne- 20.	**Kubala ngakunye uye phambili** Kubala ngemlomo (kubala ngenhloko) kusinyatselo lesibalulekile sekuhaya emagama etinombolo ngekuhleleka. Uma bafundzi bakwati kukwenta loku, akusho kutsi bayayivisisa isayizi yetinombolo lebatishoko. Kute budlelwane emkhatsini wenombolo nobe linani nobe isayizi yetinombolo. Ethemini ye-1 kulindzeleke kutsi bafundzi babale baye phambili nasemuva ngakunye kuze kufike e -20. Kubala uye phambili nasemuva kungentiwa neliklasi lonkhe. Bani nesiciniseko sekutsi bafundzi abakhulumi nje lokungenamcondvo. Emacenjini lokugcilwe kulo nemsebenti lebatentela wona, lemisebenti lelandzelako ingasetjentiswa kungeta inshokutsi yekubala: • Cala kukubili ubale uye kusiphohlongo • Bala usuke kukune uye e-10 • Bala usuke kukubili uye kusiphohlongo. Tingaki tinombolo lotibalile? **Kubala uye eshumini** Kwekucala bafundzi bacala kubala baye eshumini babuye batetayete emagama etinombolo ngekulandzelana. Bafundzi batawudzineka kubala ngemlomo kantsi kutawudzingeka kutsi bente ngetindlela letehlukene, uma kungenjalo batawube batikhulumela nje lokungenamcondvo.Kubala ngenhloko kudzinga kutsi kusekelwe kufundza tinombolo nekubala tintfo. Bafundzi badzinga kwetfulelwa imifanekiso yetinombolo ngekulandzelana. Kungasetjentiswa imifanekiso lelandzelako: • Kubala buhlalu • I-abhakhasi • Umugcatinombolo Kwekucala umugcatinombolo lonato tonkhe tinombolo, nemugcatinombolo lonaletinye tinombolo letingakakhonjiswa, ungasetjentiswa. Loku kusho kutsi bafundzi kumele bati kulandzelana kwetinombolo kute bagcwalise tikhala. Kubala uye emuva Kubala uye emuva kulikhono lelimatima kubafundzi ngaloko-ke kutetayeta kanyentana kubalulekile. Cala kubala uye emuva kusukela enombolweni bafundzi lesebayetayele, ku-2, babuye bakhe loku baye etulu ube ugcila enombolweni ngayinye lesetulu.	

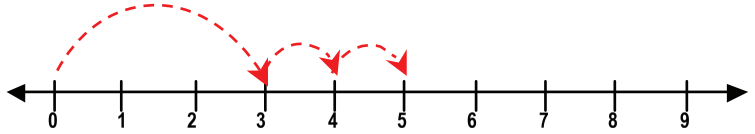
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LADZINGEKAKO EKUPHELENI KWEMNYAKA</th><th>LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1</th><th>EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA</th><th>BUDZE BESKHATSI
(etifundvweni temaminithi la - 24 na1 li-awa)</th></tr>
<tr><td>1.2
Bala uye phambili nasemuva</td><td></td><td></td><td>
Kubala ufike e-20
Kubala ngetulu kwelishumi kungahle kudzinge kutsi bafundzi kubala ngekulandzelanisa ngemuva kwathishela.
Kubalulekile kugcugcutela bafundzi kutsi bacale kubala kusukela kunobe nguyiphi inombolo. Kucala ku -8 kunebulukhuni kunekucala ku -1. Bafundzi batawusebentisa lelikhono uma sebabala bachubeke ekuhlanganiseni.
Tinsita
• Kubala buhlalu kuye e -20
• I-abhakhasi
• Igridi yetinombolo isita bafundzi kutsi bakhone kufundza lwati lolusethebuleni. Ngoba bafundzi babala baye eshumini, igridi kumele ikhombise lwati lolulandzelako.
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• Umugcatinombolo lokhombisa tinombolo letifika e-20
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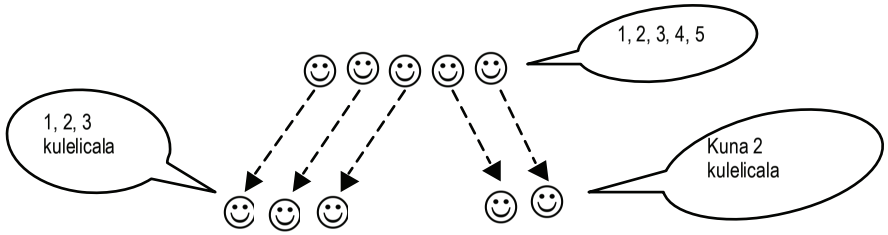
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.3 **Tinombolo nemagama etinombolo**	Tfola, bona uphindze ufundze tinombolo • Tfola, bona ubuye ufundze tinombolo -1 uye e-100 • Bhala tinombolo -1 uye e-20 • Tfola, bona ubuye ufundze emagama etinombolo -1 uye ku 10. • Bhala emagama etinombolo -1 uye ku-10.	• Tfola, bona ubuye ufundze tinombolo -1 uye e- 20 • Bhala tinombolo -1 uye ku- 5. • Tfola, bona ubuye ufundze emagama etinombolo -1 uye ku 5. • Bhala emagama etinombolo -1 uye ku-5.	Kufundza nekubhala tinombolo kanye nemagama etinombolo. Bafundzi kumele bafundze: • Kubhala tinombolo nemagama etinombolo • Kufundza tinombolo • Kusho tinombolo Kufundza nekubhala tinombolo kanye nemagama etinombolo kumele kuhlanganiswe nemisebenti yekubala. Bafundzi kumele banikwe ematfuba ekumatanisa tinombolo nemagama etinombolo elugcogcweni lwetintfo lebatibalako. Ngalendlela bafundzi bachumanisa tinombolo nemagama etinombolo, lokumele inombolo kanye nenshokutsi yenombolo. Imisebenti lengetiwe: Kutetayeta kubhala Bafundzi bangatetayeta kubhala tinombolo ngetindlela letehlukene: • Ngekutsatsisela etukwetinombolo • “Kuhlanganisa emacashati” imisebenti yekucedzela tinombolo. • Ngekubhala esantini • Ngekubhala emabhodini nobe esemendeni • Ngekupenda • Kutfunga tinombolo usetjentiswa insontfo. Lomsebenti ulusito ikakhulukati kugcizelela indzawo lapho kucalwa khona nakubhalwa tinombolo. • Ngekutsatsisela tinombolo letinkhulu letijutjwe ephepheni lelihhedlako nobe endvwangwini. Kufundza tinombolo Loku kungenteka nge: • kukhomba tinombolo emgcenitinombolo nobe kumagridi etinombolo. • Kufundza emakhaditinombolo Kumatanisa tinombolo neligcogco letintfo. Loku kungetiwa nge: • kumatanisa linani letintfo netinombolo. • Kubala incumbi yetintfo nekukhetsa likhadinombolo lelingilo lelinani letintfo. • Kubala tintfo etitfombeni nekubhala tinombolo.	

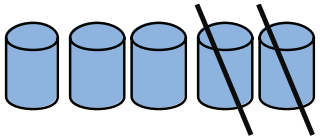
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.4 **Chaza, catsanisa ubuye uhlele tinombolo**	Chaza, catsanisa ubuye uhlele tintfo ufike e -20. • Chaza ubuye ucatsanise ligcogco letintfo ngalokunyenti, lokumbalwa, nalokufanako. • Chaza ubuye uhlele ligcogco letintfo kusukela kulokunyenti uye kulokumbalwa nalokumbalwa uye kulokunyenti. • Chaza, catsanisa ubuye uhlele tinombolo uye e -20. • Chaza ubuye ucatsanise tinombolo letiphelele ngalokuncane kuna-, kukhulu kuna-, kunyenti kuna, nalokulingana na • Chaza ubuye uhlele • tinombolo usuke kulencane kakhulu uye kulenkhulu kakhulu kanye nakulenkhulu kakhulu uye kulencane kakhulu.	Chaza, catsanisa ubuye uhlele tintfo ufike ku -5. • Chaza ubuye ucatsanise ligcogco letintfo ngalokunyeti, lokumbalwa, lokunyenti kakhulu, lokuncane kakhulu, lokunyenti kuna-, lokuncane kuna-, lokulingana na-, lokunyenti njenga-, lokwehlukile • Chaza ubuye uhlele • tinombolo usuke kulencane kakhulu uye kulenkhulu kakhulu kanye nakulenkhulu kakhulu uye kulencane kakhulu. • Kuhleleka kwetintfo letifika kuletisihlanu. • Chaza, catsanisa ubuye uhlele tinombolo ufike ku -5. • Chaza ubuye ucatsanise tinombolo letiphelele uye kule -5 usebentisa lulwimi sib. ngalokuncane kuna-, lokukhulu kuna-, lokunyenti kuna-, lokuncane kuna-	Kucatsanisa nekuhlela tinombolo kusita bafundzi kutsi bacolisise lwati lwabo lwekuhlobana kwesayizi yetinombolo. Kutabasita kutsi batfutfukise umcondvo wekutsi yinkhulu nobe yincane kangakanani inombolo uma uyicatsanisa naletinye tinombolo. Uma bafundzi banelwati lolukahle lwebudlelwane besayizi yetinombolo, batawutfola timphawu tekubala letisisekelo tilula. Esigabeni Sabokhewane loku kubitwa ngekutsi budlelwane betinombolo. Emakhono ekubala abalulekile ekucatsaniseni nasekuhleleni tinombolo. Kuhlela tinombolo kufaka ekhatsi: • Kufundza ngetinombolo tekhadinali letisho bungako betinombolo. • Kusebentisa, kufundza nekubhala emagama etinombolo netinombolo. • Lulwimi lwekucatsanisa tinombolo Kucatsanisa linani tetintfo Loku kuhlala kwenteka ngekusebentisa kucondzana kwentfo yinye nalenye. Bafundzi babala ligcogco letintfo babuye bamatanise emagama etinombolo linye licondzane nentfo. Kucatsanisa ligcogco letintfo kuya ngelwati lwekubala lebanalo bafundzi. Kubalulekile kugcila elwatini lwalokunyenti nalokuncane nakucatsaniswa linani. Nakucatsaniswa tintfo lulwimi lwekucatsanisa luyatfutfukiswa. Sibonelo: lokunyenti njenga-, linani lelilingana na-, lokulingana na-, nalokunyenti kuna-, lokuncane kuna-, lokumbalwa kuna-. Kuhlela tincumbi tetintfo Kusukela ekubaleni nasekucatsanisa emasethi lamabili etintfo, bafundzi batfola babuye bafundze budlelwane lobubili lobubalulekile: • Emagcogco lamabili ayalingana uma aneligama lenombolo lefanako nanobe emagcogco angahleleka ngalokwehlukile. • Kubala tinombolo kumela kulandzelana kwetinombolo letihleleke ngekulandzelana letingeteka ngayinye sonkhe sikhatsi. Sib: sihlanu sita ngemuva kwakune, ngaloko-ke ligcogco letintfo letisihlanu linyenti ngayinye kuneligcogco letintfo letine nobe ligcogco letintfo letine lincane ngayinye kuneligcogco letintfo letisihlanu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.4 **Chaza, catsanisa ubuye uhlele tinombolo**		• Chaza ubuye uhlele: - tinombolo usuke kulencane kakhulu uye kulenkhulu kakhulu kanye nakulenkhulu kakhulu uye kulencane kakhulu. - sebentisa lulwimi sib. ngembi kwe-, ngemuva, emkhatsini/ phakatsi	Kuhlela ubuye ucatsanise tinombolo Uma bafundzi bahlela tinombolo, bangahle basebentise libanga emkhatsini weti-nombolo kute bati kutsi nguyiphi inombolo lenkhulu. Sibonelo, batawutsi sihlanu sikhulu kuna -2 ngobe sihlanu sita ngemuva kwa -2. Bafundzi kudzingeka kutsi bachumanise kubalwa kwetintfo babuye bacatsanise incumbi yetintfo letiyimfica nencumbi yetintfo letimbili. Ngelibanga le- 2 nelibanga le-3 bafundzi batawuhlela babuye bacatsanise tinombolo ngekuchaza bungako bemadijithi. Bafundzi kudzingeka kutsi bahlele tinombolo basebentise tinhlobonhlobo temi-fanekiso. Bafundzi bangabuye bahlele tinombolo basebentisa umugcatinombolo. Sibonelo: • Tsatsa inombolo -3 uyifake emgcenitinombolo. • Khetsa inombolo lelandzela -4 uyibeke endzaweni lefanele emgcenitinombolo. • Khetsa inombolo lesemkhatsini wa -3 ne- 5 uyibeke endzaweni lefanele emgcenitinombolo • Khetsa inombolo lephambili kwa -2 uyibeke endzaweni lefanele emgcenitinombolo • Khetsa inombolo lephambili kwa- 3 uyibeke endzaweni lefanele emgcenitinombolo Emakhaditinombolo Sibonelo: Bafundzi bangapaka emakhadi ngekulandzelana. 1 2 3 4 5 Kuchubekela kumatheksthi labhalwako Bafundzi bangahlanganisa lwati lwabo ngekucedzela imisebenti encwadzini yekusebentela. Loku kungentiwa ngesikhatsi sekutisebentela. Inombolo yekhadinali nenombolo ye-odinali Inombolo yekhadinali isho samba senombolo letisesethini nobe elugcogcweni. Inombolo ye-odinali isho kubekeka kwentfo esethini letintfo. Kumele kube nekuhambelana emkhatsini wenombolo yekhadinali nenombolo ye-odinali. Bafundzi batawukhona kubona loku uma babala incumbi yetintfo babuye bati kutsi uma batsintse intfo yesihlanu basuke babale tintfo letisihlanu kuphela. Tinombolo te-odinali tentiwa kuphela ethemini ye -4.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
KUSOMBULULA TINKINGA TETIBALO KUSIMONGCONDVO				
1.6 **Emasu ekusombulula tinkinga tetibalo**	Sebentisa lamasu lalandzelako nawusombulula tinkinga tetibalo ubuye uchaze tisombululo taletinkinga: • Tinsita letiphatsekako • Sib. tibali • Titfombe tekudvweba indzabatibalo • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo	Sebentisa lamasu lalandzelako nawusombulula tinkinga tetibalo ubuye uchaze tisombululo taletinkinga: • Tinsita letiphatsekako • Sib. tibali • Titfombe tekudvweba indzabatibalo • Imigcatinombolo lesekelwa tintfo letiphatsekako sib: buhlalu bekubala.	Kulethemu bafundzi batawucala kusombulula tinkinga tetibalo temagama basebentisa lamasu lalandzelako kusombulula letinkinga: • Tinsita letiphatsekako • Imidvwebo • Imigcatinombolo **Imidvwebo netintfo letiphatsekako** Bafundzi batawudvweba titfombe babuye basebentise tintfo letiphatsekako kute basombulula tinkinga. Ekupheleni kwalethemu bafundzi bangadvweba titfombe leticuketse tinombolo letichaza indlela lekwenteke ngayo netisombululo. Kubalulekile kutsi titfombe nobe imidvwebo ibe netinombolo letichaza indlela lekwentiwe ngayo netisombululo: • emamaki lahamba ngakunye • tinombolo **Imigcatinombolo** Kusebentisa imigcatinombolo kute ubasite kutsi babale kutawubanika indlela yekurekhoda lebakucabangako babuye bakulandzelele. Kubuye kuvumele bafundzi kutsi babe nengcondvo letibambako tintfo lebangayisebentisa kuchaza kutsi bayisombulule njani inkinga. Ngalethemu bafundzi batawungeniswa emgcenitinombolo babuye bacale kusebentisa loku njengelisu lekubala. Kwekucala nakusetjentiswa umugcatinombolo entsanjeni yebuhlalu ingabekwa endzaweni lengetulu nobe ngaphasi kwemugcatinombolo kusita bafundzi kubala. Ngaphambi kwekutsi basebentise umugcatinombolo njengelisu lekubala kumele bayisebentisele loku: • Kubala uye phambili nasemuva • Kufundza tinombolo • Kubhala tinombolo • Kubeke tinombolo kumugcatinombolo • Kuhlela nekucatsanisa tinombolo	

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1.6 **Emasu ekusombulula tinkinga tetibalo**			Uma usebentisa umugcatinombolo njengemfanekiso wekubala, lwati “lwekuzuba”lungafundvwa ngekusebentisa iminwe nobe ngekwakha umugca ngephandle babuye bazube kusukela kulenye inombolo baye kulenye. Letinhlobo temisebenti tisita bafundzi kutsi babone lapho tinombolo tiba tinebudlelwane lenye kulenye. Kudzingeka bakwati kutsi, “ Kutfole kusukela ku- 3 uye ku- 5 kutawudzinga uzube ka- 2”.Bafundzi kumelwe baniketwe ematfuba ekucombela kutsi kuzutjwe kangaki,kusukela ku- 2 uye ku- 5. Sibonelo sekutsi bafundzi bangawusebentisa njani umugcatinombolo ngesikhatsi sethemu: Kunebafana labatsatfu nemantfombatana lamabili lenta umsebenti lowengetiwe wetifundvo seBuciko esikoleni.Bangaki bafundzi kuleliklasi lebuciko? Bafundzi bangasebentisa umugcatinombolo lolandzelako kute bafinyelele emphendvulweni.  Buka emanotsi langentasi ngephasi kwetindlela nobe emasu kute kungeniswe umugcatinombolo. Caphela kutsi bafundzi bavame kusombulula tinkinga ngendlela lengakalindzelwa nguthishela. Sibonelo, kusombulula inkinga, bafundzi bangakhetsa kucala ngenombolo yemantfombatana, ku-2 na bese wengeta ku -3.Indlelanchubo yebafundzi itawuntjintja ekuhambeni kwemnyaka njengoba kuvisisa kwabo kutawutfutfuka nekutetayeta ngekusombulula tinhlobo tetinkinga, nangalesikhatsi lwati lwabo lwetinombolo lutfutfuka.	

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1.7 **Kuhlanganisa nekususa**	Sombulula tinkinga tetibalo temagama letikusimongcondvo ubuye uchaze tisombululo takho lokufaka ekhatsi kuhlanganisa nekususa lokunetimphendvulo letifika e -20.	Sombulula ngekwenta, tinkinga tetibalo temagama letikusimongcondvo ubuye uchaza tisombululo takho lokufaka ekhatsi kuhlanganisa nekususa lokunetimphendvulo letifika ku -5.	Tibalo temagama tivamise kusetjentiswa njengesingeniso setimphawu tekubala. Bafundzi bacala kusombulula tinkinga tetibalo ngekusebentisa tinsita letiphatsekako; letitfutfuka tibe: • Kudvweba titfombe; • Kudvweba titfombe nekubhala tinombolo letichaza kusetjentiswa kwetimphawu tekubala; • nekusebentisa tinombolo kuphela. Sibonelo: Kunebantfwana labasihlanu kudekudeku. Labatsatfu babo basecaleni linye. Bangaki labakulelinye licala? Ethemini ye -1 bafundzi bangarekhoda tinkinga tetibalo temagama ngalendlela lelandzelako. **Emasu ekubala** Kusebentisa kubala konkhe lokuphatselene nekusombulula tinkinga tadekudeku.  Lapha bafundzi babala licembu ngalinye kanye neligcogco lonkhe, ngaloko-ke babala lokungenani emahlandla lamatsatfu. Kusebentisa kubala uchubeke kusombulula tinkinga tadekudeku. Bafundzi babala bachubeke kusukela kukutsatfu baze bafike kusihlanu. Leli lisu lelisebenta kahle kakhulu lelingasetjentiswa. “Ngiyati kutsi kunebantfwana labatsatfu kubuye kube namunye futsi umntfwana kutawenta babe bane, lomunye futsi umntfwana kutawenta babe sihlanu. Kunebantfwana lababili kulelinye licala” *Kuhlanganisa nekususa kusetjentiswa tinsita*	

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1.7 **Kuhlanganisa nekususa**			Bafundzi basebentisa tinsita letiphatsekako ngetindlela letikhetsekile kufinyelela emphendvulweni. Bafundzi basebentisa tinsita kwakha inshokutsi yekuhlanganisa nekususa basebentisa tintfo lebangatitsintsa, batibambe babuye batinyakatise/batihambise lapho bakhona. Indlela bafundzi lebasebentisa ngayo tinsita iya ngesakhiwo setibalo temagama. **Kurekhoda imifanekiso yekuhlanganisa nekususa** • **Kurekhoda kusetjentiswa tintfo letiphatsekako.** Bafundzi bangasebentisa tinsita letiphatsekako kubala konkhe nekubala bachubeke. Nobe kunjalo bafundzi bangabuye basebentise lamasu uma badvweba titfombe kukhombisa kucabanga kwabo, emasu ekubala netisombululo. • **Kurekhoda ngetitfombe kuphela** Sibonelo:  **Kurekhoda ngetitfombe netinombolo** Kute bafundzi basebentise tinombolo netitfombe kuchaza labakucabangako, kudzingeka kutsi: • Bakwati kubona tinombolo -1 uye ku- 5 • Kubala tintfo letisihlanu babuye bati kutsi -5 simele samba setintfo letibaliwe. • Kubhala tinombolo • Hlela ubuye ucatsanise tinombolo **Tinhlobo tetinkinga tekuhlanganisa nekususa** Kunetinhlobo lokungenani letintsatfu tekuhlanganisa nekususa letisisekelo kantsi lolo nalolo hlobo lungasetjentiswa ngetindlela letehlukene. Letinhlobo letisisekelo nguleti:	

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1.7 **Kuhlanganisa nekususa**			*Kuntjintja* Noluthando bekanemahhabhula lamabili.Silo umnike emahhabhula lamatsatfu. Mangaki emahhabhula lakanawo nyalo? Noluthando bekanemahhabhula lasihlanu. Wanika Silo emahhabhula lamane. Mangaki emahhabhula lesekanawo? *Kuhlanganisa* Nosisi unetimabuli letiluhlata satjani letimbili naletimbili letiluhlata sasibhakabhaka. Tingaki timabuli lekanato? Nosisi unetimabuli letine. Letintsatfu tiluhlata satjani kantsi leletinye tiluhlata sasibhakabhaka.Tingaki timabuli lekanato Nosisi? Kucatsanisa Nosisi unemabhanana lasihlanu. Themba unelibhanana linye. Nosisi unemabhanana lamanyenti ngamangaki kunaThemba? Tinsita: Bafundzi bangasebentisa tibali letihlukanisiwe, kute tibasite babone kutsi kwentekani uma kubekwa wonkhe umphumela wetintfo ndzawonye nobe kutihlukanisa. Tibali letehlukene tisita bafundzi kutsi babone kutsi kwentekani uma batibala tonkhe. Sibonelo setinsita tekubala letihlukanisiwe ngunati: • Tibali • Tintsi tekubala • Timbonyo temabhodlela • Tindvumbu temapentjisi • Ematje • Emakhiyubhi eyunifiksi • Kusebenta ngekuhleleka kwetinombolo kusukela ku -1 uye ku -5, bafundzi bangasebentisa iminwe yabo njengetibali letehlukanisiwe.	

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1.9 **Kugcogcela ndzawonye nekwaba lokuholela ekuhlukaniseni**	Sombulula ubuye uchaze tisombululo tetibalo tekwenta letifaka ekhatsi kwabelana ngalokulinganako nekugcogcela ndzawonye ngenombolo letigcwele kute kufinyelele ema -20 kanye letinetimphendvulo letingashiya insalela.	Sombulula ubuye uchaze tisombululo tetibalo letifaka ekhatsi kwabelana ngalokulinganako nekugcogcela ndzawonye ngetinombolo letiphelele kute kufinyelele ku -5 kanye netimphendvulo letingashiya insalela.	Ebangeni 1 lwati lwekuhlukanisa lungeniswa ngekunika bafundzi tinkinga tekwenta letifaka ekhatsi kwabelana nekugcogcela ndzawonye. Luphawu lwekwehlukanisa lungeniswa eBangeni le -3. Ngentasi kunetibonelo tetinhlobo tetinkinga temagama letingentiwa. **Kugcogcela ndzawonye** *Kugcogcela ndzawonye, ulahle insalela* Stella utsengisa tikwashi emasakeni lanetikwashi letimbili lisaka ngalinye. Unetikwashi letisihlanu letisele. Mangaki emasaka etikwashi letimbili lisaka ngalinye langawenta? *Kugcogcela ndzawonye, ufake insalela emphendvulweni* Kunemahhabhula lamane. Mangaki emasaka emahhabhula lamabili lisaka ngalinye langagcwaliswa? **Kwabelana** Kwabelana, ulahle insalela *Yaba emaswidi lasihlanu uwabele bangani labatsatfu kute bonkhe batfole linani lelilinganako lemaswidi.* **Kurekhoda umfanekiso wekugcogcela ndzawonye nekwabelana** Nakukhonjiswa umfanekiso wetinkinga tetibalo temagama letiphatselene nekwabelana, bafundzi batawabelana “intfo yinye ngesikhatsi. Bafundzi belibanga le-1 bangakwati kwaba intfo yinye ngesikhatsi futsi loku kutawuvela kumarekhodi abo. rdings.   Ngekuchubeka kwemnyaka bafundzi batawukwati kurekhoda basebentise titfombe netinombolo kukhombisa inombolo leyabiwe.	

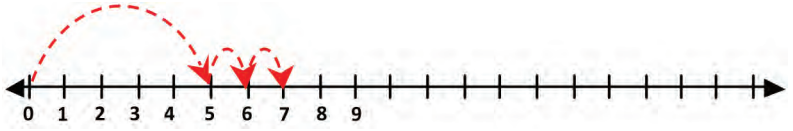
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)

KUTIBALELA NJE

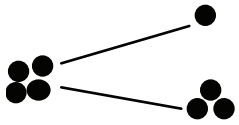
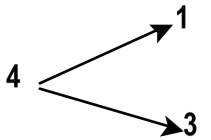
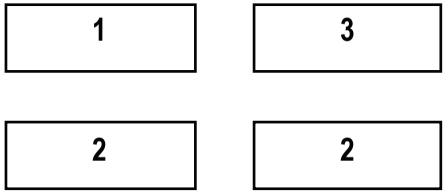
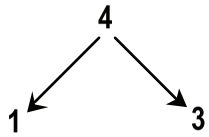
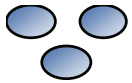
Kunetindlela letinyenti letehlukene tekucabanga ngekuhlela kufundza nekufundzisa indlela yekubala. Lenye indlela kucabanga ngekuhleleka kwetinombolo. Kuhleleka kwetinombolo emsebentini webafundzi kutawusho luhlobo lwetinsita letitawusetjentiswa nekutsi barekhoda njani tisombululo tabo. Ngaloko-ke lenye indlela yekucabanga ngekubala eSigabeni Sab-okhewane kuveta lokubaliwe. Loku kwenteka:

- ngekusebentisa tintfo letiphatsekako;
- ngekudvweba titfombe;
- ngekusebentisa titfombe netimphawu;
- ngekusebentisa tinombolo netinkhomba; nobe
- ngekusebentisa imishotinombolo;

Bafundzi basuka ekusebentiseni tintfo letiphatsekako baye ekusebenteni ngetinombolo nemishotinombolo lelukhuni. Kubala kungekhatsi kwesimongcondvo sekusombulula tinkinga. Bafundzi batfutfukisa emakhono ekusombulula tinkinga tekubala kute basebente ngetinombolo. Bafundzi badzinga kutsi batibalele nje.

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1.12 **Emasu (tindlela nobe tindlelan-chubo)**	Sebentisa lamasu lalandzelako nawubala tibalo: • tinsita letiphatsekako sib. tibali • kudvweba titfombe • kwakha nekuhlahlela tinombolo. • kuphindza nekuhhafula • umugcatinombolo	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo tetinkinga: • Tinsita letiphatsekako sib. tibali • Titfombe tekudvweba indzabasibalo. • Imigcatinombolo lesekelwa tinsita letiphatsekako sib. buhlalu bekubala	Ethemini 1 bafundzi basombulula tinkinga tetinombolo basebentisa tintfo letiphatsekako. Kubalulekile kutsi bafundzi basebentise tinsita letehlukene letikhetfwe ngekucikelela kusekela kutfutfukisa lwati lolufundziswako. Uma bafundzi bakhula baba nekutetsemba ekusebentiseni tinsita, kukhombisa kucabanga kwabo bangarekhoda indlela yekubala ngekudvweba. Lindzela kutsi imidvwebo itawukhombisa tinsita letiphatsekako. Kungahle kube nebafundzi labatawuveta tibalo tabo ngekudvweba bangasebentisi tintfo letiphatsekako. **Imigcatinombolo lesekelwa tinsita letiphatsekako** Nakusetjentiswa imigcatinombolo njengelisu kute kubalwe, bafundzi kudzingeka kutsi babe bacale ngekusebentisa: • letinye “tinsita temigca” sib. buhlalu bekubala, tilandzelinombolo; • umugcatinombolo wekubala uye phambili nasemuva; • nemugcatinombolo kute kuhlelwe kubekeka nekuhlela tinombolo Umugcatinombolo lohlelekile kumele usetjentiswe (futsi ukulungele loko) uma bafundzi benta kuhlanganisa nekususa. Umugcatinombolo lohlelekile kumele ukhombise tonkhe tinombolo kuwo. • Ngenisa kuhlanganisa ngekusebentisa umugcatinombolo a)Thishela ubeka umugcatinombolo losuka e- 0 uye e-10 ebhodini. Ukhomba bafundzi kutsi bangabala njani 3 + 2 kusetjentiswa umugcatinombolo. Ubeka sitfombe salogwaja e-0. Sibonelo: Logwaja uzuba kusukela e-0 uye ku-5 abuye azube kabili. Uzube kangaki sekukonkhe?  b)Bafundzi basebentisa iminwe yabo kuzuba emigcenitinombolo lesemadeskini abo, ngalesikhatsi thishela abanika imishotinombolo lenetimphendvulo letifika e-10, sibonelo: 1 + 2 =3.	

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1.13 **Kuhlanganisa nekususa**	Kuhleleka kwetinombolo: -1 kuya e- 20 • Hlanganisa uye e -20 • Susa e -20 • Sebentisa timphawu letifanele (+, –, =, □) • Tetayete kuhlangana kwetinombolo kufika e -10	Kuhleleka kwetinombolo: -1 kuya ku -5 • Kuhlanganisa kufike ku -5 • Susa ku- 5 • Tetayete kuhlangana kwetinombolo kufika ku -5	Ethemini 1 bafundzi **bavisisa kuhlanganisa njengekuhlanganisa tincumbi nekuchubeka ubale**. Basebentisa kuvisisa kwabo kwekutsi kuhlanganisa kungentiwa nobe ngayiphi indlela kukhetsa kutsi kungabalwa njani. Basebentisa intsambo yebuhlalu, badvweba titfombe nobe umugcatinombolo kute bente tibalo letifana na 3 + 2 nobe 1 + 4 ngekubala bachubeke. Babuye bahlahlele tinombolo kute bakwati kuhlanganisa. Ethemini ye-1 bafundzi bahumusha kususa njengekukhipha. Baveta “kukhipha” ngekusebentisa tintfo nekudvweba titfombe nangemishotinombolo. Babona kutsi linani letintfo letisele liyimphendvulo nakubalwa. Babuye barekhode kuhlanganisa nekususa basebentisa: • tinsita letiphatsekako; • titfombe nobe imidvwebo; • titfombe nobe tinombolo. **Kusebenta ngekuhleleka kwetinombolo 1 - 5** Uma bafundzi basebenta nobe babala kulokuhleleka kwetinombolo, bangakha kuvisisa kwekuhlanganisa nekususa ngalendlela: • sebentisa tinsita letiphatsekako kuveta inombolo nekwenta tibalo. • barekhoda tibalo tabo basebentisa titfombe nobe imifanekiso • barekhoda tibalo tabo basebentise inhlanganisela yetitfombe netinombolo. **Kwakha nekuhlahlela tinombolo** Kuhlanganisa nekususa ebangeni le-1 kugcila ekwenteni bafundzi bacabange ngetinombolo letakhiwe ngaletinye tinombolo. Esikhatsini lesinyenti bafundzi batibandzakanya **emisebentini leyincenye nencenye nalokuphelele**. Lemisebenti igcila enombolweni yinye. Sibonelo, uma kusetjentwa ngenombolo -4 bafundzi batawu: • batawuhlukanisa -4 ngetindlela letehlukene; • shano nobe fundza letincenye uphimisele; nobe • tidvwebe nobe tibhale phasi	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.13 **Kuhlanganisa nekususa**			  Bafundzi bangabuye basebentise emakhaditinombolo kukhombisa tincenye teti-nombolo. Ngako-ke kukhombisa -4, lamanye alamakhadi angasetjentiswa:  Lolwati lungasekelwa ngekurekhoda etincwadzini tekubhala eklasini ngesikhatsi sekutisebentela.  Nakwentiwa kususa bafundzi batibandzakanya kutindzabatibalo letitfutfukisa kuvisisa kususa njenge“kukhipha” nobe “kubale ukhiphe”. Bafundzi badzinga kwenta **imisebenti yetincenye letingakapheleli**. Lemisebenti isekela kuvisisa kwekususa futsi idzinga kutsi kube nencenye lefihlwako nobe lengatiwa. Sibonelo: Ngine  Ngifisa kuba nala -5	

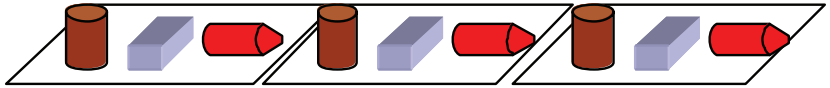
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.13 **Kuhlanganisa nekususa**			Loluphawu **alungeniswa** kulethemu. Bafundzi kumele betfulelwe tindlela letehlukene tekubhala imisho letawusita uma loluphawu selungeniswa ethemini ye- 2 Sibonelo 1  ☐ na ☐ kwenta **2** Sibonelo 2  ☐ na ☐ kwenta **3** **Kuhlangana kwetinombolo** Kulethemu bafundzi batetayetwa kuhlanganisa tinombolo kuye ku- 5. Loku kungetfulwa ngemidvwebo nemishotinombolo kusetjentiswa imifanekiso leyehlukene. Kuhlanganisa Sibonelo: *Kwenta -5 nobe kutfola bangani be -5 kusetjentiswa titfombe netinombolo.* Faka umbala etikweleni kwenta -5. Sibonelo:  _____ na_____ kwenta leti -5  _____ na_____ kwenta leti -5  _____ na _____ kwenta leti -5  _____ na_____ kwenta leti -5	

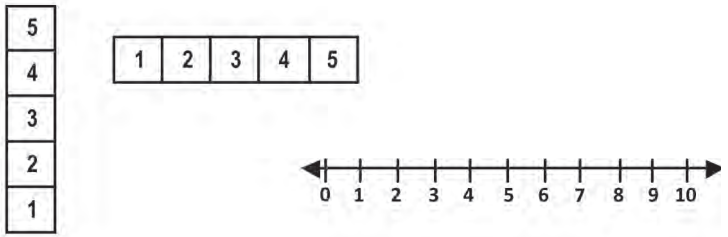
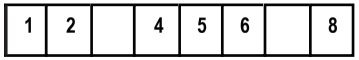
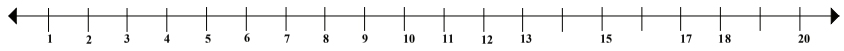
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.13 Kuhlanganisa nekususa			**Lulwimi lwekuhlanganisa nekususa** Bafundzi kumele betayetwe lulwimi lwekuhlanganisa nekususa. **Kuhlanganisa:** Hlanganisa, ngeta, na-, ngeta nga-, faka ndzawonye, sekukonkhe, kwenta, samba. **Kususa:** Susa, khipha, tsatsa ulahle, umehluko, emkhatsini, lokuncane, nciphisa nga-. Ethemini 2 bafundzi “batawuhumusha” lulwimi lwekuhlanganisa nekususa lube timphawu. Bafundzi kumele bakwati kwenta lokushiwo nguletinhlobo letilandzelako teticon-dziso: • Yenta lokunyenti ngalo -3 • Ngeta -1 • Susa lo -3 • Yenta lokuncane nga -1 • Lokunyenti nga -2 nobe -3 • Ku -4 susa -2 • Ku -3 hlanganisa na -1	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhleleka kwetinombolo kuye - 20** • Hlela lisethi loliniketiwe letinombolo letiketsiwe. • Catsanisa tinombolo uye e-100 usho kutsi nguyiphi lenyenti nobe lencane. • Yati kutsi nguyiphi inombolo lengetulu nga -1 nobe lencane ngaku -1 kunalenombolo leniketiwe. • Yati kutsi nguyiphi inombolo lengetulu nga -2 nobe lencane nga -2 kulenombolo leniketiwe. • Yati kutsi nguyiphi inombolo lengetulu nge -10 nobe lencane nge -10 kulenombolo leniketiwe. **Khumbula ngekushesh-isa:** • Hlanganisa tinombolo uye e- 10. • Khumbula imigomo yekuhlanganisa nekususa kufika e -10.	**Lwati lwetinombolo:** **Kuhleleka kwetinombolo kuye ku -5** • Hlela lisethi loliniketiwe letinombolo letiketsiwe. • Catsanisa tinombolo uye e-10 usho kutsi nguyiphi lenyenti nobe lencane. • Yati kutsi nguyiphi inombolo lengetulu nga -1 nobe lencane ngaku -1. • Yati kutsi nguyiphi inombolo lengetulu nga -2 nobe lencane nga -2	Tigaba tetibalo tenhloko titfutfukisa: • lwati lwebafundzi lwetinombolo; • lulwimi lweTibalo • emakhono ekucabanga; • nemakhono ekulalela Ngesikhatsi setigaba tetibalo tenhloko bafundzi kumele banikwe litfuba lekuchaza tindlelanchubo tabo. Tigaba tetibalo tenhloko takha kucikelela tinombolo (kuba nelwati lwetinombolo) nekucala kufundzisa bafundzi kutsi bangasebenta njani ngekukhululeka nabasebenta ngetinombolo. Inombolo -5 ayisasiyo inombolo nje. Sibonelo, ngenombolo -4, bafundzi kumele bati kutsi: • Ita ngemuva kwe -3; • Ita ngembi kwe- 5; • Ingahambisana netintfo leti -4; • Bangabhala inombolo; • Bangabhala ligama lenombolo. **Lwati lwetinombolo** Tibonelo temibuto lengabutwa nemisebenti lengabutwa nalengentiwa: • Fundza, mani emgceni bese uyabuta: Ngubani losekucaleni, wesibili, wesitsatfu nobe wekugcina? • Nguyiphi lencane, -3 nobe -5? • Nguyiphi lenkhulu -2 nobe -4? • Nginike inombolo lesemkhatsini wa -1 na -3. • Nginike inombolo lesemkhatsini wa -2 ne -5. Ngabe kunenombolo yinye kuphela? • Beka lamakhaditinombolo ngendlela lefanele kusukela kulencane kakhulu kuye kulenkhulu kakhulu. Imibuto yekubala nayo ingabutwa. • Cala nga -3 bese ubala uya phambili nga -1 uye e -10.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESKHATSI (etifundvweni temaminithi la - 24 na1 li-awa)
1.16 **Tibalo tenhloko**	**Emasu ekubala ngenhloko.** Sebentisa emasu ekubala kuhlanganisa nekususa ngalokungiko: • Cala ngenombolo lenkhulu kucala kute ubale uchubeke nobe ubale uye emuva. • Umugcatinombolo • Kuphindza nekuhhafula. • Kwakha nekuhlahlela.			

LIBANGA 1 ITHEMU 1 2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBRA				
TIHLOKO	**LWATI NEMAKHONO** **LADZINGEKA EKU-PHELENI KWEMNYAKA**	**LWATI NEMAKHONO** **LOKUTAWUGCILWA KULO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUNGAKO BE-SIKHATSI** (Etifundvweni teli-awa li-1 nemaminithi lange -24)
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letiphatsekako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako • Ngekudvweba imigca, bobunjwa nobe tintfo. **Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe.	**Tsatsela ubuye uchubekisele phambili** Tsatsela ubuye uchubekisele phambili emaphethini lalula usebentisa: • Tintfo letibonakalako • Imidvwebo (sib. usebentisa imibalala nabobunjwa)	**Kutsatsela** iphethini kusita bafundzi kubona kuhleleka nendlela emaphethini lenteke ngayo. **Kuchubekisela phambili** iphethini kusita bafundzi kubona kutsi bakuvisisile kuhleleka kwemaphethini. Bafundzi bangatsatsela babuye bachubekisele phambili emaphethini lentiwe ngetintfo letiphatsekako ngembi kwekutsi betayele kusekusebentisa ikhilayoni nobe ipeniseli kucala kutsatsela nekuchubekisela phambili emaphethini ngekudvweba. Emaphethini angentiwa ngetintfo letisetjentiswa malanga onkhe letitfolakala eklasini njenge, tibali, umetjiso, emabhokisi emetjiso, bobunjwa beJomethri, buhlalu, tintolishi tekotini yekutfunga, emabhokisi, emabhola, emakhilayoni, emapeniseli njll. Bafundzi bangabuye bente tintfo ngelubumba nobe inhlama yekudlala, loku kungasetjentiselwa kwenta emaphethini. Ebangeni 1 bafundzi bangagcila kumaphethini lapho bobunjwa kumbe tintfo (nobe tincumbi tabobunjwa nobe tintfo) tiphindvwe kanyenti ngendlela lefanako. **Sibonelo 1:** Kulamanye emaphethini isayizi yetintfo letisencunjini tiyantjintjantjintja kodvwa tincumbi tiphindvwa ngendlela lefanako.  **Sibonelo 2:** Emaphethini angentiwa ngekusebentisa intfo yinye kepha imibala yalentfo igucuke ngendlela levamile ngetikhatsi tonkhe. 	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUNGAKO BE-SIKHATSI (Etifundvweni teli-awa li-1 nemaminithi lange -24)
2.1 **Emaphethini eJomethri**	• Etintfweni temasiko nemagugu etfu		**Sibonelo 3:** Kulamanye emaphethini tintfo letehlukene tisetjentiselwa kwakha incumbi, kepha tincumbi tetintfo tiphindzeka ngendlela lefanako.  Kusita bafundzi belibanga le- 1 kubona kutsi ngukuphi lokugcogcelwe ndzawonye lokuphindziwe, kuyasita kubeka incumbi ngayinye ephepheni lelihlukile, nobe kuyikhombisa ekhatsi ebhokisini/ebhlokhini kulelo khasi. **Sibonelo 4:** Emaphethini angentiwa ngekuphindza tincumbi tetintfo. Tincumbi tingakhiwa ngetintfo letinyenti leticishe tifane letibekwe ngetindlela letehlukene. Kwenta emaphethini kuyincenye lebalulekile yakokonkhe kufundza, esigabeni lesisekucaleni kwako konkhe, ngaloko-ke kwenteka eLulwimini, kumakhono Ekuphila naseTibalweni. Sibonelo, kwenta emaphethini kuyincenye yetingoma kanye naleminye imiculo, imilolotelo, kudansa kanye naletinye timo teBuciko Balokubonwako. Kunematfuba ekutsi bafundzi batetayete emakhono emaphethini ekubona labawasebentisa kulokuphatselene neTibalo nabenta Emakhono Ekuphila-ikakhulukati kufaka buhlalu entsanjeni nobe kudvweba emaphethini.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUNGAKO BE-SIKHATSI (Etifundvweni teli-awa li-1 nemaminithi lange -24)
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilan-dzelanako lokungenani kuye e-100 **Yakha emaphethini akho** Yakha emaphethini akho etinombolo.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilan-dzelanako lokungenani kuye e-20 Kulandzelana kumele kukhombise kubala uye phambili nasemuva: • nga -1 kusukela kunobe nguyiphi inombolo emkhatsini wa -1 ne -20.	Esigabeni Sabokhewane, emaphethini etinombolo atfutfukisa lwati lwetinombolo lwebafundzi. Emaphethini etinombolo ahlotjaniswa nenombolo, timhawu tekubala nebudlel-wane. Kulandzelanisa tinombolo kungahlotjaniswa nekubala. Kulandzelanisa tinombolo kuhlanganisa kubuye kutfutfukise emakhono ebafundzi ekubala. Ngalesikhatsi emakhono ebafundzi ekubala antjintja abuye atfutfuka, nekulandzelanisa tinombolo nako kuyatfutfuka. Uma bafundzi babala ngekuphimisela bangakhonjiswa kulandzelana kwetinom-bolo lokubhalwe ngetindlela letehlukene sib.  Bafundzi batawugcwalisa tinombolo letingekho letiniketwe kuletimo letehlukene tekulandzelanisa ngetulu. Khumbula, kutsi bafundzi babhala tinombolo kufika ku- 5.Bafundzi “bangagcwali-sa “ ngekuphimisela tinombolo letingekho babuye basebentise emakhaditinom-bolo kucedzela kulandzelanisa. Buka emanotsi ekuchaza, kucatsanisa nekuhlela. **Sibonelo 1: kutfola inombolo / igridi yetinombolo**  **Sibonelo 2: kulandzelanisa tinombolo** Ekupheleni kwethemu, kuhleleka kwetinombolo kuyatfutfuka kuye e-20. Bafundzi bangasebenta ngekulandzelanisa tinombolo letiphelele kusukela ku-1 kuye ku -20 nobe tincenye talokulandzelana. **Singeniso 3:** umugcatinombolo  	3 Tifundvo

LIBANGA 1 ITHEMU 1 3. SIKHALA NABUNJWA (IJOMETHRI)				
SIHLOKO	**LWATI NEMAKHONO** **LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO** **LOKUTAWUGCILWA KUWO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI** (Sikhatsi setifundvo 1 li-awa 24 emaminithi)
3.1 **Kubekeka, kwetayeta nekubukeka**	**Lulwimi loluphatselene nekubekeka** Chaza kubekeka kwentfo yinye nayihambelana nalenye sib. ngetulu kwe-, ngembi kwe-, ngemuva kwe-, sencele, sekudla, etulu, phasi, edvute kwe-. **Kubekeka nekubukeka** Matanisa kubukeka lokungafani kwentfo yinye lesetjentiswa malanga onkhe. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela kuhambahamba eklasini. • Landzela ticondziso kubeka intfo yinye ihambisane nalenye sib.beka ipeniseli ekhatsi ebhokisini	**Lulwimi loluphatselene nekubekeka** Chaza kubekeka kwentfo yinye nayihambelana nalenye sib. ngetulu kwe-, ngembi kwe-, ngemuva kwe-, sencele, sekudla, etulu, phasi, edvute kwe-. **Kubekeka netinkhombandlela** • Sebentisa lulwimi lwekubekeka lolufundziwe nawulandzela tinkhombandlela. • Landzela tinkhombandlela kuhambahamba eklasini. • Landzela ticondziso kubeka intfo yinye ihambisane nalenye sib.beka ipeniseli ekhatsi ebhokisini	**Lulwimi lwekubekeka** Lulwimi lwekubekeka kumele lungeniswe ngemisebentileyentiwako lefaka ekhatsi bafundzi benta iminyakato yekutivocavoca lefaka ekhatsi tingoma nemilolotelo leneminyakato nemidlalo yemagama laneminyakato. Loku kungenteka ngesikhatsi sekufundzisa liklasi lonkhe nobe ngesikhatsi sekugcila ekufundziseni ngemacembu. Kuphakanyisiwe kwekutsi kufundziswe tifundvo letimbili temisebenti yekubekeka eThemini 1 kepha uchubeke nekungenisa nekwetayeta emagama laphatselene nekubekeka langemagama etincenye letincane teliklasi lonkhe, telicembu lekugcilwe kulo kanye nesikhatsi sekutisebentela. Bangabuye batetayete lulwimi lwekubekeka ngesikhatsi setifundvo teLulwimi kanye netifundvo Temakhono Ekuphila Kulusito kutsi ungenise emagama ekubekeka lahamba ngemapheya ngesikhatsi sinye sib. etulu naphasi; ekhatsi nangaphandle. Emagama lalusito lakhombisa kubekeka afaka ekhatsi: • sencele, sekudla; • phambili/ emuva; • emuva kwe-, phambi kwe-; • ngetulu kwe-/ngaphasi kwe- • ngekhatsi/ngaphandle; • ngaphasi/ngetulu; • edvute /khashane • emkhatsini Lulwimi lwekubekeka lungahlanganiswa ngemisebenti lebhalwako njengekudvweba, kufaka umbala nobe kumatanisa imidvwebo nemagama. **Kubekeka nenkhombandlela** Bafundzi batawucala bafundze lulwimi lwekubekeka bese basebentisa lolwati kulandzela: • ticondziso tekususa nobe kubeka tintfo tihambisane naletinye sib. “beka emakhilayoni edvute netibali”; “beka emakhaditinombolo etukwelikhabethi” • tinkhombandlela tekutihambela kwebafundzi eklasini sib. “wota phambili kweliklasi” “Mani edvute kwesitulo sakho”; “zuba ngetulu umgcomo wetibi” njll. Kufundzisa bafundzi kulandzela tinkhombandlela kumele kwentiwe ngemisebenti leyentiwako lapho bafundzi banyakatisa imitimba yabo nobe tintfo kuye ngekweticondziso.	2 tifundvo

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	**SIKHATSI** (Sikhatsi setifundvo 1 li-awa 24 emaminithi)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • umbala • tintfo letigicikako • tintfo letishelelako **Imisebenti lokugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentisa tintfo letiphatsekako letifana nemabhuloki ekwakha, tintfo tekuvuselela kabusha, emakhithi etintfo tekwakha.	**Tinhlobo tetintfo** Bona ubuye unikete emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • umbala **Imisebenti lokugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentisa tintfo letiphatsekako letifana nemabhuloki ekwakha, tintfo tekuvuselela kabusha, emakhithi etintfo tekwakha.	Umsebenti lomnyenti wemadayimenshini lamatsatfu (3-D) ebangeni le-1 kumele wentiwe ngetintfo letiphatsekako/ tintfo mbamba. Sibona umhlaba ngemadayimenshini lamatsatfu (3-D), ngaloko-ke kucala ngetintfo letiphatsekako kusita bafundzi kutsi bakhele kulolwati labeta nalo esikoleni. Bafundzi labanyenti labasebancane banebumatima bekuhumusha tintfo teJomethri letingemadayimenshini lamatsatfu (3-D) letisuselwa etitfombeni. Kusebenta ngetintfo letibonakalako kusita bafundzi kutsi bahumushe titfombe tetintfo teJomethri emva kwesikhatsi. Uma unentfo lebonakalako ungayigucula bese uyibuka kuwo onkhe emacala. Utayibona kutsi ibonakala njani ngasemuva kanye nangaphasi. Uma unesitfombe kuphela, kufanele ubone ngemehlo engcondvo tincenye letingabonakali kulomdvwebo. Loku akukavami kubalula kubafundzi labancane. Uma bafundzi banikwe inchazelo yentfo kuphela ngaphandle kwekuyibona nobe kuyibamba, kumatima kakhulu kutsi bativisise timphawu talentfo ngalokuphele. **Kwakha ngetintfo letingemadayimenshini lamatsatfu (3-D)** Bafundzi bacala ngekudlala ngekukhululeka ngetintfo letingemadayimenshini lamatsatfu (3-D) letehlukene bakhe tintfo lebatitsandzako basebentisa emabhuloki ekwakha nobe emakhithi lanetintfo tekwakha nobe kuvuselela kabusha. Loku kungentiwa ngesikhatsi sekutisebentela. Ungabuye usebentise kuvuselela kabusha (njengemabhokisi emetjiso) nobe emabhuloki ekwakha nobe emakhithi etintfo tekwakha sib. kwenta umfanekiso nobe sakhiwo sib. sakhiwo lesidze kakhulu, lirobothi, sitimela, ithekisi, ikhaseli njll. Bafundzi batsatsela lomfanekiso. Loku kungentiwa ngesikhatsi sekutisebentela, kepha kubalulekile kucoca nebafundzi kutsi kungani letinye tinhlobo tetintfo tisetjentiswe kulemifanekiso. Loku kusita kugcilisa bafundzi kutimphawu teJomethri tetintfo. Sibonelo, uma sakhiwo lesidze kakhulu sakhiwe ngemabhokisi nobe emabhuloki, ungabuta bafundzi ngaloku: “ungasakha yini sakhiwo lesidze kakhulu ngemabhola kuphela?” Kumele bachaze imphendvulo yabo. **Kubona nekunika emagama emabhola (indilinga) nemabhokisi (emaphrizimu)** Bafundzi batfola babuye bachaze bobunjwa labangemabhola (indilinga) nalabangemabhokisi (emaphrizimu)	3 Tifundvo

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	**SIKHATSI** (Sikhatsi setifundvo 1 li-awa 24 emaminithi)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**			Bafundzi kumele bachaze tintfo letisetjentiswa malanga onkhe babuye basho kutsi timise kwebhola nobe kwelibhokisi sib. Lesitini simise kwelibhokisi nobe leliwolintji limise kwebhola. Kubalulekile kutsi bafundzi babone babuye basebente ngetibonelo letingetulu kwentfo yinye lemise kwemabhola netintfo letimise kwemabhokisi. Bafundzi kumele **baniketwe** tintfo letinyenti letiyindilinga kute basebente ngato sib. emabhola langemasayizi lehlukene, timabuli, emawolintji njll. Bafundzi kumele babuye banikwe tintfo letinyenti letime njengemaphrizimu sib. emabhuloki, titini nemabhokisi langemasayizi lehlukene. Bafundzi **bangatfola** babuye **bahlunge** tintfo letime njengebhola (indilinga), nobe letime njengelibhokisi (emaphrizimu) nabaniketwe ligcogco letintfo. Bafundzi bangatfola, bakhombe babuye basho tintfo letime njengemabhokisi (emaphrizimu) eklasini. Bafundzi bangatjelwa kutsi bente bobunjwa labayibhola nobe labalibhokisi ngelubumba nobe ngenhlama yekudlala. **Kucatsanisa nekuchaza tintfo letingemadayimenshini lamatsatfu (3-D): isayizi** Bafundzi bacatsanisa isayizi yetintfo letifanako. **Sibonelo:** • hlela emabhola ngekwesayizi • sebentisa lulwimi lwesayizi kucatsanisa tintfo “libhokisi likhulu kunebhola ngoba ngingafaka ibhola ekhatsi ebhokisini”. **Kuchaza tintfo letingemadayimenshini lamatsatfu (3-D): umbala** Bafundzi bakhuluma ngemibala yetintfo bese bahlunga tintfo ngekwembala. Kutfola nekusho tintfo nemibala yato, nekucatsanisa isayizi yetintfo bangatetayeta ngako ngesikhatsi sekusebenta ngemaphethini. **Imisebenti lebhalwako** Nanobe imisebenti leminyenti yetintfo letingemadayimenshini lamatsatfu (3-D) yentiwa ngetandla, umsebenti kumele uhlanganiswe ngemisebenti lebhalwako.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	**SIKHATSI** (Sikhatsi setifundvo 1 li-awa 24 emaminithi)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**			**Lulwimi** Kubalulekile kutsi kutfutfukiswe kukwati kwebafundzi kukhuluma ngetintfo letingemadayimenshini lamatsatfu (3-D): • lulwimi lwesayizi: kukhulu, kukhudlwana, kukhulu kakhulu, kuncane, kuncanyana, kuncane kakhulu. • imibala • lulwimmi lwetintfo mbamba: emabhokisi, emabhola **(bafundzi abakalindzeleki kutsi bati amagama: indilinga nephrizimu).** • lulwimi lwekubekeka kuchaza sakhiwo **Sibonelo:** • ngetulu kwe-, ngaphasi • ngemuva, ngaphambili • edvute kwe-, eceleni ne- • ngaphasi, ngetulu • edvute, emkhatsini • ekhatsi, ngaphandle Lulwimi lwesayizi nembala lungatfutfukiswa ngesikhatsi setifundvo teLulwimi neseTemakhono Ekuphila lubuye lwentiwe nobe batetayete ngalo ngesikhatsi sesifundvo seTibalo. Lulwimi lwekubekeka lungatfutfukiswa ngesikhatsi setifundvo teLulwimi neseTemakhono Ekuphila nangesikhatsi bafundzi bagcila ngo ekubekekeni. Lungasetjentiswa nobe bafundzi batayetwe ngalo uma benta imisebenti yetintfo letingemadayimenshini lamatsatfu (3-D).	3 Tifundvo

LIBANGA 1 ITHEMU 1 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO** **LADZINGEKA NGEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO** **LOKUTAWUGCILWA KUWO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SKHATSI LESINIKETIWE** (etifundvweni temaminithi lange 24 na1 li-awa)
4.1 **Sikhatsi**	**Kwendlula kwesikhatsi** Khuluma ngekwendula kwesikhatsi • Bahlela tigameko letetayelekile ngemphilo yabo • Catsanisa budze besikhatsi ngekusebentisa lulwimi sib. lokudze kuna-, lokufisha kuna-, lokuphangisa kuna-, lokuhamba kancane kuna-. • Landzelanisa tigameko usebentisa lulwimi lolufana nekutsi itolo, lamuhla, kusasa. **Kusho sikhatsi** • Chaza kutsi intfo yenteka nini usebentisa lulwimi sib. ekuseni, ntsambama, ebusuku, ngembi kwesikhatsi, ngemva kwesikhatsi. • Shano ubuye ulandzelanisa emalanga eliviki. • Shano ubuye ulandzelanisa tinyanga temnyaka • Faka emalanga ekutalwa ekhalendeni.	**Kwendlula kwesikhatsi** Khuluma ngekwendula kwesikhatsi • Bahlela tigameko letetayelekile ngemphilo yabo • Catsanisa budze besikhatsi ngekusebentisa lulwimi sib. lokudze kuna-, lokufisha kuna-, lokuphangisa kuna-, lokuhamba kancane kuna-. • Landzelanisa tigameko usebentisa lulwimi lolufana nekutsi itolo, lamuhla, kusasa. **Kusho sikhatsi** • Chaza kutsi intfo yenteka nini usebentisa lulwimi sib. ekuseni, ntsambama, ebusuku, ngembi kwesikhatsi, ngemva kwesikhatsi. • Shano ubuye ulandzelanisa emalanga eliviki. • Shano ubuye ulandzelanisa tinyanga temnyaka • Faka emalanga ekutalwa ekhalendeni.	Bafundzi kumele bafundze kukhuluma nge: • kulandzelana kwetigameko • budze besikhatsi Lomnyenti walomsebenti wenteka malanga onkhe ngesikhatsi sekufundziswa kweliklasi lonkhe nobe nakufundziswa licembu lokugcilwe kulo. Bafundzi bakhuluma babuye baphendvule imibuto ngekutsi tintfo tenteka nini, kusetjentiswa lulwimi lolufana nekutsi ekuseni, ntsambama, ebusuku, ngembi kwesikhatsi nasemva kwesikhatsi. **Kwendlula kwesikhatsi** Bafundzi baladzelanisa tigameko basebentisa lulwimi njengekutsi: itolo, namuhla, kusasa. Bafundzi bacatsanisa budze besikhatsi basebentisa lulwimi, njengekutsi lokudze kuna- nobe lokufisha kuna- kanye nalokuphangisa kuna- nobe lokuhamba kancane kuna-. Bafundzi bakhuluma ngekuhlela tigameko temphilo yabo. Babuye bahlele kulandzelana kwetitfombe njenge: • tinyatselo tekwenta isangweji nobe inkomishi yelitiya; • titfombe letikhombisa kukhula kwemntfwana aze abe ngumuntfu lomdzala. • umjikeleto wemphilo yetilwane sib. licandza kudzimate kube yinkhukhu, licandza lesicoco kudzimate kube sicoco nobe licandza leluvivane kudzimate kube luvivane. • netigameko letivamile telusuku (kuvuka ekuseni, kuba sesikoleni, kudlala, kudla sidlo santsambama, kulala). **Kusho sikhatsi** • Bafundzi bafundza emalanga eliviki ngetingoma nemilolotelo. Loku bakwenta malanga onkhe. • Emalanga ekutalwa afakwa ekhalendeni emalangeni lafanelekile. • Bafundzi bafundza tinyanga temnyaka ngetingoma nemilolotelo	2 ltifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA NGEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SKHATSI LESINIKETIWE (etifundvweni temaminithi lange 24 na1 li-awa)
4.2 **Budze**	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele budze, kuphakama nobe bubanti betintfo letimbili nobe letinyenti ngekubeka yinye edvute kwalenye. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib.lokudze kuna-, lokufisha kuna-, lokuphakeme kuna-, lokubanti kuna-. • Combela, kala, catsanisa, hlela ubuye urekhode budze ngekusebentisa tilinganiso letingakabekelwa umgomo sib.budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala nekusho budze ngemayunithi langakahleleki.	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele budze, kuphakama nobe bubanti betintfo letimbili nobe letinyenti ngekubeka yinye edvute kwalenye. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib.lokudze kuna-, lokufisha kuna-, lokuphakeme kuna-, lokubanti kuna-.	Tonkhe tilinganiso Ebangeni 1 atikahleleki. Atikho tilinganiso tebudze letentiwa ngemayunithi labekelwe umgomo. Kuphakanyisiwe kwekutsi tifundvo teTibalo tigcile ebudzeni lokungenani etigamini letimbili temnyaka (iThemu 1 neThemu 3) iThemu 1 yona itawugcila ekucatsaniseni lokucondzile bese eThemini ye -3, bafundzi bangasebenta emayunithi ekukala langakahleleki. Bafundzi bangatetayeta babuye bahlanganise lolwati ngesikhatsi sekutisebentela umnyaka wonkhe **Kucatsanisa ngco kwebudze betintfo letiphatsekako** Kutfutfukisa kuvisisa budze nelulwimi lokutawukhulunywa ngalo. Bafundzi bacala kucabanga babuye bakhulume ngebudze ngekucatsanisa tintfo letimbili (noma imidvwebo yetintfo letimbili) kube nemehluko webudze lobonakala kakhulu. **Sibonelo:** • Intsanjana lendze nentsanjana lemfisha • Sihlahla lesidze nesihlahla lesifisha, • Umfula lobanti nemfula lonciphile Bafundzi bangenta nobe badvwebe tibonelo njenge: • kusebentisa lubumba noma inhlama yekudlala kwenta inyoka lendze nenyoka lemfisha • kusebentisa emabhuloki kwenta sakhiwo lesidze kakhulu nesakhiwo lesifisha. • kudvweba thishela lomudze nathishela lomfisha Uma bafundzi sebakwati kukhuluma ngebudze mayelana nalokuphikisanako, abangeniswe elulwimini lolusha lwekucatsanisa, sibonelo, “ngakhe sitimela lesidze kodvwa Sihle wakhe sitimela lesidzana”. Kucatsanisa budze ngekubeka intfo yinye edvute kwalenye. Uma bafundzi bangakhuluma ngebudze (kudze, kufisha njll), babuye bacatsanise budze betintfo letibonakalako tehlukile nawutibuka kwekucala batawuchubeka baye kutibonelo letingabonakali nawutibuka kwekucala bese babeka yinye edvute kwalenye kute ticatsaniswe.	2 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA NGEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SKHATSI LESINIKETIWE (etifundvweni temaminithi lange 24 na1 li-awa)
4.2 **Budze**			Sibonelo, • Tfola kutsi ngumuphi kubantfwana lababili lomudze ngekutsi beme bahlangane ngemihlane. • Kubeka emakhilayoni, linye edvute kwalelinye bese ulinganisa lingephasi lemakhilayoni kute utfole kutsi nguliphi lelifisha. Bafundzi kumele banikwe litfuba lekucatsanisa tibonelo letimbili tetintfo letehlukene njengetintsi, emapeniseli, tintsi tekunatsa, budze bentsambo, emaribhoni, ticeshane temaphepha njll. Imidvwebo yetintfo letimbili nayo ingacatsaniswa uma ingabekwa, munye edvute kwalomunye bese iyalinganiswa ngetulu kwayo nobe ngentasi. Bafundzi bangachubekela ekucatsaniseni kanye nasekuhleleni tintfo letintsatfu nobe letinyenti. Loku kubitwa ngekutsi kucatsanisa nekuhlela tintfo letintsatfu noma ngetulu. Tibonelo tifaka ekhatsi: • emacembu ebafundzi labeme ngababili batsintsene ngemihlane kute batihlele emgceni kusukela kulomfisha kunabobonkhe kuye kulomudze kunabobonkhe bese • bafolisa tintfo ngetincumbi letisukela kulokutsatfu nobe lokungetulu kusukela kulokuphakeme kakhulu/ lokudze kakhulu kuya kulokufisha kakhulu/ lokubanti kakhulu kuya kulokunciphile kakhulu. Tintfo letifanele tifaka ekhatsi emapeniseli, emakhilayoni, emabhodlela, tintsi, budze bentsambo nobe iribhoni; ticeshana temaphepha nobe indvwangu, ticatfula njll. Bafundzi batfutfukisa lwati lwabo lwebudze ngesikhatsi sinye nelulwimi lwekuchaza budze. Njengaloku kungadzingeki tinombolo kuloku, kungentiwa kusenesikhatsi eThemini 1 ngembi kwekutsi bafundzi bavisise kuhlanganisa tinombolo nekusebenta ngetinombolo kuye ku -5. Nanobe kukala kulikhono lwekwenta, bafundzi kumele bente imisebenti lebhalwako letawufaka ekhatsi kudvweba nekufaka umbala, kokubili kute batetayete kusebentisa emakhilayoni nobe emapeniseli babuye batetayete kurekhoda nabakala.	2 tifundvo

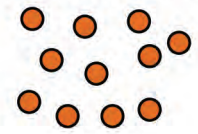
TIHLOKO	LWATI NEMAKHONO LADZINGEKA NGEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SKHATSI LESINIKETIWE (etifundvweni temaminithi lange 24 na1 li-awa)
4.3 **Sisindvo**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode sisindvo usebentisa tilinganiso letingakabekelwa umgomo nesikali sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindzako kulula kuna-, kusindza kuna-. • Chaza sisindvo setintfo ngekubala nekusho sisindvo ngemayunithi langakahleleki.	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode sisindvo usebentisa tilinganiso letingakabekelwa umgomo nesikali sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindzako kulula kuna-, kusindza kuna-.	Tonkhe tilinganiso ebangeni 1 atikahleleki. Atikho tilinganiso letihlelekile tesisindvo letentiwa ngemayunithi labekelwe umgomo nobe ngetinsita. Kuphakanyisiwe kwekutsi tifundvo teTibalo tigcile emisebentini yesisindvo lokungenani emathemu lamabili emnyaka (iThemu 1 neThemu 4) iThemu 1 yona itawugcila ekucatsaniseni lokucondzile bese eThemini ye -4, bafundzi bangasebenta ngemayunithi ekukala langakahleleki. Bafundzi bangatetayeta babuye bahlanganise lolwati ngesikhatsi sekutisebentela umnyaka wonkhe. **Kucatsanisa lokucodzile kwesisindvo setintfo letiphatsekako.** • Kutfutfukisa kuvisisa sisindvo nelulwimi lokutawukhulunywa ngalo. Bafundzi bacala kucabanga babuye bakhulume ngesisindvo ngekucatsanisa tintfo letisindzako naletilula. Baphakamisa intfo lelula babuye balinge kuphakamisa intfo lesindza kakhulu. Loku kungahlanganiswa ngekukhombisa imidvwebo lapho kucatsaniswa tintfo letisindza kakhulu netintfo letilula kakhulu. Uma bafundzi sebakwati kukhuluma ngesisindvo mayelana nalokuphikisanako, lokusindzako nalokulula, bafundzi bangacatsanisa tintfo letimbili babuye basho kutsi nguyiphi lesindza kakhulu nekutsi nguyiphi lelula kakhulu. Loku kungentiwa ngekubamba intfo esandleni ngasinye acatsanise kutsi ngukuphi lokusindza kakhulu nekutsi ngukuphi lokulula kakhulu. Bafundzi kumele barekhode yonkhe imisebenti ngekudvweba nobe ngemisebenti yekumatanisa. • Kucatsanisa sisindvo ngekusebentisa sikali sekulinganisa. Tikali tekulinganisa letikala sisindvo setintfo letitsengiswako tingasetjentiswa. Uma ungenaso lesikali, ungasakha ngekubophela ipheya yakunye kwaloku lokulandzelako ehengini yetimphahla: inkomishi yeyogathi, lingephasi lemabhodlela lasikiwe langemalitha la -2 nobe lingephasi lelibhodlela lelubisi leliyilitha nobe libhokisi lesinatfo lesibandzako (tintfo tekuphatsa letifanako tingabekwa kuwo omabili emacala ehenga). • Bafundzi bangacala ngekubeka tintfo letifanako kuwo omabili emacala esikali sekulinganisa, kute kubonakale kutsi “ibha” nobe lingephasi lehenga yetimphahla livundlile uma letintfo letimbili tinesisindvo lesilinganako. • Bafundzi bacatsanisa tintfo ngekubeka yinye kulelo nakulelo cala lesikali sekulinganisa, kute kubonakale kutsi nguyiphi lesindzako nobe lelula.	2 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA NGEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SKHATSI LESINIKETIWE (etifundvweni temaminithi lange 24 na1 li-awa)
			• Bafundzi bangabuye bacatsanise tintfo ngekubeka tintfo letengca kuyinye ecaleni linye nobe emacaleni omabili kute kubonakale kutsi kungaki kwentfo ngayinye lokunesisindvo lesilinganako nalokunye. sib. emakhilayoni la -5 anesisindvo lesifanako nesesikelo sinye. • Loku kungachutjekiselwa ekwenteni tincumbi, lapho bafundzi bahlola sisindvo lesihambelana netintfo letimbili baze babuye balandzelanise tintfo letintsatfu nobe tintfo letinyenti kusukela kulokulula kakhulu kuye kulokusindza kakhulu nobe lokusindzako kakhulu kuye kulokulula kakhulu. Tintfo kumele tikhetfwe kufaka ekhatsi tintfo letinkhulu letilula netintfo letincane letisindzako, sib. Liphakethi lasawoti lelingemagremu la -250 licatsaniswa nelibhokisi lemakhonifleki lelingemakhilogremu la -400. Loku kusita bafundzi kutsi bavisise kusukela ekucaleni kutsi sisindvo sihambisana nesayizi kuphela uma kukalwa tintfo letifanako. Bafundzi batfutfukisa lwati lwabo lwesisindvo ngesikhatsi sinye nelulwimi lwekuchaza sisindvo. Njengaloku kungadzingeki tinombolo kuloku, kungentiwa kusesenesikhatsi eThemini 1 ngembi kwekutsi bafundzi bavisise kuhlanganisa nekusebenta ngetinombolo kuye ku -5. **Kurekhoda** Nanobe kukala kulikhono lwekwenta, bafundzi kumele bente imisebenti lebhalwako letawufaka ekhatsi kudvweba nekufaka umbala, kokubili kute batetayete kusebentisa emakhilayoni nobe emapeniseli babuye batetayete kurekhoda nabakala.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA NGEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SKHATSI LESINIKETIWE (etifundvweni temaminithi lange 24 na1 li-awa)
4.4 Umtsamo/ bungako	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele bungako balokusamanti (bungako) etintfweni tekuphatsa letimbili letibekiwe, yinye edvute kwalenye. Bafundzi bahlola ngekutsela entfweni yekuphatsa yesitsatfu uma kudzingekile. • Catsanisa ubuye uhlele bungako balokusamanti lobungamumatfwa tintfo tekuphatsa letimbili natigcwalisiwe (umtsamo) • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokunyenti kuna-, lokuncane kuna-, lokugcwele, lokungenalutfo. • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa usebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi.	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele bungako balokusamanti (bungako) etintfweni tekuphatsa letimbili letibekiwe, yinye edvute kwalenye. Bafundzi bahlola ngekutsela entfweni yekuphatsa yesitsatfu uma kudzingekile. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokunyenti kuna-, lokuncane kuna-, lokugcwele, lokungenalutfo.	Uyini umtsamo? Buyini bungako? Umtsamo linani lelingamumatfwa yintfo yekuphatsa (lonkhe linani lendzawo lelisekhatsi kwentfo yekuphatsa). Bungako linani lendzawo lelitsatfwa yintfo letsite. Libhodlela lingaba nemtsamo wetinkomishi letine letigcwele, kodvwa ngesikhatsi lesitsite lingaba nenkomishi yinye kuphela yalokusamanti. Bafundzi beLibanga 1 abakalindzeleki kutsi bati umehluko emkhatsini wemtsamo nebungako. Tonkhe tilinganiso teLibanga 1 atikahleleki. Akukho kulinganisa lokuhlelekile kwemtsamo/nebungako ngemayunithi labekelwe umgomo lokwentiwako. Kuphakanyisiwe kutsi tifundvo teTibalo tigcile kumtsamo/ bungako emathemini lamatsatfu emnyaka (iThemu 1, iThemu 2 neThemu 4). Lokugcilwa kuko eThemini 1 kungaba kutfutfukisa lulwimi kute kukhulunywe ngetintfo letibalulekile nekucatsanisa kumtsamo, iThemu 2 ingaba yekucatsanisa ngco bese eThemini 3 bafundzi bangasebenta ngemayunithi langakahleleki ekulinganisa. Bafundzi bangabuye batetayete babuye bahlanganise imicondvo ngesikhatsi sabo sekutisebentela, umnyaka wonkhe. **Kucatsanisa ngco kwebungako etintfweni tekuphatsa** Kutfutfukisa kuvisisa kwebungako nelulwimi lwekukhuluma ngako. Bafundzi bacala kucabanga nekukhuluma ngebungako ngekutsi bacatsanise kutsi tintfo tekuphatsa letimbili letifanako timumatsa lokungakanani (nobe imidvwebo yetintfo tekuphatsa letimbili letilinganako) kugcilwa • kulokugcwele nalokungenalutfo • kulokunyenti kuna- / lokuncane kuna- • lokufanana na- Bafundzi bangagcwalisa tintfo tekuphatsa basebentisa emanti nobe isanti njll. Njengaloku kungadzingeki tinombolo kuloku, kungentiwa kusesenesikhatsi eThemini 1 ngembi kwekutsi bafundzi bavisise kuhlanganisa tinombolo netimphawu tekubala kuye ku -5. **Kurekhoda** Nanobe kukala kulikhono lwekwenta, bafundzi kumele bente imisebenti lebhalwako letawufaka ekhatsi kudvweba nekufaka umbala, kute batetayete: • kusebentisa emakhilayoni nemapeniseli; • nekurekhoda nabakala.	1 Sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA NGEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SKHATSI LESINIKETIWE (etifundvweni temaminithi lange 24 na1 li-awa)
4.4 **Umtsamo/** **bungako**	• Chaza umtsamo wentfo yekuphatsa ngekubala nekusho kutsi kungaki kwalokungemayunithi langakahleleki lokusetjentiswako kugcwalisa intfo yekuphatsa sib. libhodlela lelinemtsamo wetinkomishi letine.			

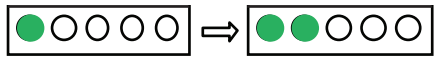
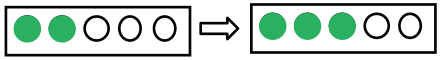
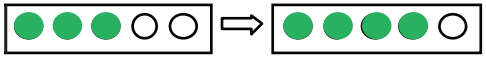
LIBANGA 1 ITHEMU 1 5.KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI** (Sifundvo 1 li-awa 24 emaminithi)
Kusebenta ngeligcogco letintfo				
5.1 **Gcogca ubuye uhlunge tintfo**	**Gcogca ubuye uhlele tintfo** Gcogca ubuye uhlunge tintfo letibonakalako letisetjentiswa malanga onkhe.	**Gcogca ubuye uhlele tintfo** Gcogca ubuye uhlunge tintfo letibonakalako letisetjentiswa malanga onkhe.	Kuhlunga, kuveta ubuye uchaze ligcogco letintfo letihlungiwe, ngemakhono labalulekile ekwenta bafundzi batfutfuke ekucaleni kwesikolo (buka emanotsi ngemakhono ekucala tinombolo lakucala khona emanotsi lacacisako) Lenchubo ibuye itfutfukise emakhono latawusetjentiswa bafundzi kumjikeleto wekusebenta ngedatha. Bafundzi banganiketwa ligcogco letintfo bese bacelwa kutsi batihlunge. Sibonelo, nika emacembu tintfo tekubala letifanako bese ubacela kutsi batihlunge ngekwemibala yato, nika emagcogco etibali letitinhlobo letehlukene njengemathegi ekufasa sinkhwa, tindvumbu temapentjisi, umetjiso, timbonyo temabhodlela bese ucela kutsi bafundzi batihlunge ngetincumbi. Bafundzi babuye badvwebe sitfombe setincumbi lebatentile. Ngalendlela bafundzi barekhoda loko lebakwentile. Baphendvula imibuto ngetincumbi. **Sibonelo** "Utakhe njani tincumbi tetibali?" "Ngente tincumbi temibala". "Incumbi lenkhulu kakhulu yetibali bekunguwuphi umbala? "Incumbi lenkhulu kakhulu beyibovu" "Mingaki imibala leyehlukene yetibali lobewunayo?' "Benginemibala lesihlalnu leyehlukene." Bafundzi bangatfola abo emagcogco. Sibonelo, bafundzi bangagcogca emacembe labuya ebaleni lesikolo nobe babuye netintfo tekuphatsa kudla letingenalutfo emakhaya.	2 tifundvo
5.2 **Veta ligcogco letintfo letihlungiwe**	**Veta ligcogco letintfo letihlungiwe** Dvweba sitfombe seligcogco letintfo.	**Veta ligcogco letintfo letihlungiwe** Dvweba sitfombe seligcogco letintfo.		
5.3 **Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe**	**Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe** • Nika tizatfu tekutsi ligcogco letintfo lihlungwe njani. • Phendvula imibuto ngaloku: - Kuhlunga kwentiwe njani?(inchubo) - Libukeka njani ligcogco letintfo letihlungiwe? • Chaza ligcogco letintfo nemdvwebo. • Chaza kutsi ligcogco letintfo lihlungwe njani.	**Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe** • Nika tizatfu tekutsi ligcogco letintfo lihlungwe njani. • Phendvula imibuto ngaloku: - Kuhlunga kwentiwe njani?(inchubo) - Libukeka njani ligcogco letintfo letihlungiwe? • Chaza ligcogco letintfo nemdvwebo. • Chaza kutsi ligcogco letintfo lihlungwe njani.		

LIBANGA 1 THEMU 2 1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA**	**LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI** **(Sifundvo 1 li-awa 24 emaminithi**
KUTFUTFUKISA LWATI LWETINOMBOLO: Bala ngetinombolo letiphelele				
1.1 **Bala tintfo**	Bala tintfo ngekutsembeka uye e-50. • Nika kucombela lokungiko kwelinani letintfo letingahlolwa ngekubalwa.	Bala tintfo nge-kwetsembeka uye e- 20. • Nika kucombela lokungiko kwelinani letintfo letingahlolwa ngekubalwa. • Kubala ngekugcogcela ndzawonye kuyakhutsatwa.	**Yini leyehlukile ethemini 1?** Ethemini 2, kubala kwekuhleleka kwetinombolo kuyangetwa. Kuchutjekwa nekugcila ekuvisiseni kutsi inombolo yekugcina isho linani letintfo letikhona esethini.Bafundzi babala tintfo letinyenti bese eThemini 2 batawufun-dza ngendzawo uma babala indzawo yetintfo uma babala nanobe bahlola kubala kwabo lokuhleleka kubasite kutsi babale kalula. **Sibonelo:** Tibali letingakagcogcwa  Tibali letibekwe ngetincumbi  Ngalethemu bafundzi bachubeka nekutfutfukisa emakhono abo ekubala nekute-tayeta loku: • Kubala konkhe: • Kuchubeka ubale: • Imigomo yelinani letinombolo: • Kusebenta ngematheksthi labhaliwe. Ngesikhatsi sethemu yesibili bafundzi bacala ku: • Babala tintfo labangeke batitsintse batibambe **Sibonelo:** Sibuta bafundzi: Tingaki tincenye temagilasi elifasitelo? • **Bala iminyakato**	2 Tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.1 **Bala tintfo**			**Sibonelo:** Shaya tandla emahlandla la -15. Phakamisa iminwe le -8. **Kucombela** Kucombela inombolo yetintfo letigcelwe ndzawonye kutfutfukisa emakhono labalulekile ekucombela. Loku kubalulekile uma kwentiwa timphawu tekubala: bangatihlola kute bacinisekise kutsi timphendvulo tabo tiyemukeleka. Kubalulekile kwekutsi bafundzi babale imifanekiso yetintfo letibutselwe ndzawonye naleto letingakabutselwa ndzawonye. Zama kubona lokungahambisani etintweni letigcogcelwe ndzawonye netintfo letingakagcogcelwa ndzawonye ngekubuta bafundzi kutsi bacombele kutsi ngukuphi lokunetintfo letinyenti.Bangacombela inombolo yetintfo letisesitfombeni. Batawubhala phasi lenombolo.Bangatibalela.Batawucatsanisa kucombela kwabo. Buta bafundzi bakhulume ngekutsi babale njani.Zama kutfola kutsi bakhona yini bafundzi lababale ngemacembu. **Ligcogco letintfo letincane** Bafundzi batfutfukisa likhono lekubona ligcogco letintfo letincane. **Kubala ngetincumbi /ngemacembu** Kute kusitakale bafundzi kubala ngetigaba tabo 2, 5 ne 10 lapho kudzingeka kutsi kugcogcelwe ndzawonye tintfo nga-2, 5 nema 10. Emakhaditinombolo kumele abukiswe kulelo nalelo ligcogco kukhombisa linani letintfo letibaliwe. Kubala ngemacembu kutawulungiselela kuvisisa kwebafundzi ema-malthiphuli esigabeni lesisemkhatsini. **Tinsita:** Cikelela tidzingo letiniketwa tinhlobo tetinsita letisetjentiswako. Tinsita letihlelilwe,njengentsambo yekubuhlalu bekubala • I-abhakhasi yekwetayeta kubala ngetincumbi temashumi • Kwakha ku -2, tincumbi te -5 nemashumi bese ubala konkhe.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.2 **Bala uye phambili nasemuva**	**Bala uye phambili nasemuva** • Nga-1 e usuke no be kuyiphi inombolo emkhatsini we -0 ne -100 **Kubala uye phambili kuloku:** • Nge -10 kusukela kunobe nguyiphi inombolo ye -10 emkhatsini wa- 1 ne-100 • Nge 5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini wa -1 ne -100 • Nga -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsinini -1 ne -100.	**Bala uye phambili nasemuva** • Nga-1e kusukela kuno nguyiphi inombolo emkhatsini we -0 ne -50 **Kubala uye phambili kuloku:** • Nge -10 kusukela kunobe nguyiphi inombolo ye -10 emkhatsini wa -1 ne-50 • Nge 5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini wa -1 ne 50 • Nga -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsinini -1 ne -20	**Yini leyehlukile ethemini 1?** Ethemini 2, bafundzi sebabala kuye -50 ngakunye. Babuye babale ngetigaba te 10, 5 na 2. **Kubala ngemlomo bazube** Kubala uzube ngulelinye ligama lekubala ngemacembu. Kusita kutfutfukisa lwati lwemaphethini etinombolo. Kubala uzube kukhutsata bafundzi kutsi babale babuye bacabange ngemacembu, lokubenta kutsi babe nelwati ngalokufanele. Loku kubenta batfutfukise likhono labo lekucombela. Kubala ngemacembu kubenta bacikelele budlelwane emkhatsini wetinombolo letingalandzelani.Ibeka sisekelo sephethini yetinombolo nekuphindzaphindza. **Imisebenti leyengetiwe** Nati tiphakamiso tetindlela letehlukene tekubala tekwenta kubala ngekuzuba • Cala ngekubala tinombolo letilandzelanako kepha kugcizelelwe yekucala yato njalo nje.Sibonelo, bafundzi bangashaya tandla, babuye basho kakhulu inombolo yesibili njalo nje.Cela bafundzi babale kepha basho inombolo yesibili kuphela ngenhloko. Loku kutawuchubeka ngekutsi bafundzi basho inombolo yesitsatfu kuphela, yesine inombolo yesihlanu. • Utawuhlukanisa liklasi ngemacembu, bese emacembu ashiyelana ematfuba ekusho inombolo lelandzelako.Sibonelo, yehlukanisa liklasi ngemacembu lasihlanu, licembu ngalinye kumele kubala inombolo yesihlanu njalo nje. • Cela bafundzi bente iphethini lefana nekutsintsa tinhlobo tabo nababaala kwekucala,baphambanise imikhono yabo babuye batsintse imikhono yabo kukwesibili,babuye bashaye ematsanga uma basamemeta inombolo yekugcina • Kwenta sigci sikhatsi sekushayela umculo kusetjentiswa kuhlanganiswe nekubala uzube. **Kubala tintfo kungatfutfukisa emakhono ekubala ngemlomo.** Eklasini, imisebenti yekubala ivamise kutfutfukisa emakhono lahlukene. Kubala uzube kwetfuleka kancono nakungeniswa kubutselwa ndzawonye kwetintfo. **Imisebenti leyengentiwe** **Emagridi Etinombolo** Cela bafundzi bente inombolo lebayitfolille igcame uma bachubeka babala nga -2, 5, 10.Babute kutsi yini lebayinakile ngaletinombolo. Sebentisa tinombolo letehlukene lapho bafundzi kumele bacale khona.	

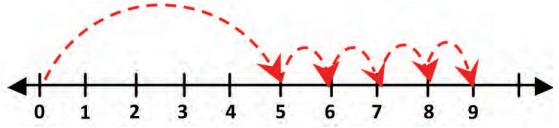
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
			Kuchubekela emathekstini labhalwako • Imigcatinombolo – bafundzi batawukhombisa kubala ngekweca kwabo basebentise imigca tinombolo. • Kulandzelana kwetinombolo – Ngasekupheleni kwethemu bafundzi batawucedzela kulandzelana kwetinombolo letilula (buka emaphethini etinombolo) **Sibonelo:** 2, 4, 6, 8, – 5, 10, 15, 20, – 10, 20, 30, 40, –	
1.3 **Tinombolo nemagama etinombolo**	**Kubona, kutfola nekufundza tinombolo** • Kubona, kutfola nekufundza tinombolo -1 uye e-100. • Kubhala tinombolo -1 uye e- 20 • Kubona, kutfola nekufundza emagama etinombolo • -1 uye e -10 • Kubhala emagama etinombolo -1 uye e -10	**Kubona, kutfola nekufundza tinombolo** • Kubona, kutfola nekufundza tinombolo -1 uye e-50 • Kubhala tinombolo -1 uye e-10 • Kubona, kutfola nekufundza emagama etinombolo • -1 uye e- 10 • Kubhala emagama etinombolo -1 uye e -10	**Kuyini leyehlukile eThemini 1?** EThemini 2, kuhlelwa kwetinombolo kwekwati, kufundza, nekubhala inombolo kanye nemagama etinombolo kuyatfutfuka. Kubala umugca tinombolo munye negridi yetinombolo kunika bafundzi litfuba lekutetayeta kutfola, kubona, kusho, nekufundza, tinombolo. Nika bafundzi litfuba lekutetayeta kanyentana ngekugcila ekufundzeni kwetinombolo letisendzaweni lebakuyo nasemibhalweni. **Sibonelo:** • Buka tinombolo temakhasi,kanye nemabhuku • Tfola emalanga ekutalwa ekhalendeni **Imisebenti leyengetiwe** Thishela unika ticondziso kutfola inombolo,kantsi ebafundzi bona basebentisa emafladikhadi kukhombisa timphendvulo. • Tfola inombolo lephambili kwe -12 • Tfola inombolo lengemuva kwe -12 • Inombolo lengetulu ngaku -3 enombolweni -11. • Inombolo lencane ngaku -3 enombolweni -14.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.4 **Chaza, ucatsan-ise bese uhlele tinombolo**	**Chaza, Catsanisa ubuye uhlele tintfo uye e- 20** • Chaza, catsanisa tintfo letigcogcelwe ndzawonye kuye kulokunyenti, lokumbalwa,lukunyenti, lokumbalwa, lokunyenti kuna, lokuncane kuna, lokulingana na, lokwehlukile • **Chaza ubuye uhlele** Ligcogco letintfo kusukela kuletinyenti kuye kuletimbalwa nakuletimbalwa kuye kuletinyenti. **Chaza, ucatsanise ubuye uhlele tinombolo uye -20** • Chaza ubuye ucatsanise tinombolo letiphelele kuye kulencane kuna, lenkhulu kuna, lokunyenti kuna, lokuligana na	**Chaza, Catsanisa ubuye uhlele tintfo uye e -10** • Chaza ubuye ucatsanise ligcogco letintfo kuye kulokunyenti,lokumbalwa,lukunyenti,lokumbalwa,lokunyenti kuna,lokuncane kuna,lokulingana na, lokwehlukile • **Chaza ubuye uhlele** Ligcogco letintfo kusukela kuletinyenti kuye kuletimbalwa nakuletimbalwa kuye kuletinyenti. **Chaza, ucatsanise ubuye uhlele tinombolo uye-10** • Chaza ubuye ucatsanise tinombolo letiphelele kuye kulencane kuna, lenkhulu kuna, lokunyenti kuna, lokuligana na	**Yini leyehlukile eThemini 1?** **EThemini 2, bafundzi bayachubeka kwenta loku:** • Kuhlela babuye bacatsanise tintfo; • Kuhlela babuye bacatsanise tinombolo;babuye • Basebentise lulwimi lwekuhleleka nekucatsanisa Kulesikhatsi seThemu bafundzi bachubeka nekuhlela bacatsanisa tintfo. KuleThemu bafundzi bacala kwakha budlelwane emkhatsini wetinombolo ngekugcila kungetulu kwakunye nangetulu kwakubili, lokuncane ngakunye nalokuncane ngakubili. • Uma ucatsanisa emasethi kumele bakwati kuchaza loku ngekutsi, “Nginetibali letingetulu ngatimbili kunaye.”,”Yena unaletincane ngayinye kwedlula mine” • Uma kucatsaniswa tinombolo kumele bakwati kutsi kunye ngetulu kwakune kwenta sihlanu’ sikhombisa singetulu ngakubili kunesihlanu” **Kutfutfukisa lwati lwa ’kunyenti ngakunye’** Lwati lwa lokunyenti kuna nalokuncane kuna lwati lwekucala lolungakahleleki lwekuhlanganisa nekususa.Kusita bafundzi kutsi bevisise isayizi yetinombolo nekuhleleka kwetinombolo. • Tjela bafundzi bafake sibali sinye “ semafulemu le -5” emakhadi edzaweni lengenalutfo. Tjela bafundzi babeke sibali sinye edvute nesibali sekucala.  Buta: Tingaki tibali lowunato? Kungakanani lokunyenti ngakunye kukunye? • Tjela bafundzi bafake sibali 1- ngetulu ekhadini “lemafulemi le -5” abo..  Buta: Tingaki tibali lowunato? Kungakanani lokunyenti ngakunye kukubili? • Tjela bafundzi bafake sibali -1 ngetulu ekhadini “lemafulemi le-5” abo.. 	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.4 **Chaza, ucatsanise bese uhlele tinombolo**	• **Chaza ubuye uhlele tinombolo:** - Kusukela kulencane kuye kulenkhulu nekusukela kulenkhulu kuye kulencane - Phambili, emva, phakatsi / emkhatsini - Kusetjentiswa umugcatinombolo -0 uye - 20 • **Chaza ubuye uhlele** Sebentisa lulwimi sib. phambili, emuva, phakatsi/emkhatsini	• **Chaza ubuye uhlele tinombolo** - Kusukela kulencane kuye kulenkhulu nekusukela kulenkhulu kuye kulencane - Kusebentisa umugcatinombolo -0 uye-10 • **Chaza ubuye uhlele** Sebentisa lulwimi sib. phambili, emuva, phakatsi/emkhatsini	Buta imibuto: Tingaki tibali lowunato? Kungakanani lokunyenti ngakunye kukutsatfu? Tingaki tibali lowutidzingako kwenta sihlanu? Buta: “ Ungangitjelani ngenombolo -4? (yincane ngakunye tikwe -5) Ungangitjelani ngenombolo 2? (yincane ngaku-3 tikwe- 5.) **Kuhlela tinombolo** Bafundzi badzinga kuhlela tinombolo ngekusebentisa imifanekiso leyehlukene. • Kugcogcelandzawonye imifanekiso Bafundzi bacatsanisa incumbi yetintfo leti-9 nencumbi yetintfo leti-2. • Imifanekiso yemugca Uma bafundzi bahlela tinombolo bangahle basebentise libanga emkhatsini wetinombolo kwati kutsi nguyiphi inombolo lenkhudlwana. Sibonelo, batawutsi inombolo -9 inkhulu kuna-2 ngobe inombolo -9 ita emva kwenombolo -2. Kuhlela tinombolo kungentiwa ngesikhatsi sekutisebentela. **Imisebenti lengetiwe** Kuhleleka kwetinombolo Bafundzi bahlela emakhadi etinombolo -1 uye e-13 kusukela kulencane kuya kulenkhulu. Bafundzi bagucula emakhadi etinombolo abo abuke phasi. Bakhetsa nobe nguwaphi emakhadi lama-4, kuhlela loku kusukela kulencane kuye kulenkhulu bese ubuta umngani ahlole kutsi ngabe kungiko.Uma bawati emakhadi la-4 bangakhetsa emakhadi la-5. Bawabeka ngekuhleleka bese batsatsela tinombolo kusukela kulenkhulu kuye kulencane. **Emathekstthi labhalwako** Bafundzi badzinga kuhlanganisa kuvisisa kwabo ngekucedzela imisebenti lebhalawako.	

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1.4 **Chaza, ucatsanise bese uhlele tinombolo**			**Sibonelo:** Ekupheleni kweThemu kumele bakwati kucedzela imisho yeluhlobo lolufanako: -1 lokunyenti kuna -3 ngu _____ -1 lokunyenti kuna -4 ngu _____ -1 lokuncane kuna -2 ngu _____ ____ sinyenti nga -1 kuna -4 ____ kuncane ngakunye -1 kuna -3	
1.6 **Emasu ekubala tibalo**	Sebentisa lamasu lalandzelako nawubala tibalo bese uchaza tisombululo taletibalo: • Tinsita letiphatsekako sibonelo,tibali • Titfombe kudvweba tibalo tendzaba • Kwakha nekuhlahlela • nekuhlahlela tinombolo. • Kuphindza nekuhhafula • Umugcatinombolo	Sebentisa lamasu lalandzelako nawubala tibalo bese uchaza tisombululo taletibalo: • Tinsita letiphatsekako sibonelo, tibali • Tibali letiphatsekako sib. tinsita letiphatsekako • Titfombe kudvweba tibalo tendzaba • Kwakha nekuhlahlela nekuhlahlela tinombolo. • Kuphindza nekuhhafula • Umugcatinombolo • Losekelwe tinsita letiphatsekako sibonelo,buhlalu bekubala	**Yini leyehlukile eThemini 1?** Kulethemu bafundzi bangeniswa tikwekuphindza nekuhhafula kwekucala.Buka emanotsi ngaphasi kwesigaba sekubala. Ekupheleni kwalethemu bafundzi bacala kubala tibalo temagama kusetjentiswa letindlela letilandzelako: • imidvwebo tinsita letiphatsekako • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula • umugcatinombolo **Imidvwebo nobe tinsita letiphatsekako** Bafundzi bachubeka nekudvweba titfombe nekusebentisa tinsita letiphatsekako kubala tibalo. Kubalulekile kutsi titfombe nemidvwebo netinombolo kanye nemishotinombolo. **Kwakha nekuhlahlela** Lendlela ngulenye yaletibalulekile Esigabeni Sabokhewane. Kusebentisa lendlela letivumela bafundzi kuhlukanisa (kuhlahlela) nekuphindza k uhlanganisa tinombolo kusita kutsi babale kalula. **Sibonelo** 6 + 4 → 5 + 1 + 4 4 + 1 → 5 + 5 → 10 Lendlela ibuye isetjentiswe kanyenti eSigabeni Lesisemkhatsini.	

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1.6 **Emasu ekubala tibalo**			**Kuphindza nekuhhafula** Lendlela ibonakala ilukhuni kantsi futsi idzinga lwati lwetinombolo lolujulile. Bafundzi labakwatiko kukhetsa lendlela bakhona kumelana netimo letehlukene kulamasu labawasebentisako. Kulethemu bafundzi bacala kuphindza tinombolo ngobe basuke babala baya e-10.Ngembi kwekuphindza nekuhhafula kungasetjentiswa njengelisu lekubala lomcondvo udzinga kufundziswa. Ebangeni -2 bafundzi batfulelwa umusho tinombolo babuye babutwe: Singatisebentisa njani tinombolo letisedvute kutfola imphendvulo ye- 5 + 6 =£?" Bafundzi batfola kutsi -5 ne -6 tisondzelene edvute kwaleyo naleyo. Tinsita letiphatsekako tisetjentiselwa kukhombisa bafundzi loku: "Ngifuna kwenta kuphindza si-5 lokutincumbi letimbili tesihlanu". Ngihlanganisalokusihlanu lokubili bese ngitfola li-10 nyalo ke senginayinye lesele lokumele ngiyengete. Imphendvulo yenta ema-11. Basebentisa lulwimi lwabo imidvwebo,bafundzi bangachubeka basebentise lelisu. Ngesikhatsi selibanga -3,bafundzi batakwati kusebentisa lendlela uma babala ngetinombolo letingemadijithi lamatsatfu. Ngalesikhatsi sethemu bafundzi batawusebentisa kuphindza nekuhhafula ngalendlela lelandzelako: **Kuphindza:** • Emathirayisikili lamabili, anemasondvo anemasondvo lamangaki? • Lungile na Simphiwe banetimabuli le-4 ngamunye.Tingaki timabuli setitonkhe? Bafundzi badvweba titfombe babuye basebentise tintfo letiphatsekako kukhombisa kutsi inombolo iphindziwe. **Kuhhafula:** • Ethemini 2 bafundzi batetayeta kuhhafula kute bayisebentise njengendlela eThemini 3. • Kuphindza nekuhhafula kumele kwetayetwe etimeni letingasebentisi simongcondvo lesitsite. **Imigcatinombolo** Kusebentisa umugcatinombolo kusita bafundzi kubala loku: • Kubamba ngengcondvo; • Bakwati kulandzela imicabango yabo;neku • Kuba nemarekhodi emifanekiso lokumele isetentjentiselwe kuchaza kutsi basibale njani lesibalo.	

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1.6 **Emasu ekubala tibalo**			Bafundzi bangasebentisa umugcatinombolo kusukela eThemini 1. Nangabe bafundzi bachubeka Esigabeni Sabokhewane kumele bakhutsatwe kusebentisa umugcatinombolo ngalokutfutfukile nalokulukhuni. eThemini -1, bafundzi bachubeka babale ngakunye. Loku kukhonjisiwe emgceni-tinombolo ngekweca ngakunye. **Sibonelo 1:** Kunebafana la-5 nemantfombatane la-4 labenta sifundvo sebuciko sekwengeta esikoleni. Bangaki bafundzi labaseklasini lebuciko?  Ethemeni 2 bafundzi bangachubeka babale,kodvwa bangakhutsatwa kusebentisa umugca tinombolo kukhombisa kubala ngetincumbi. **Sibonelo 2:** Bafundzi bahlukanisa lo-4 ngetincumbi talo-2. Umugcatinombolo utawukhombisa kweca kwalo-2 kuye ku-5.  	
1.7 **Kuhlanganisa nekususa**	Sombulula tibalo temagama kusi-mongcondvo ubuye uchaze tisombululo takho kufaka ekhatsi kuhlanganisa,kususa ngetimphendvulo letifika e-20.	Sombulula ttibalo temagama kusi-mongcondvo ubuye uchaze tisombululo takho kufaka ekhatsi kuhlanganisa,kususa ngetimphendvulo letifika e-10.	**Yini leyehlukile eThemini 1?** Ngalesikhatsi salethemu bafundzi batetayeta kwenta tibalo temagama babuye basebente kuba nekutetsemba nabasebentisa letindlela tekubala ngemagama. Kulethemu bafundzi kumele bagcile ekurekhodini. Bafundzi kumele babhale imisho yetinombolo njengelirekhodi lekubala kuye ku-5.Bafundzi bachubeka basebentise tinsita letiphatsekakonemidvwebo letawumela tibalo kusukela ku-5 kuye ku-10. Buka emanotsi eThemu 1 ngetinhlobo tetibalo letingentiwa ngesikhatsi salethe-mu. Yengeta kuhleleka kwetinombolo kuye e-10.	

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1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni.**	Sombulula tibalo temagama kusi-mongcondvo ubuye uchaze tisombululo takho kufaka ekhatsi kuhlanganisa,kususa ngetimphendvulo letifika e-20.	Sombulula tibalo temagama kusi-mongcondvo ubuye uchaze tisombululo takho kufaka ekhatsi kuhlanganisa,kususa ngetimphendvulo letifika e- 10.	Kubala kuhleleka kwetinombolo kulesikhatsi sethemu ivumela bafundzi bacala kwenta kuphindza kuhlanganisa.Kubala uye e-10 kuvumela kurekhoda. **Sibonelo:** • 1 + 1 + 1 • 2 + 2 + 2 + 2 • 3 + 3 + 3 IThemu 1 yakha lwati nekuvisisa kwekuhlanganisa nebafundzi kumele bakwati kuhlanganisa tincumbi letilinganako. Ngalesikhatsi bafundzi batawusebenta ngetibalo temagama lokuvumela kufaneki-sa kwekuphindza ngekuhlanganisa. Kuphindza kuhlanganisa kuvame kwetfulwa kubafundzi ngemacembu lanetinom-bolo letilinganako.Kwekucala bafundzi bangangeniswa etincumbini temalanga onkhe letinetintfo letilinganako. Kubala lokufaka kuphindza kuhlanganisa tinguletinye taletimo: Tincumbi letinga-2 tandla,tinyawo,emasokisi,emagilavu,ticatfuloemehlo,tindlebe,e masondvo elibhayisikili: • Tincumbi letinga -3: emasondvo ethirayisikili,umngcegcema wacalantsatfu. • Tincumbi letinga -4: emasondvo emoto,imilente yetitulo • Tincumbi letinga -5: iminwe, tintwane Lulwimi lwekuphindza kuhlanganisa kubalulekile.Bafundzi kumele banikwe litfuba lekuchaza ngemlomo labakushoko. **Kurekhoda imifanekiso yekuphindza kuhlanganisa** • Kusebentisa tintfo letiphatsekako • Bantfwana batawukhombisa tibalo basebentise tinsita letigcogcelwe ndzawonye. • Etitfombeni kuphela • Bafundzi batawudvweba titfombe bakhombise kutsi bautsele njani ndzawonye kute bahlanganise. • Kurekhoda ngetitfombe nangetinombolo • Titfombe titawukhombisa imidvwebo lesekelwa tinombolo. • Kuchubekela emathekstini labhalwako	

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1.11 **Imali**	• Kubona nekutfola imali yaseNingizimu Afrika - lebuhhehlu 5c, 10c, 20c, 50c, R1, R2 - Imali yemaphepha R10 and R20 • Kubala tibalo temali letifaka ekhatsi samba nentjintji emasentini kuye emasentini la-20c R20.	• Kubona nekutfola imali yaseNingizimu Afrika lebuhhehlu c, 10c, 20c, 50c, R1, R2, R5 • Kubala tibalo temali letifaka ekhatsi samba nentjintji kuye R10 nemasenti kuye ema-20c emasentini kuye emasentini la-20c R20.	Kufundzisa ngemali,nekuchaza lolwati lolulandzelako: • Iyini imali • Kungani imali ibaluleke • Isetjentiswa njani imali emphilweni yemalanga onkhe • Bayibala njani bafundzi imali. Bafundzi bangafundza ngemali ngembi kwekutsi baye esikoleni. Labanye bafundzi bangaba nelwati lwekubaluleka kwemali babuye bakwati kubona nekusho imali lebuhhehlu neyemaphepha. Kulethemu bafundzi batawufundza ngesisekelo selwati basebentisa imali kusimongcondvo lesentekako. Loku kwenteka ngetimo letentiwako njenge kudlala sitolo. • Letsa imali lebuhhehlu nemali yemaphepha R20 kanye ne-R10 esikoleni. Bafundzi beva umgcengcema wemali lebuhhehlu babuye bacoce ngekutsi tehluke ngani lenye kulenye. Bacocisana ngetimphawu letikuleyo naleyomali lebuhhehlu nemali yemaphepha. • Bafundzi babeka imali lebuhhehlu ngaphasi kwelucetu leliphepha lelilula bese basebentisa basebentisa kwekubhala lokungacindzeteli kakhulu bangacindzeteli kakhulu bashikishe etukwaleliphepha lelilula.sibonelo, sibonelo. emapeniseli emaphasteli. Bajuba emakhophi, bawanamatselise emabhukwini abo bese basho ligama lalobuhhehlu bemali. Babhala babuye bajube imali yemifanekiso ye-5c, 10c ne 20c. Banamatselisa tonkhe tinhlanganisela tebuhhehlu bemali leyenta 20c ne 10c sib. 20c = 10c 5c 5c, 20c = 5c 5c 5c 5c • Samba kuye e- 20c – imali lebuhhehlu kuphela. - Bafundzi bavele sebayakwati kubala nge-5 ne-10 futsi batalusebentisa lolwati kutfola samba. - Thishela unika umfundzi ngamunye emakhophi email lebuhhehlu 5c, 10c nema 20c. - Ubatjela kutsi nguyiphi imali lebuhhehlu lokumele isuswe,sib.emasenti lamatsatfu email lebuhhehlu lesi-5c kwentakwenta kuphindza kuhlanganisa, 5c+5c+5c. - Thishela ucela bafundzi kutsi basuse ema-20c basebentisa imali lebuhhehlu leyehlukene. Batawubona kutsi umfundzi ngamunye ususe babili bosi-5c semali lebuhhehlu kanye nalinye li-10c lemali lebuhhehlu.	

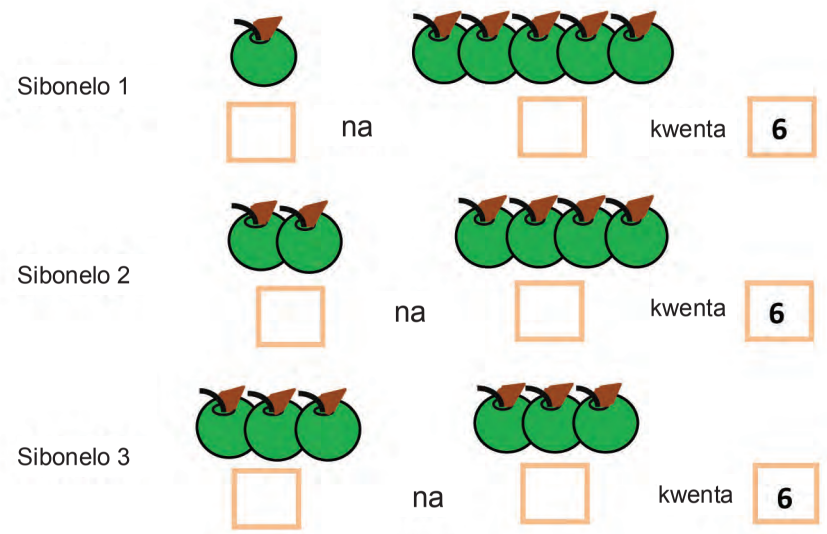
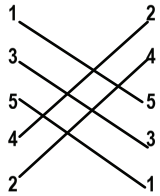
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.11 **Imali**			- Bafundzi bacedzela liphepha lekusebentela lapho bakhombisa kutsi nguyiphi imali lebuhhehlu labayidzingako kwenta samba semali lebuhhehlu lenge-20 emasenti. **Sibonelo:**20c = 10c + 10c 5c+ 5c + 5c + 5c= 20c or 5c+5c + 10c =20c • Nika intjintji usebentise imali lebuhhehlu yodvwa - Thishela wenta kususa kwemali lebuhhehlu nebafundzi kute babone sib. basusa si-5c semali lebuhhehlu kute bente buhhohlo lobufika ema-20c. - Thishela ubuta atsi"Umanukhokha lokubhadalwa kuye -15c, Ingakanani imali lesele?" - Bafundzi labakutfola kumatima kusebenta ngemali lebuhhehlu kuphela batawusebentisa tibali kute tibalekelele. Bafundzi bacedzela liphepha lekusebentela lapho batawusebenta ngentjintji yetintfo lebatitjenge nge-20 emasenti lengephasi kwaleyo. **Sibonelo:** - 10c - 5c = 5c - 20c - 10c =10c – emashumi laphelele - 20 -5c – 5c - 5c = 5c –kuphindza kususa	
KUTIBALELA NGEKUKHULULEKA				
1.12 **Emasu** (Tindlela nobe tindlelanchubo)	Sebentisa letindllela letilandzelako nawenta tibalo: • Tintfo letiphatsekako • Sib.tibali • Dvweba titfombe • Kwacha nekuhlahlela tinombolo • Kwakha nekuhlahlela • Umugcatinombolo	Sebentisa letindllela letilandzelako nawenta tibalo: • Tintfo letiphatsekako • Sib.tibali • Dvweba titfombe • Kwakha nekuhlahlela tinombolo • Kwakha nekuhlahlela • Umugcatinombolo losekelwa tinsita letiphatsekako sib. buhlalu bekubala	**Yini leyehlukile eThemini ye-1?** EThemini 2,bafundzi bacala kubala baye e-10.Kusebenta ngalokuhleleka kwetinombolo kusho kutsi tindlela tekubala tingatfutfukiswa tibuye tentiwe. Lamasu aybuye entiwe esigabeni sekubala tinombolo. **Kwakha nekuhlahlela tinombolo** Imisebenti yekwakha nekuhlahlela tinombolo ichubekisa kutfutfuka kwelwati lwebafundzi lwebudlelwane besayizi yetinombolo. Lemisebenti isendlalelo setimphawu tekubala.Kuhlukanisa tinombolo (kuhlakata) nekuphindze utihlanganise kungasita kwenta kubala kube lula. Kutetayeta njalo kuloluhlobo lwemsebenti kukhutsata bafundzi kutsi bakusebentise njenge lisu lwematematiki.	

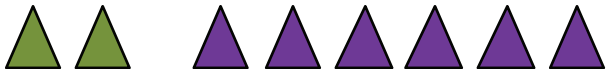
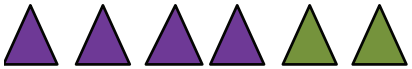
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.12 **Emasu** (Tindlela nobe tindlelanchubo)			**Kuphindza nekuhhafula** Ngembi kwekutsi kusetjentiswe kuphindza nekuhhafula njenge lisu kudzingeka kutsi kuvisiseke kubuye kwetayetwe kucala. • Kusebentisa tintfo letiphatsekako Loku kungentiwa ngeticondziso leticondzile.Tjela ubuye ukhombise bafundzi kutsi kunetintsi letisihlanu tekubala nekutsi ulindzeleke kutsi 'uphindze' lesamba ngekubeka letinye tintsi tekubala letisihlanu. • **Kuchubekela emathekstini labhalwako** usebentisa titfombe. • Bafundzi kumele banikete imifannekiso ekuphindza babuye bavete lemifanekiso ngetitfombe. • **Kusebentisa tinombolo** Bafundzi bangacala ngekucedzela imisho njenge: - Kuphindza ku-1 kwenta... - Kuphindza ku-2 kwenta.... - Kuphindza ku-3 kwenta.... - Kuphindza ku-4 kwenta.... **Umugcatinombolo losekelwa tinsita tekubala** Uma usebentisa umugcatinombolo njenge lisu lekubala,bafundzi badzinga kutsi babe naloku: - Letinye"tinsita temugca" sib.buhlalu bekubala,nendlela yekubeka tinombolo; - Umugcatinombolo wekubala uye phambili nasemuva; kanye - Nemugcatinombolo wekubeka nekuhlela tinombolo. Umugcatinombolo lohlelekile ungasetjentiswa (futsi ngiwo lofanelekile) uma bafundzi benta kuhlanganisa nekususa.Umugcatinombolo lohlelekile kumele ukhombise tonkhe tinombolo kuwo.	

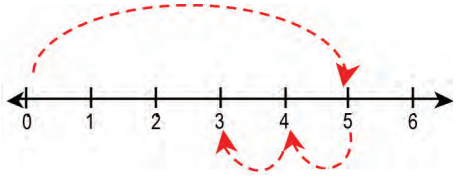
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.13 **Kuhlanganisa nekususa**	Kuhleleka kwetinombolo: -1 kuye e-20 • Yengeta uye e-20 • Susa kusukela e-20 • Sebentisa timphawu letifanele (+, –, =, □) • Tetayete kuhlanganisa tinombolo kuye e-10	Kuhleleka kwetinombolo: -1 kuye e--10 • Yengeta uye e- 10 • Susa kusukela e-10 • Sebentisa timphawu letifanele (+, –, =, □) • Tetayete kuhlanganisa tinombolo kuye ku-7	**Yini lehlukile eThemini 1?** KuleThemu 2,kuhleleka kwetinombolo kuyangetwa kusukela ku-5 kuye e-10. Kulethemu bafundzi bacala kuvisisa loku: • Tindlela tekubala ngekuhlanganisa;ne • budlelwane emkhatsini wekuhlanganisa nekususa Ngembi kwekutsi singenise timphawu tekuhlanganisa nekususa bafundzi kumele babenelwati lebalutfolile kuloku: • kubala konkhe; • kuchubeka ubale kusukela enombolweni lenkhulu; • kusebentisa nekuvisisa lulwimi lwekuhlanganisa nekususa;bese • uhlela ubuye ucatsanise tinombolo.. Kulethemu, bafundzi bachubeka nekwakha kuvisisa kwabo kwekuhlanganisa nekususa.Kuhlanganisa nekususa kuhlobene kakhulu nekubala. Lwati lwalokunyenti nga-1 lokunyenti lokuncane nga-2 kusasetjentiswa ngoba kuhambelana netinombolo letinenombolo lelandzelako nakubalwa ngekulandzela-nisa. Ngalesikhatsi salethemu bafundzi batawusebentisa timphawu kubhala imisho tinombolo kanyentana nangekutsembeka. Kuchubekela phambili ekusebentiseni timphawu kumele kusetjentwe ngekucoph-elela. Kubalulekile kutsi bafundzi bevisise tinchazelo letehlukene letihambelana netimphawu. Bafundzi kumele bevisise babuye basebentise emagama lanjenga, ngeta, hlan-ganisa, sekukonkhe,konkhe kwenta, susa,umehluko emkhatsini wa- nekususa ngembi kwekwetfula timphawu. Bafundzi kumele bacale ngekukwati kuphendvula imibuto lenjenga ku-3 na ku-2; 5 susa ku-3, ngembi kwekusebentisa timphawu. **Kurekhoda umfanekis** Kubala uye e-10 kusho kutsi bafundzi batawucala kurekhoda tibalo tabo base-bentise loku: • imidvwebo nobe tinsita letiphatsekako; • titfombe netinombolo; • tinombolo kuphela.	

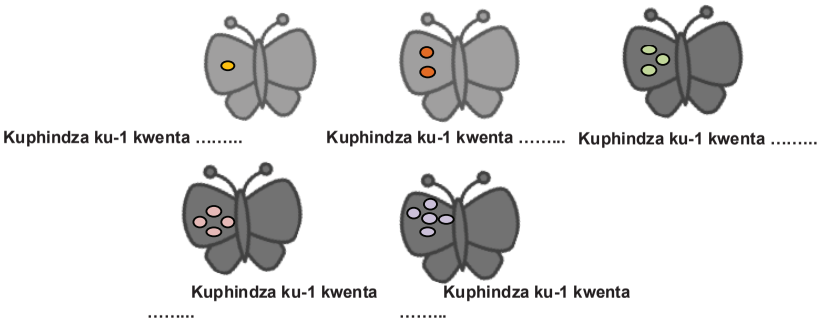
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.13 **Kuhlanganisa nekususa**			Ngasekupheleni kwethemu, kulokuhleleka kwetinombolo -1 kuye ku-5, bafundzi kumele batetsembe nabasebentisa tinombolo kuphela hhayi kudvweba titfombe temele kubala. **Emasu ekubala nawenta kuhlanganisa nekususa** *Kwenta kuhlanganisa ngekubala konkhe.* Bafundzi bacala ku -1 babuye babale baye tikwe-5 babuye bachubeke babale baye tikwe-7.  *Kwenta kuhlanganisa ngekuchubeka ubale.* Bafundzi batawubala kusukela tikwe-5 uye tikwe-7 **5**  Lendlela ingulencono kakhulu kunekubala ngakunye.Bafundzi batawusebentisa lendlela kancono kakhulu ngalesikhatsi kubala kulhleleka tinombolo kuchubeka. *Chubeka ubale kusukela kulokukhulu kuye kulokuncane* **6**  Bafundzi bachubeka babale ngetinombolo kusukela kulenkhulu, le-6,babuye bachubeke baye tikwe-8 *Kwenta kususa ngekulahla* 7 – 3 =  7- 3 = 4 Uma kurekhodwa kususa bafundzi bangahle bakhansele umfanekiso kute bak-hombise kulahla. *Kususa nekuchubeka ubale*  6 – 2 = □	

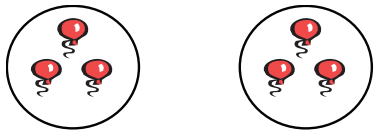
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.13 **Kuhlanganisa nekususa**			Bafundzi bachubeka babale kusukela ku-2 kuye ku-6.Kumele bacikelele kutsi tingaki tinombolo lebatibalile kusukela ku-2 kuye ku 6 *Kususa ngekubala uye emuva* 8 – 2 = □  Bafundzi bangacala ngenombolo lenkhulu, leyi-8,babuye babale baye emuva ngetinyatselo le-2 kuya ku-6. **Kwakha nekuhlahlela tinombolo** Loku kungentiwa ngetindlela letinyenti.  7 = 4 + 3  7 = 4 + 3 **Kuhlanganisa tinombolo** Kulethemu bafundzi batetayeta kuhlanganisa tinombolo kuye tikwe-7 Loku kungakhonjiswa ngetitfombe netimigcatinombolo basebentisa imifanekiso leyehlukene.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.13 **Kuhlanganisa nekususa**			**Tibonelo:** *Kwakha 6 kutfola bangani laba-6 kusetjentiswa titfombe*  *Kwenta 6 kusetjentiswa titfombe netinombolo.* *Kufaka umbala kukhombisa si-6 ngetindlela letehlukene.* ☐☐☐☐☐☐ _____ ne _____ kwenta - 6 *Kusebentisa tinombolo kuphela* *Kumatanisa emapheya etinombolo kwacha loku-6:*  	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.13 **Kuhlanganisa nekususa**			**Timphawu tekuhlanganisa** Kulethemu bafundzi bacala kubona timphawu tekuhlanganisa tinombolo letimbili tinikete umphumela lofanako netinombolo lebatihlanganisako tingangafani. Sibonelo: Bala boncantsatfu  **6 + 2 =** □  **2 + 6 =** □ Kubhala lokuhambelana nekuhlanganisa nekususa umugca tinombolo-kuvisisa budlelwane emkhatsini wekuhlanganisa nekususa. Kulethemu bafundzi bafundza kutsi bangabhala umusho tinombolo kute bawuse-bentiseleumusho tinombolo wekuhlanganisa. **Sibonelo:**  4 + 2 = 6 and 6 – 2 = 4 2 + 4 = 6 and 6 – 4 = 2 **Luphawu lelisho kulingana** Luphawu lolusho kulingana akukafaneli kutsi lwetfulwe ngekuphangisa. Kungasita kusebentisa timphawu ngendlela lekhululekile kubuye kuniketwe bafundzi litfuba kutsi basebentise imicibisholo kunekusebentisa loluphawu lelisho kulingana. **Sibonelo:** Sekukonkhe kwenta **4 and 2 →** 6	

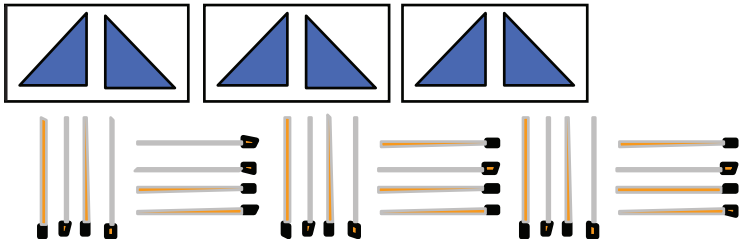
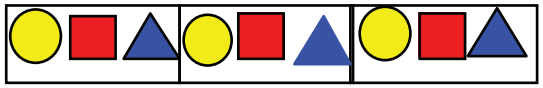
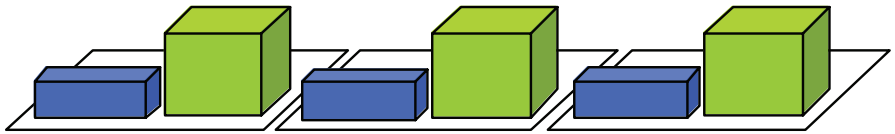
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.13 **Kuhlanganisa nekususa**			**Kusebentisa umugca tinombolo** Kungenisa nekususa kuye e-10 emgcenitinombolo. Thishela usebentisa umugcatinombolo kususa tinombolo kuye e-10 sib.5 - 2= **Sibonelo:** Logwaja uzuba kuye ku-5, wabuye wazuba tinombolo le-2 abuyela emuva wabuye wema ku-3. Ngaloko-ke 5 – 2=3  **Ematheksthi labhalwako** Bafundzi kumele batfulelwe imifanekiso letinhlobonhlobo kusekela kuvisisa weku hlanganisa nekususa. Babauye badzinge umsebenti lobhalwako. Babuye badzinge imisebenti lebhal-wako lebuta ngalokucacisako: • kuchubeka ubale; • kwengeta ngekuchubeka ubale kusukela enomboleni lenkhulu; • susa ngekufaka luphawu lwesiphambano esitfombeni kukhombisa kulahla. **Lwati lwekuphindza** Kuhleleka kwetinombolo kuvumela bafundzi kutsi bacale kusebenta ngekuphin-dzaphindza. Loku kungetfulwa ngetindlela letinyenti futsi kungentiwa uma bafunndzi babala tintfo. **Sibonelo:** Bafundzi bangenta tincumbi tetibali leti-2, tibali le-4, tibali le-6 tibali kanye netibali le-10, Umushotinombolo kumele uhambisane nemifanekiso.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.13 **Kuhlanganisa nekususa**			 Kuphindza ku-1 kwenta …….. Kuphindza ku-1 kwenta …….. Kuphindza ku-1 kwenta …….. Kuphindza ku-1 kwenta …….. Kuphindza ku-1 kwenta ……..	
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	• **Kuphindza kuhlanganisa** (njenge, inombolo lefanako) uye e- 20 • Sebentisa timphawu letifanele (+, =, □)	• **Kuphindza kuhlanganisa** (njenge, inombolo lefanako) kufike e-10 • **Kuphindza kuhlanganisa** (njenge,inombolo lefanako) kufike e- 20 • Sebentisa timphawu letifanele (+, =, □)	**Yini leyehlukile eThemini 1?** EThemini 2, bafundzi bacala kwenta kuphindza kuhlanganisa uye e-10. Uma bafundzi sebanelwati lwetinombolo 1 kuye ku-5, kuhlanganisa lokuphin-dziwe kutawenta umcondvo.. Kuphindza kuhlanganisa kumele kwetfulwe kubafundzi njengetincumbi letineti-nombolo letilinganako. Kusebenta ngetincumbi kubalulekile kuvisisa kuphindzaphindza. • Yenta tincumbi tetintfo letilinganako; • Chaza lokuhleka; ne • Kubala linani letinombolo tetintfo. Ekucaleni bafundzi batawubala ngakunye kodvwa uma sebatetsemba ngekub-ala bece badzinga kubala badzinga kubala tintfo letihlelwe ngakubili, sihlanu emashumi. Bafundzi kumele bafundziswe tintfo letinyenti temifanekiso letawusekela kuvisisa kwekuphindza kuhlanganisa. Kungabakuhle kutsi kwetfulwe bafundzi etitfombeni temalanga onkhe letihleleke ngalokulinganako,sibonelo: Tincumbi ta-2-tandla, tinyawo, emasokisi, emaglavu, ticatfulo, tindlebe, emasond-vo nemabhayisikili.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**			Tincumbi ta-3 - emasondvo ethrayisikili **Sibonelo:** Mangaki emasondvo sekawonkhe?  Mingaki iminwe. Cedz-ela lemisho tinombolo ngentasi. □ + □ + □ = 15  **Kurekhoda imifanekiso yekuphindza kuhlanganisa** Lapha kugciilwe ekutfutfukiseni lulwimi kusekela kuvisisa kuphindza kuhlan-ganisa. Bafundzi barekhoda kuvisisa basebentisa titfombe. Bafundzi kumele baniketwe titfombe tetincumbi tentfo babuye badvwebe indilinga batungelete loku kukhombisa tincumbi tetintfo.  Lulwimi lokumele lusetjentiswe lwaloku-2 lokunyenti kwabo ku-3. Uma bafun-dzi batetsemba ekuchazeni imifanekiso lemelwa ngemagrafu uma basebentisa lulwimi bachaze loko basebentisa umugcatinombolo. Umugca tinombolo: 3 + 3 = 6	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKU-PHELENI KWEMNYAKA	LWATI neMAKHONO LOKUGCILWE KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Sifundvo 1 li-awa 24 emaminithi
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhleleka-20** • Hlela lisethi letinombolo lowutiniketiwe. • Kucatsanisa tinombolo uf ike e-20 nekusho kutsi ngumuphi 1, 2 lenyenti nobe lokuncane nge-10. **Khumbula ngekushesh-isa:** • Hlanganisa tinombolo uye e- 10. • Khumbula kuhlanganisa nekususa ngemaphuzu eli -10. **Indlela yenchubo yekubala.** Sebentisa indlela yenchubo kuhlanganisa nekususa ngekunak-ekela: • Faka inombolo lenkhulu kucala kute ubale uye phambili nobe uye emuva. • Umugcatinombolo. • Kuphindza nekuhhafula. • Kwakha nekuhlahlela. • Sebentisa budlelwane emkhatsini	**Lwati lwetinombolo: Kuhleleka-10** • Hlela lisethi letinombolo lowutiniketiwe. • Kucatsanisa tinombolo uf ike e-10 nekusho kutsi ngumuphi 1, 2 lenyenti nobe lokuncane nge-10.	**Yini leyehlukile eThemini 1?** EThemini 2, kuhleleka kwetinombolo kuyatfutfukiswa kusukela tikwe-5 kuye e-10. Tibonelo temibuto nemisebenti lengabutwa ibuye yentiwe: • Kucala nga-3 nekubala uye phambili nga-1 uye e-10. • Ngukuphi lokunca ne ku -8 nobe 5? • Ngukuphi lokunyenti -8 nobe 4? • Kungakanani -2 kulokuncane ku- 9? • Kungakanani -2 kulokunyenti nga -3? • Nginike inombolo emkhatsini wa-1 na-3. • Nginikete inombolo lesemkhatsini we-6 ne -10.Ngabe kunenombolo yinye? • Beka lamakhaditinombolo ngekulandzelana kwawo kusukela kuncane kuye kulenkhudlwane.	

LIBANGA 1 ITHEMU 2 2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**Budze besikhatsi**
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawo-tonkhe** Tfola, chaza ngemagama ubuye utsatsele ema-phethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Tsatsela,chubekisela phambili ubuye uchaze** Tsatsela,chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo.	**Kutsatsela** iphethini kusita bafundzi kutsi babone kuhleleka nendlela iphethini leyakheke ngayo. **Kuchubekisela phambili** iphethini kusita bafundzi kuhlola kutsi bakuvisisile kuhleleka kwephethini. **Kuchaza** iphethini kusita bafundzi kutsi batfutfukise emakhono abo elulwimi nekukhuluma. Kubuye kukusite kutsi ubone kutsi bafundzi bayihumushe njani iphethini. Ebangeni 1 bafundzi bangagcila kumaphethini lapho tintfo nobe tincumbi tetintfo tiphindzeke ngendlela lefanako. eThemini 2 bafundzi labanyenti sebakwetayele kusebentisa emakhilayoni nobe ipeniseli nabadvweba. Bafundzi bangachubeka batsatsele babuye bachubekisele phambili emaphethini lentiwe ngetitfombe esikhundleni setintfo. Bangabuye bagcile ekuchazeni emaphethini. Akukavami kuba lula kutsi bafundzi bachaze emaphethini. Ungabasita bafundzi kufundza labalindzeleke kutsi bakukhu-lume ngako ngekubuta imibuto lenjenga: “Ngubaphi bobunjwa lobabona kulephethini?” “Ngabe bonkhe banembala munye?” “Ngabe ubona munye nobe labanyenti bobunjwa kulephethini?” “Ngabe letintfo tibuke ngendlela lefanako?” “Ngabe linani letintfo iyefana kutotonkhe tincumbi?” “Tingaki tintfo letisencunjini ngayinye?” “Ngabe bobunjwa bonkhe bayisayizi lefanako?”njll. Ethemini 2 lokunye lokugcilwa kuko kungaba kusebentisa bobunjwa beJomethri labangemadayimenshini lamabili (2-D) netintfo teJomethri letingemadayimenshini lamatsatfu (3-D) lebafundze ngato eThemini ye-1. Bafundzi bangenta bobunjwa labangemadayimenshini lamabili (2-D) ngekujuba emaphepha nobe emakhadi nobe bangabadvweba. Bangenta emaphethini ngabobunjwa labangemabhokisi lababente ngelubumba nobe ngenhlama yekudlala.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
2.1 **Emaphethini eJomethri**			Emaphethini angentiwa ngekusebentisa bunjwa munye kepha imibala yentfo igucuke ngendlela letayelekile sib.  Kulusito kutsi ebangeni le -1 usite bafundzi babone kutsi nguyiphi incumbi lephindziwe, ngekubeka incumbi ngayinye esiceshaneni seliphepha lesehlukile nobe kukhombisa ebhulokini lelikhasi. Emaphethini angentiwa ngetincumbi letifanako letiphindziwe, lapho incumbi ngayinye ineluhlobo lunye lwentfo kepha kubekeka kwetintfo encunjini kuyagucuka. Tincumbi letifanako tiyaphindvwa sib.  Kulamanye emaphethini kusetjentiswa tintfo letehlukile kwenta tincumbi kodvwa tincumbi tiphindvwa ngendlela lefanako sib.  Kulamanye emaphethini emasayizi etintfo encunjini ayantjintjantjintja, kodvwa tincumbi tiphindvwa ngendlela lefanako sib.  Bafundzi bangenta emaphethini ngekufaka buhlalu entsanjini. Emaphethini angabuye entiwe etifundvweni Temakhono Ekuphila.	1 Sifundvo

<table>
<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA</th><th>LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-2</th><th>EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA</th><th>Budze besikhatsi</th></tr>
<tr>
<td>2.2

Emaphethini etinombolo</td>
<td>Tsatsela, chubekisela phambili ubuye uchaze

Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e-100

Yakha emaphethini akho

Yakha emaphethini akho etinombolo.</td>
<td>Kulandzelanisa kumele kukhombise kubala uye phambili nasemuva kuloku:

• Ku -1 kusukela kunobe nguyiphi inombolo emkhatsini wa -1 kuye e-50

Kubala uye phambili:

• Ngemashumi kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 kuye e-50

• Nge-5 kusukela kunobe nguyiphi imalthiphuli ye-5 emkhatsini we-0 ne-50

• Nga-2 kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 ne-20

Yakha emaphethini akho

Yakha emaphethini akho etinombolo.</td>
<td>Kulandzelanisa tinombolo kungachunyaniswa nekubala. Uma emakhono ebafundzi ekubala atfutfuka, tinhlobo tekulandzelana kwetinombolo lebasebenta ngalo bafundzi, lungatfutfuka.

Kulandzelana kwetinombolo kumele kukhombise kubala uye phambili nasemuva kuloku:

• Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini wa-1 kuye e-50;

• Ngema -1 kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 ne- 50;

• Nge -5 kusukela kunobe nguyiphi imalthiphuli ye- 5 emkhatsini we-0 ne-50; ne

• Nga -2 kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 kuye 20.

Uma bafundzi babala ngemlomo bangakhonjiswa kulandzelana kwetinombolo lokubhalwe ngetindlela letehlukene. Bangakhombisa inombolo lebalwako sib.

<table>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr>
<tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr>
</table>

Bafundzi batawugcwalisa tinombolo letisele letinikwe kunobe nguyipi indlela yekulandzelanisa tinombolo ngetulu.

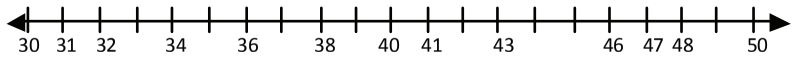
Khumbula kutsi bafundzi babhala tinombolo kuye e-10 kuphela. Bafundzi bangagcwalisa tinombolo letisele ngekulandzelana bengce e -10 uma ngabe:

• tentiwa ngemlomo;

• emakhaditinombolo aniketiwe kute afakwe endzaweni lengenalutfo; nobe

• luhla lwetinombolo luniketiwe. Bafundzi bangabuye badvwebe umugca kusukela enombolweni lengiyo lekhetsiwe kuya endzaweni lekumele ingene kuyo.

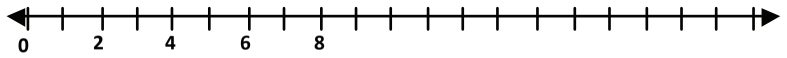
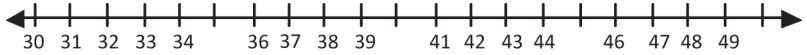
Letinye tetibonelo tiniketiwe ngentasi:



Umugcatinombolo lonetinombolo letishiyiwe.

Kulandzelana lokukhombisa kubala ngakunye uye phambili nobe emuva ushiye letinye tinombolo.

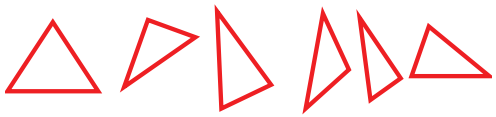
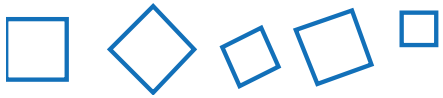
Bafundzi bamatanisa tinombolo eluhlwini loluniketiwe.</td>
<td></td>
</tr>
</table>

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
2.2 **Emaphethini etinombolo**			Badvweba umugca kukhombisa lapho inombolo lekhetsiwe kumele ifakwe khona. 40, 41, 42, __, 44; __, __, 47, ___, 49, 50. 50, 49, 48, __, __, 45, 44, ___, ____, 41, 40 Kubhalwe ngekulandzelana uye phambili ngemamalthiphuli lakhonjiswe ngenhla lanetinombolo letishiyiwe. Umugcatinombolo lokhombisa kushiya tinombolo bese bafundzi bayacedzela leti letisele.  Igridi yetinombolo lekhombisa kubala ngekulandzelana lokufakiwe nobe lokweciwe. 1 | | 3 | | 5 | | 7 | | 9 | 11 | | 13 | | 15 | | 17 | | 19 |  Bafundzi bangafaka umbala nobe bavale tinombolo letifakiwe uma bachubeka babala ngekweca. Ekupheleni kwalethemu, kuhleleka kwetinombolo kuyachubeka kuye e-50. Bafundzi bangasebenta ngekulandzelana lokuphelele kusukela ku-1 kuye e-50 nobe tincenye tekulandzelana	3 Tifundvo

LIBANGA 1 ITHEMU 2 3. SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**LWATI NEMAKHONO** **LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO** **LOKUTAWUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NETINKHOMBANDLELA TEKUFUNDZISA**	
3.1 **Kubekeka, kwetayeta nekubukeka.**	**Lulwimi loluphatselene nekubekeka** Chaza kubekeka kwentfo yinye nayihambelana nalenye sib. ngetulu kwe-, ngembi kwe-, ngemuva kwe-, sencele, sekudla, etulu, phasi, edvute kwe-. **Kubekeka nekubukeka** Matanisa kubukeka lokungafani kwentfo yinye lesetjentiswa malanga onkhe. **Kubekeka netinkhombandlela** Landzela tinkhombandlela kuhambahamba eklasini. Landzela ticondziso kubeka intfo yinye ihambisane nalenye sib. beka ipeniseli ekhatsi ebhokisini		Lulwimi lwekubekeka lolutfutfukiswe eThemini1 kumele bafundzi betayetwe ngalo ngasosonkhe sikhatsi sekufundzisa liklasi lonkhe nesikhatsi sekufundziswa kwemacembu kuyoyonkhe ithemu; sebentisa sikhatsi lesincane kwetayeta bafundzi lolulwimi ngasosonkhe sikhatsi. Sebenta ngelulwimi lwekubekeka lungahlanganiswa ngemisebenti lebhalwako njengemidvwebo, kufaka imibala nobe kumatanisa imidvwebo nemagama. Loku kungentiwa ngesikhatsi sekutisebentela. Lolunye lulwimi lwekubekeka lungabuye lwetayetwe bafundzi uma basebenta ngabobunjwa labangemadayimenshini lamabili (2-D).	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NETINKHOMBANDLELA TEKUFUNDZISA	
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • umbala • tintfo letigicikako • tintfo letishelelako **Imisebenti lokugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentisa tintfo letiphatsekako letifana nemabhuloki ekwakha, tintfo tekuvuselela kabusha, emakhithi etintfo tekwakha.		Bafundzi batawuchubeka bakhe tintfo ngetintfo letivuselelwe kabusha nobe emabhuloki ekwakha /emabhokisi emetjiso nobe emakhithi etintfo tekwakha ngesikhatsi sekutisebentela.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NETINKHOMBANDLELA TEKUFUNDZISA	
3.3 **Bobunjwa labangema-dayimenshini lamabili (2-D)**	**Tinhlobo tabobunjwa** Bona ubuye usho bobunjwa labangemadayimenshini lamabili (2-D) **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	**Tinhlobo tabobunjwa** Bona ubuye usho bobunjwa labangemadayimenshini lamabili (2-D) **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	Imisebenti lerminyenti yabobunjwa eBangeni 1 yentiwa ngetintfo letiphatsekako. Yonkhe imisebenti kumele ihlanganiswe ngemisebenti lebhalwako. Bafundzi bacala kudlala umdlalo lokhululekile ngabobunjwa labehlukene, kufaka ekhatsi kwakha titfombe ngabobunjwa beJomethri labasikiwe. Loku kungentiwa ngesikhatsi sekutisebentela. Loku kungabuye kwentiwe ngesikhatsi setifundvo Temakhono Ekuphila. Bafundzi batsatsela titfombe letentiwe ngabobunjwa beJomethri. Letitfombe tingatfolakala etincwadzini tekufundzisa nobe tifunwe nguthishela. Loku kusita bafundzi kutsi bakwati kubona tindilinga letehlukene ngemasayizi, tikwele kanye nabocalantsatfu lababekeke ngetindlela letehlukene nabocalantsatfu labanetimo letehlukene. Loku kungentiwa ngesikhatsi sekutisebentela. Loku kungentiwa ngesikhatsi setifundvo Temakhono Ekuphila. **Kucatsanisa nekuchaza bobunjwa labangemadayimenshini lamabili (2-D): isayizi** Bafundzi bacatsanisa isayizi yabobunjwa labeme ngendlela lefanako sib. • Hlela tindilinga kusukela kulencane kakhulu kuye kulenkhulu kakhulu; babuye • Babeke tonkhe tikwele nobe isayizi lefanako ndzawonye. Sebentisa lulwimi lwesayizi kucatsanisa bobunjwa labehlukene sib.”Ngidvwebe calantsatfu ekhatsi kwesikwele, ngaloko-ke calantsatfu mncane kunesikwele”. **Kuchaza bobunjwa labangemadayimenshini lamabili (2-D): umbala** Bafundzi bakhuluma ngemibala yabobunjwa bese bahlunga bobunjwa ngekwemibala. Kutfola nekusho tintfo nemibala yato, nekucatsanisa isayizi yetintfo kungentiwa ngesikhatsi sekusebenta ngemaphethini. **Kubona nekusho tindilinga, bocalantsatfu netikwele** Bafundzi batawusebenta ngetindilinga netikwele temasayizi lahlukene, kanye nabocalantsatfu labakheke ngalokwehlukene. Kubalulekile kutsi bafundzi bangaboni sibonelo sinye sabunjwa ngamunye. Emasethi lamanyenti abobunjwa betintfo letitsengiswako banika sibonelo sinye kuphela sacalantsatfu. Bafundzi kufanele bakwati kubona:	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUTAWUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NETINKHOMBANDLELA TEKUFUNDZISA	
3.3 **Bobunjwa labangema-dayimenshini lamabili (2-D)**			• Bocalantsatfu lababunjwe ngalokwehlukene babuye babekeka ngalokwehlukene. Laba ngulabanye babocalantsatfu:  • Tikwele letingemasayizi lahlukene letibekeke ngalokwehlukene. Leti nguletinye tikwele:  • Tindilinga letingemasayizi lahlukene. Leti nguletinye tetindilinga:  Kulusito kutsi bafundzi basebente ngemifanekiso yabobunjwa labakhiwe ngemabhokisi lasikiwe. Loku kutawenta kutsi bafundzi babone bocalantsatfu netikwele letehlukene letibekwe etindzaweni letehlukene. Bafundzi bahlunga bobunjwa ngekwemacala lacondzile nobe layindilinga Bafundzi bahlunga babuye bente tincumbi tabobunjwa ngekwabocalantsatfu, tikwele nobe tindilinga. Umsebenti uhlanganiswa ngemisebenti lebhalwako. Lemisebenti ingafaka ekhatsi kufaka umbala, kumatanisa emagama nabobunjwa njll.	

LIBANGA 1 ITHEMU 2 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE INKHOMBANDLELA YATHISHELA**	**BUDZE BESIKHATSI** (etifundvweni teli-awa 1 nemaminithi la -24)
4.1 Sikhatsi	**Kwendlula kwesikhatsi** Khuluma ngekwendula kwesikhatsi • Bahlela tigameko letetayelekile ngemphilo yabo • Catsanisa budze besikhatsi ngekusebentisa lulwimi sib. lokudze kuna-, lokufisha kuna-, lokuphangisa kuna-, lokuhamba kancane kuna-. • Landzelanisa tigameko usebentisa lulwimi lolufana nekutsi itolo, lamuhla, kusasa. **Kusho sikhatsi** • Chaza kutsi intfo yenteka nini usebentisa lulwimi sib. ekuseni, • ntsambama, ebusuku, ngembi kwesikhatsi, ngemva kwesikhatsi. • Shano ubuye ulandzelanisa emalanga eliviki. • Shano ubuye ulandzelanisa tinyanga temnyaka • Faka emalanga ekutalwa ekhalendeni.		Bafundzi kumele bafundze kukhuluma • ngekulandzelana kwetigameko • bungako besikhatsi Bafundzi bachubeka nekuhlanganisa tindlela tekukhuluma ngesikhatsi onkhe emalanga ngesikhati sekufundzisa liklasi lonkhe nobe ngesikhatsi sekugcila ekufundziseni licembu. Bafundzi bakhuluma babuye baphendvule imibuto ngekutsi tintfo tenteka nini, basebentisa lulwimi njengekutsi ekuseni, ntsambama, ebusuku, ngembi kwesikhatsi, nasemva kwesikhatsi. Bafundzi balandzelanisa tigameko basebentisa lulwimi njengekutsi: itolo, namuhla, kusasa, emalanga eliviki netinyanga temnyaka. Bafundzi bacatsanisa budze besikhatsi basebentisa lulwimi njengekutsi: lokudze nobe lokufisha nekuphangisa nekwenta kancane. Bafundzi bakhuluma ngekuhlela tigameko temphilo yabo. Babuye bahlele kulandzelana kwetitfombe njenge: • Tinyatselo tekwenta emasangweji nobe inkomishi yelitiya; • Titfombe letikhombisa kukhula kwemntfwana ate abe ngumuntfu lomdzala; • Umjikeleto wemphilo yetilwane sib. licandza kudzimate kube yinkhukhu, nobe licandza lesicoco kudzimate kube sicoco nobe licandza leluvivane kudzimate kube luvivane; ne • Tehlakalo letivamile telusuku (kuvuka, kuba sesikoleni, kudlala, kudla kudla kwakusihlwa, kulala). Chubeka ufake emalanga ekutalwa ekhalendeni, umnyaka wonkhe.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE INKHOMBANDLELA YATHISHELA	BUDZE BESIKHATSI (etifundvweni teli-awa 1 nemaminithi la -24)
4.2 Budze	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele budze, kuphakama nobe bubanti betintfo letimbili nobe letinyenti ngekubeka yinye edvute kwalenye. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib.lokudze kuna-, lokufisha kuna-, lokuphakeme kuna-, lokubanti kuna-. • Combela, kala, catsanisa, hlela ubuye urekhode budze ngekusebentisa tilinganiso letingakabekelwa umgomo sib.budze besandla, tinyatselo, budze bepeniseli, tibali njll.		Tonkhe tilinganiso teLibanga 1 atikahleleki. Akukho kulinganisa budze ngemayunithi langakabekelwa umgomo lokwentiwako. Ethemini ye -1 kuphakanyisiwe kutsi bafundzi bagcile kuloku: • Kucatsanisa ngco kwebudze betintfo ngekubeka yinye edvute kwalenye, • Kuhlela nekucatsanisa tinombolo, budze nobe kuphakama nobe bubanti betintfo letintsatfu nobe letinyenti, ngekutibeka ngemapheya etintfo yinye edvute kwalenye naleyo, tize tilandzelaniswe tonkhe tintfo; ne • Kutfutfukisa lulwimi kukhuluma ngemehluko webudze, kuphakama, bubanti njll. Ngesikhatsi sekutisebentela kuyo yonkhe ithemu, bafundzi bangatetayeta nekuhlanganisa kuhlela nekucatsanisa budze nobe kuphakama nobe bubanti betintfo letintsatfu nobe ngetulu, ngekubeka ipheya yetintfo, yinye edvute nalenye tize tilandzelaniswe tonkhe tintfo. Yonkhe imisebenti kumele irekhodwe.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE INKHOMBANDLELA YATHISHELA	BUDZE BESIKHATSI (etifundvweni teli-awa 1 nemaminithi la -24)
4.3 Sisindvo	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode sisindvo usebentisa tilinganiso letingakabekelwa umgomo nesikali sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindzako kulula kuna-, kusindza kuna-.		Tonkhe tilinganiso teLibanga 1 atikahleleki. Akukho kulinganisa sisindvo ngemayunithi langakabekelwa umgomo lokwentiwako. Ethemini -1 kuphakanyisiwe kutsi bafundzi bagcile kuloku: • Kucatsanisa ngco kwesisindvo setintfo; kanye • Kuhlela nekucatsanisa sisindvo setintfo letintsatfu nobe letinyenti, ngekutibeka ngemapheya esikalini sekulinganisa, tize tilandzelaniswe tonkhe tintfo • Kutfutfukisa lulwimi kukhuluma ngemehluko wesisisndvo. Ngesikhatsi sekutisebentela kuyo yonkhe ithemu, bafundzi bangatetayeta babuye bahlanganise, bahlele, bacatsanise sisindvo setintfo letintsatfu nobe ngetulu, ngekutibeka ngemapheya esikalini sekulinganisa, tize tilandzelaniswe tonkhe tintfo. Yonkhe imisebenti kumele irekhodwe.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE INKHOMBANDLELA YATHISHELA	BUDZE BESIKHATSI (etifundvweni teli-awa 1 nemaminithi la -24)
4.4 **Umtsamo/ bungako**	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele bungako balokusamanti (bungako) etintfweni tekuphatsa letimbili letibekiwe, yinye edvute kwalenye. Bafundzi bahlola ngekutsela entfweni yekuphatsa yesitsatfu uma kudzingekile. • Catsanisa ubuye uhlele bungako balokusamanti lobungamumatfwa tintfo tekuphatsa letimbili natigcwalisiwe (umtsamo) • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokunyenti kuna-, lokuncane kuna-, lokugcwele, lokungenalutfo. • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa usebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi.	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele bungako balokusamanti (bungako) etintfweni tekuphatsa letimbili letibekiwe, yinye edvute kwalenye. Bafundzi bahlola ngekutsela entfweni yekuphatsa yesitsatfu uma kudzingekile. • Catsanisa ubuye uhlele bungako balokusamanti lobungamumatfwa tintfo tekuphatsa letimbili natigcwalisiwe (umtsamo) • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokunyenti kuna-, lokuncane kuna-, lokugcwele, lokungenalutfo. • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa usebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi.	Tonkhe tilinganiso teLibanga 1 atikahleleki. Akukho kulinganisa umtsamo/ bungako ngemayunithi langabekelwa umgomo lokwentiwako. Tiphakamiso lokugcilwe kuto eThemini 1, kutfutfuka kwelulwimi lwekukhuluma ngalokwedlulele nekucatsanisa bungako. EThemini 2 kungagcilwa ekucatsaniseni ngco. EThemini 4 kungagcilwa ekusebenteni kwebafundzi ngemayunithi ekulinganisa langakahleleki. Bafundzi bangabuye batetayete babuye bahlanganise lwati ngesikhatsi sekutisebentela emnyakeni wonkhe. **Kucatsanisa ngco kwebungako etintfweni tekuphatsa** • Kuvisisa bungako nelulwimi lokutawukhulunywa ngalo. Bafundzi bacala kucabanga babuye bakhulume ngebungako ngekucatsanisa kutsi kungakanani lokusetintfweni tekuphatsa letimbili (nobe imidvwebo yetintfo tekuphatsa letifanako) Kugcilwa kuloku: - Lokugcwele nalokungenalutfo; - Lokunyenti kuna-/ lokuncane kuna-/lokumbalwa kuna;ne - Lokufana na; Bafundzi bagcwalisa babuye batfulule tintfo tekuphatsa. • Catsanisa bungakokwetintfo tekuphatsa letingafani letimbili nobe letinyenti ngekutsela entfweni yekuphatsa yesitsatfu. Uma bafundzi bakhuluma kabanti ngebungako (lokungenalutfo nalokugcwele njll.) bese bacatsanisa bungako (lobubonakala ngalokusobala kutsi kwehlukile uma ukubuka kwekucala) • Etintfweni letifanako tetintfo tekuphatsa, bangahambisa bungako ngekucatsanisa bungako etintfweni tekuphatsa letimbili letingafani. Gcila ikakhulukati etintfweni tekuphatsa letibanti naletinciphile sib. - Gcwalisa kufika ezingeni lelifanako libhodlela lelingemalitha la -2 nemalitha nelibhodlela lelingemalitha la -500; bese - Ubuta bafundzi kutsi nguliphi libhodlela lelicuketse lokunyenti.	tifundvo leti-2

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE INKHOMBANDLELA YATHISHELA	BUDZE BESIKHATSI (etifundvweni teli-awa 1 nemaminithi la -24)
4.4 Umtsamo/ bungako	• Chaza umtsamo wentfo yekuphatsa ngekubala nekusho kutsi kungaki kwalokungemayunithi langakahleleki lokusetjentiswako kugcwalisa intfo yekuphatsa sib. libhodlela lelinemtsamo wetinkomishi letine.	• Chaza umtsamo wentfo yekuphatsa ngekubala nekusho kutsi kungaki kwalokungemayunithi langakahleleki lokusetjentiswako kugcwalisa intfo yekuphatsa sib. libhodlela lelinemtsamo wetinkomishi letine.	Bafundzi bangahlola ngekutsela lokusamanti entfweni yekuphatsa yesitsatfu bese babekisa kuphakama. Bafundzi labasebancane abavami kubuka kutsi intfo yekuphatsa inebubanti lobungakanani uma bakhuluma ngebungako; bavame kubuka kutsi intfo yekuphatsa igcwele kufika kuphi. Bafundzi kumele banikkwe ematfuba lamanyenti ekutetayeta kucatsanisa bungako betintfo tekuphatsa letinebubanti lobehlukile. **Kurekhoda** Bafundzi kumele barekhode wonkhe umsebenti.	

LIBANGA 1 ITHEMU 2 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** (etifundvweni teli-awa 1 nemaminithi la-24)
Kusebenta ngeligcogco letintfo				
5.1 **Gcogca ubuye uhlunge tintfo**	**Gcogca ubuye uhlele tintfo** Gcogca ubuye uhlunge tintfo letibonakalako letisetjentiswa malanga onkhe.	**Gcogca ubuye uhlele tintfo** Gcogca ubuye uhlunge tintfo letibonakalako letisetjentiswa malanga onkhe.	Buka emanotsi eThemu 1 Ethemini 2 bafundzi batawuchubeka nekusebenta ngeligcogco letintfo ngendlela lefanako, kepha batawutfola lusito loluncane Nangabe bafundzi sebalutfolile lusito ngenchubo yekuhlunga nekuveta ligcogco letintfo ngesikhatsi sekugcila emacenjini, loku bangatetayeta kona ngesikhatsi sekutisebentela Nangabe bafundzi sebatetayete kuphendvula imibuto lephatselene neligcogco lwabo, ungacala ubacele kutsi bachaze ligcogco lwabo ngaphandle kwekubasita ngemibuto letsite.	Sifundvo -1
5.2 **Veta ligcogco letintfo letihlungiwe**	**Veta ligcogco letintfo letihlungiwe** Dvweba sitfombe seligcogco letintfo.	**Veta ligcogco letintfo letihlungiwe** Dvweba sitfombe seligcogco letintfo.		
5.3 **Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe**	**Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe** • Nika tizatfu tekutsi ligcogco letintfo lihlungwe njani. • Phendvula imibuto ngaloku: - Kuhlunga kwentiwe njani?(inchubo) - Libukeka njani ligcogco letintfo letihlungiwe? • Chaza ligcogco letintfo nemdvwebo. • Chaza kutsi ligcogco letintfo lihlungwe njani.	**Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe** • Nika tizatfu tekutsi ligcogco letintfo lihlungwe njani. • Phendvula imibuto ngaloku: - Kuhlunga kwentiwe njani?(inchubo) - Libukeka njani ligcogco letintfo letihlungiwe? • Chaza ligcogco letintfo nemdvwebo. • Chaza kutsi ligcogco letintfo lihlungwe njani.		
Kuphakanyisiwe kutsi kusebenta ngemjikeleto wekusebenta ngedatha kumele kugcilwe kuko eThemini 3 na 4				

LIBANGA 1 ITHEMU 3 1 TINOMBOLO,TIMPHAWU TEKUBALA NEBUDLELWANE				
SIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	
KUTFUTFUKA KWELWATI LWETINOMBOLO: Bala ngetinombolo letiphelele				
1.1 **Bala tintfo**	Bala tintfo ngekutsembeka uye e-50. Nika kucombela lokungiko kwelinani letintfo letingahlolwa ngekubalwa.	Bala tintfo ngekutsembeka ufike e -40 Nika kucombela lokungiko kwelinani letintfo letingahlolwa ngekubalwa.	**Yini leyehlukile ethemini 2?** Ethemini 3, bafundzi bachubekisela phambili kuhleleka kwetinombolo. Kumele kugcilwe ekuvisiseni kusetjentiswa kwemgomo welinani. Kulethemu lena bafundzi kumele bafundze indlela yekubeka tintfo ngekuhleleka ngalesikhatsi babala, kute ibasite ngalesikhatsi bahlola kutsi babale kahle. Sib. Tibali tingabekwa ngemugca.  Kulethemu bafundzi bayachubeka nekuchubekisela phambili emakhono abo ekubala nekutetayeta: • kubala konkhe; • kubala uchubeke • umgomo welinani letinombolo • Kusebenta ngemathekstthi labhaliwe **Ligcogco loluncane** **Bafundzi batawuchubeka nekutetayeta kubona ligcogco letintfo letincane.** **Kubala ngetincumbi** Kute usite bafundzi bakwati kubala ngetigaba letihamba ngakubili, ngesihlanu, ne 10, kumele bagcogce tintfo ngakubili, ngesihlanu nelishumi kute bakwati kubala ligcogco letintfo. Emakhaditinombolo kumele abukiswe eligcogcweni ngalinye kukhombisa linani letintfo letibaliwe. Kubala ngetincumbi kutawulungiselela bafundzi kutsi bavisise emamalthiphuli. **Tinsita:** Tinhlobo tetinsita letitawusetjentiswa kumele tibukisiswe • Tinsita letihlelekile, letifana nentsambo lenebuhlalu bekubala tingasetjentiswa • I -abhakhasi ingasetjentiswa kubetayeta kubala ngetincumbi telishumi. • Batawenta tincumbi tetintfo letihamba ngakubili, letihamba ngakuhlanu naletihamba ngelishumi ngetintsi temetjiso nobe kubala tintsi nekubala konkhe	

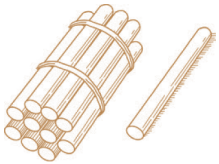
SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.2 **Bala uye phambili nasemuva**	**Bala uye phambili nasemuva** • Nga-1 nobe nguyiphi imaltiphuli emkhatsini we -0 ne -100 **Bala uye phambili nasemuva a** • Nge -10 nobe nguyiphi imaltiphuli ye -10 emkhatsini we -0 ne -100 • Ngei -5 nobe nguyiphi imalthiphuli ye-5 emkhatsini we -0 ne 100 • Ngaku -2 nobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -100	**Bala uye phambili nasemuva** • Nga 1 nobe nguyiphi imaltiphuli emkhatsini we -0 ne -80 **Bala uye phambili nasemuva** • Nge -10 nobe nguyiphi imaltiphuli ye -10 emkhatsini we 0 ne 80 • Nge -5 nobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -80 • Ngaku 2 nobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -80	**Yini leyehlukile ethemini 1?** Ethemini -3, bafundzi nyalo batawubala bay e e -80 Bayachubeka babale ngemamalthiphuli a -2, e -5 nawe -10 **Imisebenti lengetiwe:** **Imisebenti yeliklasi lonkhe** Bala uye phambili nasemuva ufike e -80 • Bafundzi babala baye phambili nasemuva • Thishela ukhomba tinombolo letikumagridi etinombolo ngalesikhatsi bafundzi babala baya e -70. • Bafundzi babala ngesihlanu kusukela e -25 baye e -60 • Bafundzi babala ngemashumi baye phambili kusukela e -0 baye e -80 Bala uzube ngekusebentisa sihlanu nemashumi ufike e- 80 • Bafundzi babala nge -10 bafike e -50 ngalesikhatsi thishela abakhomba lishadi letinombolo • Thishela ukhomba emamaltipuli e -5 eshadini le -100 bafundzi babale • Bafundzi babala baye phambili nasemuva nge -10 • Ngekusebentisa lishadi le -100, kumele baphendvule tinhlobo teticondziso letifana naleti: • Bala uchubeke ngelishumi kusukela e -20 • Bala uye emuva ngakunye kusukela e -56. • 80, 70, 60: shano tinombolo letintsatfu letilandzelako ube usebentisa lishadi le 100 **Umsebenti labatentela wona** Emakhono ekubala bece kumele asetjentiswe emisebentini lebhaliwe, sib. Bafundzi: • Bangacedzela tinombolo letilula letilandzelanako • Bangagcwalisa tinombolo letishodako etinombolweni letilandzelanako nakumugcatinombolo Bhala letinombolo letimbili letilandzelako 66, 65, 64, ___, ___	

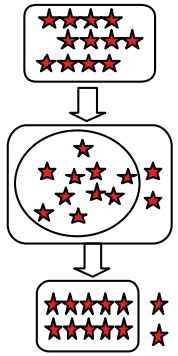
SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.3 **Tinombolo nemagama etinombolo**	**Kubona, kutfola nekufundza tinombolo** • Kubona, kutfola nekufundza tinombolo kusukela e -0 kuya e - 100 • Bhala tinombolo kusukela e - 0 kuya e -100 • Kubona, kutfola nekufundza emagama etinombolo kusukela ku- 1 kuya e - 10 • Bhala emagama etinombolo kusukela ku -1 kuya e - 10	**Kubona, kutfola nekufundza tinombolo** • Kubona, kutfola nekufundza tinombolo kusukela e -0 kuya e - 80 • Bhala tinombolo kusukela e - 0 kuya e -80 • Kubona, kutfola nekufundza emagama etinombolo kusukela ku- 1 kuya e - 10 • Bhala emagama etinombolo kusukela ku -1 kuya e - 10	**Yini leyehlukile ethemini 2?** Ethemini -3 kuhleleka kwetinombolo kukhule kwafika e – 80. Nyalo bafundzi kulindzeleke kutsi babhale tinombolo bafike e – 20. Kumele bakwati kwenta loku ngobe babala bafike e – 20 ngako – ke kumele babhale imishotinombolo. Bafundzi bayachubeka batetayete kufundza nekubhala emagama etinombolo. Kumele bakwati kumatanisa inombolo neligama lenombolo. Imisebenti yasetincwadzini tekusebentela nekubhala eklasini kutawentiwa ngesikhatsi sekutisebentela. Sibonelo semsebenti lobhalwako: Matanisa emagama netintfo Kunye ✂ Kubili ✱ ✱ ✱ ✱ Kutsatfu ✸✸ Kune ✶✶✶✶✶✶ Sihlanu ✖✖✖✖✖✖✖✖✖✖ Sitfupha ✵✵✵ Inkhotsa ✷✷✷✷✷✷✷ Siphohlongo ※ ※ ※ ※ ※ Lishumi ✦✦✦✦✦✦✦✦✦✦ **Yini lelindzeleke kubafundzi?** • Bafundze tinombolo bafike e - 50 • Babhale tinombolo bafike e - 20 • Bafundze emagama etinombolo bafike e - 10 • Babhale emagama etinombolo bafike e - 10	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.4 **Kuchaza, kucatsanisa nekuhlela tinombolo**	**Kuhlela nekucatsanisa tintfo** • Kucatsanisa ligcogco letintfo ngalokuncane, lokumbalwa, lokunyenti kakhulu, lokuncane kakhulu, lokunyenti kuna, lokuncane kuna, kufana na, kunyenti njenga, umehluko • Kuhlela ligcogco letintfo kusukela kulokunyenti kuye kulokuncane nekusukela kulokuncane kuye kulokunyenti. • Hlela ufike etintfweni le - 100 **Hlela ucatsanisa tinombolo** • Hlela tinombolo: - kusukela kuletincane kuye kuletinkhulu nekusukela kuletinkhulu kuye kuletincane - Ngaphambili, ngemuva, emkhatsini, - Usebentisa umugcatinombolo kusukela e – 0 kuya e – 100	**Kuhlela nekucatsanisa tintfo le - 15** • Kucatsanisa ligcogco letintfo ngalokuncane, lokumbalwa, lokunyenti kakhulu, lokuncane kakhulu, lokunyenti kuna, lokuncane kuna, kufana na, kunyenti njenga, umehluko • Kuhlela ligcogco letintfo kusukela kulokunyenti kuye kulokuncane nekusukela kulokuncane kuye kulokunyenti. • Hlela ufike etintfweni le - 15 **Hlela ucatsanisa tinombolo tifike e - 15** • Hlela tinombolo: - kusukela kuletincane kuye kuletinkhulu nekusukela kuletinkhulu kuye kuletincane - Ngaphambili, ngemuva, emkhatsini - Usebentisa umugcatinombolo kusukela e – 0 kuya e - 80	**Yini leyehlukile ethemini 2?** Ethemini 3, bafundzi bachubeka: • Kuhlela nekucatsanisa ligcogco letintfo • Kuhlela nekucatsanisa tinombolo • Kusebentisa lulwimi loluphatselene nekuhlela nekucatsanisa tintfo **Imisebenti lengetiwe:** Thishela usho inombolo, sib. 12 Thishela ubuta imibuto: Ikuphi inombolo kulomugcatinombolo? Nguyiphi inombolo lendvulela li -12? Nguyiphi inombolo leta ngemuva kwe – 12? 12 linyenti nga – 1 kuna _____ 12 lincane nga – 1 kuna _____	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.4 **Kuchaza, kucat-sanisa nekuhlela tinombolo**	• Catsanisa tinombolo letiphelele ngalokuncane kuna, lokukhulu kuna, lokunyenti kuna, kulingana na • Kucondzana kunye kulokunye • Hlela tinombolo ufike e - 100 **Sebentisa tinombolo te Odinali kukhombisa kuhleleka nobe indzawo** • Beka tintfo emgceni ticale kuyekucala kuye kuyelishumi nobe kusukela ekucaleni kuye kuyekugcina, sib. Kwekucala, kwesibili, kwesitsatfu, kwekugcina. (kuhleleka kwetinombolo) Kuhleleka kwetinombolo ngekulandzelana ngalendlela, kwekucala kuye kuyelishumi	• Catsanisa tinombolo letiphelele ngalokuncane kuna, lokukhulu kuna, lokunyenti kuna, kulingana na • Kucondzana kunye kulokunye • Hlela tinombolo ufike e - 15 **Sebentisa tinombolo te Odinali kukhombisa kuhleleka nobe indzawo** • Beka tintfo emgceni ticale kuyekucala kuye kuyelishumi nobe kusukela ekucaleni kuye kuyekugcina, sib. Kwekucala, kwesibili, kwesitsatfu kwekugcina. (kuhleleka kwetinombolo)		

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.5 **Simelibungako**	**Kubona simelibungako semadijithi lamabili uye e - 20** • Hllukanisa tinombolo letingemadijithi lamabili tibe ngemashumi nemivo uye e – 20. Sib. Li- 12 liba li -10 na - 2	**Kubona simelibungako semadijithi lamabili uye e - 15** • Hllukanisa tinombolo letingemadijithi lamabili tibe ngemashumi nemivo uye e – 15. Sib. Li- 12 liba li -10 na - 2	**Yini leyehlukile ethemini 2?** Kulethemu bafundzi bacala kuhlukanisa tinombolo tibe ngemashumi nemivo ube usebentisa: • Kubutsela ndzawonye kwetintfo tifike elishumini • Indlela yekubhala li – 14 = ne -10 na - 4 Kuvisisa lokuphelele kwesimelibungako kuyatfutfuka kuye eSigabeni Sabokhe-wane naseSigabeni Lesisemkhatsini. Ebangeni -1 bafundzi bacala kucabanga ngetincumbi tetintfo letilishumi nobe tintfo letingemayunithi. Bacala kwenta lushintjo lokubona lishumi njengelishumi lelihlukene, batawucala kubona li – 10 njengemivo nobe njengelishumi linye. Kucala kuvisisa simelibungako kulethemu, bafundzi kudzingeka: • Bawati emagama etinombolo nekubala ngekulandzelanisa tinombolo ngekutetsemba bafike lokungenani e – 20. • Bakwati kubhala nekufundza tinombolo • Kwenta tibalo tekuhlanganisa nekususa • Kubala tintfo letiphatsekako ngekutibutsela ndzawonye • Bakwati kukhombisa tincumbi tetintfo **Kuhlukanisa tinombolo tibe ngemashumi nemivo** Ebangeni 1 kumele bagcile ekwenteni tincumbi telishumi netibali letingakabut-selwa ndzawonye. Ngemuva kwekuhlukanisa tinombolo tibe ngemashumi nemivo bafundzi kumele babe batfole litfuba lelanele lekutetayeta kuhlukanisa tinombolo ethemini -1 na -2. Loku kufanele kube kukhonjiswe ngekwenta nangendlela yekubhala. **Kusebentisa tinsita letiphatsekako** Tinsita letiphatsekako tibalusito ekwakheni lwati letinombolo, letimele tinom-bolo nemgomo wesimelibungako. Nangabe ubala ngemashumi nangetincumbi temashumi, bafundzi batawucala kuvisisa kutsi emamaltipuli e -10 atawuba sin-yatselo nangabe babala, sib. 26, 27, 28, 29, 30, 31. Kumele bacale kuba nelwati lwekutsi ligama nobe inombolo leli -10 imele umuvoi munye.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.5 **Simelibungako**			Kusebenta ngetinsita letiphatsekako ngekutsi babutsisele ndzawonye tintfo kute bakhe lishumi linye babuye bavisise kutsi li -10 liyincumbi yetintfo letilishumi letingakabutselwa ndzawonye. Kuvele ukhombe bafundzi incumbi yelishumi bese ubatjela kutsi li -14 lifana nelishumi li -1 naku -4 lokungakabutselwa ndzawonye, angeke kubanikete umcondvo wekutsi li – 14 lifana nelishumi li -1 naku -4 lokungakabutselwa ndzawonye. Kubutsisela ndzawonye tintfo kute wakhe incumbi yelishumi kubalulekile kakhulu. Nangabe basebentisa i-abhakhasi bafundzi kumele bakwati kukhombisa Lishumi linye Lishumi linye nakunye loku -2 Lishumi linye nakunye loku -3 Lishumi linye nakunye loku -4  Lindzela bafundzi kutsi batawubala ngakunye kwenta tincumbi telishumi. Kulabanyenti kutawuba ngiyo indlela kuphela yekusho ligama lenombolo nobe kusho kutsi kungaki lokukhona Bafundzi bangenta tincumbi telishumi naleto letingakabutsiselwa ndzawonye kukhombisa kutsi li -11 lingahlahlelwa libe yincumbi yinye yelishumi naleto letingakabutsiselwa ndzawonye  Emakhiyibhu lakhacelanako angapakwa akhe sakhiwo lesidze nobe ikholomu yalokuli -10  Emakhadi esimelibungako angasetjentiswa kukhombisa emashumi nemivo	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
			Kwendlulela kumatheksthi labhaliwe Kukhombisa ngetitfombe incumbi yelishumi nemivo Bafundzi bangakhonjiswa imifanekiso levumela tincumbi telishumi nemivo **Sibonelo**: Ekupheleni kwethemu bafundzi kumele bakwati kubhala: 13= lishumi li -1 nemivo le-3 13= li – 10 nemivo le – 3 Tinsita letiphakanyisiwe Tintfo letingabutsiselwa ndzawonye: • Tintsi tekubala • Tibali letingafakwa entsanjeni • Tintsi temetjiso • Tintsita te - ayisikhilimu • Emakhiyubhu lakhacelanako • Buhlalu bekubala • I-abhakhasi 	
1.6 **Emasu ekusom-bulula tinkinga**	Sebentisa lamasu lalandzelako nawusom-bulula tinkinga tetibalo temagama ubuye uchaza tisombululo tetinkinga • tintfo letiphatsekako, sib. tibali • Titfombe tekudvweba tibalo tetindzaba • kwakha nehlahlela tinombolo • kuphindza nekuhhafula tinombolo • Umugcatinombolo	Sebentisa lamasu lalandzelako nawusom-bulula tinkinga tetibalo temagama ubuye uchaza tisombululo tetinkinga • tintfo letiphatsekako, sib. tibali • Titfombe tekudvweba tibalo tetindzaba • kwakha nehlahlela tinombolo • kuphindza nekuhhafula tinombolo • umugcatinombolo losekelwa tintfo letiphatsekako, sib. buhlalu bekubala.	**Yini leyehlukile ethemini 2?** Bayachubeka nekutetayeta emasu ekubala • Kuphindza nekuhhafula tinombolo kuyasetjentiswa njengelisu lekubala kulethemu. Nobe kunjalo bafundzi kumele bachubeke batetayete kuphindza nekuhhafula tinombolo ekusombululeni tinkinga temagama letisesimeni lesinganayo ingcikitsi Ekupheleni kwalethemu bafundzi bacala kusombulula tinkinga temagama ngekusebentisa lamasu lalandzelako. • Imidvwebo nobe tinsita letiphatsekako • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula • Umugcatinombolo Buka emanotsi ethemini 2	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.7 **Kuhlanganisa nekususa**	Bala tibalo temagama letikulesimongcondvo ubuye uchaze sisombululo sakho setinkinga letifaka ekhatsi kuhlanganisa, kususa, netimphendvulo kufike e - 20.	Bala tibalo temagama letikulesimongcondvo ubuye uchaze sisombululo sakho setinkinga letifaka ekhatsi kuhlanganisa, kususa, netimphendvulo kufike e - -15.	**Yini leyehlukile ethemini 2?** Buka emanotsi ethemu- 2 Kepha usebente ngetinombolo ufike e -15	
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphindzeni**	Bala tibalo temagama letikulesimongcondvo ubuye uchaze sisombululo sakho setinkinga letifaka ekhatsi kuhlanganisa lokuphindziwe netimphendvulo kufike e -20.	Bala tibalo temagama letikulesimongcondvo ubuye uchaze sisombululo sakho setinkinga letifaka ekhatsi kuhlanganisa lokuphindziwe netimphendvulo kufike e -15	Buka ethemini 2, sib, tinkinga tetibalo Kepha usebente ngetinombolo ufike e - 15	
1.9 **Kugcogcela ndzawonye nekwabelana lokuholela ekuhlukaniseni**	Sombulula ubuye uchaze tisombululo kwenta tibalo magama lokutifaka ekhatsi kulinganisa nekugcogcela ndzawonye tinombolo letiphelele kuye e - 20 netimphendvulo letifaka ekhatsi tinsalela.	Sombulula ubuye uchaze tisombululo kwenta tibalo magama lokutifaka ekhatsi kulinganisa nekugcogcela ndzawonye tinombolo letiphelele kuye e – 15 netimphendvulo letifaka ekhatsi tinsalela.	Buka ethemini 2, sib, tinkinga tetibalo Kepha usebente ngetinombolo ufike e - 15	

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1.11 **Imali**	• Kubona nekwati imali lebuhhehlu yaseNingizimu Afrika (• 5c, 10c,20c,50c, RI, R2, R5 • Imali yemaphepha. R10 and R20 • Sombulula tinkinga temali lefaka samba nentjintji yemasenti lafika ku 20c nobe emarandi lafika ku R20	• Kubona nekwati imali lebuhhehlu yaseNingizimu Afrika (- 5c, 10c,20c,50c, RI, R2, R5 • Sombulula tinkinga temali lefaka samba nentjintji lefika ku R20 nemasenti lafika ku 20c.	**Samba – emarandi kuphela** Bafundzi basebenta nge R1, R2, R5, R10 ne R20 imali yemaphepha. Bahlanganisa linani bafike e R20 ngekwenta ngekutsi basebentise imali yekudlala Sibonelo R5 + R10 = R15 R10 + R10 + R10 =R30 – kuhlanganisa lokuphindziwe R5 +R2 + R8 = R15 – bagcwalise bafike e -10 **Intjintji – emarandi kuphela** Bafundzi basebenta nge R1, R2, R5, R10 ne R20 imali yemaphepha. Benta tibalo tekususa ngekwenta basebentise imali yemaphepha. Bafundzi bacedzela emaphepha ekusebentela lapho basebenta ngentjintji yetintfo lebatitsenge nge R20 nobe lengaphasi kwalena Sibonelo R10 – R8 =R2 R15 – R5 =R10 R10 – R5 – R2 =R5 – R2 = R3 R20 – R2 – R2 =R18 – R2 = R16	
KUBALA				
1.12 **Emasu** **(tindle nobe tindlelanchubo)**	Sebentisa lamasu lalandzelako nawubala tibalo • tintfo letiphatsekako, • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula tinombolo • Umugcatinombolo	Sebentisa lamasu lalandzelako nawubala tibalo: • tintfo letiphatsekako, sib. tibali • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula tinombolo • umugcatinombolo losekelwa tintfo letiphatsekako, sib. buhlalu bekubala.	Bafundzi kulindzeleke kutsi bente tibalo letingekho kusimongcondvo lesitsite babe basebentisa lamasu lalandzeleko: • kwakha nekuhlahlela tinombolo • kuphindza nekuhhafula tinombolo • Umugcatinombolo Buka emanotsi ethemini 2	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**	**Kuhleleka kwetinombolo: 0 -20** • Hlanganisa ufike e- 20 • Susa e - 20 • Sebentisa timphawu letifanele (+, -, =, □) • Kutetayeta kuhlanganisa tinombolo kufike e -10	**Kuhleleka kwetinombolo: 0 -15** • Hlanganisa ufike e - 15 • Susa e - 15 • Sebentisa timphawu letifanele (+, -, =, □) • Kutetayeta kuhlanganisa tinombolo kufike ku -9	**Yini leyehlukile ethemini 2?** **Ethemini 2 kubala nekuhleleka kwetinombolo kuyakhula kusukela e -10 kuya e -15** Kute basebente ngetinombolo tekuhlanganisa nekususa, bafundzi kufanele babe batfole lwati lolwanele: • Lokusebentisa nekuvisisa lulwimi loluphatselene nekususa nekuhlanganisa • Kubala konkhe • Kubala uchubeke kusukela kulenkhulu inombolo • Kuhlela nekucatsanisa tinombolo Emasu ekubala nangabe wenta tibalo tekuhlanganisa nekususa **Ngalethemu bafundzi batawuchubeka nekusebentisa lamasu lalandzelako:** • Batawenta tibalo tekuhlanganisa ngekubala konkhe • Batawenta tibalo tekuhlanganisa ngekubala bachubekele phambili • Kubala uchubeke kusukela kulenkhulu inombolo • Batawenta tibalo tekususa ngekutsi basuse lokutsite • Kususa ngekutsi babale baye emuva Ngalethemu bafundzi batawenta loku: Kutjintja inombolo ibe lishumi nekususa nobe kuhlanganisa nakunye **Lendlela ingafundziswa nekuhleleka kwetinombolo letincaneibuye isetjentiswa etinombolweni letinkhulu.** Sibonelo 9 + 6 = □ Bafundzi bangasho kubo batsi,.'' Ngitawususa kunye kuloku -6 bese ngikungeta kule -9 kute kwente li -10'' Ngakoke 9+6 angabhalwa ngalendlela, 10+5= 15 Sibonelo 8 + 5 = □ Bafundzi bangasho kubo batsi,.'' Ngitawususa lo -2 kuloku -5 bese ngikungeta kule -8 kute kwente li -10''	

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1.13 **Kuhlanganisa nekususa**			"Ngakoke 8+5 angabhalwa ngalendlela 10+3=13 Nabafundza lamasu, bafundzi batawusebentisa tinsita letiphatsekako kuvisisa lamasu **Sibonelo:** Yakha incumbi yetinja le -10  **9 + 4**  **10 + 3** $9 + 4 = 10 + 3 = 13$ Kuhlahlela tinombolo tibe tincenye letincane kute kubala kube lula Bafundzi batawuhlahlela tinombolo tibe tincenye letehlukene. Batawuhlahlela tinombolo tibe tincenye letitawenta kutsi kube lula kubo kutisebentisa • Kusebentisa imicibisholo netinombolo kukhombisa kutsi bayacabanga 8 + 6 = □ 8 + 2 + 4 8 + 2 → 10 + 4 = 14 8 + 7 = □ 8 + 2 + 5 8 + 2 → 10 + 5 = 15 15 – 9 = □ 15 - (5+4) 15 – 5 → 10 - 4 = 6	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**			**Kusebentisa lwati labanalo njengendlelanchubo** Lendlelanchubo lekhonjiswe ngentasi ivumela bafundzi kutsi bahlele kubala kwabo nelwati lwetinombolo Kubetayeta lendlelanchubo lengentasi kutawukhutsata bafundzi kutsi bakhombise budlelwane emkhatsini wetinombolo kubuye kufundzise bafundzi kutsi basebentise lwati lwabo kute babale tibalo. **Kubeka inombolo lenkhulu ekucaleni kute babale bachubekele phambili nobe emuva** 4 + 12 = ☐ Hlela letinombolo 4 + 12 ngalendlela 12 + 2 ubale uchubekele phambili 4 kusukela e -12. **Kubona tinombolo letisedvute nalokuphindziwe** 7 + 6 Umfundzi angachaza asho kutsi sibalo singabhalwa ngalendlela: 6+6 -1 (phindza uhlanganise na -1) nobe 7+ 7- 1 (phindza si-7 ususe ku -1) Bafundzi bangahle barekhode tindlelanchubo tabo basebentise imicibisholo 6 + 6 → 12 + 1 = 13 **Kusebentisa lwati lwebudlelwane emkhatsini wekuhlanganisa nekususa** 15 – 9 = ☐ Umfundzi uyati kutsi lesibalo singaphindza sibhalwe njengesibalo sekuhlanganisa, 'ngiyati kutsi t 9 + ☐ = 15." Bafundzi bangahle basebentise kubala bachubekele phambili kute bakhone kubala tibalo **Kuhlanganisa tinombolo** Kute batetayete kuhlanganisa tinombolo, bafundzi kumele baniketwe tinhlobo letehlukene temisebenti kutsi bayente. Loku kutawentiwa ngesikhatsi sekutisebentela Umugcatinombolo ungasetjentiswa kubetayeta kuhlanganisa tinombolo tifike ku -9	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**			**Lwati lwekuphindzaphindza** Bafundzi batawube babhala imishotinombolo kulethemu 1 + 1 = ☐ 2 – 1 = ☐ 2 + 2 = ☐ 4 – 2 = ☐ 3 + 3 = ☐ 6 – 3= ☐ 4 + 4 = ☐ 8 – 4 = ☐ Bafundzi kumele bakwati kuphendvula lemibuto lelandzelako • Phindza ku -3 • Bayini bo 3 lababili • Iroli yi -1 iphindza sitfupha. Imphendvulo ingubani? • Mangaki emasokisi kuletintfo letisihlanu letihamba ngakubili?	
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	• Kuphindza kuhlanganisa (inombolo lefanako) ufike e -20 • Sebentisa timphawu letifanele (+, -, =, □)	• Kuphindza kuhlanganisa (inombolo lefanako) ufike e -15 • Sebentisa timphawu letifanele (+, -, =, □)	**Yini leyehlukile ethemini 2?** Ethemini 3 bafundzi bayachubeka nekutfutfukisa lulwimi loluphatselene nekuphindza kuhlanganisa. Sibonelo • Ku -2 lokunyenti kwa -3 • Tincumbi le -4 ta -2 Bafundzi bayachubeka nekubhala imishotinombolo letawukhombisa titfombe. Kubala uzube kumele kuchubeke kute kusite bafundzi kubala tintfo letibutsiselwe ndzawonye etitfombeni. Nangabe titfombe nobe tintfo tibutsiselwe ndzawonye ngakubili, bafundzi kumele babale ngakubili hayi ngakunye kute batfole linani lesamba setintfo.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhlelaka - 20** • Hlela lisethi letinombolo lowutiniketiwe • Catsanisa tinombolo kusukela e e -20, usho kutsi nguyiphi lenkhulu nobe lencane • Kwati kutsi nguyiphi inombolo lenkhulu nga -1 nobe lencane nga -1 • Kwati kutsi nguyiphi inombolo lenkhulu nga -2 nobe lencane nga -2 • Kwati kutsi nguyiphi inombolo lenkhulu nge -10 nobe lencane nge -10 **Khumbula ngekushesh-isa:** • Kuhlanganisa tinombolo uy e- 10 • Kukhumbula kuhlanganisa nekususa uye e- 10 **Emasu ekubala** Sebentisa emasu ekuhlanganisa nekususa ngalokufanele: • Faka inombolo lenkhulu kucala kute ubale uchubeke nobe ubale uye emuva	**Lwati lwetinombolo: Kuhlelaka - 15** • Hlela lisethi letinombolo lowutiniketiwe. • Catsanisa tinombolo kusukla e e -15, usho kutsi nguyiphi lenkhulu nobe lencane • Kwati kutsi nguyiphi inombolo lenkhulu nga -1 nobe lencane nga -1 • Kwati kutsi nguyiphi inombolo lenkhulu nga -2 nobe lencane nga -2 **Khumbula ngekushesh-isa** • Kuhlanganisa tinombolo uye tikwe- 5 • Kukhumbula kuhlanganisa nekususa uye tikwe - 5 **Emasu ekubala** Sebentisa emasu ekuhlanganisa nekususa ngalokufanele: • Faka inombolo lenkhulu kucala kute ubale uchubeke nobe ubale uye emuva • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela	**Yini leyehlukile ethemini 2?** Ethemini 2 kuhleleka kwetinombolo kuyakhula kucale ku -10 kuye ku -15 Tibonelo temibuto nemisebenti lengabutwa nalengentiwa: • Cala nga -3 ubale uye phambili ngakunye ufike e -10 • Bafundzi bayafola beme emgceni babute umbuto: ngubani wekucala, ngubani wesibili, ngubani wesitstfu nobe wekugcina? • Nguyiphi inombolo lencane e – 14 naku -8 • Nguyiphi inombolo lenkhulu ku -8 naku -4 • Kungaki ku -13 okuncane nga -2 • Kungaki ku -8 lokunyenti nga -2 • Nginike inombolo lesemkhatsini wa -1 naku -3. • Nginike inombolo lesemkhatsini we -10 ne – 14.Ngabe kunenombolo yinye kuphela? • Beka emakhaditinombolo ngekuhleleka kusukela kulencane kuya kulenkhulu. **Khumbula ngekusheshisa** Ngikhombise inombolo lotayihlanganisa ikunike si -5 (bhala nobe usebentise simelibungako nobe emafladikhadi) • 1 • 2 • 3 • 4 Ngikhombise inombolo lesele nangabe.....asusiwe ku -5 (bhala nobe usebentise simelibungako nobe emafladikhadi) • 1 • 2 • 3 • 4 1 + 2 = 3 Wenta yiphi inombolo 2 + 1? Imphendvulo ngabe iyafana? 3 + 1 = 4 wenta yiphi inombolo 1 + 3? Imphendvulo ngabe iyafana?	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.16 **Tibalo tenhloko**	• Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela **Lwati lwetinombolo: Kuhlelaka - 20** • Hlela lisethi letinombolo lowutiniketiwe. • Catsanisa tinombolo kusukela e-100 usho kutsi ngukuphi lenkhulu nobe lekuncane. • Kwati kutsi nguyiphi inombolo lengetulu ngaku- 1 lencane ngaku- 1 kulenombolo leniketiwe. • Kwati kutsi nguyiphi inombolo lengetulu nga- 2 lencane nga -2 kulenombolo leniketiwe. • Kwati kutsi nguyiphi inombolo lengetulu nge-10 lencane nge-10 kulenombolo leniketiwe. **Khumbula ngekusheshisa:** • Hlanganisa tinombolo uye e- 10. • Khumbula kuhlanganisa nekususa ngemaphuzu eli 10.		**Emasu ekubala:** Sebentisa emasu ekubala kuhlanganisa nekususa ngalokufanele Hlanganisa loku lokulandzelako ngekucala ngenombolo lenkhulu kucala bese ubala uyachubeka. 1 + 2 2 + 3 1 + 4 Phindza -1. Kuyini lokubili kwa -2? Iyini ihhafu ya -4? Kusebentisa umugcatinombolo Weca kangaki nawusuka ku -3 uya ku – 5? Weca kangaki nawusuka emuva kusukela ku -5 kuya ku -2?	

SIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.16 **Tibalo tenhloko**	**Indlela yenchubo yekubala.** Sebentisa indlela yenchubo kuhlanganisa nekususa ngekunak-ekela: • Faka inombolo lenkhulu kucala kute ubale uye phambili nobe uye emuva. • Imigcatinombolo. • Kuphindza nekuhhafula. • Kwakha nekuhlahlela. Sebentisa budlelwane emkhatsini			

LIBANGA 1 ITHEMU 3 2. EMAPHETHINI, EMAFANGISHINI NE ALJEBHRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NETINKHOMBANDLELA TEKUFUNDZISA**	**Budze besikhatsi** (etifundvweni teli –awa li- 1 nemaminithi lange -24)
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela,chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo.	Ebangeni 1 bafundzi bagcila kumaphethini lapho tincenye temaphethini tingaphindzeka ngendlela letayelekile. Buka emanotsi eThemini 2	1 sifundvo

<table>
<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA</th><th>LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3</th><th>EMANOTSI LACACISAKO NETINKHOMBANDLELA TEKUFUNDZISA</th><th>Budze besikhatsi
(etifundvweni teli –awa li- 1 nemaminithi lange -24)</th></tr>
<tr>
<td>2.2
Emaphethini etinombolo</td>
<td>Tsatsela, chubekisela phambili ubuye uchaze
Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e-100
Yakha emaphethini akho
Yakha emaphethini akho etinombolo.</td>
<td>Tsatsela, chubekisela phambili ubuye uchaze
Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e-80
Kulandzelana kwetinombolo kumele kukhombise kubala uye phambili nasemuva:
• Nga -1 kunobe nguyiphi inombolo emkhatsini wa-1 ne -80 kubala uye phambili:
• Nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 ne -80
• Nge -5 nobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne-80
• Nga -2 nobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne-80
Takhele emaphethini akho
Yakha emaphethini akho etinombolo</td>
<td>Kulandzelana kwetinombolo kungachunyaniswa nekubala. Njengoba emakhono ebafundzi ekubala antjintja abuye atfutfuke, tinhlobo tetinombolo letilandzelanako umfundzi lasebenta ngato tiyatfutfuka.
Kulandzelana kwetinombolo kumele kukhombise kubala uye phambili nasemuva kuloku:
• Nga -1 kusukela kunobe nguyiphi inombolo lesemkhatsini waku -1 ne -80
• Nge -10 nobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 ne 80
• Nge -5 nobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -80
• Nga -2 nobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 -80
Nangabe bafundzi babala ngemlomo bangakhonjiswa kulandzelana kwetinombolo lokubhalwe phasi ngetindlela letehlukene
Bangakhombisa inombolo lebalwako
Sibonelo 1: Kusebentisa lishadi letinombolo
<table>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr>
<tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr>
<tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr>
<tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr>
</table>
Sibonelo 2: Kusebentisa umugcatinombolo kutfola emaphethini
Kubala nge -10 kusukela e -50 kuya e -80
Bafundzi bafundza tinombolo bafike e -80, kepha babe babhala tinombolo kusukela ku -1 kuya e -15. Emaphethini etinombolo lanetinombolo letingetulu kwe -15 tingetiwa:
• Ngekufaka umbala etinombolweni letisemaphethinini lekumagridi etinombolo.
• Ngekufaka indilinga kumaphethini, kumagridi etinombolo nobe emgcenitinombolo
• Kusebentisa emakhadi etinombolo kupaka tinombolo letilandzelanako
• Kusebentisa emakhadi etinombolo kukhombisa tinombolo letisele ngendlela yekubhala ngekulandzelanisa lokuniketiwe.</td>
<td>3 tifundvo</td>
</tr>
</table>

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NETINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminithi lange -24)
2.2 **Emaphethini etinombolo**			• Kusebentisa luhla lwetimphawu tetinombolo loluniketiwe kudvweba umugca losuka enombolweni lekhetsiwe lengiyo kuya endzaweni lekumele iye kuyo. Bafundzi banganiketwa tinombolo letibhaliwe letilandzelanako letinetinombolo letisele. Kumele baniketwe luhla lwetinombolo letilindzelekile, lapho bangakhetsa khona imphendvulo lekungiyo. Bafundzi bangagcwalisa tinombolo letisele labaniketwe tona kulenye yetindlela letilandzelekako ngenhla kanye nekugcwalisa tinombolo letisele ngendlela yekub-hala yetinombolo letilandzelanako sib. 2, 12, 22, ___, 42, 52, 62.	

LIBANGA 1 ITHEMU 3 3. SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI EKUCACISA NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**Budze besikhatsi** (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
3.1 **Kubekeka, kwetayeta nekubekeka**	**Lulwimi loluphatselene nekubekeka** Chaza kubekeka kwentfo yinye nayihambelana nalenye sib. ngetulu kwe-, ngembi kwe-, ngemuva kwe-, sencele, sekudla, etulu, phasi, edvute kwe- **Kubekeka nekubukeka** Matanisa kubukeka lokungafani kwentfo yinye lesetjentiswa malanga onkhe. **Kubekeka netinkhombandlela** Landzela tinkhombandlela kuhambahamba eklasini. Landzela ticondziso kubeka intfo yinye ihambisane nalenye sib. beka ipeniseli ekhatsi ebhokisini		Lulwimi lwekubekeka lolutfutfukiswe eThemini 1 kumele bafundzi betayetwe ngalo ngasosonkhe sikhatsi sekufundzisa liklasi lonkhe nesikhatsi sekufundziswa kwemacembu kuyoyonkhe ithemu; sebentisa sikhatsi lesincane kwetayeta bafundzi lolulwimi ngasosonkhe sikhatsi. Lolunye lulwimi lwekubekeka lungabuye lwetayetwe bafundzi uma basebenta ngetintfo letingemadayimenshini lamatsatfu (3D) Umsebenti lophatselene nekubekeka nenkhombandlela ungahlanganiswa ngemisebenti lebhalwako lefana nekudvweba nobe kumatanisa imidvwebo nemagama. Loku kungentiwa ngesikhatsi sekutisebentela.	2 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI EKUCACISA NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
3.2 **Tintfo letinge-madayimeshini lamatsatfu** **(3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • umbala • tintfo letigicikako • tintfo letishelelako **Imisebenti lokugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentisa tintfo letiphatsekako letifana nemabhuloki ekwakha, tintfo tekuvuselela kabusha, emakhithi etintfo tekwakha.	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • umbala • tintfo letigicikako • tintfo letishelelako	**Kugcila etimphawini tetintfo letingemadayimenshini lamatsatfu (3-D)** Bafundzi basebenta ngemabhola netintfo letakheke njengemabhola, nemabhokisi lahlukene naletinye tintfo letakheke njengemaphrizimu langucalandze nobe emakhiyubhu. Bafundzi bangenta umsheleleti ngekutsi babeke libhokisi ngaphasi ekugcineni kwelibhuku lelikhulu. Bafundzi batawucwaninga babuke kutsi ngutiphi tintfo letingagicika, ngutiphi letingashelela  Bafundzi bangacwaninga bahlole kutsi bangakwati yini kwenta sakhiwo lesidze kakhulu basebentisa emabhola odvwa nobe emabhokisi odvwa. Ngesikhatsi sekutisebentela bafundzi bangachubeka: • bahlunge tintfo ngekwesayizi • bahlunge tintfo ngekwembala • kwakha basebentisa tintfo;ne • kwenta emabhola nobe emabhokisi basebentisa lubumba nobe inhlama yekudlala **Kubona nekunika emagama emabhola (indilinga) nemabhokisi (iphrizimu)** Bafundzi bayachubeka kutfola nekuchaza tintfo teJomethri naletisetjentiswa malanga onkhe ngekusho kutsi ngabe takheke njengebhola nobe njengelibhokisi, sib. Lesitini sakheke njengelibhokisi nobe leliwolintji lakheke njengebhola **Imisebenti lebhalwako** Imisebenti leyentiwako lephatselene netintfo letingemadayimeshini lamatsatfu kumele ihlanganiswe ngemisebenti lebhalwako.	2 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI EKUCACISA NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
3.3 **Bobunjwa labangema-dayimenshini lamabili (2-D)**	**Tinhlobo tabobunjwa** Bona ubuye usho bobunjwa labangemadayimenshini lamabili (2-D) **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	Akukho lokuphakanyisiwe eThemini 3 lokumele kugcilwe kuko lokuphatselene nabobunjwa labangemadayimeshini lamabili (2-D). Nanobe kunjalo bafundzi bangachubeka bente titfombe ngabobunjwa labangemadayimenshini lamabili (2-D) labajutjiwe nobe bente umsebenti lobhalwako ngesikhatsi sekutisebentela seTibalo nobe Emakhono Ekuphila.		
3.4 **Kuhlukanisa emkhatsini kulingane ngalokufanako**	**Kuhlukanisa emkhatsini kulingane ngalokufanako** • Bona kwehlukana ngalokulinganako kwemtimba wakho • Bona ubuye udvwebe umugca lowehlukanisa emkhatsini ngalokulinganako nangalokufanako bobunjwa labangemadayimeshini lamabili	**Kuhlukanisa emkhatsini kulingane ngalokufanako** • Bona kwehlukana ngalokulinganako kwemtimba wakho • Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa labangemadayimeshini lamabili (2-D)	Bafundzi kumele babuke umugca lowehlukanisa emkhatsini kulingane ngalokufanako etintfweni letiphatsekako nasetitfombeni Imisebenti lebhalwako kumele kungabi kudvweba ihhafu lenye kuphela kepha faka tibonelo lapho bafundzi batawudvweba umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubo bobabili bobunjwa beJomethri, sib. bocalantsatfu, nabobunjwa labangasibo beJomethri, sib. umdvwebo wemuntfu.	1 tifundvo

LIBANGA1 ITHEMU 3 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**Budze besikhatsi** (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
4.1 **Sikhatsi**	**Kwendlula kwesikhatsi** Khuluma ngekwendula kwesikhatsi • Bahlela tigameko letetayelekile temphilo yabo. • Catsanisa budze besikhatsi ngekusebentisa lulwimi sib.lokudze kuna, lokufisha, ngekuphangisa, kwenta kancane. • Landzelanisa tigameko usebentisa lulwimi lolufana nekutsi itolo, lamuhla, kusasa. **Kusho sikhatsi** • Chaza kutsi tintfo tenteka sikhatsini usebentisa lulwimi sib. ekuseni, • ntsambama, ebusuku, ngembi kwesikhatsi, ngemva kwesikhatsi. • Yati emalanga eliviki. • Yati tinyanga temnyaka • Faka emalanga ekutalwa ekhalendeni.		Bafundzi kumele bakwati kukhuluma: • ngekulandzelana kwetigameko • ngebudze besikhatsi Bafundzi bayachubeka bahlanganisa tindlela tekukhuluma ngesikhatsi malanga onkhe ngesikhatsi sekufundzisa liklasi lonkhe nobe ngesikhatsi semacembu lekugcilwe kuwo. Bafundzi bakhuluma babuye baphendvule imibuto ngekutsi tintfo tenteka nini, basebentisa lulwimi njengekutsi ekuseni, ntsambama, ebusuku, ngembi kwesikhatsi, nasemva kwesikhatsi. Bafundzi balandzelanisa tigameko basebentisa lulwimi njengekutsi: itolo, namuhla, kusasa, emalanga eliviki netinyanga temnyaka. Bafundzi bacatsanisa budze besikhatsi basebentisa lulwimi njengekutsi: lokudze nobe lokufisha nekuphangisa nekwenta kancane. Bafundzi bakhuluma ngekuhlela tigameko temphilo yabo. Babuye bahlele kulandzelana kwetitfombe njenge: • Tinyatselo tekwenta emasangweji nobe inkomishi yelitiya; • Titfombe letikhombisa kukhula kwemntfwana ate abe ngumuntfu lomdzala; • Umjikeleto wemphilo yetilwane sib. licandza kudzimate kube yinkhukhu, nobe licandza lesicoco kudzimate kube sicoco nobe licandza leluvivane kudzimate kube luvivane; ne • Tehlakalo letivamile telusuku (kuvuka, kuba sesikoleni, kudlala, kudla kudla kwakusihlwa, kulala). Chubeka ufake emalanga ekutalwa ekhalendeni, umnyaka wonkhe.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
4.2 Budze	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele budze, kuphakama nobe bubanti betintfo letimbili nobe letinyenti ngekubeka yinye edvute kwalenye. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib.lokudze kuna- , lokufisha kuna-, lokuphakeme kuna-, lokubanti kuna-. • Combela, kala, catsanisa, hlela ubuye urekhode budze ngekusebentisa tilinganiso letingakabekelwa umgomo sib.budze besandla, tinyatselo, budze bepeniseli, tibali njll.	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode budze ngekusebentisa tilinganiso letingakabekelwa umgomo sib.budze besandla, sivinini, budze bepeniseli, tibali njll.	**Yini leyehlukile ethemini 3?** Tonkhe tilinganiso teLibanga 1 atikahleleki. Akukho kulinganisa budze ngemayunithi langakabekelwa umgomo lokwentiwako. Ethemini 1 kuphakanyisiwe kutsi bafundzi bagcile kuloku: • Kucatsanisa ngco kwebudze betintfo ngekubeka yinye edvute kwalenye, • Kuhlela nekucatsanisa tinombolo, budze nobe kuphakama nobe bubanti betintfo letintsatfu nobe letinyenti, ngekutibeka ngemapheya etintfo yinye edvute kwalenye naleyo, tize tilandzelaniswe tonkhe tintfo; ne • Kutfutfukisa lulwimi kukhuluma ngemehluko webudze, kuphakama, bubanti njll. Ngesikhatsi sekutisebentela kuyo yonkhe ithemu, bafundzi bangatetayeta kuhlanganisa, kuhlela, nekucatsanisa budze nobe kuphakama nobe bubanti betintfo letintsatfu nobe ngetulu, ngekubeka ipheya yetintfo, yinye edvute nalenye tize tilandzelaniswe tonkhe tintfo. Yonkhe imisebenti kumele irekhodwe. Ethemini 3 bafundzi batawugcila ekwenteni silinganiso lesingakahleleki ngemayunithi ebudze langakabekelwa umgomo. **sebudze lesingakahleleki lesisebentisa emayunithi langakabekelwa umgomo.** Bafundzi bangafundza yonkhe imigomo nemisebenti yekutetayeta kukala basebentisa silinganiso lesingakabekelwa umgomo. Kukala ngemayunithi langakabekelwa umgomo akufanelanga kutsatselwe phasi nobe kutsatfwe njengentfo lengakabaluleki kunekukala ngemayunithi labekelwe umgomo. Kukala budze ngemayunithi langakabekelwa umgomo kufaka ekhatsi kutsi mangaki emayunithi lakhetsiwe lanebudze lobufana nebalentfo lekalwako. Sibonelo, budze belideski bulingana nebudze betandla leti -8. Bafundzi kumele bakale tintfo letehlukene basebentisa tintfo letehlukene njengemayunithi langakabekelwa umgomo. Kunetindlela letintsatfu longawasebentisa ngato emayunithi langakabekelwa umgomo: • Kupaka emgceni ngalokuvundlile entfweni lekalwako, tintfo letinyenti letinebudze lobulinganako, njengemabhokisi emetjiso; timbonyo temabhodlela letinetimo latifanako nobe tibali, emapeniseli lamasha, njll. Sibonelo: kukala bubanti belideski, emapeniseli lamasha angabekwa yinye ekugcineni kwalenye ngale kwelideski. Lapha kubalulekile kutsi:	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
4.2 **Budze**			• Tonkhe tintfo tinebudze lobulinganako. Angeke usho kutsi libhuku lakho linebubanti lobungangetivalo temabhodlela leti -12, nangabe tivalo temabhodlela tingemasayizi lehlukile, sib. timbonyo temabhodlela elubisi letingemalitha la -2, timbonyo temabhodlela eplastiki esinatfo lesibandzako, timbonyo temabhodlela letisansimbi (tinkwamba) • Akukashiywa tikhala emkhatsini wetintfo, tidzinga kupakwa kahle kute titsintsane • Sebentisa tintfo letimbili letifanako njengemayunithi langakabekelwa umgomo. Beka lentfo edvute kwalenye, bese ususa leyekucala uyibeke ngale kwaleyo yesibili. Loku kwentiwa nangabe kukalwa ngebudze besandla, budze belunyawo nobe tinyatselo. • Kusebentisa intfo yinye kuphela njengeyunithi lengakabekelwa umgomo bese bayayigucula nobe babeke luphawu ekugcineni kwalentfo ngembikwekutsi bayishelelise. Bafundzi kumele bafundziswe kusho iyunithi ngasosonkhe sikhatsi, sib.bubanti belibhuku bulingana netimbonyo temabhodlela le-12, liklasi linebudze lobunge -38 etinyatselo Nangabe bafundzi baye bakala nganobe nguyiphi iyunithi emahlandla lamanyenti, kumele bacombele kutsi yindze kangakanani intfo lekumele ikalwe. Kucombela ngaphambili kwekutsi ukale kubalulekile, kodvwa kungentiwa kuphela nangabe bafundzi bake bakala basebentisa leyo yunithi. Bafundzi kudzingeke bafundziswe kutsi kute bacatsanise budze, kuphakama, nobe bubanti kumele basebentise iyunithi lefanako, sib. Nangabe bubanti bemnyango bulingana budze betandla lobunge -20, bubanti nebudze belideski bulingana nemapeniseli langu -8, angeke usho kutsi umnyango ubanti kwedlula lideski. Bafundzi kumele bakale ngetinhlobo letehlukene temayunithi letingakahleleki, kute bakwati: • kucala kuvisisa kutsi uma emayunithi amancane, atawusetjentiswa tikhatsi letinyenti, sib. bubanti beliklasi bungaba tinyatselo letinge -20 kodvwa budze betinyawo bu -48 babuye • bacale kusebentisa emayunithi lahambisana naloko lebakukalako, sib. kukala bubanti beliklasi ngetimbonyo temabhodlela kukucitsa sikhatsi	2 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
4.2 **Budze**			**Kurekhoda silinganiso** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode silinganiso sabo ngasosonkhe sikhatsi **Kulinganisa budze njengegcikitsi nekusombulula tinkinga tetibalo** Ngesikhatsi lesiniketwe tinombolo, timphawu tekubala nebudlelwane, bafundzi bangasombulula tinkinga letisebentisa ingcikitsi lephatselene netilinganiso letingakahleleki tebudze, sib. libhokisi lensipho yekuwasha linekuphakama lokulingana nemabhokisi la -8 emetjiso. Libhokisi lemakhoniflekisi linekuphakama lokulingana nemabhokisi la -13 emetjiso. Liphakeme kangakanani libhokisi lemakhoniflekisi kwendlula libhokisi lensipho yekuwasha. Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.	
4.3 **Sisindvo**	**Kukala lokungakahleleki** • Combela, catsanisa, hlela ubuye urekhode sisindvo usebentisa tilinganiso letingakabekelwa umgomo nesikali sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokulula, lokusindzako lokulula kakhulu, lokusindza kakhulu.		Tonkhe tilinganiso ebangeni 1 titilinganiso letingakahleleki. Asikho silinganiso lesihlelekile sesisindvo lesisebentisa emayunithi labekelwe umgomo lesitawentiwa Ethemini 1 kuphakanyiswe kutsi bafundzi kumele bagcile kuloku: • Kucatsanisa ngco sisindvo setintfo • Kuhlela nekucatsanisa sisindvo setintfo letintsatfu nobe letingetulu, ngekubeka tintfo lengemapheya tize tilandzelaniswe tonkhe tintfo. • Kutfutfukisa lulwimi kute bacoce ngemehluko wesisindvo Ngesikhatsi sekutisebentela ithemu yonkhe, bafundzi bangatetayeta kuhlanganisa, kuhlela nekucatsanisa sisindvo setintfo letintsatfu nobe letingetulu ngekutsi babeke tintfo letingemapheya esikalini sekulinganisa tize tilandzelaniswe tonkhe tintfo. Umsebenti wonkhe kumele urekhodwe	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
4.4 **Umtsamo / Bungako**	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele bungako • balokusamanti • (bungako) etintfweni tekuphatsa letimbili letibekiwe, yinye edvute kwalenye. • Bafundzi bahlola ngekutsela entfweni yekuphatsa yesitsatfu uma kubalulekile. • Catsanisa ubuye uhlele bungako balokusamanti lobungamumatfwa tintfo tekuphatsa letimbili natigcwalisiwe (umtsamo) • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokunyenti kuna-, lokuncane kuna-, lokugcwele, lokungenalutfo. • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa usebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi.		Tonkhe tilinganiso ebangeni 1 tisilinganiso lesingakahleleki. Asikho silinganiso lesihlelekile sesisindvo lesisebentisa emayunithi langakabekelwa umgomo lesitawentiwa emnyakeni kumtsamo/ bungako kumele kugcilwe kuloku: • Kutfutfukisa lulwimi kute bacoce ngemtsamo/ bungako • Kucatsanisa bungako etintfweni letimbili letifanako • Kucatsanisa bungako etintfweni tekuphatsa letinebubanti lobehlukene ngekutsela entfweni yesitsatfu Buka emanotsi ethemu 2 Bafundzi bangatetayeta babuye bahlanganise lolwati ngesikhatsi sabo sekutisebentela	

LIBANGA I ITHEMU 3 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**Budze besikhatsi** (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
Kusebenta ngeligcogco letintfo				
5.1 **Gcogca ubuye uhlele tintfo**	**Gcogca ubuye uhlele tintfo** Gcogca ubuye uhlunge tintfo letibonakalako letisetjentiswa malanga onkhe.	Kuhlunga ligcogco letintfo akusiyo intfo lekugcilwe kuyo ehhafini yesibili yemnyaka nobe kunjalo kumele kube ngumsebenti lowentiwa ngalesosikhatsi ngesikhatsi sekutisebentela Imisebenti lekumele kugcilwe kuyo eThemini ye-3 ngumjikeleto wekusebenta ngedatha Buka ngentasi.		
5.2 **Veta ligcogco letintfo letihlungiwe**	**Veta ligcogco letintfo letihlungiwe** Dvweba sitfombe seligcogco letintfo			
5.3 **Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe**	**Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe** • Nika tizatfu tekutsi ligcogco letintfo lihlungwe njani. • Phendvula imibuto ngaloku: - Kuhlunga kwentiwe njani? (inchubo) - Libukeka njani ligcogco letintfo letihlungiwe? • Chaza ligcogco letintfo nemdvwebo. • Chaza kutsi ligcogco letintfo lihlungwe njani.			

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Kusebenta ngedatha				
5.4 **Gcogca ubuye uhlele idatha**	**Gcogca ubuye uhlele idatha** • Gcogca idatha lephatselene neliklasi nobe sikolo kute baphendvule imibuto lebutwe nguthishela	**Gcogca ubuye uhlele idatha** • Gcogca idatha lephatselene neliklasi nobe sikolo kute baphendvule imibuto lebutwe nguthishela	**Tiphakamiso lekugcilwe kuto: Umjikeleto wekusebenta ngedatha lophelele** Lokumele kwenteke kumjikeleto wekusebenta ngedatha • Bafundzi bagcogca lwati kute bakwati kuphendvula imibuto. Esigabeni Sabokhewane naseSigabeni lesiseMkhatsini lombuto uvame kuniketwa nguthishela nobe incwadzi yekufundzisa • Bafundzi bahlunga babuye bavete lwati ngetindlela letitawenta kutsi kube lula kuhlatiya. Bafundzi beLibanga 1 batetayeta igrafutitfombe • Bafundzi bahlatiya lwati kugrafutitfombe ngekuphendvula imibuto lebutwe nguthishela Igrafutitfombe yaseklasini Ebangeni le -1 kulusito kucala kusebenta ngedatha ngekwenta igrafutitfombe yaseklasini. Kusebentisana kanyekanye njengeliklasi kuyabasita bafundzi kutsi babambe lichaza kuto tonkhe tigaba talenchubo ngaphandle kwekulahleka emininingwaneni yanobe ngusiphi sigaba sigaba. Kwenta igrafutitfombe kuvumela thishela kutsi akhone kugcilisa bafundzi etintfweni letibalulekile tekusebenta ngedatha kanye naloko lokumele bakwati lokuphatselene netimphawu letibalulekile tegrafutitfombe • Igrafu kumele bayilebule kuphi futsi njani? (sihloko segrafu) • Tinhlobo tegrafu kumele batilebule kuphi futsi njani? • Igrafutitfombe kumele ibe neluphawu lolutawuchaza kutsi sitfombe ngasinye sisho kutsini. • Titfombe nobe indzawo yetitfombe kumele ibe nesayizi lefanako • Titfombe kumele tibekeke njani tisabalale emgceni • Igrafu itawufundvwa njani Kusebenta ngemjikeleto wonkhe wedatha kutawutsatsa tifundvo letinyentana Gcogca, uhlele ubuye uvete idatha Bothishela kulesigaba kumele bente siciniseko sekutsi tihloko letehlukene tikhetselwa kugcogca idatha nekuhlatiya ebangeni ngalinye. Tibonelo letifanele tifaka ekhatsi kuhlela kabusha lishadi lesimo selitulu salenyanga leyengcile semalanga onkhe kute sakhe igrafutitfombe nobe kwenta igrafutitfombe lephatselene nelusuku lwekutalwa lwebafundzi.	3 tifundvo
5.5 **Veta idatha**	**Veta idatha** Veta idatha kugrafutitfombe	**Veta idatha** Veta idatha kugrafutitfombe		
5.6 **Hlatiya ubuye uhumushe idatha**	**Hlatiya ubuye uhumushe idatha** • Phendvula imibuto lephatselene nedatha lekugrafu yetitfombe	**Hlatiya ubuye uhumushe idatha** • Phendvula imibuto lephatselene nedatha lekugrafu yetitfombe		

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminitsi langu -24)
			Kuhlatiya idatha Bafundzi babuta imibuto lefana nalena: ‘’Ngusiphi simo selitulu lebesivame kakhulu lenyanga?’’ ‘’Ngusiphi simo selitulu lebesivame kancane lenyanga?’’ Mangaki emalanga lamanyenti lashisa kakhulu kwendlula emalanga lanemafu lesibe nawo? Kusebenta ngemjikeleto wonkhe wedatha kutawutsatsa tifundvo letinyentana	

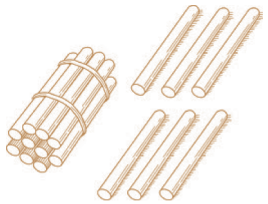
LIBANGA 1 ITHEMU 4 1. TINOMBOLOTIMPHAWU TEKUBALA NEBUDLELWANE				
SIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI**
KUTFUTFUKISA LWATI LWETINOMBOLO: Bala ngetinombolo letiphelele				
1.1 **Kubala tintfo**	Bala tintfo ngekutsembeka uye e-50. Nika kucombela lokungiko kwelinani letintfo letingahlolwa ngekubalwa.	Bala tintfo ngekwetsembeka kuye eli-50. Nika kucombela lokungiko kwenombolo yetintfo letinga hlolwa ngekubala	**Yini leyehlukile ethemini 3?** Ethemini 4, bafundzi bachubekisela phambili kubala ngalokuhlelekile.Kusamele kugcilwe ekuvisiseni imigomo yelinani letinombolo. Kulethemu bafundzi kumele bafundze kuhlela tintfo ngekulandzelana kwato uma babala kute kutsi uma bahlola kubala kwabo, kuhleleka kubasita kutsi bakwati kalula.Sibonelo: Tibali kumele tibekwe ngekulandzelana kwato. Kulethemu bafundzi bachubeka bangete emakhono ekubala nekutetayeta kubala: • Kubala konkhe • Kubala uchubeke; • Imigomo yekubala tinombolo; • Kusebenta ngemibhalo lebhaliwe Bafundzi badzinga kwenta kuchumana emkhatsini wekuhlobana kwetinombolo nelinani lekubala tinombolo.Loku bakwati kukutfola uma babona sebaceda kubala bafike etintfweni leti-50. Batawukwati kutsi kuhleleka lababala ngako tintfo akukuphazamisi kubala. **Kubala ngetincumbi** Kute kusitwe bafundzi babale ngetigamu tangakubili, sihlanu kanye nelishumi badzinga kugcogca tintfo ngakubili, ngakuhlanu, nangemashumi. Emakhaditinombolo kumele akhonjiswe kulelo nalelo gcogco kukhombisa tintfo lebaliwe. Kubala ngetincumbi kusita bafundzi kutsi bavisise emamalthiphuli nekubala tinombolo. Ekupheleni kwethemu bafundzi kumele bakwati kubona ligcogco ngekwehlukanisa inombolo. Sibonelo:” Ngiyati kutsi li-10 ngobe -1 ungete ku-4 kulelinye licala kanye ne-6 kulelinye licala kute kuvisiswe emamalthiphuli nekubala kulelinye licala.” **Tinsita:** Akucikelelwe ngekucophelela tidzingo letiniketwa luhlobo lwetinsita letitawusetjentiswa. • Tinsita letihlelekile, njengentsambo yekubala yebuhlalu, tingasetjentiswa • I-abhakhasi ingasetjentiswa kwetayeta kubala ngetincumbi telishumi. • Bafundzi bangenta emabhandlela aloku-2, emabhandlela,emabhandlela aloku-5 nelishumi bese ubala konkhe.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.2 **Bala uye phambili nasemuva**	**Bala uye phambili nasemuva** • Ngakunye kusukela kunobe nguyiphi inombolo emkhatsini we-0 ne-100 **Kubala uye phambili kuloku:** • Nge -10 kusukela kunobe nguyiphi inombolo ye -10 emkhatsini we- 0 ne-100 • Nge -5 kusukela kunobe nguyiphi imalthiphuli e- 5 emkhatsini we-0 ne -100 • Nga- 2 kusukela kunobe nguyiphi imalthiphuli a- 2 emkhatsini we-0 ne -100	**Bala uye phambili nasemuva** • Ngakunye kusukela ku nguyiphi inombolo emkhatsini we- 0 kuye e-100 **Kubala uye phambili kuloku:** • Nge -10 kusukela kunobe nguyiphi imalthiphuli ye- 10 emkhatsini 10 emkhatsini we- 0 ne-100 • Nge-5 kusukela kunobe nguyiphii imalthiphuli ye -5 emkhatsini wa- 0 ne e-100 • Nga- 2 kusukela kunobe nguyiphi imalthiphuli ya- 2 emkhatsini wa ne-100 • Nga- 2 kusukela kunobe nguyiphi imalthiphuli ya- 2 emkhatsini wa-1 ne-20	**Yini leyehlukile ethemini 1?** Ethemini 4, bafundzi sebabala ngetigamu ta-10,5 na—2 kuye e-100. Kubala ngetigamu kulikhono lelibalulekile lelitawusetjentiswa bafundzi eBangeni 2 nelibanga 3 futsi atawusita bafundzi kwenta tibalo tekubala. Ekupheleni kwethemu bafundzi kumele bakwati ku: • Cala kusukela e-52, ubuye uchubeke ubale ngakunye uye e- 72. • Cala kusukela e-88,ubuye ubale uye emuva ngakunye uye e- 70 • Cala kusukela e- 38,ubuye ubale ngakubili uye e -50 • Cala kusukela e- 45,ubuye ubale ngetihlanu uye e-100 • Cala kusukela e- 10,ubuye ubale ngemashumi uye e-100 Bafundzi kumele bakwati kusebentisa emakhono abo ekubala emsibentini yabo lebhalwako.Sibonelo: • Kutsatsela nekwelula kulandzelanisa tinombolo lokungenani kufike e-100.Buka sigaba semaphethini etinombolo.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.3 **Tinombolo nemagama etinombolo**	Kubona, kutfola nekufundza tinombolo • Kubona, kutfola nekufundza tinombolo -0 uye e-100 • Kubhala tinombolo we-0 uye e- 20 • Kubona, kutfola nekufundza emagama etinombolo • 1 uye e -10 • Kubhala emagama etinombolo -1 uye e 10.	• Kubona, kutfola nekufundza tinombolo -0 uye e-100 • Kubhala tinombolo -0 uye e- 20 • Kubona, kutfola nekufundza emagama etinombolo 1 kuye e -10 • Kubhala emagama etinombolo -1 kuye e 10.	**Yini leyehlukile eThemini 3?** EThemini 4, kuhlelwa kwetinombolo kuyatfutfuka kuye e-100.Kubhala tinombolo nemagama etinombolo kuyahlanganiswa kulethemu.Alukho lwati lolusha lolufundvwako.Kubalulekile kwati kutsi kwakheka kwetinombolo nekubala kuncike ekusetjentisweni ngalokungiko kwemagama etinombolo.Bafundzi badzinga kusebentisa, kusho nekubhala emagama etinombolo etingcitsini letehlukene uma kwenteka. Ngasekupheleni kwethemu kumele bakwati kwenta lemisebenti leyehlukene lelandzelako: *Matanisa timphawu temagama,titfombe titfombe tetintfo.* *Lelikhadi lisho 6* Lisho kutsini lelikhadi? 6 11 Matanisa emagama netintfo Kunye ✂ Kubili ✱ ✱ ✱ ✱ Kutsatfu ✸✸ Kune ✶✶✶✶✶✶ Sihlanu ✖✖✖✖✖✖✖✖✖✖ Sitfupha ✵✵✵ Inkhotsa ✷✷✷✷✷✷✷ Siphohlongo ※ ※ ※ ※ ※ Imfica ✦✦✦✦✦✦✦✦✦	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.4 **Chaza, Catsanisa ubuye uhlele tinombolo**	**Chaza, Catsanisa ubuye uhlele tintfo ufike e-20** • Catsanisa ligcogco letintfo kuye kulokuny enti,lokumbalwa,lukun yenti,lokumbalwa,loku nyenti kuna,lokuncane kuna,lokulingana na, lokwehlukile. • **Hlela** ligcogco letintfo kusukela kuletinyenti kuye kuletimbalwa nakuletimbalwa kuye kuletinyenti kakhulu. • Hlela tinombolo kuye e- 20 etintfo. **Hlela ubuye ucatsanisa** • **Kuhlela tinombolo** • Kusukela kulencane kuye kulenkhulu nekusukela kulenkhulu kuye kulencane • Phambili, emuva, phakatsi / emkhatsini • Kusetjentiswa umugcatinombolo 0 - 20 • Kuchumanisa- kunye –nalokunye • Kusebentisa kuhleleka kwetinombolo kuye e-20.		Ngekuhlela nekucatsanisa tintfo netinombolo letifundvwe bafundzi tekutsi: • Tincenye tenombolo yekhadinali tisetjentiselwa kuchaza inombolo esethini. **Yini leyehlukile eThemini 3?** Ekupheleni kwethemu nemnyaka bafundzi kumele bakwati kusebentisa lulwimi lwekuhlela nekucatsanisa ngaletinhlobo tetindlela letilandzelako: • Yekucala, yesibili, yesitsatfu, yesine,yesihlanu…….. • Tingaki …… • Tinyenti njenge, inombolo lefana ne……. • Kulingana na, lokunyenti kuna, lokuncane kuna, lokumbalwa kuna, lokukhulu kuna, lokumbalwa kuna,lokunncanyane kuna,lokukhudlwana kuna…… kuhlela,kwekucala,ngembi, emva, edvute,emkhatsini wetinombolo ◯◯◯◯◯◯◯◯◯◯◯◯◯◯◯◯◯◯◯◯ • Faka umbala loluphuti endilingeni yesihlanu. • Faka umbala lobovu endilingeni yekucala. • Faka umbala lolingaangane endilingeni yesiphohlongo Bafundzi kumele baphendvule imibuto lefana. • Ngubani losekucaleni kulomugca? • Ngubani wesibili kulomugca? • Mthunzi unemapeniseli emakhilayoni la-5.Cally unemapeniseli emakhilayoni la-8.Ngubani lonemakhilayoni lambalwa? • Nginike inombolo lesemkhatsini we-15 ne-17 • Bhala inombolo lesemkhatsini wa-4 ne-10. • 1, 2, 3, 4, _, _, _, _, _, 10 • Gcwalisa tinombolo letingekho	

<table>
<tr><th>SIHLOKO</th><th>LWATI NEMAKHONO
LADZINGEKAKO EKUPHELENI KWEMNYAKA</th><th>LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1</th><th>EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA</th><th>BUDZE BESIKHATSI</th></tr>
<tr>
<td>1.4
Chaza, Catsanisa ubuye uhlele tinombolo</td>
<td>Kusebentisa tinombolo te-Odinali kukhombisa kuhleleka, indzawo
• Beka tintfo ngekulandzelana kwato kusukela ekucaleni kuye eshumini kwekucala kuye kuyekugcina sib.kwekucala, kwesibili, kwesitsatfu ….(tinombolo te-odinali/ tinombolo letihlelekile)
Tincenye tetinombolo te-Odinali ngekuhleleka kwetinombolo kusukela kuyekucala kuye kuyelishumi.</td>
<td></td>
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<table>
<tr><td>Phambili</td><td></td><td>Ngemuva</td></tr>
<tr><td></td><td>17</td><td></td></tr>
<tr><td></td><td>12</td><td></td></tr>
<tr><td></td><td>14</td><td></td></tr>
<tr><td></td><td>9</td><td></td></tr>
<tr><td></td><td>6</td><td></td></tr>
</table>
Bhala letinombolo ngekuhleleka kusukela kulenkhulu kakhulu kuya kulencane kakhulu.
Tsatsela ubuye ucedzele ngekusebentisa lamagama: “-ncane” na “-nyenti”
• 35 _____ kune 38
• 79 _____ kune 65
Kwati kutsi inombolo lephambili nguyo lencane nekutsi leta ngemuva nguyo lenkhulu ngakunye.
Bafundzi batawuphendvula imibuto lefana nalena:
• Nguyiphi inombolo leta ngembi kwe 17?
• Nguyiphi inombolo leta emuva kwe 82?
• Faka tinombolo letingekho kumugcatinombolo
Beka lamakhaditinombolo ngekuhleleka kwawo:
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SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.5 **Simelibungako**	**Kutfola simelibungako lokungenani etinombolweni letimadijithi lamabili uye e-20** • Hlahlela tinombolo letingemadijithi lamabili tibe ngemashumi nema-yunithi. Sib. li-12 liba li-10 na-2		**Yini leyehlukile eThemini 3?** Kulethemu bafundzi bachubeka ngekwakha nekutfutfukisa lwati ngesimelibungako. Ethemini- 4, lbafundzi basebenta ngetinombolo letisezingeni leliphakeme/ lelisetulu babuye bachubeke ba: • Babale bagcogcele ndzawonye kute bente tincumbi temashumi naletitimele ngakunye; • Babhale li-18 = 1 lishumi naloku-8 lokusiphohlongo lokutimele ngakunye; babuye • Rekhoda li-14 = li-10 na- 4. Bafundzi kumele bachubeke nekusebenta ngatinsita letiphatsekako batigcogce ngakunye kwente lishumi babuye batfole lwati kwekutsi lishumi liyincumbi yinye leyakhiwa ngulokulishumi lokutimele ngakunye.  Kusebentisa i-abhakhasi, bafundzi kumele bakwati kukhomba: • Lishumi linye; • Lishumi linye nemivo le-5 • Lishumi linye nemivo le-6 Lindzela kwekutsi bafundzi babe basabala ngakunye kute bakhe tincumbi temashumi.kulabanyenti kuyakuba yindlela lebanika ngayo inombolo kusho kutsi kungaki.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.5 **Simelibungako**			**Emakhadi esimelibungako** Emakhadi esimelibungako kumele asetjentiswe Kulethemu kukhombisa kutsi tinombolo takheka njani. Emakhadi esimelabungako angakhonjiswa/angabekwa eceleni kwetincumbi  **Tinsita** Tintfo letingagcogcelwa ndzawonye: • Tindvuku tekubala • Tibali letingafakwa entsanjeni • Tintsi temetjiso • Tintsi te-ayisikhilimu • Emakhiyubhi lahlanganako • Emakhadi esimelibungako • Imali yekudlala Kubalulekile kutsi kube netincumbi temashumi letihlalatikhona letigcogcwe bafundzi tafakwa etintfweni letitsite.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.6 **Emasu ekubala tibalo**	Sebentisa lamasu lalandzelako nawusombulula tinkinga ubuye uchaze tisombululo taletinkinga: • Tinsita letiphatsekako. sib. tibali • Titfombe tekudvweba indzabatibalo • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigca tinombolo		**Yini leyehlukile eThemini 3?** Ekupheleni kwalethemu bafundzi bacala kusombulula tinkinga magama basebentisa lamasu lalandzelako: • Imidvwebo tinsita letiphatsekako • Kwakha kuhlahlela tinombolo • Kuphindza nekuhhafula • Imigca tinombolo Buka emanotsi ethemu 2.	
1.7 **Kuhlanganisa nekususa**	Sombulula tibalo temagama kusimongcondvo ubuye uchaze tisombululo takho kufaka ekhatsi kuhlanganisa, kususa ngetimphendvulo letifika e-20.		Ekupheleni kwalethemu bafundzi kufanele bakwati kusebenta ngetinkinga letifana naleti letingentasi Gucula loku Noluthando abenemahhabhula la- 5. Silo wamupha emahhabhula la- 8. Unamangaki emahhabhula nyalo? Noluthando abenemahhabhula la- 13. Wapha Silo emahhabhula la-5. Usele namangaki emahhabula nyalo? Hlanganisa Nosisi unemamabuli la- 5 laluhlata nala-8 laluhlata kwesibhakabhaka. Unamangaki emamabuli? Nosisi unemamabuli la-13. La -5 aluhlata lalamanye onkhe aluhlata kwesibhakabhaka. Mangaki emamabuli laluhlata kwesibhakabhaka lanawo Nosisi? kucatsanisa Nosisi unemabhanana la-13. Themba unemabhanana la-5. Emabhanana aNosisi awedlula ngamangaki aThemba?	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	Sombulula tinkinga magama letikusimongcondvo nekuchaza tisombululo takho kuletinkinga letifaka ekhatsi kuphindza kuhlanganisa lokunetimphendvulo letifika ema-20		Ekupheleni kwalethemu bafundzi kufanele bakwati kusebenta ngetinkinga letinjengaleti letingentasi. **Kuphindza kuhlanganisa** Mangaki emasondvo emabhayisikili la-4? **Silinganiso** Thami unatsa tinkhomishi timbili telubisi malanga onkhe. Unatsa tingaki tinkomishi telubisi ngeliviki? **Emagridi** Mnu. Khumalo uhlanyela emalayini lamatsatfu emaklabishi. Kunetitjalo temaklabishi letisi-5 ngelilayini. Tingaki titjalo temaklabishi nasetiphelele?	
1.9 **Kugcogce-landzawonye nekwabelana lokuholela ekuh-lukanisena**	Sombulula ubuye uchaze tisombululo tetibalo tekwenta letifaka ekhatsi kwabelana ngalokulinganako nekugcogcela ndzawonye ngenombolo letigcwele kute kufinyelele ema -20 kanye netimphendvulo letitawushiya insalela.		Ekupheleni kwalethemu bafundzi kufanele bakwati kusebenta ngetinkinga letinjengaleti letingentasi. **Kugcogcela ndzawonye** Kugcogcelandzawonye, kususa insalela • Stella utsengisa emahhabhula lasemasakeni lanemahhabhula lamatsatfu ngalinye. Unemahhabhula lali-14. Angenta mangaki emasaka lanemahhabhula lamatsatfu ngalinye? Kugcogcelandzawonye, kufaka insalela empendvulweni • Ben ufuna kutsatsatsela gogo wakhe emacandza lali-15. Udzinga mangaki emabhokisi emacandza langafaka emacandza lasi-6 ngalinye kute afake onkhe lamacandza? **Kwaba** kwaba, kususa insalela • Aba emaswidi lali-14 uwabele bangani labatsatfu ngalokulinganako. Kwaba, lokuholela etincetwini • Aba tincetu leti-4 tashokolethi utabele bangani labatsatfu ngalokulinanako kungabikho licetu lashokolethi lelisalako. (Bafundzi akudzingeki kwekutsi babite incenye yetincetu njenga kunye kulokutsatfu. Bangachaza tincetu ngendlela lelula basusela entfweni legcwele.) Tincetu talokugcogciwe	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.11 **Imali**	• Kubona nekutfola imali yaseNingizimu Afrika lebuhhehlu 5c, 10c, 20c, 50c, R1, R2, R5, Imali yemaphepha R10 and R20 • Kubala tibalo temali letifaka ekhatsi samba nentjintji emasentini kuye emasentini la-20c R20 ku- 20c		Ekupheleni kwalethemumu bafundzi kufanele bakwati kusebenta ngetinkinga letinjengaleti letingentasi. John utsenge sinkhwa nge- R8. Usibhadele ngemali yeliphepha leli R10. Utfole intjintji yamalini? Make waRosy utsenge sikhafu nge R17. Ubhadele ngemali yemaphepha lamabili lengemarandi lalishumi? Lusuku lwekutalwa lwaJudy belingeLisontfo. Dzadzewabo wamupha R5, umfowa-bo yena wamupha R2 nemzala wakhe wamupha R10. Ingumalini imali layitfola naseyiphelele?	
KUBALA				
1.12 **Emasu** **(Tindlela Tindlelanchubo)**	Kusebentisa lamasu lalandzelako uma kubalwa: • Imidvwebo/tinsita letiphatsekako, sib. Tibali • Kusebentisa titfombe kwetfula samba sendzaba nakuhlanganiswa • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Umugcatinombolo		**Yini leyehlukile eThemini 3?** Bafundzi balindzeleke kwekutsi batibalele nje ngekukhululeka basebentise lamasu lalandzelako: • Imidvwebo/tinsita letiphatsekako - Imidvwebo yebafundzi kufanele icala kuhleleka babuye bakwati kuchaza loko lebakubalile lokumayelana nemidvwebo yabo. • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo Buka emanotsi ethemu 2.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.13 **Kuhlanganisa nekususa**	• Hlanganisa e- • Kususa e- • Sebentisa timphawu letifanele, (+, –, =, ☐) • Kutetayeta/kutilolonga ngekuhlanganisa tinombolo neli- 10		Kuhlanganisa nekususa etinombolweni letihleleke e 0-20 kusho kwekutsi bafundzi batawu: • Kucala kutfutfukisa lwati lesimelibungako emashumini nemayunithi; • Chubeka ngekubala ngetincumbi; and • Cala kubona kutsi kubala ngakunye akusiyo indlelanchubo lephumelelisako/ lesheshako. Bafundzi batawuchubeka ne: • Kubala tintfo; • kubona, kufundza nekubhala tinombolo; ne • kucatsanisa nekuhlela tinombolo. Kute kusetjentwe ngetinombolo tekuhlanganisa nekususa, bantfwana kumele babe batfole lwati lwati lolwanele nge: • kubala konkhe; • kubala lokusukela enombolweni lenkhulu; • kusebentisa nekuvisisa lulwimi lwekuhlanganisa nekususa; ne • kuhlela nekucatsanisa tinombolo. Bafundzi bachubeka nekutfutfukisa kuvisisa kwabo kwekuhlanganisa nekususa. Ekupheleni kwemnyaka bafundzi kumele bakwati ku: • sebentisa lwati lolumayelana nekuhlanganisa, kususa netinombolo kute uchaze ubuye urekhode kuhlanganisa nekususa imishotinombolo; • kusebentisa tindlela tekwenta nekubhala letingakahleleki kusebenta ngekuhlanganisa nekususa; • kusombulula kubala ngekuhlanganisa nekususa babuye barekhode timphendvulo tabo kumishotinombolo ne; • kuvisisa kwekutsi kususa kuhlanekela(inivesi) kuhlanganisa kufane kuguculwa nekukusebentisa loku kusungula nekurekhoda lokubalwako. Kuvisisa kuhlanganisa nekususa bafundzi kufanele bakwati ku: • kwati nekusebentisa liciniso lelitsi kuhleleka kwekuhlanganisa akushayi mkhuba; • sebentisa timphawu +, - na =;	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.13 **Kuhlanganisa nekususa**			• Kwati kwekutsi ☐ simele inombolo lengatiwa; • Kuvisisa kususa njengekulahla lokutsite bese utfola lokusele kuloko'; ne Kusho nekubhala tinombolo letimaciniso letihambelanako etibalweni tekuhlanganisa na kuguculwa sib. 8 + 6 = 14 lokusho kutsi 14 – 6 = 8. Kurekhoda imifanekiso yekuhlanganisa nekususa: Na labanye bafundzi bangaseloku bafuna kubala nekurekhada nga- 1, kumele basitwe kutsi bacale kurekhoda nekubala ngetincumbi/ngekugcogcelandzawonye. Kufanele bakwati ku: Dvweba titfombe ubuye usebentise tinombolo letikhombisa ikakhulu tincumbi/ lokugcogcelwendzawonye **Kuhlakata inombolo ibe tincenye letincane kwentelwe kutsi kubala kube lula** **Bafundzi batawudzilita inombolo ibe tincenye letehlukahlukene**. Batawuhlakata inombolo ibe tincenye letisebentisekako kubo. Bafundzi batawucala ngekuhlakata inkhotsa ibe ngakunye. Ngako-ke, uma setentiwe letinombolo letifika e-10 nebafundzi bangasebenta ngaletinombolo ezingeni lelilukhuni, kumele bahlakate inkhotsa ibe tincetu letehlukene. Kusebentisa imicibisholo netinombolo kukhomba kucabanga 11 + 7 = ☐ 11 + 4 + 3 11 + 4 → 15 + 3 = 18 11 + 7 = ☐ 11 + 5 + 2 11 + 5 → 16 + 2 = 18 17 – 9 = ☐ 17 - (7 + 2) 17 – 7 → 10 - 2 = 8 **Kuhlanganisa tinombolo** Bafundzi kumele baniketwe imisebenti letinhlobonhlobo lokumele bayente kute batetayete nekuhlanganiswa kwetinombolo. Loku kwenteka ngesikhatsi lesikhululekile.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
			Umugcatinombolo ungasetjentiswa kutilungiselela ngekuhlanganisa ne-10. **Kusebentisa lwati lonalo njengemasu** **Lamasu lakhonjiswe ngentasi avumela bafundzi kutsi kubala nelwati lwabo ngetinombolo kuhleleke**. Kusebenta/kutetayeta ngalamasu langentasi kutawukhutsata bafundzi kutsi bavete budlelwane emkhatsini wetinombolo nekufundzisa bafundzi kwekutsi bangasebentisa lwati lwabo kusita ekubaleni. **Faka inombolo lenkhulu kucala kute ubalele kuyo ngemuva.** 4 + 12 = ☐ Phindza uhlele 4 + 12 njenga 12 + 4 bese ubala usukela kuli- 12. **Bala usukela enombolweni lenkhulu** Bafundzi kufanele bakwati kubala basukele enombolweni lenkhulu. Lena yindlelanchubo lephumelelisako kunekubala ngakunye kufike e-14 bese ubala ngalokunyenti/lokwengetiwe lokusihlanu. 14 + 5 = ☐ Bafundzi babala basukele e- 14, bese kuba li-15, 16, 17, 18, 19. **Kubona kuphindza lokusondzelene** 8 + 7 Umfundzi angachaza kutsi lesibalo singabhalwa njenge 8 + 8 -1 (phindza 8 susa 1) or 7 + 7 + 1 (phindza 7 hlanganisa na 1). Bafundzi bangarekhoda indlelanchubo basebentise imicibisholo: 8 + 8 → 16 + 1 = 17 **Gucula inombolo ibe lishumi ubuye ususe uhlanganise ngakunye** Lendlelanchubo ingafundziswa ngetinombolo letihlelwe taba tincane tase tisetjentiswa etinombolweni letinkhulu. 9 + 6 = ☐ Bafundzi bangatitjela loku: “ngitawutsatsa kunye kuloku- 6 bese ngikuhlanganisa nalokuyi-9 kute kwente li-10.” Le 9 + 6 ingabhalwa njenge 10 + 5 = 15 8 + 5 = ☐ Bafundzi bangatitjela loku: “ngitawutsatsa kubili kulokusi- 5 bese ngikuhlanganisa kulokusiphohlongo kute kwente li-10.”	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.13 **Kuhlanganisa nekususa**			Le 8 + 5 singabhalwa njenge 10 + 3 = 13 **Sebentisa lwati ngebudlelwane bekuhlanekela emkhatsini wekuhlanganisa nekususa** 15 – 9 = ☐ Umfundzi uyati kutsi lesibalo kumele siphindze sibhalwe njengesibalo sekuhlanganisa: “ngiyati kutsi i 9 + ☐ = 15.” Bafundzi bangasebentisa kubala basukela enombolweni kute bakhone kubala. **Umugcatinombolo** Kufanele bakwati kusebentisa imigcatinombolo kusekela labatibalela kona. Sibonelo: 13 + 6	
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphindzeni**	• Kuhlanganisa inombolo lefanako e-20 ngalokuphindzaphindziwe • Sebentisa timphawu letifanele (+, =, ☐)		**Yini leyehlukile ethemini ye-3?** Ethemini ye- 4, bafundzi bachubeka nekutfutfukisa lulwimi lwekuphindza kuhlanganisa sibonelo: • Ku -2 lokunyenti kwaloku- 3 • Ti -4 tincumbi taku- 2 Bafundzi bachubeka nekubhala imishotinombolo lemele imidvwebo. Kubala ngekuzupha kumele kuchubeke kusite bafundzi kutsi babale tintfo letigcogcelwe ndzawonye etitfombeni. Nangabe titfombe tintfo tigcogcelwe ndzawonye ngakubili kumele bafundzi babale ngakubili bangasabali ngakunye kute batfole inombolo lesamba setintfo. Ekupheleni kwaleithemu bafundzi kufamele bakwati ku: • Kuvisisa kuphindza kuhlanganisa njengekwenta tincumbi letilinganako; • Khombisa kuphindza kuhlanganisa ngekusebentisa tintfo mbamba; • Kurekhoda imishotinombolo lematanisekako emsebentini lowentiwako imidvwebo,ne • Kusebentisa imigcatinombolo kute ufike empendvulweni.	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo:** **Kuhleleka** 20 • Shano inombolo lengembikwaleniketiwe nalengemuva/ lelandzela leniketiwe • Hlela luhla lwetinombolo letikhetsiwe letiniketiwe • Kucatsanisa tinombolo kufike ema- ≠ ubuye usho kutsi nguyiphi lenkhulu lencane • Kwati kutsi nguyiphi inombolo lenyenti nga-1 nalencane nga-1 kunaletinye tinombolo • Kwati kutsi nguyiphi inombolo lenyenti ngakubili nalencane ngakubili kunaletinye tinombolo **Kukhumbule ngekusheshe:** • Kuhlanganisa nekususa e- 10 **Emasu ekubala** Kusebentisa emasu ekubala kuhlanganisa nekususa lokufanele:		**Yini leyehlukile eThemini 3?** Ethemini ye-4, linani letinombolo lingeteka kusukela e -15 kuye e-20. **Tibonelo** temibuto lengabutwa nemisebenti lengentiwa: • Cala nga -3 ubuye ubalele phambili ngakunye kuye e-10. • Bafundzi bayafola bese bayabhuta: ngubani wekucala? Wesibili, wesitsatfu wekugcina? • Ngukuphi lokuncane ku 14nobe 8? • Nguyiphi lenkhulu ku 8 nobe4? • Nguyiphi lencane nga -2 e- 13? • Nguyiphi lenyenti nga- 2 e- 8? • Nginikete inombolo lesemkhatsini wa-1 na -3. • Nginikete inombolo emkhatsini we-10 ne -14. Ngabe kuna yinye inombolo? • Beka lamakhaditinombolo ngendlela lehlelekile kusukele kulokuncane kakhulu kuye kulokukhulu kakhulu **Khumbula ngekusheshisa** Ngikhombe inombolo lokumele ngiyihlanganise kute kwente 10 (bhala phansi usebentise simelibungako emakhadi lakhombisa letinombolo) • 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9	

SIHLOKO	LWATI NEMAKHONO LADZINGEKAKO EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KULO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.16 **Tibalo tenhloko**	• Beka inombolo lenkhulu kucala kute ubale usukele kuyo ubalele emuva • imigcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela		Ngikhombe inombolo lesele uma …. Asuswe ku 10 (bhala phansi usebentise simelibungako emakhadi lakhombisa letinombolo) • 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • 6 + 4 = 10 kungaki 4 + 6? Ngabe iyafana imphendvulo? • 5 + 2 = 4 kungaki 2 + 5? Ngabe iyafana imphendvulo? **Emasu ekubala** Kusebentisa emasu ekubala kuhlanganisa nekususa lokufanele. • Hlanganisa loku lokulandzelako ngekufaka inombolo lenkhulu kucala bese ubalela kuye: 1 + 9 2 + 6 1 + 4 • Phindza 1 Bangubani bo 2 lababili? Ngubani ihhafu ya 4? • Kusebentisa umugcatinombolo Uzuba kangaki kusukela 3 kuye ku 5? Uzuba kangaki nawubuyela emuva usuka ku 5 uye ku 2?	

LIBANGA1 ITHEMU 4 2. EMAPHETHINI, EMAFANGISHINI NE- ALJEBHRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-4**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESIBEKIWE**
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo.	Bafundzi batawusebenta ngemaphethini laphatselene nemvelo, ngetintfo letisetjentiswa emphilweni yemalanga onkhe netemasiko nemagugu esive kusukela ebangeni 1 kuye ebangeni 6. Loku kusho kutsi akumelanga ucitse sikhatsi lesinyenti esihlokweni. Kumele futsi ukhetse imisebenti nobe emaphethini lafanele libanga ngalinye. Ebangeni 1 bafundzi bangashikisha emaphethini. Tibonelo letisebentisekako ngemaphethini emacembe, emaphethini etitsendze teticatfulo, emaphethini emasondvo etimoto, sivalo sedreyini, emagcolo etihlahla nekupheva njll. Lenye yeluhlobo lwemaphethini bafundzi lebangalibuka ngumugca lowehlukanisa emkhatsini kufanane ngalokulinganako, sib. Emacembe lamanyenti anemugca lohlukanisa emkhatsini kulingane ngalokufanako. Bafundzi bangabuka futsi emaphethini emafenisi (emawayela, tingodvo); Umsebenti wetitini nemathayilisi aphasi; Timphahla netindvwangu; Emapuleti, tinkomishi nemasoso; Emabhola etinyawo; tilwane letifana netinkhomo, emavivane, lidvuba, indlulamitsi, ingwe, tinyoni, tinambutane; timbali nemacembe; buhlalu bemasiko nebesimanjemanje; ne tindziwo nobe timantji letelukiwe. Kunetindlela letehlukene tekuchaza emaphethini lesiwabona ndzawotonkhe. Emaphethini lamanyenti ndzawotonkhe akheke ngemigca, bobunjwa nobe tintfo. Labobunjwa nobe tintfo akumelanga tihlobaniswe nabobunjwa beJomethri labatintfo letingema 2-D shapes and 3-D lokusetjentwe ngato ebangeni le1. Bafundzi bangabuka babuye bachaze lokutsite	1 sisindvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE
2.1 **Emaphethini eJomethri**			• Yini lokuphindzekako e.g. emacashati, imigca, nobe nguluphi luhlobo lwabunjwa; nekutsi • Kuphindzeke njani sib. Ngabe lemigca iyaphambana (njengasendvwangwini yetindishi), ayalingana yini onkhe lamacashati, endlaleke kahle na, bayalingana yini bonkhe labobunjwa, umbala lofanako, ngabe onkhe abuke ndzawonye, sib. Uma ujuba liwolintji onkhe lamabanga anciphile emkhatsini bese aba makhulu lapho agcina khona ngephandle.	
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e-100 Yakha emaphethini akho etinombolo.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e-100 Kulandzelana kumele kukhombe • Kubala uye phambili nasemuva nga -1 kusukela kunobe nguyiphi inombolo emkhatsini wa -1 ne -100. • Kubala uye phambili: • Ngemashumi kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 kuye e-100 • Nge-5 kusukela kunobe nguyiphi imalthiphuli ye-5 emkhatsini we-0 ne-100	Kulandzelana kwetinombolo kungahlotjaniswa nekubala. Njengobe likhono lebantfwana ligucuka libuye litfutfuka, tinhlobo tekulandzelana kwetinombolo labasebenta ngato bafundzi tingatfutfukiswa. Kulandzelana kwetinombolo kumele kukhombise kubala uye phambili nasemuva kuloku: • Nga-1 kusukela kunobe nguyiphi inombolo emkhatsini wa-1 kuye e-100; • Ema-10 kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 ne- 100; • Si-5 kusukela kunobe nguyiphi imalthiphuli ye- 5 emkhatsini we-0 ne-100;ne • Ngakubili kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 kuye 100; Bafundzi bangakwati kukhombisa tinombolo emgcenitinombolo nobe igridi yetinombolo, nobe kulandzelana lokubhaliwe uma babala. Bafundzi bangakwati kwenta (ngetibali) nobe imibala nobe bafake indilinga etinombolweni letisemngceni wetinombolo nobe igridi yetinombolo, nobe kulandzelana lokubhaliwe uma babala. Bafundzi bangagcwalisa tinombolo letisele etinombolweni letibhalwe ngekulandzelana, emgcenitinombolo nobe kumagridi etinombolo kutetayeta kubala. Khumbula kwekutsi bafundzi babhala kuphela bafike e- 20. Buka emanotsi eThemu 3 kutsi bafundzi bangasebenta njani ngetinombolo letilandzelanako letingetulu kwe- 20.	5 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE
		• Nga-2 kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 ne-100 **Yakha emaphethini akho** • Yakha emaphethini akho etinombolo		

LIBANGA 1 ITHEMU 4 3				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 4**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESIBEKIWE** (Etifundvweni teli-awa 1 nemaminithi lali-24)
3.1 **Kubekeka, kwetayeta neku-bukeka**	**Lulwimi loluphatselene nekubekeka** Chaza kubekeka kwentfo yinye nayihambelana nalenye sib. ngetulu kwe-, ngembi kwe-, ngemuva kwe-, sencele, sekudla, etulu, phasi, edvute kwe-. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela kuhambahamba eklasini. • Landzela ticondziso kubeka intfo yinye ihambisane nalenye sib.beka ipeniseli ekhatsi ebhokisini **Kubekeka nekubukeka** Matanisa kubukeka lokungafani kwentfo yinye lesetjentiswa malanga onkhe.	**Lulwimi loluphatselene nekubekeka** Chaza kubekeka kwentfo yinye nayihambelana nalenye sib. ngetulu kwe-, ngembi kwe-, ngemuva kwe-, sencele, sekudla, etulu, phasi, edvute kwe-. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela kuhambahamba eklasini. • Landzela ticondziso kubeka intfo yinye ihambisane nalenye sib.beka ipeniseli ekhatsi ebhokisini **Kubekeka nekubukeka** Matanisa kubukeka lokungafani kwentfo yinye lesetjentiswa malanga onkhe.	**Indzawo netinkhombandlela** Bona emanotsi ethemu 1. Nobe nguluphi lulwimi lolusha lolumayelana nekubekeka kwentfo endzaweni kumele lwetfulwe ngemisebenti yekwenta letakwenta bafundzi bente imisebenti yekutivocavoca ngeminyakato. Loku kungentiwa ngesikhatsi sekufundzisa liklasi lonkhe nobe ngesikhatsi sekugcila emacenjini. Tinkhombandlela kufanele tifundvwe ngemisebenti yekwenta letawenta bafundzi batinyakatise nobe banyakatise tintfo njengekusho kweticondziso. Loku kungentiwa ngesikhatsi sekufundzisa liklasi lonkhe nobe ngesikhatsi sekugcila emacenjini. Kusebenta kubekeka netinkhombandlela kungahlanganiswa ngekurekhodwa lokubhalwe phasi njengemdvwebo, kufaka umbala nobe kumatanisa imidvwebo nemagama. Loku kungentiwa ngesikhatsi lesikhululekile. **Kubekeka nekubukeka** Bafundzi Besigaba Sabokhewane kumele bevisise kwekutsi tintfo tibukeka ngalokwehlukile uma utibukela etindzaweni letehlukene. Bafundzi bangatsatsa lula kutsi tintfo letifana netimoto tibonakala titincane uma tisekudzeni kakhulu. Njengobe bafundzi basebenta kakhulu ngemabhuku nemidvwebo lesemabhukwini, kufanele bati kwekutsi kungani intfo nayikhonjiswa ngaphambili ibonakale iyinkhulu kunentfo lekhonjiswa ngemuva. Ngesikhatsi sekugcila emacenjini bafundzi bangakwenta ngekubeka tandla tabo embikwabo, kute bavimbe kubukeka kwetintfo letinkhulu letibucadlwana. Ebangeni 1 bafundzi kufanele baniketwe imisebenti lebatawumatanisa kubukeka lokwehlukene (kubukeka kwangetulu, kubukeka kwelicala, kubukeka kwaphambili) kwekubukeka lokwehlukene kwetintfo letisetjentiswa malanga onkhe. Loku kutawusita bafundzi kutsi bakwati kukhulumisa imidvwebo yetintfo teJomethri letentiwa ngetindlela letehlukene	1 sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithi lali-24)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • umbala • tintfo letigicikako • tintfo letishelelako **Imisebenti lokugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentisa tintfo letiphatsekako letifana nemabhuloki ekwakha, tintfo tekuvuselela kabusha, emakhithi etintfo tekwakha.	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • umbala • tintfo letigicikako • tintfo letishelelako	Bafundzi bachubeka bakhe tintfo tekwakha ngetintfo; tekuvuselela kabusha nobe emabhuloki/ emabhokisi emetjiso nobe emakhithi ekwakha ngesikhatsi sekutisebentela.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithi lali-24)
3.3 Bobunjwa labangemadayi-menshini lamabili (2-D)	**Tinhlobo tabobunjwa** Bona ubuye usho bobunjwa labangemadayimenshini lamabili (2-D) **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	**Tinhlobo tabobunjwa** Bona ubuye usho bobunjwa labangemadayimenshini lamabili (2-D) **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	Imisebenti leminyenti yabobunjwa ebangeni1 yentiwa ngetintfo letiphatsekako. Yonkhe imisebenti kumele ihlanganiswe ngemisebenti lebhalwako. Bafundzi bacala kudlala umdlalo lokhululekile ngabobunjwa labehlukene, kufaka ekhatsi titfombe letisikiwe tabobunjwa beJomethri. Loku kungentiwa ngesikhatsi sekutisebentela. Loku kungentiwa ngesikhatsi setifundvo Temakhono Ekuphila. Bafundzi batsatsela titfombe letentiwe ngabobunjwa beJomethri.Letitfombe tingatfolakala etincwadzini tekufundzisa nobe tifunwe nguthishela. Loku kusita bafundzi kutsi bakwati kubona tindilinga letehlukene ngesayizi, tikwele kanye nabocalantsatfu babobunjwa labehlukene. Loku kungentiwa ngesikhatsi sekutisebentela. Loku kungentiwa ngesikhatsi setifundvo Temakhono Ekuphila. **Kucatsanisa nekuchaza bobunjwa labangemadayimenshini lamabili (2-D): Isayizi** Bafundzi bacatsanisa isayizi yabobunjwa besayizi lefanako sib. • Hlela tindilinga kusukela kulencane kakhulu kuye kulenkhulu kakhulu; babuye • Babeke tonkhe tikwele nobe isayizi lefanako ndzawonye. Sebentisa lulwimi lwesayizi kucatsanisa bobunjwa labehlukene sib.”Ngidvweba calantsatfu ekhatsi kwesikwele, ngaloko- ke calantsatfu mncane kunesikwele”. **Kuchaza bobunjwa bemadayimenshini lamabili (2-D): umbala** Bafundzi bakhuluma ngemibala yabobunjwa bese bahlela bobunjwa ngekwemibala. Kutfola nekusho tintfo nemibala yato, nekucatsanisa isayizi yetintfo ketingasetjentiswa ngesikhatsi sekusebenta ngemaphethini. **Kubona nekusho tindilinga, bocalantsatfu netikwele** Bafundzi batawusebenta ngetindilinga netikwele temasayizi lahlukene, kanye nabobunjwa labakheke ngalokwehlukene. Kubalulekile kutsi bafundzi bangaboni sibonelo sinye sabunjwa ngamunye.Emasethi lamanyenti abobunjwa betintfo letitsengiswako banika sibonelo sinye kuphela sacalantsatfu. Bafundzi kufanele bakwati kubona: • Bocalantsatfu lababunjwe ngalokwehlukene babuye babekeka ngalokwehlukene.Laba ngulabanye babocalantsatfu:	Tifundvo 3

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithi lali-24)
			• Tikwele letinemasayizi lahlukene letibekeke ngalokwehlukene. Leti nguletinye tikwele: • Tindilinga letingemasayizi lahlukene. Leti nguletinye tetindilinga: Kubalulekile kutsi bafundzi basebente ngekusika emabhokisi lamifanekiso yabobunjwa. Loku kutawenta bafundzi babone bocalantsatfu netikwele letehlukene letibekwe etindzaweni letehlukene. Kubalulekile kutsi bafundzi basebente ngekusika imifanekiso yabobunjwa labehlukene bemakhadibhodi.Loku kusita bafundzi kutsi babone bocalantsatfu lababekeke ngalokwehlukene. Bafundzi bahlunga bobunjwa ngekwemacala lacondzile nobe layindilinga Bafundzi bahlunga bente tincumbi tabobunjwa ngekwabocalantsatfu, tikwele nobe tindilinga. Imisebenti iyahlanganiswa ibe misebenti lebhalwako. Lemisebenti ingafaka ekhatsi kufaka umbala, kumatanisa emagama nabobunjwa njll.	
3.4 **Kuhlukanisa emkhatsini kulingane ngalokufanako**	**Kuhlukanisa emkhatsini kulingane ngalokufanako** • Bona kwehlukana kulingane ngalokulinganako kwemtimba wakho • Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimeshini lamabili (2-D) nabobunjwa labangasibo beJomethri	**Kuhlukanisa emkhatsini kulingane ngalokufanako** • Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimeshini lamabili (2-D) nabobunjwa labangasibo beJomethri	Bafundzi kumele babuke umugca lowehlukanisa emkhatsini kulingane ngalokufanako etintfweni letiphatsekako nasetitfombeni Umsebenti lobhalwako kumele kungabi: • “kudvweba kulenye ihhafu kuphela” • kepha kumele kufake tibonelo lapho bafundzi batawudvweba emgceni lowehlukanisa emkhatsini kulingane ngalokufanako. Umugca lowehlukanisa emkhatsini kulingane ngalokufanako.	1 sifundvo

LIBANGA 1 ITHEMU 4 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO KUITHEMU 4**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESIBEKIWE** (Etifundvweni teli-awa 1 nemaminithilali 24)
4.1 **Sikhatsi**	**Kwendlula kwesikhatsi** Khuluma ngekwendula kwesikhatsi • Bahlela tigameko letetayelekile temphilo yabo. • Catsanisa budze besikhatsi ngekusebentisa lulwimi sib.lokudze kuna, lokufisha, ngekuphangisa, kancanyane. • Landzelanisa tigameko usebentisa lulwimi lolufana nekutsi itolo, lamuhla, kusasa. **Kusho sikhatsi** • Chaza kutsi tintfo tenteka sikhatsini usebentisa lulwimi sib. ekuseni, ntsambama, ebusuku, ngembi kwesikhatsi, ngemva kwesikhatsi. • Kwati emalanga eliviki. • Kwati tinyanga temnya • Faka emalanga ekutalwa ekhalendeni.	**Kwendlula kwesikhatsi** Khuluma ngekwendula kwesikhatsi • Bahlela tigameko letetayelekile temphilo yabo. • Catsanisa budze besikhatsi ngekusebentisa lulwimi sib.lokudze kuna, lokufisha, ngekuphangisa, kancanyane. • Landzelanisa tigameko usebentisa lulwimi lolufana nekutsi itolo, lamuhla, kusasa.	Bafundzi kumele bakwati kukhuluma: • ngekulandzelana kwetigameko • ngebudze besikhatsi Bafundzi bayachubeka bahlanganisa tindlela tekukhuluma ngesikhatsi malanga onkhe ngesikhatsi sekufundzisa liklasi lonkhe nobe ngesikhatsi semacembu lekugcilwe kuwo. Bafundzi bakhuluma babuye baphendvule imibuto ngekutsi tintfo tenteka nini, basebentisa lulwimi njengekutsi ekuseni, ntsambama, ebusuku, ngembi kwesikhatsi, nasemva kwesikhatsi. Bafundzi balandzelanisa tigameko basebentisa lulwimi njengekutsi: itolo, namuhla, kusasa, emalanga eliviki netinyanga temnyaka. Bafundzi bacatsanisa budze besikhatsi basebentisa lulwimi njengekutsi: lokudze nobe lokufisha nekuphangisa nekwenta kancane. Bafundzi bakhuluma ngekuhlela tigameko temphilo yabo. Babuye bahlele kulandzelana kwetitfombe njenge: • Tinyatselo tekwenta emasangweji nobe inkomishi yelitiya; • Titfombe letikhombisa kukhula kwemntfwana ate abe ngumuntfu lomdzala; • Umjikeleto wemphilo yetilwane sib. licandza kudzimate kube yinkhukhu, nobe licandza lesicoco kudzimate kube sicoco nobe licandza leluvivane kudzimate kube luvivane; ne • Tehlakalo letivamile telusuku (kuvuka, kuba sesikoleni, kudlala, kudla kudla kwakusihlwa, kulala). Chubeka ufake emalanga ekutalwa ekhalendeni, umnyaka wonkhe.	Tifundvo 2

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO KUITHEMU 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithilali 24)
4.2 Budze	**Kukala lokungakahlele-ki** • Catsanisa ubuye uhlele budze, kuphakama nobe bubanti betintfo letimbili nobe letinyenti ngekubeka yinye edvute kwalenye. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib.lokudze kuna-, lokufisha kuna-, lokuphakeme kuna-, lokubanti kuna-. • Combela, kala, catsanisa, hlela ubuye urekhode budze ngekusebentisa tilinganiso letingakabekelwa umgomo sib.budze besandla, sivinini, budze bepeniseli, tibali njll.	Kukala konke lokwentiwa ebangeni 1 akukahleleki. Kute kukala lokuhlelekile lokumayelana nebudze lokunesikali lesibekiwe lokwentiwako. Ngesikhatsi sekusebenta ngekukhululeka eku-chubekeni kwethemu, bafundzi bangatetayeta babuye bahlanganise kukala budze nebu-banti basebentisa tintfo letingakahleleki. Yonkhe imisebenti kufanele irek-hodwe. Bona emanotsi eithemu 3		

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO KUITHEMU 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithilali 24)
4.3 Sisindvo	**Kukala lokungakahlele-ki** • Combela, catsanisa, hlela ubuye urekhode sisindvo usebentisa tilinganiso letingakabekelwa umgomo nesikali sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi ukhulume ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu	**Kukala lokungakahlele-ki** • Combela, catsanisa, hlela ubuye urekhode sisindvo usebentisa tilinganiso letingakabekelwa umgomo nesikali sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi ukhulume ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu	Tonkhe tilinganiso teLibanga 1 atikahleleki. Akukho kulinganisa sisindvo ngemayunithi langakabekelwa umgomo lokwentiwako. **Yini leyehlukile ethemini 4?** Ethemini 1 kuphakanyiswe kutsi bafundzi bagcile kuloku: • Kucatsanisa ngco kwesisindvo setintfo • Kuhlela nekucatsanisa sisindvo setintfo letintsatfu nobe letinyenti, ngekutibeka ngemapheya esikalini sekulinganisa tize tilandzelaniswe tonkhe tintfo; ne • Kutfutfukisa lulwimi kukhuluma ngemehluko wesisindvo njll. Ethemini 4 bafundzi batawugcila ekwenteni silinganiso lesingakahleleki ngemayunithi esisindvo langakabekelwa umgomo. **Silinganiso sesisindvo lesingakahleleki ngekusebentisa emayunithi langakabekelwa umgomo.** Bafundzi bangafundza yonkhe imigomo nemisebenti yekutetayeta kukala basebentisa silinganiso lesingakabekelwa umgomo. Kukala ngemayunithi langakabekelwa umgomo akufanelanga kutsatselwe phasi nobe kutsatfwe njengentfo lengakabaluleki kunekukala ngemayunithi labekelwe umgomo. Kukala sisindvo ngemayunithi langakabekelwa umgomo kufaka ekhatsi kutsi mangaki emayunithi lakhetsiwe lanesisindvo lesifana nesalentfo lekalwako. Sibonelo, irula inesisindvo lesilingana nemabhuloki la -9. Bafundzi kumele bakale tintfo letehlukene basebentisa tintfo letinyenti njengemayunithi langakabekelwa umgomo. Bafundzi kumele bafundziswe kusho iyunithi ngasosonkhe sikhatsi nabanika sisindvo, sib.libhuku linesisindvo lesifanako netimabuli leti -34 Nangabe bafundzi sebakalile nganobe nguyiphi iyunithi emahlandla lamanyenti, kumele bacombele kutsi kungaki kwaleyo yunithi lokunesisindvo lesilingana nesentfo lekalwako. Kucombela ngembi kwekutsi ukale kubalulekile, kodvwa kungentiwa kuphela nangabe bafundzi bake bakala basebentisa leyo yunithi. Bafundzi kudzingeke bafundziswe kutsi kute bacatsanise sisindvo setintfo letehlukene kumele basebentise iyunithi lefanako, sib. Nangabe irula irula inesisindvo semabhuloki langa -20 nesikelo sinesisindvo setimabuli leti -20, angeke usho kutsi kunesisindvo lesifanako nobe ngukuphi lokusindza kakhulu.	Tifundvo 2

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO KUITHEMU 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithilali 24)
4.3 **Sisindvo**			**Kurekhoda silinganiso** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode silinganiso sabo ngasosonkhe sikhatsi **Kulinganisa sisindvo njengegcikitsi nekusombulula tinkinga tetibalo** Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala nebudlelwane, bafundzi bangasombulula tinkinga letisebentisa ingcikitsi lephatselene netilinganiso letingakahleleki tesindvo, sib. idasta inesisindvo setimabuli leti -11. Libhokisi lemakhilayoni linesisindvo setimabuli leti -8. Kunesisindvo setimabuli letingaki sekukonkhe? Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.	
4.4 **Umtsamo/ bungako**	**Kukala lokungakahleleki** • Catsanisa ubuye uhlele bungako balokusamanti (bungako) etintfweni tekuphatsa letimbili letibekiwe, yinye edvute kwalenye. Bafundzi bahlola ngekutsela entfweni yekuphatsa yesitsatfu uma kubalulekile. • Catsanisa ubuye uhlele bungako balokusamanti lobungamumatfwa tintfo tekuphatsa letimbili natigcwalisiwe (umtsamo)	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa usebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi.	Tonkhe tilinganiso teLibanga 1 atikahleleki. Akukho kulinganisa umtsamo/ bungako ngemayunithi langakabekelwa umgomo lokwentiwako. **Yini leyehlukile ethemini 4?** Ethemini 1 kuphakanyiswe kutsi bafundzi bagcile kuloku: • Kutfutfukisa lulwimi ekukhulumeni ngemehluko webungako; • Kucatsanisa bungako betintfo tekuphatsa letimbili letifanako; ne • Kucatsanisa bungako etintfweni tekuphatsa letimbili letibonakala tingafani, ikakhulu letibanti naletincama. Ethemini se 4 bafundzi bangagcila ekukaleni lokungakahleleki ngemayunithi ebungako langakabekelwa umgomo. **Uyini umtsamo? Buyini bungako?** Libhodlela lingaba nemtsamo lolingana tinkomishi letine, kodvwa lingagcwali nswi, sibonelo, lingaba kuphela nemtsamo lolingana inkomishi yinye yemanti ngesikhatsi lesitsite. Umtsamo linani lentfo letseliwe lengamumatfwa yintfo yekuphatsa (nobe linani lesikhala ngekhatsi kwetintfo tekuphatsa). Bungako linani lesikhala lesitsatfwa yintfo letsite. Ngalesinye sikhatsi bafundzi batawukala bungako (nobe Isanti nobe nalokunye) lobutfolakala etintfweni tekuphatsa. Loku kukala bungako balokumumetfwe yintfo yekuphatsa.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO KUITHEMU 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithilali 24)
4.4 **Umtsamo/ bungako**	• Sebentisa lulwimi kukhuluma ngekucatsanisa sib. lokunyenti kuna-, lokuncane kuna-, lokugcwele, lokungenalutfo. • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa usebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi.		Ngalesinye sikhatsi bafundzi batawube bakala kutsi intfo yekuphatsa imumatsa kangakanani uma igcwaliswe nswi/ngalokwedlulele. **Kukala umtsamo lokungakahleleki usebentisa emayunithi langakabekelwa umgomo** Bafundzi bangafundza yonkhe imigomo nemisebenti yekutetayeta kukala basebentisa silinganiso lesingakabekelwa umgomo. Kukala ngemayunithi langakabekelwa umgomo akufanelanga kutsatselwe phasi nobe kutsatfwe njengentfo lengakabaluleki kunekukala ngemayunithi labekelwe umgomo. Bafundzi kumele batfole ematfuba ekukala umtsamo/ bungako basebentisa tintfo letinyenti njengemayunithi langakahlelek sib. tinkomishi (kodvwa akushiwo tinkomishi tekukala mbamba), tipunu (kodvwa akushiwo tipunu tekukala mbamba), timbonyo temabhodlela letifana netimbonyo temabhodlela elubisi lange-malitha la -2, tikotela letincane, emabhodlela lamancane, njll. Kukala bungako/umtsamo ngemayunithi langakabekelwa umgomo kufaka ekhatsi kubala kutsi ugcwalisa abuye atsele kangaki kulentfo lekhetsiwe ize ifinyelele kumtsamo/bungako lobulindzelekile. Bafundzi kumele bafundziswe kusho iyunithi ngasosonkhe sikhatsi sib. kunetipunu temanti letigcwele letinge -48 ebhodleleni nobe kunemanti langaphasi kancane kwenkomishi ebhodleleni. Nangabe bafundzi sebakalile nganobe nguyiphi iyunithi emahlandla lamanyenti, kumele bacombele kutsi kungaki kwaleyo yunithi lokunesisindvo lesilingana nesentfo lekalwako. Kucombela ngembi kwekutsi ukale kubalulekile, kodvwa kungentiwa kuphela nangabe bafundzi bake bakala basebentisa leyo yunithi. Bafundzi kufanele bafundziswe kutsi kute bacatsanise bungako nobe umtsamo kufanele kusetjentiswe intfo lefanako. sibonelo uma ingilazi imumatsa emathisipunu lange -20 emanti nenkomishi imumatsa tipunu leti -10 temanti, angeke usho kutsi ingilazi imumatsa emanti lamanyenti. Bafundzi kumele bakale tintfo letinyenti letingakahleleki kute • bacale kuvisisa kutsi uma iyunithi iyincane, utayisebentisa kanyenti, sib. bungako belibhodlela bungaba tipunu letigcwele leti -20 kodvwa tibuye tibe yinkomishi 1; babuye • bacale kusebentisa tintfo letifanele loko lebakukalako, sib. kukala libhodlela lelingemalitha la -2 ngethisipunu kukucitsa sikhatsi.	Sifundvo 1

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO KUITHEMU 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithilali 24)
4.4 **Umtsamo/ bungako**			**Kurekhoda silinganiso** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode silinganiso sabo ngasosonkhe sikhatsi **Kukala umtsamo njengengcikitsi yekusombulula tinkinga nekubala** Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala nebudlelwane, bafundzi bangasombulula tinkinga letisebentisa ingcikitsi yekukala umtsamo/ bungako lokungakahleleki. Sibonelo, Gogo usebentisa tinkomishi leti -2 telubisi kwenta iphudingi. Uma ayiphindza kabili leresiphi, utawudzinga lubisi lolungakanani? Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.	

LIBANGA 1 ITHEMU 4 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 4**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESIBEKIWE** (Etifundvweni teli-awa 1 nemaminithilali 24)
Kusebenta ngekugcogca tintfo				
5.1 **Gcogca ubuye uhlele tintfo.**	**Gcogca ubuye uhlele tintfo** Gcogca ubuye uhlunge tintfo letibonakalako letisetjentiswa malanga onkhe.		Kuhlunga ligcogco letintfo akusiyo intfo lekugcilwe kuyo ehhafini yesibili yemnyaka nobe kunjalo kumele kube ngumsebenti lowentiwa ngalesosikhatsi ngesikhatsi sekutisebentela Imisebenti lekumele kugcilwe kuyo eThemini 4 kufundza nekuhlatiya emagrafutitfombe. Buka ngentasi.	
5.2 **Veta ligcogco letintfo letihlungiwe**	**Veta ligcogco letintfo letihlungiwe** Dvweba sitfombe seligcogco letintfo.			
5.3 **Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe**	**Cocisanani nibuye nibike ngeligcogco letintfo letihlungiwe** • Nika tizatfu tekutsi ligcogco letintfo lihlungwe njani. • Phendvula imibuto ngaloku: - Kuhlunga kwentiwe njani? (inchubo) - Libukeka njani ligcogco letintfo letihlungiwe? • Chaza ligcogco letintfo nemdvwebo. Chaza kutsi ligcogco letintfo lihlungwe njani.			

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithilali 24)
Kusebenta ngedatha				
5.4 **Gcogca ubuye uhlele idatha**	**Gcogca ubuye uhlele idatha** • Gcogca idatha ngeliklasi nobe ngesikolo kute uphendvule imibuto lebutwe nguthishela			
5.5 **Veta idatha**	**Veta idatha kugrafutitfombe**			
5.6 **Hlatiya ubuye uhumushe idatha**	**Hlatiya ubuye uhumushe idatha** • Phendvula imibuto lemayelana nedatha lekugrafutitfombe	Hlatiya idatha yalokuvetiwe kwabuye kwaniketwa.	Bafundzi bangaze bati ngemjikeleto wedatha lephelele (lophakanyisiwe eThemini 3), bangagcila ekuhlatiyeni lokuvetiwe lebaniketwe kona. EThemini 4 kuphakanyisiwe kutsi bafundzi bahlatiye (baphendvule imibuto) emagrafutitfombe la -2.	Tifundvo 2

3.5.2 KUCACISWA KWALOKUCUKETFWE EBANGENI 2

LIBANGA 2 ITHEMU 1 1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA**	**Budze besikhatsi** **1 awa- 24 emamithi**
KUTFUTFUKISWA KWELWATI LWETINOMBOLO: Kubala ngetinombolo letiphelele				
1.1 **Bala Tintfo**	**Kubala tintfo letiphatsekako** Combela ubuye ubale ngekwetsembeka lokungenani tintfo letisetjentiswa malanga onkhe leti -200. Lisu lekwenta tincumbi liyakhutsatwa.	Bala ngekwetsembeka lokungenani tintfo letisetjentiswa malanga onkhe leti- 100 Nika kucombela lokwamukelekile kwelinani letintfo lokungahlolwa ngekubala.	**Buka emanotsi elibanga 1, iThemu 3 neThemu 4** Ithemu 1 ebangeni 2 ihlanganise umsebenti lowentiwe ethemini 4 ebangeni le -1 **Kubala ngetincumbi.** Lokugcilwe kuko kulethemu kubala uchubeke nekubala ngetincumbi. Sita bafundzi kutsi babale tinombolo tetintfo letinkhulu, ngekubakhutsata kutsi bente incumbi yetintfo ngakubili, ngesihlanu, nangemashumi. Emakhaditinombolo kumele akhonjiswe encunjini ngayinye kukhombisa inombolo yetintfo letibaliwe. Kubala ngetincumbi kutawulungiselela bafundzi kutsi bavisise emamalthiphuli. Bafundzi kumele baniketwe litfuba lekubona kutsi tincumbi te-100 tingakheka ngetindlela letehlukene,sibonelo: • tincumbi telishumi le-10; • letehlukene leti-100; nobe • tincumbi le -2 te -50. **Kuchubeke ubale** Bafundzi basadzinga lwati lokutsi baniketwe tintfo letingcogciwe babuye bachubeke babale kubale. **Tinsita:** Kunakekela lokukahle kuyadzingeka kunikwe tinsita letitsite letisetjentiswako kugcugcutela bafundzi kubala ngetincumbi.Tinhlobo tetinsita letingito tifaka loku: • Tinsita letihlelekile, njengentsambo yebuhlalo bekubala. • I-abhakhasi kutetayeta kubala ngetincumbi te -10. • Kwenta emabhandlela la -2,emabhandlela la -5 nelishumi babuye babale onkhe ngetintsi tekubala nobe umetjisi. • Imali yekudlala. Nangabe bafundzi bake babona tinsita tekubala letihlelekile nobe tinsita letentiwe tincumbi, bakhutsate bente tincumbi nababala. Bafundzi badzinga kutsi bente budlelwane bekubala emkhatsini we- odinal nekhadinali. Loku kuyaphumelela uma babona kutsi kuvimba kubala nabafika entfweni lengemashumi lasihlanu kusho kutsi babale tintfo le -50. Ekupheleni kwethemu bafundzi kumele bakwati:	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.1 **Bala Tintfo**			• Kubala tintfo labangatitsintsa nobe batiphatse; • Kubala tibali ngetincumbi tesihlanu nelishumi • Nekutihlela kabusha babuye batibale futsi. Bafundzi kumele bakwati kuphendvula imibuto"Ngabe usenelinani lelifanako letibali?" **Imisebenti lengetiwe:** Bafundzi kumele bakwati kuphendvula letinhlobo teticondziso nemibuto: • Nati tibali leti -100. Tibale ngekwenta tincumbi telishumi. Nyalo buka ngekubala ngakunye.Ungakacali kubala, ngabe ucabanga kutsi samba sitawufana? • Kute ubale tonkhe tibali leti -100, utawukhetsa kutibala ngetincumbi te -20 nobe -25? Yini indzaba? • Cabanga kutsi ngukuphi lokungaba yindlela lengcono kubala emapeniseli lagcogelwe ndzawonye. • Nati tibali leti -80.Uma sibala ngakubili nobe ngelishumi, ngabe linani lesamba setibali sitawuphindze sifane? • Bala tibali leti -46 ngekutibeka ngetincumbi talokubili.	

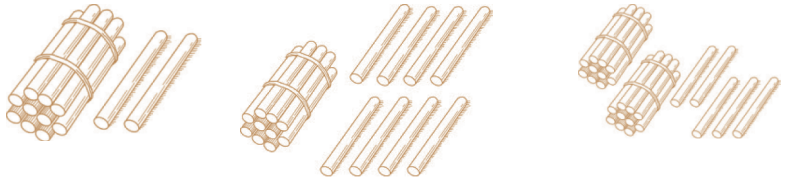
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.2 **Bala uye phambili nasemuva**	Bala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -200. • Nge -10 kusukela kunobe nguwaphi emamalthiphuli emkhatsini we -0 ne -200. • Nge -5 kusukela kunobe nguwaphi emamalthiphuli e -5 emkhatsini we -0 ne -200. • Nga -2 kusukela kunobe nguwaphi emamalthiphuli a -2 emkhatsini we -0 ne -200. • Nga -3 kusukela kunobe nguwaphi emamalthiphuli a -3 emkhatsini we- 0 ne 200. • Nga -4 kusukela kunobe nguwaphi emamalthiphuli a -4 emkhatsini we -0 ne -200.	Bala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -100. • Nge -10 kusukela kunobe nguwaphi emamalthiphuli emkhatsini we -0 ne -100. • Nge -5 kusukela kunobe nguwaphi emamalthiphuli e -5 emkhatsini we -0 ne -100. • Nga -2 kusukela kunobe nguwaphi emamalthiphuli a -2 emkhatsini we -0 ne -100.	Ethemini ye -1 ebangeni 2 umsebenti lowentiwako uhlanganisa umsebenti lowentiwe ebangeni 1 ethemini ye -4. Kubala uzube kuhlala kulikhono lelibalulekile lelitawusita bafundzi nababala tibalo. Kusho ngenhloko kulandzelana kwetinombolo kuhlala kulikhono lelibalulekile lelidzingeka nakubalwa. Kubala kumele kuchubeke kube incenye yemalanga onkhe yemphilo yebafundzi kanjalo imilolotelo, emaculo, netindzaba kumele tibe yincenye yelwati lwekubala: Ebangeni 1 bafundzi batfole lwati lolulandzelako loluhambelana nekubala: • Lwati lwekugcina tinombolo • Imigomo yelinani letinombolo - kubita lokugcogciwe • Kwakheka kwetinombolo • Kucondzanisa kunye kulokunye **Kubala ngekuzuba** Kubala ngekuzuba ngulelinye ligama lekubala ngetincumbi.Kusita kutfutfukisa lwati lwemaphethini etinombolo. Kubala uzube kukhutsata bafundzi kutsi babale babuye bacabange ngetincumbi, lokubenta bakhutsale. Loko kuyabasita ekutfutfukiseni likhono lekucombela. Kubala ngetincumbi kubenta kutsi babati budlelwane lobusemkhatsini wetinombolo letingalandzelani. Loku kwenta sisekelo semaphethini etinombolo nekuphindzaphindza tibalo. Bafundzi kumele bachubeke basitwe ngemifanekiso letabasita ekubaleni ngekuzuba.sibonelo:	

2	4	6	8	10
12	14	16	18	20
22	24	26	8	30
32	34	36	38	40
42	44	46	48	50
52	54	56	58	60
62	64	66	68	70
72	74	76	78	80
82	84	86	88	90
92	94	96	98	100

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.2 **Bala uye phambili nasemuva**			**Imisebenti lengetiwe:** Kubala uye phambili nasemuva uye e -100 ngekusebentisa lishadi lelikhulu le-100:(5-7 emaminithi ngelilanga) Cala kubala NELIKLASI LONKHE kanyekanye, manini kunobe nguyiphi inombolo sib. e -24 Bafundzi banikana ematfuba ekubala bachubeke kusukela kuleyo nombolo ngemacembu, ngababili nangamunye njengoba thishela ashilo, abhale inombolo endzaweni yekuphumula ngayinye. Buta imibuto njengekutsi nguyiphi iphethini loyibonako? Igcinaphi iphethini yekucala? (Sibonelo:Emaphethini ekubala nga -2: 2; 4; 6; 8; ne -10) Ekupheleni kwethemu bafundzi kumele bakhone ku: Kubala kuvakale nekuphendvula imibuto njengaloku: • Cala e -52, ubale uye phambili ngakunye uye e - 72. • Cala e- 88 ubale uye emuva ngakunye uye e -70. • Cala e -38 ubale ngakubili uye e -50. • Cala e -45 ubale ngesihlanu uye e -100. • Cala e -10 ubale ngelishumi uye e -100. Bafundzi kumele bakwati kusebentisa emakhono abo emisebentini lebhalwako, sibonelo, emisebenti yekutentela bangagcwalisa tinombolo letilandzelanako, Sibonelo 76; 75; 74; __; 72; __; __; __; 68 (uye emuva) 27; 28; 29; __; __; 32; __ (ngakunye uyephambili) 8; 10; __; 14, __ (ngakubili nobe etinombolweni letihamba ngakubilii) 5; 10, 15;20,25 ____ (ngesihlanu) 90; __; 70,60; __ (kubala uye emuva ngelishumi) 10, 20, 30, 40, ___, 60, 70, ___ (kubala uye phambili ngelishumi).	

<table>
<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA</th><th>LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1</th><th>EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA</th><th>Budze besikhatsi
1 awa- 24 emamithi</th></tr>
<tr>
<td>1.3
Tinombolo nemagama eti-nombolo</td>
<td>Bona, tfola ubuye ufundze tinombolo
• Bona, tfola ubuye ufundze tinombolo kusukela e -0 kuye e -200
• Bhala tinombolo kusukela e -0 kuye e-200
• Bona, tfola ubuye ufundze emagama etinombolo kusukela e -0 kuye e -100
• Bhala emagama etinombolo kusukela e -0 kuye e -100</td>
<td>Bona, tfola ubuye ufundze tinombolo
• Bona, tfola ubuye ufundze tinombolo kusukela e -0 kuye e -100
• Bhala tinombolo kusukela e -0 kuye e-100
• Bona, tfola ubuye ufundze emagama etinombolo kusukela e -0 kuye e -25
• Bhala emagama etinombolo kusukela e-0 kuye e -25</td>
<td>Ngalethemu bafundzi bachubeka ne:
• Kufundza nekubhala tinombolo bafike e-100;
• Nekufundza nekubhala emagama etinombolo bafike e -25.
Ekupheleni kwethemu bafundzi kumele bati loku:
Kubhala tinombolo temagama etinombolo laniketiwe:
• Lishumi nenkhotsa
• emashumi lamabili nakutsatfu
Condzanisa timphawu netinombolo
<table>
<tr><td>66</td><td>Emashumi layimfica nakunye</td></tr>
<tr><td>8</td><td>Emashumi lasihlanu nakutsatfu</td></tr>
<tr><td>172</td><td>Emashumi lamane</td></tr>
<tr><td>109</td><td>Emashumi lamatsatfu nesiphohlongo</td></tr>
<tr><td>91</td><td>Likhulu nemashumi layinkhotsa nakubili</td></tr>
<tr><td>40</td><td>Emashumi lasitfupha nesitfupha</td></tr>
<tr><td>53</td><td>Siphohlongo</td></tr>
<tr><td>38</td><td>Likhulu nemfica</td></tr>
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Fundza kakhulu tinombolo kulinye likhadi:</td>
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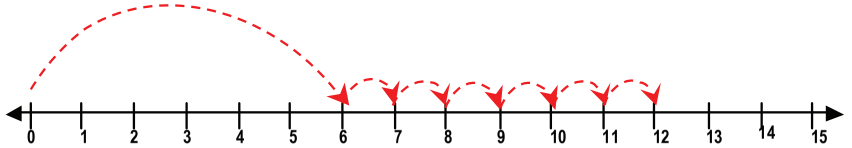
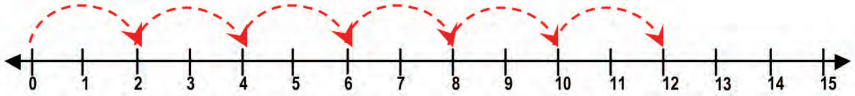
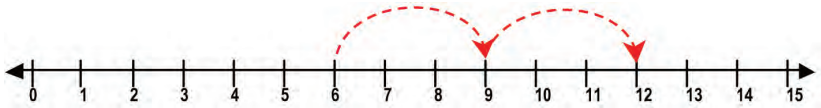
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.4 **Chaza, catsanisa ubuye uhlele tinombolo**	**Hlela ubuye ucatsanise tinombolo uye e -99** • Hlela tinombolo letiphelele kuye e -99 kusukela kulokuncane kakhulu kuya kulokukhulu kakhulu, kanye nalokukhulu kakhulu kuya kulokuncane kancane. • Catsanisa tinombolo letiphelele kuye e -99 ngekusebentisa kuncane kuna, kukhulu kuna, kunyenti kuna, kumbalwa kuna kubuye kulingane na. **Sebentisa tinombolo letingema- odinali kukhombisa kuhleleka, indzawo nekubekeka** Beka tintfo emgceni kusukela kuyekucala kuye kuyelishumi nobe ekucaleni kuye ekug-cineni, sib. Kwekucala, kwesibili, kwesitsatfu..... kwemashumi lamabili.	**Hlela ubuye ucatsanise tinombolo uye e -25** • Hlela tinombolo letiphelele kusukela kulokuncane kakhulu kuya kulokukhulu kakhulu, kanye nalokukhulu kakhulu kuya kulokuncane kancane. • Catsanisa tinombolo letiphelele ngekusebentisa kuncane kuna, kukhulu kuna, kunyenti kuna, kumbalwa kuna kubuye kulingane na. **Sebentisa tinombolo letingema- odinali kukhombisa kuhleleka, indzawo nekubekeka** Beka tintfo emgceni kusukela kuyekucala kuye kuyelishumi nobe ekucaleni kuye ekug-cineni, sib. Kwekucala, kwesibili, kwesitsatfu..... kwelimashumi	Kuhleleka kwekulandzelana kwetinombolo nekucatsanisa kumatanisa kubala kwekuhleleka kwetinombolo. Loku kusho kutsi kute ubala uye e -99, lwati lweti-nombolo lwebafundzi kumele lutfutfukiswe kute bafike esisombululweni. Uma bafundzi bahlela babuye bacatsanise ngekutetsemba kunaloku lekubekiwe loko kutawuchubekisa tinombolo nelwati lwekusebenta ngetinombolo. Bafundzi kumele bachubeke basebentise lulwimi lwekuhlela nekucatsanisa: Kwekucala, kwesibili, kwesitsatfu, kwesine kwesihlanu, kwesitfupha..... Kungaki…… Lokunyenti njenge, inombolo lefanako njengethe … Kulingana na, kunyenti kuna, kuncane kuna, kumbadlwana kuna, kukhulu kuna..... Kwekucala, kwekugcina, ngembikwe ku, emva kwe, edvute, emkhatsini..... Ngekuhlela nekucatsanisa tintfo netinombolo bafundzi bafundze kutsi: • Linani letinombolo lisetjentiselwa kuchaza inombolo esethini; • Incenye yenombolo leyi-odinali isho inombolo lenebudlelwane nendzawo esethini.sibonelo Faka umbala lomtfubi endilingeni yesitsatfu. **Imisebenti lengetiwe** • Tinombolo letingema-odinali: Coca ngemehluko losemkhatsini wemagama ‘kunye’ na ‘kwekucala’; ‘kubili ‘ na ‘kwesibili’ njll.Buta imibuto lenjenga le: Ungalisebentisa nini ligama lelitsi ‘kutsatfu ‘ na wesitsatfu? Singabhala kwekucala kwesibili, kwesitsatfu ngendlela lemfishane? • Hlukanisa liklasi katsatfu libe ngemacembu lamane lalinganako. Munye umfundzi utfola likhadi lekatawubhala kulo ligama lakhe. Emacembu abeka emakhadigama abo ngekulandzelana ngema-alfabhethi. Thishela nebafundzi bangabuta imibuto, sib. ngubani wesine kulelicembu?	

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1.5 Simelibungako	**Bona simelibungako setinombolo letinge-madijithi lamabili kuya e- 99** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamabili kuye e -99 tibe ngemamalthiphuli emakhulu, emashumi kanye nemivo • Tfola ubuye usho bungako bedijithi ngayinye.	**Bona simelibungako setinombolo letinge-madijithi lamabili kuye e- 25** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamabili kuye e -99 tibe ngemamalthiphuli emakhulu, emashumi kanye nemivo • Tfola ubuye usho bungako bedijithi ngayinye.	**Yini leyehlukile eBangeni 1?** Ethemini ye-1,bafundzi basebenta ngekuhleleka kwetinombolo letisetulu ba-chubeke neku: • Bala ugcogce kute wente tincumbi telishumi nemivo; • Bhala li -18 = nelishumi li-1 nemivo le -8 Li -13 = neli -10 na -3. Ngalethemu bafundzi bayachubeka nekutinika lwati lolunyenti kute batfole lishumi njengesilinganiso neyunithi. Lishumi, lishumi linye lelinemivo lelishumi.”Lishumi lelitayelekile nalinye ligama (e -24 atincumbi le -2 telishumi nemivo le-4 nobe emashumi la -2 nemivo le -4.) lidzinga kusetjentiswa ngasosonkhe sikhatsi kute bakhe lulwimi lolukhombisa kuhlahlela nekuhlanganisa tinombolo **Kusebenta ngetintfo lephatsekako.** • **Kubala tintsi/umetjiso** • Kubala tintsi nobe umetjiso kungentiwa tincumbi kukhombisa emabhandlela elishumi kanye nemivo. **Sibonelo** **Kukhombisa -12** **Kukhombisa 18** **Kukhombisa 25**  • **I-abhakhasi** Bafundzi bayachubeka ngekusebenta ngetinsita letiphatsekako ngekwenta tin-cumbi letenta lishumi linye nekuvisisa kutsi li -10 yincumbi yinye yelishumi. Kusebentisa i-abhakhasi, bafundzi kumele bakwati kukhombisa: - Linye lishumi; - Linye lishumi nemivo le -5; - Linye lishumi nemivo le -6; - Linye lishumi nemivo le -7; - Linye lishumi nemivo le -8; - Linye lishumi nemivo le -9.	

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1.5 Simelibungako			• **Emabhuloki eDienes.** **Ngalethemu tinsita tekufundzisa ngebungako singakhuliswa.Emabhuloki etinombolo letakha lishumi (incenye yemabhuloki eDeines) angatfulwa kutfutfukisa umbono welishumi njengentfo letimele nekutsi:** - kunye loku-10 kulingana nelishumi; - kunye loku -20 kulingana nemashumi la -2; - Kunye loku -16 kulingana nelishumi li -1 nemivo le-6. Nanobe bafundzi basadzinga kubala nekwenta tincumbi telishumi, bangabuye bakhombise li -18 ngekubeka ibhuloki yinye yetinombolo letakha lishumi nemabhuloki lasiphohlongo kukhombisa inombolo. Bafundzi kumele bente tincumbi futsi kukhombisa ema -20 • **Kuveta tintfo ngetindlela letilinganako.** Ngalethemu kugcilwe ekukhombiseni tintfo letivetwe njengenombolo yinye. Emashumi lamabili angachazwa njengemashumi la -2 (ngekusebentisa emabhandlela nobe tincumbi tetintfo) nobe tincumbi le -2 telishumi. Kubalulekile kukhomba bafundzi kutsi e -20 angabukeka ngendlela lehlukile. Ngako-ke khombisa tintfo le -20, nayinye incumbi yalokulishumi nemivo le -10 netincumbi le -2 telishumi. Bafundzi kumele banikwe litfuba lekuchaza leluhlelo, basho kutsi yini lehlukile, yini lefanako. • **Emakhadi esimelibungako/emafladikhadi** Emakhadi esimelibungako angatfulwa abuye asetjentiswe ngelesikhatsi sethemu kukhombisa kutsi tinombolo takheke njani. Emakhadi esimelibungako angakhonjiswa kanye nemabhandlela nobe etincumbini tetintfo. • **Bungako bedijithi** Bafundzi kumele bacale kusho kutsi idijithi yinye imeleni.Buta bafundzi: - Imeleni i -7 e-27? - Kumeleni lo - 2 e -29? Bafundzi kumele basebentise emakhadi esimelibungako kusekela sitatimende sabo. • **Kundlulela emathekssthni labhalwako.** Ngesikhatsi sekutisebentela bafundzikumele bente imisebenti lebhalwako leyakha ibuye ihlanganise:	

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1.5 Simelibungako			- Lwati lwetincumbi telishumi nemivo - Bungako bedijithi. **Sibonelo:** Penda buhlalu lobu -12  Penda buhlalu lobu -16  Gcwalisa inombolo leshodako (loku kungentiwa nobe kuchazwe ngekusebentisa tintfo letiphatsekako) 18 = nelishumi li -1 nemivo le____ 23 = nemashumi la ___ nemivo le-3 **Tinsita letiphaknyiisiwe** Tintfo letingagcogcwa: • Tindvuku tekubala • Tibali letingaphotselwa. • Tintsi temetjisi • Tindvukwana te- ayisikhilimu • Emakhiyubhi lakhacelanako.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.6 **Emasu ekubala tibalo**	Sebentisa lamasu lalandzelako nawusombulula tinkinga tetibalo ubuye uchaze tisombululo tetibalo: • Imidvwebo nobe tinsita letiphatsekako, si. tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Imigcatinombolo	Sebentisa lamasu lalandzelako nawusombulula tinkinga tetibalo ubuye uchaze tisombululo tetibalo: • Imidvwebo nobe tinsita letiphatsekako, sib. tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Imigcatinombolo	Bafundzi kulindzeleke kutsi basombulule tibalo temagama ngekusebentisa lamasu lalandzelako: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo. **Imidvwebo netintfo letiphatsekako.** Bafundzi batawuchubeka badvwebe titfombe babuye basebentisa tintfo letiphatsekako kubala tibalo. Kubalulekile kutsi titfombe nobe imidvwebo ibe netinombolo nemishotinombolo. • **Kwakha nekuhlahlela tinombolo** Loku ngulamanye emasu labalulekile eSigabeni Sabokhewane. Kusebentisa lamasu kusita bafundzi kutsi bakhone kuhlahlela nekuhlanganisa tinombolo kute kubala kubelula. Batawube bawasebentisa lamasu eSigabeni Lesisemkhatsini. • **Kuphindza nekuhhafula** Lelisu lihle kakhulu lifuna lwati lwetinombolo loluphelele. Bafundzi labakhonako kukhetsa lelisu bakhululekile kulamasu lebawasebentisako.sibonelo: Kubala tibalo temagama: Ngelilanga linye eMtfolamphilo bantfwana la -17 bebagonyelwa umkhuhlwane. Ngelilanga lelilandzela bagoma bantfwana la -16. Bangaki bantfwana lebagonyiwe sebabonkhe? Lenkinga yetibalo ingasombululwa ngekusebentisa kuphindza tinombolo. Umfundzi angatsi phindza li -16 ulihlanganise na -1 nobe phindza li -17 ususe ku -1 **Imigcatinombolo** Kusebentise imigcatinombolo kute basitakale nababala kutawunika bafundzi indlela yekurekhoda loko lebakucabangako nekukulandzela. Kuphindze kuvumele bafundzi kutsi babenemfanekiso walokurekhodiwe labatawusebentisa nabachaza kutsi bayisombulule njani inkinga yetibalo. Bafundzi bebasebentisa imigcatinombolo kusukela ebangeni -1.Ngalesikhatsi kumele bakwati kwakha imigcatinombolo longanalutfo lebangafaka kuwo inombolo lesekucaleni babuye babuke kutsi bangasuka njani kulenye baye kulenye. Ngalethemu kutawuba nekutfutfuka ekwakheni umugcatinombolo. Sibonelo sekutsi bafundzi bangawusebentisa njani umugcatinombolo kurekhoda emasu ekubala:	

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1.6 **Emasu ekubala tibalo**			Zonke unemathoyizi la -6 laneboya. Zia unalamanyenti nge -6 kuna Zonke. Zia unemathoyizi laneboya lamangaki? Bafundzi batawenta imigcatinombolo lelandzelako kubasita kutsi bafike emphendvulweni.  Bafundzi bangabuye bahlahlele si -6 ngetincumbi le -2. Lomugcatinombolo utawukhombisa kuzuba nga -2 kusukela ku -6. **Sibonelo:**  Nangabe bafundzi sebabala ngekutetsemba ngekuchuka babale kusukela enombolweni lebaniketwe yona, umugcatinombolo kumele ucale ku -6. Lendlela lomugcatinombolo lowakheke ngayo umatanisa lwati lwekubala uye phambili. Kubalulekile kutsi bafundzi babone imigcatinombolo ucala etinombolweni letehlukene uma utisebentisela kubala nobe kuhlela tinombolo. Lomunye angahlahlela si -6 ngetincumbi le -2 babuye bachubeke bangete ku -6. **Sibonelo:**  Si -6 singahhafulwa babuye barekhode kuzuba ka -2 kwa -3 **Sibonelo:**  Bafundzi kumele baniketwe ematfuba lamanyenti kusho kutsi bangafika njani enombolweni ngekusebentisa umugcatinombolo.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.6 **Emasu ekubala tibalo**			Munye angabuta: Bangazuba kangaki kuyofika e -15? Kute ufike etinombolweni, bafundzi kumele bati tinombolo letakha li -15 nobe bakhone kusebentisa umugcatinombolo kute bafike emphendvulweni. Kubalulekile kutsi bafundzi bakhulume ngekutsi batawuzuba kangakanani emgcenitinombolo. Kutitayeta loluhlobo lwalomsebenti kulungiselela bafundzi kusebenta ngemigcatinombolo lengenalutfo. Nangabe basesebenta ngemigcatinombolo, labanye bafundzi bangadzinga kubamba intsambo lenebuhlalu ngetulu nobe ngaphasi kwemugcatinombolo kute ibasite nababala. Vumela bafundzi bakhetse emasu lebatawukhona kuwasebentisa. Nanobe bafundzi bangasebentisa lamasu langasikahle, badzinga kukhonjiswa indlela kute basebentise kakhulu emasu lakahle. Bafundzi batetayeta kusebentisa lamasu. Akukadzingeki kutsi bayatisise. Caphela kutsi bafundzi bayaye basebentise tindlela letehlukene tekusombulula tibalo temagama letingeke tibe nguleto thishela latilindzele. Sibonelo, tibalo tekuhlukanisa tingasombululwa ngekuphindza kususa, kuhlanganisa nobe kuphidzaphindza. Indlelanchubo yebafundzi itawuntjintja ngekuhamba kwemnyaka njengoba kuvisisa kwabo nekutayela kwabo tinhlobo tetibalo kuyakhula, nelwati lwetinombolo luyatfutfuka.	

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<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA</th><th>LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1</th><th>EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA</th><th>Budze besikhatsi
1 awa- 24 emamithi</th></tr>
<tr><td>1.7
Kuhlanganisa nekususa</td><td>Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo letifaka ekhatsi Kubala tibalo temagama ngegcikitsi bese bachaza tisombululo lokufaka ekhatsi kuhlanganisa, kususa netimphendvulo ufike e-99.</td><td>Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo letifaka ekhatsi Kubala tibalo temagama ngegcikitsi bese bachaza tisombululo lokufaka ekhatsi kuhlanganisa, kususa netimphendvulo ufike e-20.</td><td>Yini leyehlukile eBangeni 1?
Ngalethemu bafundzi batetayeta kwenta tibalo temagama bese basebenta nge-kutetsemba ngekusebentisa lamasu lalandzelako uma babala tibalo:
• Imidvwebo netintfo letiphatsekako.
• Kwakha nekuhlahlela tinombolo
• Kuphindza nekuhhafula
• Imigcatinombolo.
Kulethemu, kumele usekele bafundzi kulokunyenti lebakwentako nabazama kurekhoda nekuveta tibalo lebatibalile. Bafundzi kumele babhale phasi imishoti-nombolo njengemsebenti lobhaliwe wetibalo letisombululiwe. Kubalulekile kubuka bafundzi lebanetinkinga tekubhala imishotinombolo kute ukhone kubona tinkinga letikhona.
<table>
<tr><th colspan="3">Luhlobo lwetibalo 1: Intjintji</th></tr>
<tr><td></td><td>Hlanganisa</td><td>Hlukanisa</td></tr>
<tr><td>Umphumela longatiwa</td><td>Moeketsi unemaswidi la- 6. Mahlodi umupha lamanye la -9 Mangaki emaswidi aMoeketsi sekawonkhe?</td><td>Kunemaswidi la -15. Moeketsie udla la -6. Kusele emaswidi lamangaki a Mahlodi?</td></tr>
<tr><td>Intjintji lengatiwa</td><td>Moeketsi unemaswidi la- 6. Udzinga mangaki kute abe nemaswidi la -15?</td><td>Moeketsi unemaswidi la- 15. Mahlodi udla lamanye emaswidi. Kusala la -9. Udle mangaki emaswidi Mahlodi?</td></tr>
<tr><td>Kucala lokungatiwa</td><td>Moeketsi unemaswidi. Mahlodi umnike lamanye la -9. Nyalo sewunemaswidi la -15. Ucale ngamangaki emaswidi Moeketsi?</td><td>Moeketsi udla emaswidi. Unika Mahlodi la -6. Nyalo sewusele nemaswidi la – 8. Bekanamangaki ekucaleni?</td></tr>
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TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.7 Kuhlanganisa nekususa				

Luhlobo lwetibalo 2: Catsanisa

	Hlanganisa	Hlukanisa
Umphumela longatiwa	Moeketsi unemaswidi la- 6.	Mahlodi unemaswidi la -15.
Intjintji lengatiwa	Mahlodi unemaswidi la -9. Unemaswidi lamanyenti ngamangaki Moeketsi kwendlula Mahlodi?	Mahlodi unemaswidi la -6. Unalamanye lambalwa la-9 kundlula lawo aMoeketsi. Unemaswidi lamangaki Mahlodi?
Kucala lokungatiwa	Mahlodi unemaswidi la -15. Unamanyenti ngalayi -9 kwendlula a Moeketsi. Unemaswidi lamangaki Moeketsi?	Mahlodi unemaswidi la-16. Moeketsi unalambalwa la-9 kundlula lawo aMahlodi. Unemaswidi lamangaki Mahlodi?

Luhlobo lwetibalo 3: Kulinganisa

	Hlanganisa	Hlukanisa
Umphumela longatiwa	Mahlodi unemaswidi la -15. Moeketsi unemaswidi la- 6. Kumele abe nemaswidi lamanyenti ngamangaki Moeketsi kute abe manyenti alingane nalawo a Mahlodi?	Mahlodi unemaswidi la -16. Moeketsi unemaswidi la- 6. Kumele adle mangaki emaswidi Mahlodi kute emaswidi akhe alingane nalawo a Mahlodi?
Intjintji lengatiwa	Moeketsi unemaswidi la- 6.Uma atsenga la -9 utawuba nalamanyenti lalingana nalawo a Mahlodi. Unamangaki emaswidi Mahlodi?	Moeketsi unemaswidi la- 6.Uma Mahlodi adla emaswidi -9 utakuba nemaswidi lalinganako ne a Moeketsi. Unamangaki emaswidi Moeketsi?
Kucala lokungatiwa	Mahlodi unemaswidi la -15. Uma Moeketsi atsenga lamanye lamanyenti la- 9 utawuba nemaswidi lalinganako ne aMahlodi. Unamangaki emaswidi Moeketsi?	Mahlodi unemaswidi la -16. Uma adla emaswidi la -9 utawuba nemaswidi lalingana nalawo aMoeketsi. Unamangaki emaswidi Moeketsi?

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo ngekusebentisa kuhlanganisa lokuphindzaphindzako nobe kuphindzaphindza lokunetimphendvulo letifika e- 50	Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo ngekusebentisa kuhlanganisa lokuphindzaphindzako nobe kuphindzaphindza lokunetimphendvulo letifika e- 20.	Kuphindzaphindza Sisekelo sekuvisisa kuphindzaphindza kulelibanga kugcogcela ndzawonye tintfo. Kwenta tincumbi kutawusita umfundzi kutsi akwati kuveta kahle simo sekuphindzaphindza. Kunetigaba letintsatfu letisemcoka tetimo tetinkinga tetibalo letifaka ekhatsi kuphindzaphindza kwetinombolo letiphelele: • Tincumbi letifanako (sib. ematafula lamatsatfu lanebantfwana labane ngalinye): lavetwe njengemasethi laphindziwe. • Kucatsanisa lokuphindzaphindzako (sib. bafana nemantfombatane labaphindvwe katsatfu): labavetwe njengekuhambelana kwalokunyenti nakunye. • Ligcogco lolubocalandze (sib. imigca lemitsatfu yebantfwana labane): letibekwe ngemigca nangemakholamu. Yinye yaletimo ingafananiswa netindlela letitsite lokubutwa ngato imibuto. (Buka Tinhlobo tetinkinga tetibalo ebangeni -2 esigabeni se -2). Inkinga yesimo sekuphindzaphindza lokufaka ekhatsi tinombolob letintsatfu letilandzelako ebudlelwaneni betibalo: • Inombolo yetintfo esethini ngayinye • Inombolo yemasethi • Samba **Tibonelo tetibalo letingentiwa kulethemu** Kulindzeleke kutsi uma usabala tibalo letingentasi, bafundzi batawusebentisa titfombe, imidvwebo nobe tintfo letiphatsekako kute basitakale nababala. Nangabe bafundzi badvweba titfombe tekubasita kubala, lemidvwebo kumele ikhombise simo setintfo letiyincumbi. Bafundzi kumele bakhutsatwe ekubhaleni imishotinombolo kuto tonkhe tibalo temagama. Lindzela kutsi bafundzi batawusebentisa kuhlanganisa lokuphindzako kwemishotinombolo kukhombisa sisombululo.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**			**Tibonelo tetibalo lengentiwa:** **Kuphindza kuhlanagnisa** • Anamangaki emasondvo emabhayisikili lamane? • Banamangaki emehlo bantfwana la-7. Bafundzi bangabala tibalo ngalendlela lelandzelako. • Titfombe nobe imidvwebo kumele kukhombise kugcogceka kwetintfo  Bafundzi kumele bakhutsatwe kubala nga -2 kutfola imphendvulo. Kumele bakhutsatwe kukhombisa kubala kwabo kumishotinombolo  **2 + 2 + 2 + 2 + 2 + 2 + 2 = 14** **Linani** Thami unatsa tinkomishi le -3 telubisi onkhe emalanga. Unatsa tingaki tinkomishi telubisi ngeliviki? **Emagridi nobe ligcogco** Babe Khumalo uhlanyele imigca lemitsatfu yetitjalo tbunjwa.Kunetitjalo letisihlanu emgceni ngamunye. Tingaki titjalo tbunjwa setitonkhe? • Ingadze yetibhidvo inemigca yetitjalo letisihlanu. Umugca ngamunye unetitjalo letilinganako. Nangabe kunesamba setitjao le-15, tingaki titjalo kumunye umugca? • Ingadze yetibhidvo inetitjalo le-18 letihlanyelwe ngemigca. Kunetitjalo le -6 emgceni ngamunye. Mingaki imigca lekhona?	

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1.9 Kugcogca nekwabelana lokuholela ekuhlukaniseni.	Sombulula ubuye uchaze tisombululo tetibalo lletentiwako lokufaka ekhatsi kwabelana lokulinganako nekugcogca ufike e-99 letinetimphendvulo letingafaka tinsalela.	Sombulula ubuye uchaze tisombululo tetibalo lletentiwako lokufaka ekhatsi kwabelana lokulinganako nekugcogca ufike e-20 letinetimphendvulo letingafaka tinsalela.	Njengekuphindzaphindza,sisekelo sekuvisisa setibalo tekuhlukanisa kulelibanga, kwabelana lokulinganako nekugcogcela ndzawonye tintfo. • Kugcogcela ndzawonye (sib. bafundzi labalishumi nakubili ematafuleni lamane, mangaki ematafula) • Kwabelana (sib. bafundzi labalishumi nakubili ematafuleni lamane, bangaki etafuleni ngalinye) Labanye bafundzi bafika esikolweni bakwati kwenta konkhe kugcogcela ndzawonye nekwabelana lokuhlukanisa tintfo letiphatsekako. Simo setinkinga tetibalo tekuphindzaphindza nekuhlukanisa kufaka ekhatsi tinombolo letintsatfu letilandzelako ebudlelwaneni betibalo: • Inombolo yetintfo esethini ngayinye • Inombolo yemasethi • Samba **Tibonelo tetibalo letingentiwa kulethemu** Kwabelana • Nginemapeniseli la-12 lekumele nginihlukanisele nobatsatfu; Nitawutfola mangaki emapeniseli ngamunye? • Kunetimoto temathoyisi le -18; Ungatihlukanisa ngalokulinganako emkhatsini wenu nobabili? • Kunemapulamu la-16 nebantfwana la -8 labahlukaniselana wona ngalokulinganako. Umntfwana ngamunye unemapulamu lamangaki? • Naomi unetimbali le-20. Utifaka emavasini la-2. Tingaki timbali kuyinye ivasi? • Tom ubhake emakhekhe la -8. Unemasimatisi la-40. Utawufaka emasimatisi mangaki kulinye likhekhe? Kugcogca • Ungenta tingaki timoto nawunemasondvo la -8. Tingaki tidududu longatenta? • Kunemahhabhula la -18 ebhokisini. Tingaki tikhwama letinemahhabhula la -3 longatigcwalisa? • Umbhaki ubhake emabhanisi la-30.Ufaka emabhanisi la-6 kuwowonkhe emabhokisi. Utawugcwalisa emabhokisi lamangaki? • Kunebafundzi la-16 namuhla. Mangaki emathimu ebantfwana labane lesingawenta? **Ligcogco** • Mongezi upaka tibali le- 20 emigceni le -10. Tingaki tibali emgceni ngamunye?	

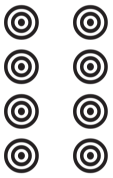
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.11 **Imali**	• Kubona ubuye utfole imali lebuhhehlu yase Ningizimu Afrika, 5c, 10c, 20c, 50c, R1, R2, R5, neyemaphepha R10, R20, R50 • Sombulula tinkinga tetibalo temali lokufaka tamba nentjintji uye e R99 nakumasenti ufike e-90c.	• Kubona ubuye utfole imali lebuhhehlu yase Ningizimu Afrika, 5c, 10c, 20c, 50c, R1, R2, R5, neyemaphepha Sombulula tinkinga tetibalo temali lokufaka tamba nentjintji ngemasenti ufike e-50c nobe emarandi uye e -R20	**Yini leyehlukile eBangeni 1?** Ngalethemu bafundzi batetayeta kwati imali ngekuhlahlela imali ibe tincenye letincane **Tibonelo tetibalo letingentiwa kulethemu** • Ungababela ngalokulinganako imali lengu 50c bafundzi labane? Chaza kutsi kungenteka njani. • Emaswidi emabhabuligamu abita 10c linye. Busi usebentise 50c. Utsenge mangaki emaswidi emabhabuligamu? • Thenje ubhadala R5 kuya esikolweni ekuseni ngetekisi, Ubhadale nga R20 wemaphepha. Utawutfola malini intjintji? Utawusala namalini nasekabuyela ekhaya ngetekisi? • Ifiziphophu ibita R2, 50. Palesa ufuna kutsenga emafiziphophi la- 4. Una R8, 00. Unayo yini imali leyanele? Uma angenayo, utawudzinga malini?	
1.12 **Emasu** **(tindlela nobe indlelanchubo)**	Sebentisa lamasu lalandzelako nawenta tibalo: Imidvwebo nobe tintfo letiphatsekako sibonelo tibali. • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo	Sebentisa lamasu lalandzelako nawenta tibalo: • Sebentisa imidvwebo nobe tintfo letiphatsekako sibonelo tibali. • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo	**Yini leyehlukile eBangeni 1?** Bafundzi balindzeleke kutsi basombulule ngekutibalela ngaphandle kwesimongcondvo ngekusebentisa lamasu lalandzelako: • Imidvwebo nobe tintfo letiphatsekako. • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo. **Imidvwebo nobe tintfo letiphatsekako** Bafundzi batawuchubeka badvwebe titfombe babuye basebentise tinsita kusombulula tinkinga tetibalo. Kubalulekile kutsi titfombe nobe imidvwebo ibe netinombolo kanye nemishotinombolo. **Kwakha nekuhlahlela tinombolo** Loku ngulamanye emasu labalulekile Esigabeni Sabokhewane(Bafundzi batalisebentisa ngasosonkhe sikhatsi lelisu lekuhlahlela tinombolo Esigabeni Lesisemkhatsini). Kusebentisa lamasu kusita bafundzi kutsi bakwati kuhlahlela nekuhlanganisa tinombolo kute kubala tibalo kubelula. Ngalethemu bafundzi: • Batawuhlahlela tinombolo ngekusebentisa simelibungako; • Batawuhlahlela tinombolo ngekusebentisa emamalthiphuli e -10 • Kuhlahlela tinombolo letingemapheya sib. emapheya lenta e -20.	

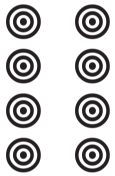
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.12 **Emasu** **(tindlela nobe indlelanchubo)**			**Kuphindza nekuhhafula** Bafundzi bayachubeka basebentise kuphindza nekuhhafula tinombolo njengendlelanchubo yekubala **Imigcatinombolo.** Buka emanotsi lanetibonelo kwenta imigcatinombolo esigabeni sekusombulula tinkinga tetibalo. • Kuhlanganisa nekususa Bafundzi kumele bente imigcatinombolo yabo babuye bahlahlele tinombolo tibe tincenye lebatawukhona kutisebentisa. **Sibonelo** 8 + 12 Umugcatinombolo kumele ucale ku -8, bafundzi bangaticambela: • Kuzuba ka -2 kwa -6 • Kuzuba ka -4 kwa -3 • Kuzuba ka -3 kwa -4 • Kuzuba kanye kwe -10 nekuzuba kanye kwa -2 Kuphindzaphindza Imigcatinombolo kumele uchubeke usetjentiswe kusekela kuhlanganisa lokuphindzako. Kuzuba lokulinganako kuyarekhodwa kumugcatinombolo nemisho lesekelako ingarekhodwa nayo **Sibonelo:** 5 + 5 + 5 + 5 + 5 = 25 kuzuba ngelinyawo lunye ka -5 ukuphindze ka -5 kwenta 25 tincumbi le -5 taloku -5 = 25 5 x 5 = 25 Etibalweni tekuphindzaphindza letiniketiwe, bafundzi kumele bakwati kuchaza kutsi umugca utawusuka njani kulenombolo uye kulenye emgcenitinombolo Vumela bafundzi bakhetse emasu lebatawukhona kuwasebentisa. Nanobe bafundzi bangasebentisa lamasu langasikahle, badzinga kukhonjiswa indlela kute basebentise kakhulu emasu lakahle. Kumele wati kutsi bafundzi bangahle basombulule tinkinga ngendlela thishela langakayilindzeli, Sibonelo, tibalo tekuhlukanisa tingasombululwa ngetibalo tekuphindza kususa, kuhlanganisa nobe kuphidzaphindza. Indlelanchubo yebafundzi itawuntjintja ngekuhamba kwemnyaka njengoba kuvisisa kwabo nekutayela tinhlobo tetinkinga tetibalo kuyakhula kantsi futsi nelwati lwetinombolo luyatfutfuka.	

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1.13 **Kuhlanganisa nekususa**	• Hlanganisa uye e-99 • Susa kusukela e-99 • Sebentisa timphawu letifanele (+, –, =, □) • Tetayete kuhlanganisa tinombolo uye e-10	• Hlanganisa uye e-20 • Susa kusukela e -20 • Sebentisa timphawu letifanela (+, –, =, □) • Enta utetayete kuhlanganisa tinombolo uye e-10	**Yini leyehlukile eBangeni 1?** Kulethemu kugcilwa kakhulu ekutfutfukiseni tindlelan nobe emasu ekubala. Kuhlahlela tinombolo kute ubale kuba lisu lelibalulekile bafundzi labatatetayeta lona. **Lethemu igcile eku:** Sebentiseni kwakha nekuhlahlela imisebenti yetinombolo lekutawusita ekutfutfukiseni kuvisisa kuhlanganisa nekususa. Bafundzi batetayeta kuhlanganisa nekususa uye e -20 Kusekuhlelekeni kwalenombolo lapho bafundzi batawucala kutitfutfukisa lwati lwesimelibungako selishumi nemayunithi. Kubala ngetincumbi kubalulekile nebafundzi kumele bacale kubona kutsi kubala uye phambili ngakunye akusiyo indlela lekahle. Kusekuhlelekeni kwetinombolo lapho bafundzi kumele bacabangisise kabanti ngemasu lebatayisebentisa. Kukhetsa lisu lekubala lelingilo kusita bafundzi kutsi babanemakhono ekubala. Kute ukwati kubala kuhleleka kwetinombolo kusukela e -0 uye e -20 lwati lwebafundzi kumele lifake: • Tintfo tekubala; • kubona, kufundza nekubhala tinombolo; • kucatsanisa nekuhlela tinombolo; • Kwakha nekuhlahlela tinombolo; • kutetayeta kuhlanganisa nekususa ufike e -20 • Kuphindza nekuhhafula; • Kutikhumbuta lamanye emaphuzu etinombolo;. **Emasu ekubala lalindzelekile ekuhlanganisa nekususa.** Emasu lakhonjiswe ngaphasi avumela bafundzi bente kubala kube ngulokuhlelekile nelwati lwetinombolo. Kutetayeta emasu langaphasi kutawukhutsata bafundzi bakhombise budlelwane emkhatsini wetinombolo nekufundzisa bafundzi kutsi bangasebentisa lwati lwabo kute babale. **Faka inombolo lenkhulu kucala kute ubale uye phambili nasemuva** 4 + 12 = □ Hlela kabusha 4 + 12 njenge 12 + 2 ubuye ubale kusukela e-12.	

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1.13 **Kuhlanganisa nekususa**			**Kutfola kuphindza lokusedvute** 8 + 7 Bafundzi bangachaza kutsi sibalo singabhaleka ngalendlela 8 + 8 -1 phindza si -8 ususe ku -1) nobe 7 + 7 + 1 (phindza si -7 usihlanganise na ku -1). Bafundzi bangarekhoda indlelanchubo ngekusebentisa imicibisholo. 8 + 8 → 16 + 1 = 15 **Ntjintja inombolo ibe lishumi ubuye ususe nobe ungete kunye.** Lendlelanchubo ingafundziswa ngetinombolo letiphasi bese basebentisa tinombolo letisetulu 9 + 6 = ☐ Bafundzi bangatsi: Ngitawutsatsa kunye kuloku -6 ngikuhlanganise naloku -9 kute kube li -10” Ngako ke 9 + 6 angabhalwa ngalendlela 10 + 5 = 15. 8 + 5 = ☐ Bafundzi bangatsi: “Ngitawutsatsa kubili kuloku -5 ngikuhlanganise naloku -8 kute kube li –10 Ngaloko 8 + 5 angabhalwa ngalendlela 10 + 3 = 13. **Kuhlahlela tinombolo tibe tincenye letincane kute kubala kube lula.** Bafundzi batawuhlahlela tinombolo tibe tincenye letehlukene lebatawukhona kutisebentisa. Kubala uye phambili ngekuhlanganisa yinye inombolo 11 + 7 = ☐ 11 + 4 + 3 11 + 4 → 15 + 3 = 18 11 + 7 = ☐ 11 + 5 + 2 11 + 5 → 16 + 2 = 18 17 – 9 = ☐ 17 - (7 + 2)	

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1.13 **Kuhlanganisa nekususa**			17 – 7 → 10 - 2 = 8 12 + 7 = ☐ 10 + 2 + 7 7 + 2 → 9 + 10 = 19 **Sebentisa budlelwane lobusemkhatsini wekuhlanganisa nekususa** 15 – 9 = ☐ Bafundzi bayati kutsi tibalo tingaphindvwa tibhalwe njengetibalo tekuhlanganisa: “Ngiyati kutsi 9 + ☐ = 15” Bafundzi bangakusebentisa kubala baye phambili kute babale tibalo tekubala. **Kuhlanganisa tinombolo.** Kute batetayete kuhlanganisa tinombolo, bafundzi kumele banikwe imisebenti lehlukene. Loko kwenteka kahle ngesikhatsi sekutisebentela. Umugcatinombolo ungasetjentiswa kutetayeta kuhlanganisa tinombolo letakha li -10.	

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1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	• Hlanganisa tinombolo letifanako letiphindza kuhlanganisa lekuholela ekuphindzaphindzeni uye e -50. • Kuphindzaphindza tinombolo -1 uye e-10 nga 1,2,5,3, na - 4 • Sebentisa timphawu letifanele (+, x, =, ☐)	• Hlanganisa tinombolo letifanako letiphindza kuhlanganisa lekuholela ekuphindzaphindzeni uye e-20 • Kuphindzaphindza tinombolo -1 uye e-10 nga 2, • Sebentisa timphawu letifanele (+, x, =, ☐)	**Yini leyehlukile eBangeni 1?** Bafundzi batakwenta ingucuko lesuka etibalweni tekuphindza kuhlanganisa kuye ekuphindzaphindzeni. Batawucala kuvisisa umcondvo tibalo tekuphindzaphindza. Batakwenta imisebenti lebavumela kutsi babone budlelwane emkhatsini wetinombolo: • Linani letinombolo esethini / nobe ecenjini • Linani lemasethi nobe tincumbi • Samba Bafundzi bafika ebangeni 2 bavisisa tibalo tekuphindza kuhlanganisa Ekupheleni kwalethemu kumele bakwati ku: • Chaza kubala ngekuzuba nekuphindza kuhlanganisa lokuholela ekuvisiseni kuphindzaphindza; • Sebentisa,fundza ubuye ubhale luphawu lwekuphindzaphindza; • Bhala imishotinombolo yekuphindzaphindza; • Ubuye uphindzaphindze inombolo yi -1 uye e -10 ngaku -2; Nangabe wenta tinkinga tetibalo temagama bafundzi batawutsandza kusebentisa kuphindza kuhlanganisa, ngaphandle kwetibalo temagama letinemfanekiso weligcogco. Kusegcikitsini yesimo lesikhululekile lapho leminye imifanekiso yekuphindzaphindza ingasetjentiswa. **Ligcogco.** Njengoba bafundzi batfola lwati ngetinhlobo tetibalo temagama tekuphindzaphindza, kuhlela tincumbi tibe ligcogco letintfo kungaveta sakhiwo seluhlobo lwetibalo tekuphindzaphindza sib. 2 x 4 uyefana na 4 x 2  4+ 4 = 8	

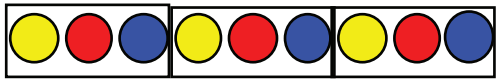
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1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**			Kunemigca lemine yabo-2 lobenta 8 sekukonkhe.Bafundzi kumele barekhode ngalendlela:  2 + 2 + 2 + 2 = 8 Kusebentisa ligcogco letintfo kuvumela: • Kwakha nekuhlahlela tinombolo; • Kuchumanisa tibalo tekuphindzaphindza netibalo tekuphindza kuhlanganisa; • Kucabanga tibalo tekuphindzaphindza njengeligcogco. • Kwakha sisekelo semtsetfo wetibalo tekuphindzaphindza. Bafundzi abagcile enanini lemigca nasenanini letibali emigceni.  4 + 4 = 8 Kunemigca le -4 ya -2 nasekukonkhe kulingana ne -8 Bafundzi kumele barekhode ngalendlela:  2 + 2 + 2 + 2 = 8 Kunemigca le -2 ya -4 nasekukonkhe kulingana ne -8. Ligama “phindzaphindza” selingangeniswa: lo -4 ukuphindzaphindze ngaku -2 kulingana ne -8. Uma bafundzi banelwati lolunyenti, luphawu lwekuphindzaphindza lungangeniswa kanyekanye nalolulwimi lolutfutfukisiwe.	

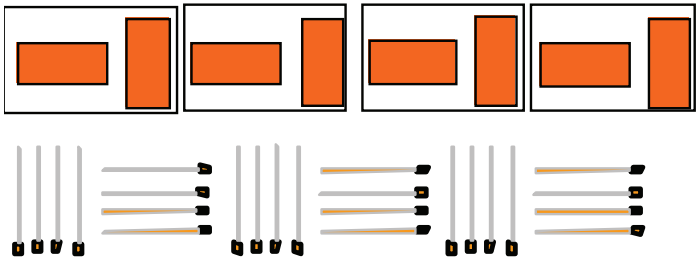
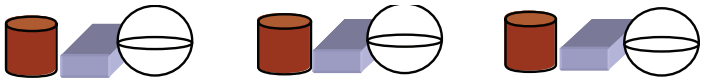
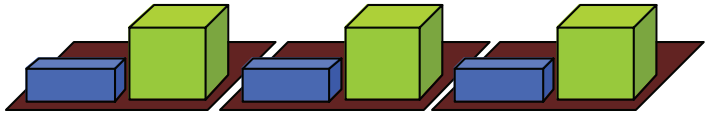
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**			• Tincumbi le -4 ta -2 • lokubili lo -4 • 2 + 2 + 2 + 2 = 8 • Tincumbi le -4 ta -2 nobe ku - 4 ukuphindzaphindze nga -2 kulingana ne -8 Nanobe timphawu tingenisiwe, emagama, titfombe nemamalthiphuli emifanekiso kulekelela kuvisisa timphawu tekubala kuhlala kubalulekile. Imifanekiso yekuvisisa kuphindzaphindza: • Emakhiyubhi lakhacelanako angasetjentiswa ungabuye uwapake ngemakholamu lamane kuyinye ikholamu kube nemakhiyubhi lamabili. Loku kuvumela bafundzi batsi: Kunetincumbi letine incumbi ngayinye ibe naku -2. Kuyabavumela kutsi barekhode 2 +2 + 2 + 2 kanye netincumbi le -4 ta -2 tilingana na -4 x 2. • Umugcatinombolo ungentiwa kukhombisa kuphindza kuhlanganisa nobe tincumbi tetinombolo. Loku kuchumana kakhulu nekubala uzube. Bafundzi kumele barekhode loku lokulandzelako: Yi-1 incumbi ya -2 ilingana na -2 nobe ku -1 ukuphindze nga -2 kulingana na -2 nobe 1 x 2 = 4- 2 Ti -2 tincumbi ta -2 tilingana na -4 nobe ku -2 ukuphindze nga -2 kulingana na -4 nobe 2 x 2 = 4 Ti -3 tincumbi ta -2 tilingana ne -6 nobe ku -3 ukuphindze nga -2 kulingana ne -6 nobe 3 x 2 = 6	

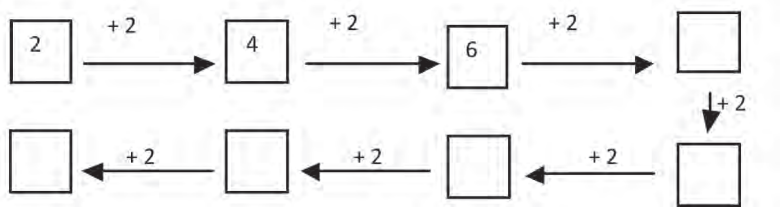
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhleleka-99** • Hlela lisethi letinombolo lowutiniketiwe. • Catsanisa tinombolo ufike e -99 ubuye usho kutsi ngukuphi lolunyenti nobe lokuncane. • Yati kutsi ngiyiphi inombolo lenyenti nga -1 nobe lencane nga -1 • Yati kutsi ngiyiphi inombolo lenyenti nga -2 nobe lencane nga -2 • Yati kutsi ngiyiphi inombolo lenyenti nga -3 nobe lencane nga -3 • Yati kutsi ngiyiphi inombolo lenyenti nga -4 nobe lencane nga -4 • Yati kutsi ngiyiphi inombolo lenyenti nga -5 nobe lencane nga -5 • Yati kutsi ngiyiphi inombolo lenyenti nga -10 nobe lencane nga -10	**Lwati lwetinombolo: Kuhleleka -25** • Hlela lisethi letinombolo lowutiniketiwe. • Catsanisa tinombolo ufike e-99 ubuye usho kutsi ngukuphi lolunyenti nobe lokuncane. • Ati kutsi ngiyiphi inombolo lenyenti nga -1 nobe lencane nga -1 • Ati kutsi ngiyiphi inombolo lenyenti nga -2 nobe lencane nga -2 • Ati kutsi ngiyiphi inombolo lenyenti nga -10 nobe lencane nga -10 **Khumbula ngekushesh-isa:** • Tikhumbute ngemaciniso etibalo tekuhlanganisa nekususa uye -10.	**Yini leyehlukile eBangeni 1?** **Lethemu igcile kuloku:** Luhlelo lwetibalo tenhloko kumele lutfutfukiswe ngekuhleleka emnyakeni wonkhe. Akumelanga bafundzi bacelwe kutsi babale noma njani malanga onkhe. Njengoba bafundzi bahlanganisa tihloko babuye batfutfukise tindlelanchubo tekubala etincenyeni tesifundvo, tincenye taloku timele tifakwe eluhlelweni lwetibalo tenhloko: Lwati nemakhono kuyatfutfukiswa esifundvweni lesisemcoka, babuye batetayete, ngalesinye sikhatsi ngetinombolo letihlelekile letincane,ehlelweni lwetibalo tenhloko. Ethemini ye 1 ungagcina kuhleleka kwetinombolo letincane ubuye ukukhulise ngekuhamba kwemnyaka. Ekucaleni kwemnyaka, kuhleleka kwetinombolo netindlelancubo tekubala tingaphatselana naloko lokutfutfukisiwe ebangeni 1. **Lwati lwetinombolo:** **Tibonelo tembuto longabutwa:** **Emagama etinombolo netinombolo** Phakamisa likhadi nobe ubhale phasi ligama lenombolo. Khetsa umfundzi atobhala inombolo lehambelana neligama lenombolo. **Lokunyenti nobe lokuncane** Kungaki • Lokuncane nga -1 kwendlula li -15 • Lokunyenti nga -1 kwendlula i -9 Nguluphi luhlavu lwesihlanu lwe aliphabhethi? Kuyiphi inyanga yemfica emnyakeni? Kuhlela nekucatsanisa Ngukuphi lokunyenti: li -12 nobe e -21? Nginike inombolo lesemkhatsini we-17 ne-19. **Emaciniso etibalo tekuhlanganisa nekususa:** • Ati ngenhloko tinombolo longatihlanganisa ubuye utisuse letakha li -10. □ + △ = 10 □ + △ = 8	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.16 **Tibalo tenhloko**	**Khumbula ngekushesh-isa:** • Hlanganisa ususe ngemaciniso etibalo uye e-20 • Hlanganisa nobe ususe emamalthiphuli e-10 kusukela e-0 uye e -100 **Indlela yenchubo yekubala.** Sebentisa indlela yenchubo kuhlanganisa nekususa ngekunak-ekela: • Faka inombolo lenkhulu kucala kute ubale uye phambili nobe uye emuva. • Umugcatinombolo. • Kuphindza nekuhhafula. • Kwakha nekuhlahlela. • Sebentisaa budlelwane emkhatsini wekuhlanganisa nekususa.	**Indlela yenchubo yekubala.** Sebentisa indlela yenchubo kuhlanganisa nekususa ngekunak-ekela: • Faka inombolo lenkhulu kucala kute ubale uye phambili nobe uye emuva. • Umugcatinombolo. • Kuphindza nekuhhafula. • Kwakha nekuhlahlela. • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususi.	Hlanganisa ubuye ususe tonkhe tinombolo letiphatselene nemaciniso ekubala ubuye ususe lokufaka ekhatsi ne-10 1 + 9 = 10 9 + 1 = 10 2 + 8 = 10 8 + 2 = 10 3 + 7 = 10 7 + 3 = 10 8 – 4 = 4 18 – 4 = 4 8 – 5 = 3 18 – 3 = 5 8 – 6 = 2 18 – 2 = 6 Khumbula ngekusheshisa kuphindza kuhlanganisa kwe -10. Loku kumele kufake lwati lwekususa lokuhambelanako. • 1 + 1 = 2 • 2 + 2 = 4 • 3 + 3 = 6 • 4 + 4 = 8 • 5 + 5 = 10 Ngikhombise inombolo loyingetako.....kute kwente -10 (bhala phasi nobe use-bentise simelibungako nobe emafladi khadi) • 8 • 2 • 9 • 5 • 3 Ngikhombise inombolo lesele nawususa.....e -10 (bhala phasi nobe usebentise simeli bungako nobe emafladi khadi) • 5 • 3 • 6 • 1 • 7	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINDLELA TEKUFUNDZISA	Budze besikhatsi 1 awa- 24 emamithi
1.16 **Tibalo tenhloko**			Letinye tibalo tenhloko tingentiwa ngaphandle kwetinsita kodvwa kuhle kwenta tibalo tenhloko ngetinsita bese uyarekhoda lokwentile. **Tinsita letiphakamisiwe** • Umugcatinombolo (lowakhiwe nalongenalutfo) • Igridi yetinombolo • Emakhadi esimelibungako (emafladi khadi) • Buhlalu bekubala	

LIBANGA 2 ITHEMU 1 2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** (Setifundvo 1 li awa 24 emaminithi)
	Tsatsela, chubekisela phambili ubuye uchaze Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawo-tonkhe** Tfola, chaza ngemagama ubuye utsatsele ema-phethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo.	**Kutsatsela** iphethini kusita bafundzi kutsi babone kuhleleka nendlela iphethini leyakheke ngayo. **Kuchubekisela phambili** iphethini kusita bafundzi kuhlola kutsi bakuvisisile kuhleleka kwephethini. **Kuchaza** iphethini kusita bafundzi kutsi batfutfukise emakhono abo elulwimi nekukhuluma. Kubuye kukusite kutsi ubone kutsi bafundzi bayihumushe njani iphethini. Kulula kutsi bafundzi bakhulume ngemaphethini nasebawentile. Ba-fundzi badzinga kuceceshwa ngaloku lebafanele bakubuke nekuchaza iphethini. Ungakwenta loko ngekubuta imibuto lenjengale: “Ngubaphi bobunjwa lobabona kulephethini?” “Ngabe bonkhe banembala munye?” “Ngabe ubona munye nobe labanyenti bobunjwa kulephethini?” “Ngabe letintfo tibuke ngendlela lefanako?” “Ngabe linani letintfo iyefana kutotonkhe tincumbi?” “Tingaki tintfo letisencunjini ngayinye?” “Ngabe bobunjwa bonkhe bayisayizi lefanako?”njll. Faka bobunjwa beJomethri labangemadayimenishini lamabili (2-D) netintfo teJomethri letingemadayimeshini lamatsatfu (3-D) lebafundze ngato bafundzi. Bafundzi bangenta bobunjwa bemadayimenshini lamabili (2-D) ngekujuba ema-phepha nobe emakhadi nobe babadvwebe. Bangenta emaphethini ngabobunjwa labangemabhokisi, bobunjwa labamabhola, nemasilinda lentiwe ngelubumba nobe ngelubumba lwekudlala. Emaphethini angentiwa ngekusebentisa intfo yinye kodvwa kuntjintjwe imibala yetintfo ngendlela letayelekile. **Sibonelo:** 	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (Setifundvo 1 li awa 24 emaminithi)
2.1 **Emaphethini eJomethri**			Emaphethini angentiwa ngekuphindzaphindza tintfo letifananako etincunjini, lapho incumbi yinye inayinye inhlobo yentfo kodvwa indzawo yentfo encunjini iyantjintja. Tincumbi letifananako tiphindziwe. **Sibonelo:**  Kulamanye emaphethini kusetjentiswe tintfo letehlukile kwenta, incumbi kodvwa tincumbi tetintfo tiphindzeke ngendlela lefanako. **Sibonelo:**  Emaphethini angentiwa ngendlela yekuntjintja emasayizi etintfo ngendlela lekufanako.  Bafundzi bangenta emaphethini ngekufaka buhlalu entsanjini. Emaphethini angabuye entiwe etifundvweni Temakhono Ekuphila.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (Setifundvo 1 li awa 24 emaminithi)
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e-200. **Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho etinombolo.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e -100. Kulandzelana kumele kukhombise kubala uye phambili nasemuva • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini wa -1 ne -100. • nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini wa -0 ne -100. • nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini wa -1 ne -100. • nga -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we- 10 ne -100.	Kulandzelanisa tinombolo kungachunyaniswa nekubala. Uma emakhono ebafundzi ekubala atfutfuka, tinhlobo tekulandzelana kwetinombolo lebasebenta ngalo bafundzi, lungatfutfuka. Kulandzelana kwetinombolo kumele kukhombise kubala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini wa-1 kuye e-50; • Ngema -1 kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 ne- 50; • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye- 5 emkhatsini we-0 ne-50; ne • Nga -2 kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 kuye 20. Ebangeni lesibili bafundzi babala kwekucala baye emuva ngemamalthiphuli e-10, 5 na -2. Bafundzi bangakhomba tinombolo ngalesikhatsi babala. Kulusito kunika bafundzi kulandzelana kwetinombolo ngemifanekiso leyehlukene sib. • Tinombolo letibhaliwe letilandzelanako.100; 99; 98; 97; 96; …… • Imigcatinombolo • Emagridi etinombolo • Luchungechunge lwetinombolo Bafundzi bangambonya, bafake umbala, nobe bafake indilinga etinombolweni nababala emgcenitinombolo nakumagridi etinombolo. Bafundzi bangagcwalisa tinombolo letisele emgcenitinombolo, kumagridi etinombolo, etinombolweni letibhaliwe letilandzelanako nakuluchungechunge lwetinombolo sib.  Ngasekupheleni kweThemu bafundzi basebenta ngekulandzelana kwetinombolo kuye nobe kusukela e -100.	3 sifundvo

LIBANGA 2 ITHEMU1 3 SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1**	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**BUDZE BESIKHATSI** (Setifundvo 1 li awa 24 emaminithi)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • tintfo letigicikako • tintfo letishelelako	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • tintfo letigicikako • tintfo letishelelako	**Yini leyehlukile ebangeni 1?** • Emasilinda ayacala ebangeni 2 kodvwa angangeniswa eThemini ye -3 Ethemini ye-1 bafundzi babuyeketa babuye bahlanganise nalebakwenta ebangeni -1. Ethemini ye -3 bafundzi bangagcila emsebentini wemasilinda. Imisebenti leminyenti ebangeni 2 yetintfo letingemadayimenshini lamatsatfu (3-D) kumele yentiwe ngetintfo letiphatsekako/ letibonakalako. Umhlaba siwubuka ngemadayimenshini lamatsatfu, ngaloko-ke kucala ngetintfo letibonakalako kusita bafundzi kutsi bakhele elwatini lebeta nalo esikoleni. Bafundzi labanyenti labasebancane banebumatima bekuhumusha tintfo teJomethri letingemadayimenshini lamatsatfu (3-D) letisuselwa etitfombeni. Kusebenta ngetintfo letibonakalako kusita bafundzi kutsi bahumushe titfombe tetintfo teJomethri emva kwesikhatsi. Uma unentfo lebonakalako ungayigucula bese uyibuka kuwo onkhe emacala. Utayibona kutsi ibonakala njani ngasemuva kanye nangaphasi. Uma unesitfombe kuphela, kufanele ubone ngemehlo engcondvo tincenye letingabonakali kulomdvwebo. Loku akukavami kubalula kubafundzi labancane. Uma bafundzi banikwe inchazelo yentfo kuphela ngaphandle kwekuyibona nobe kuyibamba, kumatima kakhulu kutsi bativisise timphawu talentfo ngalokuphele. **Kwakha ngetintfo letingemadayimenshini lamatsatfu (3-D)** Bafundzi batsatsela umfanekiso walokutsite labakuniketwe nguthishela sib. sakhiwo lesidze kakhulu, lirobothi, sitimela, ithekisi, nencaba njll. Imifanekiso nobe takhiwo tingakhiwa ngemabhuloki ekwakha, kubuyeketa tintfo tekuvuselela kabusha, emakhithi ekwakha, letinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D), bobunjwa labajutjiwe labangemadayimenshinii lamabili (2-D). Loku kungentiwa ngesikhatsi sekutisebantela. Kubalulekile kubafundzi kukhuluma ngemifanekiso lebayakhile. Sib. uma sakhiwo lesidze kakhulu sakhiwe ngemabhokisi nobe emabhuloki, ungabuta bafundzi ngaloku: “ungasakha yini sakhiwo lesidze kakhulu ngemabhola kuphela?” Kumele bachaze imphendvulo yabo.	3 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	BUDZE BESIKHATSI (Setifundvo 1 li awa 24 emaminithi)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Imisebenti lekugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentise tintfo letiphatsekako njengabobunjwa labajutjiwe labangemadayimenshini lama (2-D), emabhuloki ekwakha, tintfo tekuvuselela kabusha, emakhithi ekwakha, naletinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D)	**Imisebenti lekugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentise tintfo letiphatsekako njengabobunjwa labajutjiwe labangemadayimenshini lama (2-D), emabhuloki ekwakha, tintfo tekuvuselela kabusha, emakhithi ekwakha, naletinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D)	**Kucatsanisa nekuchaza tintfo letingemadayimenshini lamatsatfu (3-D): isayizi** Bafundzi bacatsanisa emasayizi etintfo letifanako.sibonelo: • Hlela emabhola ngekwesayizi; ubuye • usebentise lulwimi lwesayizi kucatsanisa tintfo; “Libhokisi likhulu kunebhola ngobe ngingafaka ibhola ekhatsi ebhokisini ” **Kuchaza tintfo letingemadayimenshini lamatsatfu(3-D): Umbala** Bafundzi bakhuluma ngemibala yetintfo babuye batihlunge ngekwemibala yato. Kutfola nekunika emagama etintfo nemibala yato kanye nekucatsanisa emasayizi etintfo, bangatetayeta ngako ngalesikhatsi basebenta ngemaphethini. **Tintfo letingemadayimenshini lamatsatfu (3-D) ebangeni 2** Bafundzi basebenta ngaloku: • emabhola netintfo letime njengemabhola.ne emabhokisi lamanyenti netintfo letime njengemaphrizimu labocalandze nobe emakhiyubhu. Bafundzi bacwaninga kutsi ngutiphi tintfo letingagicikako naletingashelela. **Kugcila etimphawini tetintfo letingemadayimenshini lamatsatfu(3-D)** Bafundzi bangenta umsheleleti ngekubeka libhokisi ngaphasi kwalenye incenye yelibhuku lelikhulu. Bangahlola kwekutsi ngabe tintfo tingashelela nobe tingagicika. Loku kuchubeka kuloko labakwente ebangeni 1, sekungetwe emasilinda.  Bafundzi bangabuye bacwaninge kutsi bangenta takhiwo letidze ngekusebentisa emabhola nobe emabhokisi odvwa. **Kubona nekunika emagama emabhola (indilinga) nemabhokisi (emaphrizimu)** Bafundzi kumele **baniketwe** tintfo letinyenti kute basebente ngato • letime njengemabhola sib. emabhola langemasayizi lehlukene, timabuli, emawolintji njll.;	

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3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**			• letime njengemaphrizimu njengemabhuloki, titini nemabhokisi langemasayizi lehlukene sib: emabhokisi emetjiso, emabhokisi emasiriyeli, emabhokisi elitiya, emabhokisi emutsi wekucubha. Bafundzi **bangatfola** babuye **bahlunge** tintfo letime njengebhola (indilinga), nobe letime njengelibhokisi (emaphrizimu) nabaniketwe ligcogco letintfo. Bafundzi bangatfola nobe bakhombe tintfo letime njengemabhokisi (emaphrizimu) eklasini. Sib, lesitini sime njengelibhokisi nobe leliwolintji lime njengebhola **Ngesikhatsi sekutisebentela bafundzi bangachubeka:** • bahlunge tintfo ngekwesayizi • bahlunge tintfo ngekwemibala; • kwakha ngetintfo;ne • kwenta emabhola nabobunjwa labangemabhokisi (emaphrizimu) ngelubumba nobe ngenhlama yekudlala. **Imisebenti lebhalwako** Nanobe imisebenti leminyenti yetintfo letingemadayimenshini lamatsatfu (3-D) imisebenti yekwenta, umsebenti kumele uhlanganiswe ngemisebenti lebhalwako. **Lulwimi** Kubalulekile kutfutfukisa likhono lebafundzi lekukhuluma ngetintfo letingemadayimenshini lamatsatfu (3-D). • Lulwimi lwesayizi: kukhulu, kukhudlwana, kukhulu kakhulu, kuncane, kuncanyana, kuncane kakhulu. • Imibala • Lulwimi lwetintfo: emabhokisi, emabhola (Akukabaluleki kutsi bafundzi bafundziswe lwatimagama lwendilinga) • Lulwimi kuchaza lokwakhiwako sibonelo: etukwe-, ngaphasi, ngemuva, ngaphambili, edvute ne-, eceleni kwe-, ngetulu kwe, edvute, emkhatsini, ekhatsi, ngaphandle Lulwimi lwesayizi nembala lungatfutfukiswa elulwimini nobe etifundvweni ngetikhatsi Temakhono Ekuphila tibuye tisetjentiswe ngesikhatsi se Tibalo. Lulwimi lwekubekeka lungatfutfukiswa ngesikhatsi sesifundvo seLulwimi nobe seMakhono Ekuphila nobe ngalesikhatsi bagcile ekubekekeni. Lungasetjentiswa nobe lwentiwe uma bafundzi basebenta ngetintfo letingemadayimenshini lamatsatfu (3-D)	

LIBANGA 2 ITHEMU1 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** (Setifundvo 1 li awa 24 emaminithi
4.1 **Sikhatsi**	**Kusho sikhatsi** • Ati emalanga eliviki • Ati tinyanga temnyaka • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa lalishumi nakubili ngema-awa, ihhafu yema-awa nekota yema-awa. **Kubala budze besikhatsi nekundlula kwesikhatsi** Sebentisa ikhalenda kubala nekuchaza sikhatsi ngemalanga nobe emaviki. Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nekota yema-awa.	**Kusho sikhatsi** • Ati emalanga eliviki • Ati tinyanga temnyaka • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa lalishumi nakubili ngema-awa ewashini letintsi.	Ebangeni -1 bafundzi bakhulume ngaloku. • Kulandzelana kwetigameko; • Budze besikhatsi; Bafundze emalanga eliviki netinyanga temnyaka babuye bakusebentisa loku nalolunye lulwimi, kukhuluma ngekulandzelanisa tigameko temphilo yabo. Bakhulume ngekutsi tintfo titsatsa sikhatsi lesingakanani basebentisa lulwimi njengekutsi: lesidze, lesifisha, ngekusheshisa nobe kancane. Bafundzi bahlele titfombe: • Indlela yekwenta isangweji nobe inkomishi yelitiya; • Sitfombe lesikhombisa kukhula kwemntfwana aze abe mdzala; • Umjikeleto wemphilo yetilwane sibonelo: licandza kudzimate kube yinkhukhu, nobe licandza lesicoco kudzimate kube sicoco, nobe licandza leluvivane kudzimate kube luvivane. • Tigameko letetayelekile letenteka ngelilanga (kuvuka, kuba sesikolweni, kudlala, kudla sidlo sasebusuku, kulala). Bafaka emalanga ekutalwa ekhalendeni umnyaka wonkhe. Ebangeni 2 bafundzi bachubeka nekutetayeta kukhuluma ngebudze besikhatsi nekulandzelanisa sikhatsi. Ngesikhatsi sekufundzisa liklasi lonkhe nesikhatsi sekugcila emacenjini, bafundzi bayachubeka ngekukhuluma ngemalanga eliviki, tinyanga temnyaka, nelusuku lwangalelo langa kanye nemalanga lengcile naletako. Bafundzibayetayela kusebentisa ikhalenda ngekubeka njalonjalo loku. • emalanga ekutalwa; • imigidvo yetenkholo; • tigameko temlandvo; • tigameko tesikolo; • nemaholide avelonkhe ekhalendeni. Ngesikhatsi sekutisebentela, bafundzi bayachubeka nelandzelanisa tigameko tasemphilweni yabo babuye balandzelanise titfombe tetigameko ngekuhleleka kwato.	

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4.1 **Sikhatsi**			**Yini leyehlukile eBangeni 1** Ebangeni -2 kukhulunywa ngesikhatsi ikakhulukati kufundza emawashi. Ethemini 1 bafundzi bagcila ekukhulumeni sikhatsi ngema-awa basebentisa liwashi letintsi. Nanobe kunjalo bafundzi kumele basho sikhatsi setintfo letenteka njalonjalo. Sibonelo: sikhatsi lekucalwa ngaso sikolo, sikhatsi selikhefu nesikhatsi sekuya ekhaya nobe sikhatsi sekuntjintja sifundvo baya kulesinye. Khetsa sikhatsi seliwashi lesikhombisa li-awa leligcwele. Kubalulekile kusebentisa liwashi lelikhulu lelikhomjiswe eklasini, kute kutsi bafundzi batowubuka kulo. Bafundzi bangabuye bakhe imifanekiso yemawashi. Ungabacela bakhombise tikhatsi letehlukene lokufaka ekhatsi kubala, Sibonelo: ngikhombe li-awa le -10. Ngikhombe kutsi kutawuba ngusikhatsini uma kundlule ema-awa lama2 emuva kwe -10.	
4.2 **Budze**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-.	**Kukala lokungakahleleki** Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-.	Yini leyehlukile kusukela ebangeni -1 Ebangeni -1 bafundzi bagcile kuloku: • Kubeka tintfo yinye edvute kwalenye ticondzane ngco kute ucatsanise, budze kuphakama, nebubanti ne: • Silinganiso lesingakahleleki ngemayunithi ebudze langakakabekelwa umgomo. EThemini -1 yeLibanga -2 bafundzi kumele bachubeke bagcile ekulinganiseni basebentisa emayunithi langakabekelwa umgomo, kodvwa bangabuye betfulelwe emamitha njengeyunithi yekulinganisa. **Silinganiso sebudze lesingakahleleki ngekusebentisa emayunithi ebudze langakabekelwa umgomo.** Bafundzi bangafundza imigomo netimiso tesilinganiso ngemayunithi langakabekelwa umgomo. Kukala budze ngemayunithi langakabekelwa umgomo kumele kungabonakali njengalokusezingeni leliphansi kunekukala ngemayunithi labekelwe umgomo. Kukala budze ngemayunithi langakabekelwa umgomo kufaka ekhatsi kubala kutsi kungaki kweyunithu lekhetsiwe lokunebudze lobufanako neyunithi lekalwako. Sibonelo: budze belideski bulingana nebudze betandla leti --8. Bafundzi kumele bakale tintfo letehlukene letinyenti bsebentisa emayunithi langakahleleki. Kunetindlela letintsatfu longawasebentisa ngato emayunithi langakabekelwa umgomo:	

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4.2 Budze	**Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo.	**Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo.	- Kupaka emgceni ngalokuvundlile entfweni lekalwako, tintfo letinyenti letinebudze lobulinganako, njengemabhokisi emetjiso; timbonyo temabhodlela letinetimo latifanako nobe tibali, emapeniseli lamasha, njll. Sibonelo: kukala bubanti belideski, emapeniseli lamasha angabekwa yinye ekugcineni kwalenye ngale kwelideski. Lapha kubalulekile kutsi: - Tonkhe tintfo tinebudze lobulinganako. Angeke usho kutsi libhuku lakho linebubanti lobungangetivalo temabhodlela leti -12, nangabe tivalo temabhodlela tingemasayizi lehlukile, sib. timbonyo temabhodlela elubisi letingemalitha la -2, timbonyo temabhodlela eplastiki esinatfo lesibandzako, timbonyo temabhodlela letisansimbi (tinkwamba) • Akukashiywa tikhala emkhatsini wetintfo, tidzinga kupakwa kahle kute titsintsane • Sebentisa tintfo letimbili letifanako njengemayunithi langakabekelwa umgomo. Beka lentfo edvute kwalenye, bese ususa leyekucala uyibeke ngale kwaleyo yesibili. Loku kwentiwa nangabe kukalwa ngebudze besandla, budze belunyawo nobe tinyatselo. • Sebentisa intfo yinye kuphela njengeyunithi lengakabekelwa umgomo, bafundzi bayayigucula nobe babeke luphawu lapho igcina khona ngembi kwekutsi bayishelelise. Bafundzi kumele bafundziswe kusho iyunithi ngasosonkhe sikhatsi, sib. bubanti belibhuku bulingana netimbonyo temabhodlela le-12, liklasi linebudze lobutinyatselo leti -9. Nangabe bafundzi sebabakalile nganobe nguyiphi iyunithi emahlandla lamanyenti, kumele bacombele kutsi yindze kangakanani intfo lekumele ikalwe. Kucombela ngaphambili kwekutsi ukale kubalulekile, kodvwa kungentiwa kuphela nangabe bafundzi bake bakala basebentisa leyo yunithi. Bafundzi kudzingeke bafundziswe kutsi kute bacatsanise budze, kuphakama, nobe bubanti kumele basebentise iyunithi lefanako, sib. Nangabe bubanti bemnyango bulingana budze betandla lobunge -20, bubanti nebudze belideski bulingana nemapeniseli langu -8, angeke usho kutsi umnyango ubanti kwedlula lideski. Bafundzi kumele bakale ngetinhlobo letehlukene temayunithi letingakahleleki, kute bakwati: • kucala kuvisisa kutsi uma emayunithi amancane, atawusetjentiswa tikhatsi letinyenti, sib. bubanti beliklasi bungaba tinyatselo letinge -20 kodvwa budze betinyawo bu -48 babuye	

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4.2 **Budze**			• bacale kusebentisa emayunithi lahambisana naloko lebakukalako, sib. kukala bubanti beliklasi ngetimbonyo temabhodlela kukucitsa sikhatsi **Kungenisa kukala lokuhlelekile** Sikhatsi lesinyenti lesicitfwa ekukaleni ebangeni le -2 kumele sibe sekukala lokungakahleleki. Nanobe kunjalo, unganika bafundzi litfuba lekutsi bacale kutfutfukisa lwati lwekutsi imitha yindze kangakanani. Loku kwenteka ingakanani budze be -1 imitha “lithulusi (njengerula yemamitha, indvuku lebatiwe yaba yimitha -1 budze nobesiceshana sentsambo leyimitha -1 budze) Kubona budze lobuyimitha -1 kusita bafundzi kutsi babenesitfombe sekutsi imitha yindze kangakanani. Bangakhona kukala ngemamitha ngelisondvo lekukala, kodwa lobudze bemitha akusilula kukubona. Bafundzi bacala ngekutfola tintfo letilingana ncamashi nemitha. Kuyasita kuba netintfo longacatsanisa ngato onkhe emalanga, sibonelo: bubanti besivalo nekuphakama kwelifasitelo kuvamise kuba yimitha. Loku kusita bafundzi kutsi basebentise budze nobe bubanti lebangabubona kucombela budze baletinye tintfo lebatikalako. Uma bafundzi sebanelwati kwekukala ngemamitha, kumele bacombele ngembi kwekulinganisa. Bafundzi bangatfola tintfo letindze nobe letimfisha kunemitha. Ekugcineni bangakala budze lobehlukene nobe libanga ngemamitha. **Kurekhoda silinganiso** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode silinganiso sabo ngasosonkhe sikhatsi(ngemayunithi langakahleleki nangemamitha) **Kulinganisa budze njengengcikitsi yekusombulula tinkinga nekubala.** Ngesikhatsi lesabelwe Tinombolo, Timphawutekubala neBudlelwane, bafundzi bangasombulula tinkinga letisebentisa ingcikitsi ye • Kulinganisa budze lokungakahleleki, sibonelo: Lideski laLebo lilingana nebudze betandla leti -11. Lideski lathishela lilingana nebudze betandla letingu -19. Bungakanani budze belideski lathishela? • Kukala budze ngemamitha. Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (Setifundvo 1 li awa 24 emaminithi
4.3 Sisindvo	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. emabhuloki, titini. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa uhlele ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa. • Bakala sisindvo sabo ngemakhilogremu basebentisa sikali sasendlini yekugezela.		Ebangeni 1 bekuphakanyisiwe kutsi bafundzi bagcile ekusebenteni ngesikali sekulinganisa • Kucatsanisa sisindvo setintfo; • Kuhlela nekucatsanisa sisindvo setintfo letintsatfu nobe letingetulu, ngekubeka tintfo lengemapheya tize tilandzelaniswe tonkhe tintfo. • Kutfola sisindvo setintfo ngekusebentisa emayunithi esisindvo langakahleleki. Bafundzi babuye bagcila ekutfutfukiseni lulwimi lwekukhuluma ngesisindvo. Ngesikhatsi sekutisebentela, bafundzi bangatetayeta kucombela, kukala, kucatsanisa, kuhlela nekurekhoda sisindvo setintfo ngekusebentisa sikali sekulinganisa nobe emayunithi esisindvo langakahleleki. **Kukala sisindvo njengengcikitsi yetisombulula tinkinga nekubala.** Kusombulula tinkinga nekubala kungachubeka kusebentise ingcikitsi yesisindvo leniketwe ngekulinganisa lokungakahleleki Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala neBudlelwane, bafundzi bangasombulula tinkinga letisebentisa ingcikitsi yesisindvo Sibonelo: Idasta inesisindvo setimabuli leti -11. Libhokisi lemakhilayoni linesisindvo setimabuli leti -8. Konkhe kutawenta sisindvo setimabuli letingaki? Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (Setifundvo 1 li awa 24 emaminithi
4.4 Umtsamo/ Bungako	**Kukala lokungakahleleki** • Combela ubuye ukale, catsanisa, ubuye uhlele umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ngekukala ngemalitha		Ebangeni 1 bekuphakanyiswe kutsi bafundzi bagcile kuloku: • Kutfutfukisa lulwimi ekukhulumeni ngemehluko webungako; • Kucatsanisa bungako betintfo tekuphatsa letimbili letifanako; ne • Kucatsanisa bungako etintfweni tekuphatsa letimbili letibonakala tingafani, ikakhulu letibanti naletincama. • Kukala bungako nemtsamo ngemathulusi nemayunithi langakabekelwa umgomo **Uyini umtsamo? Buyini bungako?** Libhodlela lingaba nemtsamo lolingana tinkomishi letine, kodvwa lingagcwali nswi, sibonelo, lingaba kuphela nemtsamo lolingana inkomishi yinye yemanti ngesikhatsi lesitsite. Umtsamo linani lentfo letseliwe lengamumatfwa yintfo yekuphatsa (nobe linani lesikhala ngekhatsi kwetintfo tekuphatsa). Bungako linani lesikhala lesitsatfwa yintfo letsite. Ngalesinye sikhatsi bafundzi batawukala bungako (nobe Isanti nobe nalokunye) lobutfolakala etintfweni tekuphatsa. Loku kukala bungako balokumumetfwe yintfo yekuphatsa. Ngalesinye sikhatsi bafundzi batawube bakala kutsi intfo yekuphatsa imumatsa kangakanani uma igcwaliswe nswi/ngalokwedlulele. Ngesikhatsi sekutisebentela bafundzi bangatetayeta kucombela, bakale, bacatsanise, bahlele babuye barekhode bungako nemtsamo ngemathulusi nemayunithi emtsamo langakahleleki. Kupheka nekubhaka kuyingcikitsi lelusito lapho bafundzi bangatetayeta kukala umtsamo. Khetsa emaresiphi lapho tilinganiso tiniketwe ngetinkomishi, emathisipunu, nalamanye emayunithi langakahleleki. **Kukala umtsamo njengengcikitsi yekusombulula tinkinga nekubala** Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala nebudlelwane, bafundzi bangasombulula tinkinga letisebentisa ingcikitsi yekukala umtsamo/ bungako lokungakahleleki. Sibonelo, Gogo usebentisa tinkomishi leti -2 telubisi kwenta iphudingi. Uma ayiphindza kabili leresiphi, utawudzinga lubisi lolungakanani? Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (Setifundvo 1 li awa 24 emaminithi
4.4 Umtsamo/ Bungako	• Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi.			

LIBANGA 2 ITHEMU 1 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** (Setifundvo 1 li awa 24 emaminithi)
5.4 **Gcogca ubuye uhlele idatha**	**Gcogca ubuye uhlele idatha** • Gcogca idatha yeliklasi nobe yesikolo kute uphendvule imibuto lebutwe nguthishela.	**Gcogca ubuye uhlele idatha** • Gcogca idatha yeliklasi nobe yesikolo kute uphendvule imibuto lebutwe nguthishela.	**Yini leyehlukile eThemini 1?** • Bafundzi abasasebenti ngeligcogco letintfo. • Bafundzi bachubeka ngekusebenta ngemagrafutitfombe – bayawakha njengencenye yemjikeleto wedatha babuye bawahlatiye emagrafutitfombe laniketiwe. **Umjikeleto wedatha lophelele.** Emjikeletweni wekusebedatha, • Bafundzi bagcogca lwati kute baphendvule imibuto. Esigabeni Sabokhewane nasesigabeni lesiseMkhatsini, lemibuto iniketwa nguthishela nobe yincwadzi yekufundzisa; • Bafundzi bahlunga babuye bavete lwati ngetindlela letenta kube lula kuhlatiya. Indlela yekuveta lebatetayeta yona bafundzi beLibanga 2 yigrafutitfombe. • Bafundzi bahlatiya lwati lelukugrafutitfombe ngekuphendvula imibuto lebutwa nguthishela. Igrafutitfombe yaseklasini Kuphakanyisiwe kutsi eBangeni 2 bafundzi basebente ngemjikeleto wedatha lophelele kwenta igrafutitfombe yaseklasini lokungenani kabili emnyakeni. Kusebentisana kanyekanye njengeliklasi kuyabasita bafundzi kutsi babambe lichaza kuto tonkhe tigaba talenchubo ngaphandle kwekulahleka emininingwaneni yanobe ngusiphi sigaba sigaba, sib. kudvweba tonkhe titfombe. Kwenta igrafutitfombe kuvumela thishela kutsi akhone kugcilisa bafundzi etintfweni letibalulekile tekusebenta ngedatha kanye naloko lokumele bakwati lokuphatselene netimphawu letibalulekile tegrafutitfombe Timphawu tegrafutitfombe lekudzingeka kutsi bafundzi bafundziswe tona: • Igrafu ilebulwa kuphi futsi njani? (sihloko segrafu) • Tigaba tikuphi futsi tilebulwa njani? • Igrafutitfombe kudzingeka kutsi ibe nenchazelo lechaza kutsi sitfombe ngasinye sichazani? • Titfombe nobe tikhala tetitfombe kudzingeka tibe ngemasayizi lafananako. • Tibekwa njani titfombe tibe kuyo yonkhe imigca. • Afundvwa njani emagrafu.	
5.5 **Veta idatha**	**Veta idatha** • Veta idatha kugrafutitfombe	**Veta idatha** • Veta idatha kugrafutitfombe.		
5.6 **Hlatiya ubuye uhumushe idatha**	**Hatiya ubuye uhumushe idatha.** • Phendvula imibuto ngedatha lekugrafutitfombe	**Hatiya ubuye uhumushe idatha.** • Phendvula imibuto ngedatha lekugrafutitfombe		

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (Setifundvo 1 li awa 24 emaminithi)
			Kudzingekile kutsi bafundzi bati kutsi kubalulejile kutsi bafundzi bacale ngekufundza sihloko segrafu kute bati kutsi idatha imayelana nani. Kumelele babuye bafundze tihloko ecaleni lelivundlile nasecaleni lelimile. Bafundzi abadzingi kwati emathemu ebuchwepheshe lasetjentiswe kuchaza tincenye tegrafu, kumele bayifundze “ngaphasi”nase “macaleni” kubona kutsi igrafu ikhuluma ngani. Sivamise kufundza kusukela esancele uye esekudla, kodvwa bafundzi emagrafu lekundzinga kutsi bawafundze kusukela esancele kuye esekudla kodvwa uma bafundzi bafundza emagrafu kudzingeka kutsi bafundze kusukela esancele baye esekudla nekusukela phasi baye etulu. Bafundzi badzinga kuchazelwa ngaloku. Kudzingeka kutsi babuye batetayete lamakhono. **Kukhetsa sihloko nekubuta imibuto kugcogca idatha.** Ebangeni 2 kumele ubute imibuto sibonelo. “Nguluphi luhlelo lwamabonakudze lolutsandvwako eklasini?” Bothishela kulesigaba kumele baciniseke kutsi bakhetsa tihloko letehlukene tekugcogca nekuhlatiya idatha, libanga ngalinye. Tihloko letifanele tifaka ekhatsi imidlalo letsandvwako, tinatfo letibandzako letitsandvwako, imibala letsandvwako, sikhatsi lesedlulile lesitsandvwako, luhlelo lwamabonakudze lolutsandvwako njll. **Kuhlela tigaba tekugcogca lwati.** Nika bafundzi tigaba letinyenti lebatawukhetsa kuto. **Kuveta idatha** Umfundzi ngamunye angatfola siceshana seliphepha lelilinganako kudvweba timphendvulo. Imidvwebo ibese ihlelwa ngemigca kwenta igrafutitfombe. Tihloko tifakwa emacaleni egrafu. **Hlatiya ubuye uhumushe idatha** Bafundzi baphendvula imibuto loyibutako ngegrafutitfombe sibonelo. “Nguluphi luhlelo lwamabonakudze lolutsandvwako eklasini lakho?” “Nguluphi luhlelo lwamabonakudze lolutsandvwako bafundzi labancane eklasini?” “Ingabe bafundzi labanyenti batsandza …. nobe…..?” “Bangaki bafundzi labanye labatsandza …. ku ….?”	

LIBANGA 2 ITHEMU 2 1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI**
1.1 **Bala Tintfo**	**Kubala tintfo letiphatsekako** Combela ubale onkhe emalanga lokungenani uye e-200 ngekwetsembeka. Indlelanchubo ngetincumbi ayachuchutelwa.	Bala tintfo onkhe emalanga lokungenani uye e -150 ngekwetsembeka. Nika tizatfu tekucombela tinombolo tetintfo letingabukwa nawubala.	**Yini leyehlukile e Themini 1?** EThemini -2 kuhleleka kwetinombolo kutfutfukisiwe nebafundzi sebatawubala tintfo bafike e -150.Ngoba lena inombolo letinkhulu yetintfo kutibala.kugcilwe ekubaleni ngetincumbi.Lawa ngemakhono lekufanele bafundzi bawente kusukela ebangeni -1 kantsi bayasebentisa ekuhleleni tinombolo letinkhulu. Kubalulekile kutsi ekupheleni kweThemu bafundzi babone tintfo lebatigcogcile leti -150 bese bangabeka siphakamiso ngendlela lekahle kutsi babale. Kubala tintfo kuleThemu kuyachubeka kusite: • emakhono ekubala ladzingekako kute uvisisa simeli bungako; • kubala ngenhloko; • kusho tinombolo ngemagama; • kubona tinombolo; • nemakhono ekubala ladzingekako ekubaleni. **Tinsita:** Letinhlobo taletinsita letisetjentisiwe kudzingeka tinakekelwe. • Tinsita letakhiwe njenge ntsambo yebuhlalu bekubala. • I abhakhasi utetayete kubala ngetincumbi temashumi. • Tincumbi tabo -2, tincumbi te-5 nemashumi langabaleka. • Emabhuloki eDine, njengemabhuloki lasisekelo selishumi. • Imali yekudlala.	10

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.2 **Kubala uye phambili na-samuva**	Bala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -200. • Nge -10 kusukela kunobe nguwaphi emamalthiphuli emkhatsini we -0 ne -200. • Nge -5 kusukela kunobe nguwaphi emamalthiphuli e 5- emkhatsini we -0 ne -200. • Nga -2 kusukela kunobe nguwaphi emamalthiphuli a -2 emkhatsini we -0 ne -200. • Nga -3 kusukela kunobe nguwaphi emamalthiphuli a -3 emkhatsini we -0 ne -200. • Nga- 4 kusukela kunobe nguwaphi emamalthiphuli a -4 emkhatsini we-0 ne -200.	Bala uye phambili nasemuva kuloku: Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -150. • Nge -10 kusukela kunobe nguwaphi emamalthiphuli emkhatsini we -0 ne -150. • Nge -5 kusukela kunobe nguwaphi emamalthiphuli e -5 emkhatsini we 0- ne -150. • Nga -2 kusukela kunobe nguwaphi emamalthiphuli a - emkhatsini we- 0 ne -150. • Nga- 4 kusukela kunobe nguwaphi mamalithiphuli a 4 emkhatsini wa- 0 ne -150.	**Yini leyehlukile eThemini 1?** EThemini -2 kubala kwetinombolo letihlelekile titfutfukisiwe nebafundzi bacala kubala ngakutsatfu, nakune kwekucala.Loku kungangeniswa.Loku kungan-geniswa nawubala tintfo letibonakalako, kubala entsanjini yetinombolo tebuhlalu ngekusebentisa igridi yemakhulu nemugca wetinombolo. Ekupheleni kweThemu bafundza batawukhona kuphendvula imibuto njenge: • Cala nge - 132, ubale ngakunye uye e- 150. • Cala nge - 120 ubale uye emuva ngakunye uye e -98. • Cala nge - 60 ubale ngakubili uye e -100. • Cala nge -100 ubale ngakubili uye e -138. • Cala nga -3 ubale ngakutsatfu uye e -30. • Cala nge -60, ubale uye emuva ngakutsatfu uye e -42. • Cala nga -4 ubale ngakune uye e -40. • Cala nge -84 ubale uye emuva ngakutsatfu uye e-68. • Cala nge-45 ubale ngesihlanu uye e -100. • Cala nge -100, ubale uye emuva ngelishumi uye e -10. Bafundzi kumele babale baye emuva kusukela nome kuyiphi imalithiphuli.	

<table>
<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA</th><th>LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2</th><th>EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA</th><th>BUDZE BESIKHATSI</th></tr>
<tr>
<td>1.3

Tinombolo netinombolo-magama</td>
<td>Tfola,ubuke ubuye ufundze tinombolo
• Tfola,ubuke ubuye ufundze tinombolo kusukela e- 0 uye e-200
• Bhala tinombolo kusukela e- 0 uye e -200.
Tfola,ubuke ubuye ufundze tinombolo
• Tfola,ubuke ubuye ufundze tinombolo kusukela e- 0 uye e-200
• Bhala tinombolo ngemagama kusukela e- 0 uye e-100.</td>
<td>Tfola,ubuke ubuye ufundze tinombolo
• Tfola,ubuke ubuye ufundze tinombolo kusukela e-0 uye e-150
• Bhala tinombolo kusukela e- 0 uye e -150
Tfola,ubuke ubuye ufundze tinombolo
• Tfola,ubuke ubuye ufundze tinombolo kusukela e- 0 uye e-150
• Bhala tinombolo ngemagama kusukela e- 0 uye e-50.</td>
<td>Yini leyehlukile eThemini 1?

Bafundzi bayachubeka bafundze babhale tinombolo netinombolo ngemagama bakhulisekuhlelka kwetinombolo.Bafundzi batawubona, bafundze, babhale timphawu letingephasi kwelikhulu bese babhala tinombolo ngemagama baye e-50.

Kunakekela kumele kwentiwe uma kukhulunywa ngetinombolo letinemadijithi lamtsatfu,sibonelo lomunye kumele atsi “emakhulu lamatsatfu nemashumi lamabili nakutsatfu” kunekutsi “kunye,kubili,kutsatfu”

Nangabe ubhala tinombolo letingemadijithi lamatsatfu lasemkhatsini we -100 ne -110, idijithi lesendzaweni yemashumi licandza. Labanye bafundzi batfola kulukhuni kubhala letinombolo ngetimphawu uma banikwe tinombolo ngemagama. Sibonelo, kubhala li -102 kungaba lukhuni kulabanye bafundzi. Bangabhala ti -1002. Emakhadi esimelibungako alusito ekwenteni bafundzi bavisise kutsi tinombolo tibekeka njani ngendlela lefanele. Bafundzi kumele baniketwe sikhatsi lesinyenti sekutetayeta kubhala tinombolo.

Tibonelo tekurekhoda:
• Bhala tinombolo.
<table><tr><td>Likhulu nemashumi lamatsatfu nakunye</td><td></td></tr><tr><td>Likhulu nemashumi lamane nenkhotsa</td><td></td></tr></table>• Catsanisa emagama etinombolo netinombolo
• Cedzela tinombolo letilandzelanako.
• Cedzela umugcatinombolo nekulandzelana kwetinombolo.</td>
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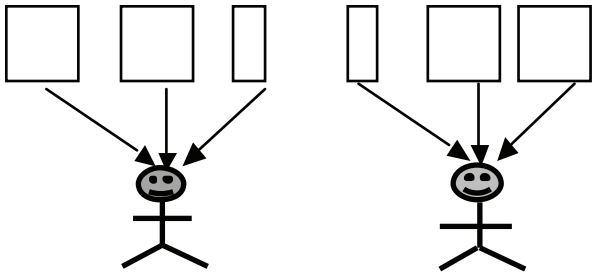
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.4 **Chaza, catsanisa, ubuye uhlele tinombolo.**	**Chaza,catsanisa, ubuye uhlele tinombolo uye e-99** • Chaza, catsanisa, ubuye uhlele tinombolo uye e-99 ngekusebentisa lokuncane kuna, lokukhulu kuna, kunyenti kuna, na kulingana na. • Chaza, catsanisa, ubuye uhlele tinombolo ufike e- 99 kusukela kulencane uye kulenkhulu, ngekusukela kulenkhulu uye kulencane. **Sebentisa tinombolo letihlelekile, kukhombisa kuhleleka, nendzawo.** Beka tintfo emgceni kusukela kuwe ekucaleni, kuya ekugcineni nobe kwekucala kuya kukwekugcina, sibonelo wekucala, wesibili, wesitsatfu...welishumi.	**Chaza,catsanisa, ubuye uhlele tinombolo uye e-50** • Chaza, catsanisa, ubuye uhlele tinombolo ngekusebentisa lokuncane kuna, lokukhulu kuna, kunyenti kuna, na kulingana na. • Chaza, catsanisa, ubuye uhlele tinombolo kusukela kulencane uye kulenkhulu, ngekusukela kulenkhulu uye kulencane. **Sebentisa tinombolo letihlelekile, kukhombisa kuhleleka, nendzawo.** Beka tintfo emgceni kusukela ekucaleni, uye eshumini nobe ekucaleni kuya ekugcineni. Sibonelo wekucala, wesibili wesitsatfu...welishumi.	**Yini leyehlukile eThemini 1?** Ngesikhatsi saleThemu bafundzi bachubeka nekuhlela nekucatsanisa tinombolo. Umugcatinombo uhlala usitfombe lesibalulekile lesisitako nawuhlola lapho inombolo ibekwe khona nebudlelwane lobukhona naletinye tinombolo. Umfanekiso wemugcatinombolo utawusita bafundzi kundlelancubo yabo yetibalo tenhloko ngalesikhatsi babala. **Imisebenti lebatentela yona lengetiwe:** Batetayeta kubhala kusukela entfweni yekucala kuya kuyelishumi. Rekhoda loku lokulandzelako ebhukwini lakho lekusebentela: • Nguyiphi inombolo leta kucala e -46? • Nguyiphi inombolo leta emuva kwe -48? • Nguyiphi inombolo lesemkhatsini we -45 ne -47? • Sebentisa lomugcatinombolo lonikwe wona kugwalisa tinombolo letishodako. • Bhala lokunyenti nga ku-1 kwendlula letinombolo: - lokunyenti nga -1 e -23 kulingana ___ - lokunyenti nga -1 e -29 kulingana ___ - lokunyenti nga -1 e -42 kulingana ____ • Bhala lokuncane nga-1 kwaletinombolo: - Lokuncane nga -1 e -20 kulingana ___ - Lokuncane nga -1 e -31 kulingana ___ - Lokuncane nga -1 e -42 kulingana ___ • Bhala lokunyenti nge-10 kwaletinombolo: - lokunyenti nge -10 kwe -20 kulingana ___ - lokunyenti nge -10 kwe -30 kulingana ___ • Bhala lokuncane nge -10 kwaletinombolo. - lokuncane nge-10 kwe - 50 kulingana ____ - lokuncane nge-10 kwe - 40 kulingana ____ • Bhala tinombolo ngalokuhlelekile kusukela kulenkhulu uye kulencane. (130, 133, 123, 143, 103, 113) • Cedzela lomusho. Faka kunyenti nobe kuncane: - e-24 _____ kuna -24 - e-36 _____ kune-19	

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1.5 **Simeli bungako**	**Tfola bungako lokungenani betinombolo letingemadijithi lamabili uye e-99.** • Tfola kutsi yinye idijithi imeleni. • Hlahlela tinombolo letingemadijithi tibe ngemamalthiphuli elishumi nemivo.(SV) • Tfola usho bungako bayinye idijithi.	**Tfola bungako lokungenani betinombolo letingemadijithi lamabili uye e -50.** • Tfola kutsi yinye idijithi imeleni. • Hlahlela tinombolo letingemadijithi tibe ngemamalthiphuli elishumi nemivo.(SV) • Tfola usho bungako bayinye idijithi.	**Yini leyehlukile eThemini1?** NgaleThemu kuhleleka kwetinombolo kuyetfutfuka kusukela e-25 kuya e -50. Bafundzi nyalo basebentisa lwati lwabo lwebungako ekuhleleni tinombolo letisetulu. KuleThemu bafundzi bachubeka neku: • Bala ubutsanise kukhombisa emashumi nemivo ngetindlela letehlukene; • Bala tincumbi lokucalwe ngato/tinsita tekucala letibonakalako; • Sebentisa emakhadi esimelibungako kukhombisa tincumbi tetinombolo netinombolo letibaliwe; • Khombisa kuhleleka lokwehlukene kwetinombolo, sibonelo e -35 angakhonjiswa ngekwehlukana ngalendlela emashumi la-3 nemivo le -5 netincumbi le -2 temashumi ne -15 lesitimele; • Bese usho bungako bayinye idijithi. Lomsebenti longetulu wentiwa njalo ecenjini lokugcilwe kulo nangalesikhatsi bafundzi betisebentela bangarekhoda loku lokulandzelako: e - 48 = netincumbi le -4 temashumi ne -8 lesitimele. E -48 = ne -40 ne -8 Loku kungalekelelwa ngekusebentisa emafuladi khadi nobe emakhadi esimelibungako. **Bungako bedijithi** Bafundzi kumele bacale kusho kutsi yinye idjithi imeleni: Buta bafundzi: • Imeleni i -7 e -27? • Umeleni ku -4 e -49? Bafundzi kumele basebentise emakhadi esimelibungako kucinisekise titatimende tabo.	

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KUSOMBULULA TINKINGA TETIBALO TEMAGAMA LETIKUSIMOGCONDVO				
1.6 **Emasu ekubala tibalo**	Sebentisa lamasu nawusombulula tinkinga tetibalo temagama ubuye uchaze tisombululo tetinkinga: • Ngemidvwebo nobe tintfo letiphatsekako sibonelo tibali. • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo	Sebentisa lamasu nawusombulula tinkinga tetibalo temagama ubuye uchaze tisombululo tetinkinga: • Ngemidvwebo nobe tintfo letiphatsekako sibonelo tibali. • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo	Bafundzi balindzelekile kutsi basombulule tibalo temagama ngekusebentisa lamasu: • Imidvwebo nobe tinsita letiphatsekako sib. tibali • Kwakha nobe kuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo **Imidvwebo nobe tinsita letiphatsekako.** Bafundzi batawuchubeka badvwebe titfombe babuye basebentise tinsita letiphatsekako kusombulula tinkinga tetibalo. Kudvweba tintfo uye e -30 nobe e -50 ngayinye akubi yimphumelelo loko kumele kungakhutsatwa. Bakhutsate bafake tinombolo nangabe barekhoda imisebenti yabo lokufaka ekhatsi titfombe letimele lowo msebenti. Bafundzi bangabuye bakhutsatwe kubhala imishotinombolo. Buka emanotsi eThemini 1	

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1.7 **Kuhlanganisa nekususa**	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo lokufaka ekhatsi kuhlanganisa nekususa netimphendvulo ufike e-99.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo lokufaka ekhatsi kuhlanganisa nekususa netimphendvulo ufike e -50	**Yini leyehlukile eThemini 1?** NgaleThemu bafundzi bayachubeka nekutetayeta kwenta tinkinga etibalo temagama basebentisa emasu lalandzelako nabasombulula tinkinga tetibalo: • Imidvwebo nobe tinsita letiphatsekako sib. tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo KuleThemu kugcilwe ekurekhodeni. Bafundzi kumele babhale phasi imishotinombolo njengelirekhodi lelibhaliwe lekusombulula tinkinga tetibalo. Kubalulekile kubuka kutsi ngubaphi bafundzi labanetikinga tekubhala imishotinombolo kusebenta ngatinkinga tetibalo letitsite. Uma bafundzi bakucela kutsi ubakhombe kutsi tinkinga tetibalo ungatikhombisa njani ngemishotinombolo nasebatisombululile, kusikhatsi lesihle sekubakhomba. Tibonelo tetibalo letingentiwa kulethemu, buka emanotsi ethemini 2	
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni.**	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo ngekusebentisa kuphindza kuhlanganisa lokuholela ekuphindzaphindza netimphendvulo ufike e-50.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo ngekusebentisa kuphindza kuhlanganisa lokuholele ekuphindzaphindza netimphendvulo ufike e-30.	**Yini leyehlukile eThemini ye -1** **Tinombolo letihlelekile kulethemu tiyetfutfuka tiye e -30**. Bafundzi kumele bakhutsatwe kubhala imishotinombolo kuto tonkhe tibalo temagama. Lomunye angalindzela bafundzi kutsi basebentise kuhlanganisa lokuphindzako kwemishotinombolo kukhombisa tisombululo.Ngalethemu bafundzi kumele babhale tibalo tekuphindzaphindza temisho tinombolo tetisombululo tab. Ethemini 1 betfulelwe timphawu tetibalo tekuphindzaphindza ngako-ke kumele basebentise lolwati uma basombulula tinkinga tetinombolo tekuphindzaphindza. Kuphindza kuhlanganisa negridi / luhlobo lwetibalo teligcogco kumele lukhombise tibalo tekuphindzaphindza temisho tinombolo. Kutawubakhona bafundzi lebatawuba nekutetsemba ekurekhodeni tisombululo tabo ngekusebentisa kuphindza kuhlanganisa hhayi kuphindzaphindza **Tibonelo tetibalo letingentiwa kulethemu** Kuphindza kuhlanganisa • Emabhayisikili la -8 anemasondvo lamangaki? • Bantfwana la -9 banemehlo lamangaki? **Sivinini** Thami unatsa tingilazi le -6 temanti onkhe emalanga. Unatse tingilazi temanti letingaki ngeliviki? **Emagridi/ ligcogco** Umnumzane Khumalo uhlanyele imigca le -6 yetitjalo tbunjwa. Kunetitjalo le -5 emgceni ngamunye. Tingaki titjalo tbunjwa setitonkhe?	

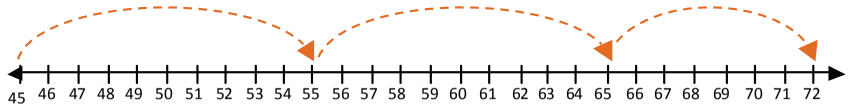
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.9 **Kugcogcela ndzawonye nekwabelana lokuholela ekuhlukaniseni.**	Somubulula ubuye uchaze tisombululo ngekwenta tibalo letifaka ekhatsi kwabelana lokulinganako nekugcogca ufike e-99 netimphendvulo letifaka ekhatsi tinsalela	Somubulula ubuye uchaze tisombululo ngekwenta tibalo letifaka ekhatsi kwabelana lokulinganako nekugcogca ufike e-50 netimphendvulo letifaka ekhatsi tinsalela	**Tibonelo tetibalo letingentiwa kulethemu** Kulethemu vumela bafundzi kusebentisa imidvwebo netinsita letiphatsekako kukhombisa tisombululo tabo.Imishotinombolo kumele isetjentiswe.Bafundzi bangasebentisa kuphindza kususa kukhombisa kutsi bafike njani emphendvulweni **Igridi/ ligcogco** Mongezi upaka tibali leti -20 emigceni le -10. Tingaki tibali emgceni ngamunye? **Kugcogcela ndzawonye** Kugcogcela ndzawonye, *kulahla insalela* Stella utsengisa emahhabhula lasetikhwameni letinemahhabhula la -6 ngasinye. Unemahhabhula la -40. Angeta tingaki tikhwama letinemahhabhula la -6 ngasinye? **Kugcogcela ndzawonye**, ***kufaka insalela emphendvulweni***. Ben ufuna kutsatsa emacandza la -35 kugogo wakhe. Udzinga mangaki emabhokisi emacandza latsatsa emacandza la -6 ngalinye kute apake onkhe emacandza. **Kwabelana** *Kwabelana, lokulahla insalela.* Aba emaswidi la -45 kubangani la -4 kute bonkhe batfole emaswidi lalinganako. Sue na Greg benta incenye yemsebenti kanye kanye. Sue usebenta ema - awa la -3, Greg usebente li;awa li -1. Babhadalwe R40. Batawabelana njani lemali?	

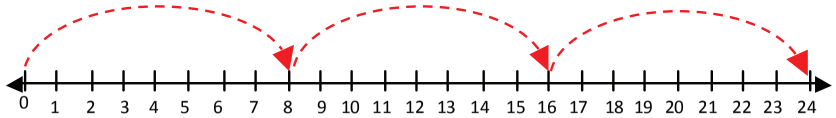
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.10 **Kwabelana lekuholela etincetwini**	Somubulula ubuye uchaze tisombululo ngekwenta tibalo letifaka ekhatsi kwabelana lokulinganako lokuholela etisombululweni letifaka tincetu letineyunithi sibonelo. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$ njll.	Somubulula ubuye uchaze tisombululo ngekwenta tibalo letifaka ekhatsi kwabelana lokulinganako lokuholela etisombululweni letifaka tincetu letineyunithi sibonelo. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$ njll.	**Yini leyehlukile eThemini 1?** Lenye yetinhloso tekucala ekutfutfukisweni kwetincetu kumele kube kusita bafundzi kutsi bakhe umcondvo wetincenye tetincetu letiphelele. Tincenye letenta imiphumela nangabe intfo lephelele nobe iyunithi ihlukaniswe tincenye letinemasayizi lalinganako nobe kwaba lokulingene. Bafundzi bakhombisa kuvisisa umcondvo wekuhlukanisa linani libe tincenye letimbili nobe letinyenti kute tabiwe kahle emkhatsini webangani. Bayakwati kuchumanisa emkhatsini wemcondvo wekwaba tintfo ngendlela lefanele netincenye tetincetu. Kwaba imisebenti kuyintfo lenhle yekucala umcondvo wetincetu. Ikharikhulami yetfu nayo ingenisa lwati lwekwabelana lelinemphumela ngetincenye tetincetu. Imisebenti yekwabelana itfulwe ngendlela lelula yekwenta tibalo temagama. Kucala nangabe bafundzi benta imisebenti yekwabelana (kuhlukanisa) batfola kuhlukanisa nobe kwabelana emacembe lasele etincenyeni. Babuye babelana letincenye letisele futsi. Lulwimi loluphatselene netincetu lungetfulwa ngemlomo. Ngako- ke munye angabhala tincetu ngemagama sib. yinye ihhaffu, yinye ikota, incenye yinye yalokutsatfu. Uma ubhala ngetincenye tetincetu letinyenti sib. Emahhafu la -3, emakota la-3, bhala loko njenge timphawu nangemagama. Kusho sitsi lo -3 lokungetulu kwa -2 nobe lo -3 lokungetulu kwa -4 akuwuletsi umcondvo lotsite kantsi kuhle kutsi loku sikushiyele bafundzi beSigaba Lesisemkhatsini. **Kwabelana** Etibonelweni letingentasi simo sekwabelana lokulinganako lokunensalela lokungabelana ngako kusetjentisiwe. Ebantfwana lababili bahlukaniselana emashokolethi la -5 kute batfole lokulinganako. Munye utawutfola lengakanani? Bafundzi batawunika umntfwana munye emashokolethi lamabili babuye bahhafule emashokolethi lasele. 	

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1.10 **Kwabelana lekuholela etincetwini**			**Tinsalela** Kubalulekile kutsi bafundzi badvwebe bakhombise timphendvulo. Bafundzi abacale ngekuchaza ngemagama abo “tincenye”lebatiphulile.Kulindzele kutsi bafundzi nabajuba tincenye letisele, letincenye tingaba ngemasayizi langalingani. Loko angeke kugucule indlela lebachaza ngayo indlela yekwabelana. Bafundzi nabangabelana kahle, emagama etincetu anganiketwa kuletincenye. Kusukela ekwabelaneni kwetibalo temagama netisombululo letinetinsalela kuye etisombululweni letinetinombolo letiphelele netincenye tetincetu, lokusho kutsi bafundzi sebayatati tincetu letingesito mbamba netinombolo letihlanganisiwe. Bafundzi akukalindzeleki kutsi bayati nobe bayisebentise letheminoloji.sibonelo: tincenye letimbili nehhafu tingabhalwa ngalokuhlelekile ngalendlela 2 ½, lokutinombolo letihlangene. **Umsebenti wekwabelana nelulwimi lwetincetu.** Kucocisa ngetisombululo kwebafundzi indlela lenhle yekungenisa lwatimagama letincenye tetincetu. Uma ishokoleti iphulwe yaba tincenye letilinganako, tsani nje,’sibita ngekutsi tincenye letine’.Libhesikidi leliphelele lijutjwe tincenye letine. Tonkhe letincenye tiyalingana ngemasayizi. Bafundzi kumele bati tintfo letimbili tetincenye tetincetu. • Linani letincenye tetincetu • Nekulingana kwetincenye. Imisebenti yekwaba isita bafundzi kutfutfukisa lwati lolulandzelako: • Uma sehlukanisa intfo ibe tincenye le -2 letilinganako, kutsiwa yihhafu. • Uma sehlukanisa intfo ibe tincenye le -3 letilinganako,kutsiwa yincenye yinye yalokutsatfu • Uma sehlukanisa intfo ibe tincenye le -4 letilinganako, kutsiwa emakota • Uma sehlukanisa intfo ibe tincenye le -3 letilinganako, kutsiwa incenye yinye yalokusihlanu Kugcila etibalweni temagama etincetu kulethemu kuvumela bafundzi kutsi: • Babelane bagcogce tintfo ngekulingana; • Basho tincenye tetincetu; • Batfole tincetu entfweni lephelele. • Kubona kutsi tincetu tiyincenye yentfo lephelele.	

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1.10 **Kwabelana lekuholela etincetwini**			**Tibonelo. Tetinkinga tetibalo temagama tifanelekile ethemini 2.** • Erin, Tawfiq na Thami kufanele bahlukaniselane emashokoleti lamane ngekulingana. Umntfwana ngamunye utawutfola emashokoleti lamangaki? Dvweba sitfombe kukhombisa imphendvulo yakho. • Miles, Hannah, Mathew na Ndaweni bahlukaniselana emabhazi etitselo la -5. Bangahlukaniselana njani ngekulingana? Dvweba sitfombe kukhombisa imphendvulo yakho. • Serebolo naJamie bahlukaniselana lunye lutsi lwemaswidi emalikhorisi. Jamie utsi muney kumele atfole ihhafu. Ucinisile yini? Dvweba sitfombe ukhombise imphendvulo yakho. Kubalulekille kutsi bafundzi nabadvweba tisombululo bakwati kuchaza kutsi babelane njani. Ekucaleni sebentisa lulwimi lwebafundzi lolungakahleleki kuchaza tincenye tetincetu. Nasebatitsemba babuye bavisise lwati “lwalokuphelele nalokucanyane” ligama lelicetu lingangeniswa.Ngako- ke nobe ngubani angabhala ligama lelucetu sib. yinye ihhafu, yinye ikota, kunye kulokutsatfu.Timphawu tetincetu atikangeniswa, njengekusho kutsi kunye kulokungetulu kwa -2 akuvakali kantsi kubalulekile kuyekelela loluphawu emabangeni latako.	
1.11 **Imali**	• Kubona imali lebuhhehlu yaseNingizimu Afrika 5c, 10c, 20c, 50c, R1, R2, R5, kanye nemali yemaphepha R10, R20, R50 • Kusombulula tinkinga temali lokufaka ekhatsi samba nentjintji uye e R99 nasemasenti lafika e-90c	• Kubona imali lebuhhehlu yaseNingizimu Afrika 5c, 10c, 20c, 50c, R1, R2, R5, kanye nemali yemaphepha R10, R20, R50 • Kusombulula tinkinga temali lokufaka ekhatsi samba nentjintji uye e R99 nasemasenti lafika e-90c	**Yini leyehlukile eThemini 1?** Ngalethemu bafundzi batetayeta kubona imali babuye bayihlahlele ibe tincenye letincane. **Sibonelo setibalo letingentiwa kulethemu.** • Ungamhlukanisa -50c ngalokulinganako emkhatsini webafundzi labane? Uchaze kutsi kwenteke njani? • Joe usebentisa -50c kutsenga emaswidi ebhabuligamu labita -10c. Utsenge emaswidi ebhabuligamu lamangaki? • Thenje ubhadale R5 ekuseni etekisini nakaya esikolweni. Ubhadale R20 wemali yemaphepha. Utfola intjintji lengumalini Utawube asele namalini nakabuyela emuva ekhaya ngetekisi? • Imali lebhadalwa emathekisini akaZurina ingu R5, 50. Utawutfola malini intjintji yakhe nakakhpha R10? Mia usebentisa R38. Bekane R50. Unamalini lesele?	

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KUTIBALELA NGEKUKHULULEKA				
1.12 **Emasu, tindlela nobe indlelanchubo.**	**Sebentisa lamasu lalandzelako nawubala:** • Imidvwebo nobe tintfo letiphatsekako sibonelo tibali. • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo	**Sebentisa lamasu lalandzelako nawubala**: • Imidvwebo nobe tintfo letiphatsekako sibonelo tibali. • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo	Bafundzi balindzelekile kutsi basombulule tibalo temagama ngekusebentisa lamasu: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo **Imidvwebo nobe tinsita letiphatsekako.** Bafundzi bayachubeka badvwebe titfombe babuye basebentisa tinsita letiphatsekeko kusombulula tinkiga tetibalo. Kubalulekile kutsi titfombe nobe imidvwebo ibe netinombolo nemishotinombolo. **Kwakha nekuhlahlela tinombolo** Leli lisu lelibalulekile eSigabeni sabokhewane (Luyasetjentiswa njalonjalo esigabeni lesisemkhatsini) Kusebentisa lelisu kuvumela bafundzi kutsi bahlahlele baphindze bahlanganise tinombolo kute kubala kube lula. Kubalulekile kutsi bafundzi basebentise lwati lebanalo uma bakha babuye bahlahlele tinombolo sib: • Kuhlahlela usebentise simelibungako • Kuhlahlela usebentise emamalthiphuli e -10 • Kuhlahlela tinombolo tibe emapheya. **Yini leyehlukile ethemini 1?** **Kuphindza nekuhhafula** Bafundzi esikhatsini lesinyenti batfola kuphindza tinombolo kuyintfo lelula; nanobe kunjalo, kubalulekile kucecesha bafundzi kusebentisa lwati lebanalo lwekuphindza. • Sebentisa lwati lwekubona kubona kuphindza lokusedvute. **Kuphindza** **Kuphindza lokusedvute** 12+12 12+13 25+25 22+24 • Sebentisa emasu ekuphindza ubuye ukhombise lokwehlukene,sib.13+14 = nekuphindza li -13 ulihlanganise na -1	

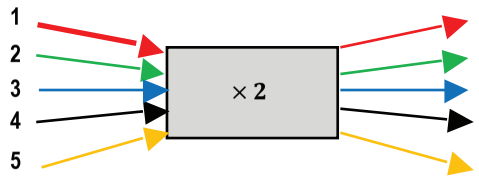
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.12 **Emasu, tindlela nobe indlelanchubo.**			Lelisu lilukhuni lidzinga lwati lwetinombolo lelicinile.Bafundzi labakhona kukhetsa loku njengelisu bakhululekile kuletindlelancubo lebatisebentisako. Sibonelo. Ngelilanga linye bantfwana la -24 bayogomela umkhuhlane emtfolamphilo. Ngelilanga lelilandzelako bantfwana la-25 bagonyelwa umkhuhlane. Bangaki bantfwana sebabonkhe labagonyelwe umkhuhlane? Inkinga ingasombululwa ngekusebentisa kuphindza tinombolo. Umfundzi angatsi phindza e -24 uwahlanganise na-1 nobe phindza e -25 ususe ku -1 **Imigcatinombolo** Kusebentisa umugcatinombolo kubasita ekubaleni kutawunika bafundzi indlela yekurekhoda loko lebakucabangako babuye bakulandzelele. Kubuye kuvumele bafundzi kutsi nemfanekiso wekurekhoda lebangawusebentisa kuchaza kutsi bayisombule njani inkinga Bafundzi bebasentisa umugcatinombolo kusukela ebangeni -1. Ngalesikhatsi sanyalo kumele bakwati kutakhela imigcatinombolo lengenalutfo lebatawufaka tinombolo tekucala bese bayasho kutsi batawufika njani kulenombolo baye kulenye. Sibonelo.lesikhombisa kutsi bafundzi bangawusebentisa njani umugcatinombolo. **Kuhlanganisa nekususa** Bafundzi kumele bente imigcatinombolo yabo babuye bahlahlele tinombolo tibe tincenye lebetawukhona kutisebentisa.. **Sibonelo:** 45+27  **Kuphindzaphindza** Imigcatinombolo kumele ichubeke isetjentiswe kusita kuhlanganisa lokuphindziwe. Kuzubisa lokufananako kuyarekhodwa kumugcatinombolo nemisho lelekelelako kumele ibhalwe.	

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1.12 **Emasu, tindlela nobe indlelanchubo.**			**Sibonelo:**  8+8+8=24 Kuzuba lo-3 kwa -8 kulingana ne -24 Tincumbi le -3 te -8 =24 3x3 = 24 Ekuphindzaphindzeni lokuniketiwe bafundzi kumele bachaze kutsi kungazubiswa njani emgcenitinombolo.	
1.13 **Kuhlanganisa nekususa**	• Hlanganisa uye e -99 • Susa kusukela e -99 • Sebentisa timphawu letifanela (+, –, =, ☐) • Enta utetayete kuhlanganisa tinombolo uye e-20	• Hlanganisa uye e -50 • Susa kusukela e -50 • Sebentisa timphawu letifanela (+, –, =, ☐) • Enta utetayete kuhlanganisa tinombolo uye e -15	**Yini leyehlukile eThemini 1?** Bafundzi ebangeni le -2 bachubeka nekusebentisa tinsita letiphatsekako naleminye imianekiso kusita ekutfoleni lwati lwetinombolo nekubala. Kusetjentiswa kwalemifanekiso kutawuba sezingeni lelisetulu ngekuhamba kwesikhatsi. Nakuphela umnyaka bafundzi belibanga le -3 kumele bakwati kubala tinombolo letingemadijithi lamatsatfu ngaphandle kwekusebentisa tinsita letiphatsekako. Bafundzi ebangeni le -2 bayachubeka basebentise balungise tindlelatinchubo tabo tekubala.Bandzinga kusekelwa kute kwentiwe sicinisekiso sekutsi kurekhoda kwabo kuhlelekile kute imisebenti yabo ifundvwe ngibo nalabanye. Bafundzi belibanga le -2 batawusebentisa tindlela letinyenti tekurekhoda babe nekutetsemba ekusebentiseni timphawu tetinombolo netinombolo njengendlelanchubo yekurekhoda. Bafundzi kumele “bacabange” ngemibuto lebutiwe babuye babuke kuhleleka kwetinombolo kwetinkinga tetibalo kute bakwati kukhetsa lisu lelihle lebatalisebentisa. Ngekusombulula tinkinga tetibalo bafundzi basuke sebacalile kutfutfukisa emasu abo ekubala netindlelanchubo tabo tekurekhoda. Ebangeni le-2 batatilungisela loko. Ngalethemu kumele babe nekutetsemba ekufundzeni tindlelanchubo tabo tekurekhoda nekusebentisa tindlela nekuchaza kutsi bafike njani emphendvulweni. Bafundzi kumele bakwati kwenta lokulandzelako ngekuhlanganisa nekususa: Nanobe bafundzi basebentisa tinsita letiphatsekako nemifanekiso letibasita ekubaleni, uma kufika ekusebenteni ngetinombolo kumele bakwati kubala ngendlela lesezingeni lelisetulu. Ngesikhatsi sethemu ye -2 bafundzi badzinga kuchubeka nekubala, imibuto lephatselene netibalo tekuphindza ngetindlela letehlukene kute bakhone kusebentisa emasu ekuphindza kubala lokusedvute.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.13 **Kuhlanganisa nekususa**			**Sibonelo:** Phindza e -20. Bhala loku njenge sibalo sekuhlanganisa imishotinombolo. Tsatsela ubuye ucedzele • 12 + 12 = ☐ • 14 + 14 = ☐ • 15 + ☐ = 30 • 16 + ☐ = 32 • 17 + 17 = ☐ • 36 = 18 + ☐ • 38 = ☐ + 19 Tindlelanchubo letingatfolakala longatisebentisa kukhombisa tibalo tekuhlanganisa nekususa. **Kuhlahlela tinombolo tibe tincenye letincane kute kubala kube lula.** **Kusebentisa lwati lwesimelibungako kuhlahlela tinombolo tibe ngemashumi nemivo.** *Kuhlanganisa tinombolo letingemadigithi lamabili ngekuhlahlela totimbili tinombolo.* 23 + 36 = ☐ 23 + 36 = (20 + 3) + (30 + 6) = (20 + 30) + (3 + 6) = 50 + 9 = 59 **Kuhlanganiso ngekuhlahlela yinye inombolo** 23 + 36 = ☐ 23 + (30 + 6) 23 + 30 → 53 + 6 = 59 Bafundzi bangahlahlela tinombolo ngetindlela letitawuba lula kubo. Loko kusho kutsi bangatenta ngetindlela letehlukene: 23 + 36 = ☐ 23 + (10 + 10 + 10 + 6) 23 + 10 → 33 + 10 → 43 + 10 → 53 + 6 = 59	

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1.13 **Kuhlanganisa nekususa**			**Kususa** • Kuhlahlela totimbili tinombolo 47 – 26 = □ 47 – 26 = (40 + 7) – (20 + 6) = (40 – 20) + (7 -6) = 20 + 1 = 21 42 – 26 = □ 42 – 26 (30 + 12) – (20 + 6) 30 – 20 = 10 12 – 6 = 6 10 + 6 = 16 • Kususa ngekuhlahlela yinye inombolo. 47 – 26 = □ 47 – (20 + 6) 47 – 20 27 - 6 = 21 42 – 26 = □ 42 – 26 (30 + 12) – 26 30 – 26 = 4 12 + 4 = 16 • Lindzela kutsi labanye bafundzi bangahlahlela tinombolo ngetindlela letehlukene kute kube lula kubo kubala 47 – 26 = □ 47 – (10 + 10 + 6) 47 – 10 → 37 -10 → 27 - 6 = 21	

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1.13 **Kuhlanganisa nekususa**			**Kusebentisa lwati lebanalo njengemasu.** Lamasu lavetwe ngentasi avumela bafundzi babale babuye basebentise lwati lweti-nombolo ngalokuhlelekile. Kutetayeta lamasu langentasi kutawukhutsata bafundzi kuveta budlelwane lebusemkhatsini wetinombolo nekufundzisa bafundzi kutsi ban-gasebentisa lwati lwabo kubasita ekubaleni. **Kubala uye phambili nekubala uye emuva** 48 – 39 = □ Kubala uye etulu ngakunye kusukela e -39 kuyindlelanchubo lefanele ngobe tinom-bolo tisondzelene. **Tfola kuphindza lokusedvute** 24 + 25 kuchaza kutsi kuphindvwe e -24 ahlanganiswa na -1 nobe phindza e -25 ususe ku -1. 24 + 24 + 1 Kungenteka bafundzi barekhode emasu abo basebentise imicibisholo. 24 + (20 + 4) + 1 24 + 20 → 44 + 4 → 48 + 1 = 49 **Kusebentisa kuhhafula ngekuhlahlela tinombolo.** 29 + 12 29 + (6 + 6) 29 + 6 → 35 + 6 = 41 **Ntjintja inombolo iye kumamalthiphuli elishumi ubuye ususe nobe ungete imivo.** Bala uye etulu naphasi usondzete e -10 28 + 19 = □ Lapha bafundzi badzinga kusho kubo kutsi bangatikhetsela tindlela letimbili. Ntjintja e -28 nobe li -19 edvute nemamalthiphuli lasondzele -10. Bayatikhetsela. Sibalo singabhalwa ngalendlela: 28 + 19 = 28 + 20 - 1 28 + 20 → 48 - 1 = 47 Labanye bafundzi bangahlahlela e -20 ngetincumbi le -2 te -10 kute babale kahle.. Kusita bafundzi kutsi bakwati kutetsemba kakhulu nekutisebentela tibalo ngekwabo,nangabe banemasu lanje: • Kubuka tisombululo tabo ngekwabo; • Kubuka ticinisekiso tetisombululo tabo.	

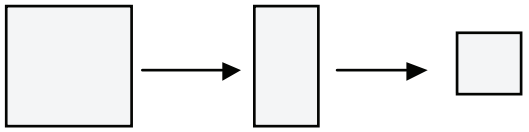
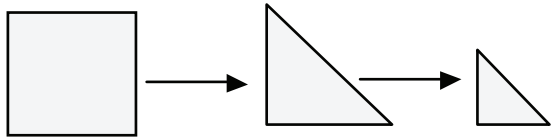
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	• Phindzaphindza -1 uye e -10 nga 2, 5 • Sebentisa timphawu letifanele (+, x, =, ☐)	• Phindzaphindza -1 uye e -10 nga 2, 5 • Sebentisa timphawu letifanele (+, x, =, ☐)	**Yini leyehlukile eThemini 1?** Ngethemu yesibili bafundzi bayachubeka nekutetayeta tibalo tekuphindzaphindza lebativisisako. Kungeniswa tibalo tekuphindzaphindza -1 uye e-10 nge -5 Kute kungeniswe kuphindzaphindza nge -5, buka emanotsi ekuphindzaphindza nga -2 eThemini ye -1 Ekupheleni kwethemu bafundzi kumele bakwati kurekhoda loku lokulandzelako: Yi -1 incumbi ye -5 ilingana ne -5 nobe -1 umphindzaphindze nga -2 kulingana na -2 nobe 1 x 2 = 4 Ti -2 tincumbi ta -2 tilingana na -4 nobe ku -2 ukuphindzaphindze nga -2 kulingana na -4 nobe 2 x 2 =4 Ti -3 tincumbi ta -3 kulingana ne-6 nobe ku -3 ukuphindzaphindze nga -2 kulingana ne -6 nobe 3 x3 =6 Lokugcilwe kuko akusiko kwati ngenhloko lithebula kodvwa kwakha lwati lwetibalo tekuphindzaphindza. Bafundzi solo mane bafundza kufundza nekuvisisa tibalo tek-uphindzaphindza imishotinombolo. Imifanekiso yemamalthiphuli ekuphindzaphindza kumele iniketwe babuye barekhode umsebenti lomnyenti eticwadzini tabo taseklasini. Sibonelo salokubhalwako. Kurekhoda ethebulini: Emaflodayagramu  Nangabe usebenta ngemaphethini etinombolo, kuphindzaphindza ungakuchumanisa nekubala uzube, ngecwaninga emaphethini emamalthiphuli kumagridi etinombolo. Sibonelo: Bafundzi bangarekhoda nga -2 na -5 kumagridi etinombolo. Bangakhuluma ngekutsi nguyiphi inombolo levela ethebulini lalokubili nobe ethebulini lalokusihlanu	

Inombolo yebafundzi	1	2	3	4	5	6	7	8	9
Inombolo yemilente									

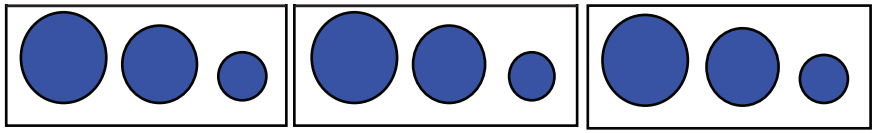
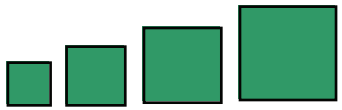
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.16 **Tibalo Tenhloko**	**Lwati lwetinombolo: Kuhlelaka - 99** • Hlela lisethi letinombolo lowutiniketiwe. • Catsanisa tinombolo uye e -99 ubuye usho kutsi nguyipi nalencane nobe lenkhulunga -1, 2,3,4,5 ne-10. **Khumbula ngekushesh-isa:** • Imigomo yekuhlanganisa nekususa uye e-20 • Hlanganisa nobe ususe emamalthiphuli e-10 kusukela e-0 kuya ku -100 **Emasu ekubala** Sebentisa emasu ekubala ngekuhlanganisa nekususa kahle: • Faka tinombolo letinkhulu kucala kute ukhone kubala uye emuva naphambili. • Umugcatinombolo. • Kuphindza nekuhhafula • Kwakha nekuhlahlela. • Sebentisa budlelwane lobusemkhatsini wekuhlanganisa neku susa	**Lwati lwetinombolo:** **Kuhleleka - 50** • Hlela lisethi letinombolo lowutiniketiwe. • Catsanisa tinombolo uye e -99 ubuye usho kutsi nguyipi nalencane nobe lenkhulunga -1, 2,3,4,5 ne-10. **Khumbula ngekushesh-isa:** • Imigomo yekuhlanganisa nekususa uye e-10. **Emasu etenhloko** Sebentisa emasu ekubala ngekuhlanganisa nekususa kahle: • Faka tinombolo letinkhulu kucala kute ukhone kubala uye emuva • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane lobusemkhatsini wekuhlanganisa nekususa.		

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.16 **Tibalo Tenhloko**			**Lwati lwetinombolo:** Emasu ekubala, lwati lwetinombolo, lwati lwetinombolo nemigomo yetinombolo titfutfukiswa ngetisombuluo tinkinga tetibalo nekubala. Loko kwentiwa ngesikhatsi setibalo tenhloko. Loku kusita bafundzi kutsi batetayete babuye bakhone kutisebentisa kahle nababala nangalesikhatsi basombulula tinkinga tetibalo kusimongcondvo. **Sibonelo semibuto lengabutwa**: Phakamisa likhadi nobe ubhale ligama lenombolo.Khetsa umfundzi kutobhala inombolo lematanisako. **Lokunyenti nobe lokuncane** Nguyiphi? • Nguyiphi inombolo lencane nga -1 e -50 • Nguyiphi inombolo lenyenti nga -1 e -39 • Nguyiphi inombolo lencane nga -3 e -27 • Nguyiphi inombolo lenyenti nge -10 e -20 Nguluphi luhlavu lwesihlanu lwema-alfabhethi? Nguyiphi inyanga yemfica emnyakeni? **Ngaphambili nangemuva** Nguyiphi inombolo leta kucala e -37? Nguyiphi inombolo leta ngemuva e -39? **Kuhlela nekucatsanisa** Nguyiphi inombolo lenkhulu: e -21 nobe e -41? Nginike inombolo lesemkhatsini we -37 ne -39. **Imigomo yekuhlanganisa nekususa:** Buka emanotsi ethemu 1. **Emasu ekubala** Sebentisa emasu ekubala kuhlanganisa nekususa ngalokungiko. Hlanganisa tinombolo letinyenti ngekusebentisa emasu lafana nalawa:	

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1.16 **Tibalo Tenhloko**			• Buka tinombolo letimbili letenta li -10 ubuye usebentise leti kucala 2 + 7 + 8 2 + 8 kulingana ne -10 ubuye ungete i -7 Faka tinombolo letinkhuluu kucala kute ukhone kubala uye phambili nasemuva • Cala ngetinombolo letinkhulu. 3 + 6 Phindza ufake imishotinombolo: 6 + 3 ubuye ubale uye phambili ufike ku -9 • Sebentisa kuphindza njengelisu lekubala ngenhloko Tfola kuphindza lokusedvute. **Sibonelo:** 5 + 4 = 9 kuchaza kutsi kuphindvwe lo- 4 kwahlanganiswa na -1 nobe phindza si -5 ususe ku -1 Kubona kutsi nangabe tinombolo letimbili tisondzelene kulula kutfola umehluko ngekubala uye phambili kunekubala uye emuva. 8 – 6 = 2 ubuye uchaze kutsi kubala uye phambili kusukela ku -6 kuye ku -8 kusinika lo -2 Letinye tibalo tenhloko tingentiwa ngaphandle kwetinsita, kodwa kuyesita kwenta tibalo tenhloko ngetinsita. Tinsita letiphakamisiwe. • Umugcatinombolo (Lowakhiwe nalongenalutfo) • Igridi yetinombolo • Emakhadi ebungako (emafuladi khadi) • Buhlalu bekubala	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
1.17 **Tincetu**	• Sebentisa usho tincetu lebatetayele ngemagama naletitfolakalo etindzaweni tabo. Lokufaka ekhatsi emahhafu, emakota, lokutsatfu nalokusihlanu • Tfola tincetu emidvwetjweni • Bhala tincetu nnjenge hhafu, nalokubili kulokutsatfu.	• Sebentisa usho tincetu lebatetayele ngemagama naletitfolakalo etindzaweni tabo. Lokufaka ekhatsi emahhafu, emakota, lokutsatfu nalokusihlanu • Tfola tincetu emidvwetjweni • Bhala tincetu njenge hhafu,nalokubili	**Lethemu igcile kuloku:** Ngalethemu bafundzi bangeniswa etibalweni tetincetu. Bafundzi batawungeniswa etincetwini ngekwabelana tibalo temagama nemisebenti. Nanobe kunjalo, lwati lwetincenye tetincetu lubaluleke ngendlela yekutsi kumele lutfutfukiswe luye phambili ngekusebentisa imisebenti yekuhlanganisa. • Kwenta ihhafu nekota yabobunjwa ngekugoca nekusika emaphepha Bafundzi bangagoca liphepha libe ihhafu babuye basho yinye incenye.Kubalulekile kutsi bavisise kutsi nawenta tincenye letimbili letilinganako entfweni, ubita incenye yinye ngehhafu. Bangagoca liphepha liphindze libe ihhafu. Lokubalulekile lapha kugoca likhasi ngetindlela letehlukene kutfola ihhafu lelibukeka lihlukile.  nobe  Ngasosonkhe sikhatsi cela bafundzi bacombele kutsi tingaki tincenye lebatatitfola ubuye ubavumele basombulule liphepha babuke. Kucatsanisa labobunjwa lababili labehlukene nobe emakota abobunjwa lamabili lehlukene kungaholela enkulumiswaneni lejabulisako yabobunjwa nemasayizi. Ungababuta bafundzi: Ngingababita labobunjwa lababili ngeligama letinombolo lelifanako, ihhafu yinye? 	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI
			Cinisekisa kimi kutsi ngingabita labobunjwalababili ngemagama etinombolo, yinye ikota.  Bafundzi kumele basho yinye incenye kantsi loku kungenteka ngekubhala phasi tincetu.sibonelo:  • Kuhlanganisa wente inombolo lephelele Bafundzi abasebentise tincetu tetindilinga nobe bajube tindilinga emaphepheni kut-fola kutsi ihhafu nekota yabobunjwa ingahlanganiswa kute yenta intfo lephelele futsi. • Kufaka umbala nekushikisha tincetu. Letinhlobo temsebenti tigcugcutela: • Kwati kutsi tincetu tincenye letilinganako; • Kubona tincenye tetincetu. nekusho emagama etincetu.. **Kubhala emagama etincetu** Asibangenisi bafundzi ekubhaleni timphawu tetincetu.Bafundzi bafundza kulebula tincenye tetincetu ngekubhala yinye ihhafu nobe yinye ikota.	

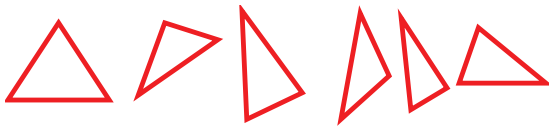
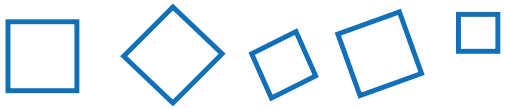
LIBANGA 2 ITHEMU 2 2. EMAPHETHINI, EMAFANGISHINI NE- ALJEBRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUNGAKO BESIKHATSI**
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo.	Ebangeni 1 naseThemini 1, ebangeni 2, bekuphakanyisiwe kutsi bafundzi basebente ngemaphethini lapho tincenye (bobunjwa, imigca nobe tintfo) tiphindvwe ngendlela lefanako. Ethemini 2 yelibanga 2 bafundzi bacala kusebenta ngemaphethini lapho isayizi yabobunjwa nobe linani labobunjwa tintjintja ngendlela lebangakwati kutsi bayicombele. Lamanye emaphethini anetincumbi tabobunjwa nobe tintfo letiphindziwe, lapho isayizi yabunjwa encunjini ngayinye intjintja ngendlela lelindzelekile sibonelo bunjwa uya ngekuba mncane.  Lamanye emaphethini akhiwe asuselwa eluhlotjeni lunye lwabunjwa kodvwa sibonelo ngasinye sabunjwa siyakhula nobe sinciphe ngesayizi. Sib:  Lamanye emaphethini akhiwe asuselwa etincunjini tetintfo tabobunjwa beluhlobo lunye, kodwa inombolo yeluhlobo ngalunye lwabobunjwa luyakhula nobe lunciphe ngendlela leyetayelekile sib.  **Kutsatsela** iphethini kusita bafundzi kutsi babone kuhleleka nendlela iphethini leyakheke ngayo. **Kuchubekisela phambili** iphethini kusita bafundzi kuhlola kutsi bakuvisisile kuhleleka kwephethini. **Kuchaza** iphethini kusita bafundzi kutsi batfutfukise emakhono abo elulwimi nekukhuluma. Kubuye kukusite kutsi ubone kutsi bafundzi bayihumushe njani iphethini. Kuvamise kuba lula kutsi bafundzi bakhulume ngephethini emva kwekuyenta. Ngalesikhatsi bafundzi balindzeleke kutsi bachaze emaphethini ngaphandle kwekusebentisa imibuto lebacondzisako. Chubeka ugcile ekutfutfukiseni lulwimi loludzingekako nakuchazwa emaphethini.	(Etifundvweni teli-awa li-1 nemaminithi lange -24)

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUNGAKO BESIKHATSI
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilan-dzelanako lokungenani kuya ku -200. **Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho etinombolo.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilan-dzelanako lokungenani kuya ku -150. Kulandzelana kumele kukhombise kubala uye phambili nasemuva nge: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -150. • Nge -10 kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini wa -0 ne -150. • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -150. • Nga 2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we- 0 ne -150. • Nga -3 na-4 kusukela kunobe nguyiphi imalthiphuli ya-3 na -4 emkhatsini we -0 ne -150.	Buka emanotsi eThemu 1, kepha uchubekisele phambili kuhleleka kwetinombolo kuye e-150.	3 Tifundvo

LIBANGA 2 ITHEMU2 3 SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI** (Setifundvo 1 li -awa 24 emaminithi)
3.1 **Kubekeka,** **kwetayeta neku-bukeka.**	**Lulwimi loluphatselene nekubekeka** Chaza kubekeka kwentfo yinye nayihambelana nalenye sib. ngetulu kwe-, ngembi kwe-, ngemuva kwe-, sencele, sekudla, etulu, phasi, edvute kwe-. **Kubekeka nekubukeka** Matanisa kubukeka lokungafani kwentfo yinye lesetjentiswa malanga onkhe. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela kuhambahamba eklasini.	**Lulwimi loluphatselene nekubekeka** Chaza kubekeka kwentfo yinye nayihambelana nalenye sib. ngetulu kwe-, ngembi kwe-, ngemuva kwe-, sencele, sekudla, etulu, phasi, edvute kwe-. **Kubekeka netinkhombandlela** • Landzela tinkhombandlela kuhambahamba eklasini.	**Tiphakamiso lokugcilwe kuto ngeThemu 2: Lulwimi loluphatselene nekubekeka, kulandzela inkhombandlela** Lokugcilwa kuko eThemini ye -2 kungaba kubekeka, nekutetayeta. Ethemini ye -3 bafundzi bangasebenta ngekubukeka. Hlola lokwatiwa bafundzi nalabakukhum-bulako mayelana nekubekeka nekwetayeta. **Yini leyehlukile eBangeni 1?** Ebangeni 2 bafundzi bahlanganisa umsebenti lebawufundze eBangeni 1 ngekubekeka, kwetayeta nekubukeka. **Lulwimi loluphatselene nekubekeka** Lulwimi lwekubekeka kumele lungeniswe ngemisebenti leyentiwako lefaka ekhatsi kutsi bafundzi bente iminyakato yekutivocavoca lefaka ekhatsi tingoma nemilolotelo leneminyakato nemidlalo yemagama laneminyakato. Loku kun-genteka ngesikhatsi sekufundzisa liklasi lonkhe nobe ngesikhatsi sekufundzisa licembu lekugcilwe kulo. Kuphakanyisiwe kwekutsi kufundziswe tifundvo letimbili ngekubekeka ngesikhatsi Sethemu ye -1, kepha uchubeke kungenisa nekubeta-yeta emagama laphatselene nekubekeka ngetincenye letincane teliklasi lonkhe, telicembu lekugcilwe kulo kanye nesikhatsi sekutisebentela. Lulwimi lwekubekeka lungabuye lwetayetwe bafundzi ngesikhatsi seLulwimi kanye nangesikhatsi seti-fundvo Temakhono Ekuphila Lulwimi lwekubekeka lungahlanganiswa ngemisebenti lebhaliwe njengemidvwebo nobe kumatanisa imidvwebo nemagama, kudvweba intfo nobe bunjwa uma utjel-wa, kukubekeka uma uyicatsanisa nalenye intfo, kufaka umbala nobe kumatanisa imidvwebo nemagama. **Kubekeka nenkhombandlela** Kufundzisa bafundzi kulandzela tinkhombandlela kumele kwentiwe ngemisebenti yekwenta lapho bafundzi banyakata ngekweticondziso. Ebangeni 2, bafundzi banganikwa ticondziso ngemlomo nobe letibhaliwe kuhambahamba eklasini, sib “buya phambili kweliklasi” “Mani edvute kwesitulo sakho” “zuba umgcomo wetibi” njll.	2 Tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li -awa 24 emaminithi)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo let-ingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • Emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye uc-atsanise tintfo letingema-dayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • tintfo letigicikako • tintfo letishelelako **Imisebenti lekugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentise tintfo letiphatsekako njengabobunjwa labajutji-we labangemadayimen-shini lama (2-D), emab-huloki ekwakha, tintfo tekuvuselela kabusha, emakhithi ekwakha, na-letinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D)		Akukho lokugcilwa kuko lokuphatselene nemisebenti yemadayimenshini lamat-satfu (3-D) lokuphakanyiselwe iThemu ye -2 nanobe kunjalo imisebenti lephatse-lene nemadayimeshini lamatsatfu (3-D) ingahlanganiswa ngemisebenti lebhal-wako. Bafundzi bangachubeka bakhe tintfo letingemadayimenshini lamatsatfu (3-D) ngetintfo tekuvuselela kabusha nobe ngemakhithi ekwakha ngesikhatsi sekutisebentela.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li -awa 24 emaminithi)
3.3 **Bobunjwa labangema-dayimenshini lamabili (2-D)**	**Tinhlobo tabobunjwa** Bona ubuye unike emagama abobunjwa labangemadayimenshini lamabili (2-D) **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	**Tinhlobo tabobunjwa** Bona ubuye unike emagama abobunjwa labangemadayimenshini lamabili (2-D) **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	**Yini lensha ebangeni 2** • bocalandze Imisebenti leminyenti lephatselene nabobunjwa ebangeni 2 yenteka kusebentisa tintfo letiphatsekako. Yonkhe umsebenti kumele ihlanganiswe ngemisebenti lobhalwako. Bafundzi bacala ngekudlala umdlalo lokhululekile ngabobunjwa labehlukene lokufaka ekhatsi kwakha titfombe ngabobunjwa beJomethri labajutjiwe. Loku kungenteka ngesikhatsi sekutisebentela. Kungabuye kwentiwe ngesikhatsi setifundvo teMakhono Ekuphila. Bafundzi batsatsela titfombe letentiwe ngabobunjwa beJomethri. Letitfombe tingatfolakala emabhukwini ekufundzisa nobe kuthishela. Loku kusita bafundzi kutsi bakwati kutfola. • Tindilinga netikwele letingemasayizi lehlukene; • Tikwele, bocalandze nabocalatsatfu lababekeke ngalokwehlukile; na • bocalatsatfu nabocalandze labeme ngendlela lehhukene. Loku kungenteka ngesikhatsi sekutisebentela. Kungabuye kwentiwe ngesikhatsi setifundvo teMakhono Ekuphila. **Kucatsanisa nekuchaza bobunjwa labangemadayimenshini lamabili (2-D):** **Isayizi** Bafundzi bacatsanisa isayizi yabobunjwa labafanako sibonelo: • hlela tindilinga kusukela kuletincane kuye kuletinkhulu, • faka tonkhe tikwele nobe isayizi lelinganako ndzawonye. Sebentisa lulwimi lwesayizi kucatsanisa bobunjwa labehlukene sibonelo: “Ngidvwebe calantsatfu ekhatsi kwesikwele, ngaloko calantsatfu mncane kunesikwele” **Kuchaza bobunjwa labangemadayimenshini lamabili (2-D**): **Umbala** Bafundzi bakhuluma ngemibala yabobunjwa bese bahlunga bobunjwa ngekwemibala yabo. Kutfola nekunika emagama etintfo nemibala yato kanye nekucatsanisa isayizi yetintfo, kungentiwa nakusetjentwa ngemaphethini.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li -awa 24 emaminithi)
3.3 **Bobunjwa labangema-dayimenshini lamabili (2-D)**			**Kubona nekunika emagama etindilinga, bocalantsatfu netikwele** Bafundzi kumele basebente ngetindilinga netikwele letingemasayizi lehlukene, kanye nabocalantsatfu labakheke ngalokwehlukene. Kubalulekile kutsi bafundzi bangaboni kuphela sibonelo sinye sabunjwa ngamunye. Emasethi lamanyenti abobunjwa labatsengiswako anika sibonelo sinye kuphela sacalantsatfu. Bafundzi kufanele bakwati kubona: - Bocalantsatfu labakheke ngalokwehlukene babuye babekeka ngalokwehlukene. Leti nguletinye tibonelo tabocalantsatfu:  - Tikwele letingemasayizi lahlukene letibekeke ngalokwehlukene. Leti nguletinye tibonelo tetikwele:  - Bocalandze labangemasayizi lahlukene letibekeke ngalokwehlukene. Leti nguletinye tibonelo tetikwele:  - Tindilinga letingemasayizi lahlukene. Leti nguletinye tetindilinga:  Kulusito kutsi bafundzi basebente ngemifanekiso yabobunjwa bemabhokisi lajutjiwe. Loku kwenta bafundzi kutsi babone bocalantsatfu, tikwele nabocalandze lababekwe ngetindlela letehlukene. Bafundzi bahlunga babuye bente tincumbi tabobunjwa ngekwabocalantsatfu, tikwele nobe tindilinga. Imisebenti ihlanganiswa ngemisebenti lebhalwako. Lemisebenti ingafaka ekhatsi kufaka umbala, kumatanisa emagama nabobunjwa njll.	Tifundvo 3

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li -awa 24 emaminithi)
3.4 **Kuhlukanisa emkhatsini kulingane ngalokufanako**	**Kuhlukanisa emkhatsini kulingane ngalokufanako.** Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimenshini lamabili (2-D) nalekungasibo beJomethri.	**Kuhlukanisa emkhatsini kulingane ngalokufanako.** Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimenshini lamabili (2-D) nalekungasibo beJomethri.	Bafundzi kumele babuke umugca lowehlukanisa emkhatsini kulingane ngalokufanako etintfweni letiphatsekako nasetitfombeni. Imisebenti lebhalwako: • **Akukafaneli** “idvwetjwe ehhafini yinye kuphela”; • Kumele ifake tibonelo lapho bafundzi badvweba umugca lowehlukanisa emkhatsini kulingane ngalokufanako. Umugca lowehlukanisa emkhatsini kulingane ngalokufanako, akumelanga ume ubuke etulu ngasosonkhe sikhatsi, sibonelo: esitfombeni senyoka lomugca lohlukanisa emkhatsini kulingane ngakufanane ungavundla; ingabuye • ifake ekhatsi tibonelo letinemigca leminyenti lehlukanisa emkhatsini kulingane ngalokufanako. Uma bafundzi bangenaso siciniseko sekutsi sitfombe nobe bunjwa unemugca lohlukanisa emkhatsini kulingane ngalokufanako, bangahlola ngekugoca liphepha emkhatsini bese bayabona kutsi letincetu letimbili tifana ncamashi, uma letincetu tifana, kusho kutsi lomugca logociwe ungumugca lowehlukanisa emkhatsini kulingane ngalokufanako.	1 Sifundvo

LIBANGA 2 ITHEMU 2 4 SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI** (Setifundvo 1 li awa 24 emaminithi)
4.1 **Sikhatsi**	**Kusho sikhatsi** • Ati emalanga eliviki • Ati tinyanga temnyaka • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide avelonkhe, tigameko temlandvo, tigameko tesikolo ekhalendeni. • Shano sikhatsi nema-awa la -12 ngema-awa, ihhafu yema-awa nekota yema-awa. **Bala budze nekwend-lula kwesikhatsi** Sebentisa emakhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe ngemaviki. Sebentisa emawashi kubala budze besikhatsi. ngema-awa, ngehhafu yema-awa	**Kusho sikhatsi** • Ati emalanga eliviki • Ati tinyanga temnyaka • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide avelonkhe, tigameko temlandvo, tigameko tesikolo ekhalendeni. • Shano sikhatsi sema-awa lalishumi nakubili ngema-awa nangehhafu yema-awa ewashini letintsi **Bala budze nekwendlula kwesikhatsi** Sebentisa emawashi kubala budze besikhatsi. ngema-awa, ngehhafu yema-awa	Ebangeni 2 bafundzi bachubeka nekutetayeta kukhuluma ngebudze be-sikhatsi nekulandzelanisa sikhatsi. Ngesikhatsi sekufundzisa liklasi lonkhe nesikhatsi sekugcila emacenjini, bafundzi bayachubeka ngekukhuluma ngemalanga eliviki, tinyanga temnyaka, nelusuku lwangalelo langa kanye nemalanga lengcile naletako. Bafundzibayetayela kusebentisa ikhalenda ngekubeka njalonjalo loku. • emalanga ekutalwa; • imigidvo yetenkholo; • tigameko temlandvo; • tigameko tesikolo; • nemaholide avelonkhe ekhalendeni. Ngesikhatsi sekutisebentela, bafundzi bayachubeka nelandzelanisa tigameko tasemphilweni yabo babuye balandzelanise titfombe tetigameko ngekuhlele-ka kwato. **Yini leyehlukile kusukela ebangeni 1** Ebangeni 2 kukhulunywa ngesikhatsi ikakhulukati kufundza emawashi. Ethemini 1 bafundzi bagcila ekukhulumeni sikhatsi ngema-awa baseben-tisa liwashi letintsi. Nanobe kunjalo bafundzi kumele basho sikhatsi setintfo letenteka njalonjalo. Sibonelo: sikhatsi lekucalwa ngaso sikolo, sikhatsi selikhefu nesikhatsi sekuya ekhaya nobe sikhatsi sekuntjintja sifundvo baya kulesinye. Khetsa sikhatsi seliwashi lesikhombisa li-awa leligcwele. Kubalulekile kusebentisa liwashi lelikhulu lelikhomjiswe eklasini, kute kutsi bafundzi batowubuka kulo. Bafundzi bangabuye bakhe imifanekiso yema-washi. Ungabacela bakhombise tikhatsi letehlukene lokufaka ekhatsi kubala, Sibonelo: ngikhombe li-awa le -10. Ngikhombe kutsi kutawuba ngusikhatsini uma kundlule ema-awa lama2 emuva kwe -10.	1 Sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li awa 24 emaminithi)
4.2 Budze	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-. **Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo.	EThemini ye-1bekuphakamiswe kutsi bafundzi bagcile ekucombeleni, ekulinganiseni, ekucatsaniseni nasekurekhodeni budze, bubanti nekuphakama ngemayunithi langakahleleki kodwa babuye bacombele, balinganise, bacatsanise barekhode tilinganiso ngemamitha. Totimbili letindlela tekukala budze bangatetayeta ngato ngesikhatsi sekutisebentela, ithemu yonkhe. Wonkhe umsebenti kumele urekhodwe. Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala neBudlelwane, bafundzi basombulula tinkinga letisebentisa ingcikitsi. • Silinganiso sebudze lesingakahleleki. • Kukala budze ngemamitha Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.		

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li awa 24 emaminithi)
4.3 **Sisindvo**	**Kukala lokungakahlele-ki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. emabhuloki, titini. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa uhlele ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa. • Bakala sisindvo sabo basebentisa sikali sasendlini yekugezela.	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. emabhuloki, titini. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa uhlele ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa. • Uma kunesikali sasendlini yekugezela, bafundzi bakala sisindvo sabo. Lokulindzelekile kutsi bafundzi bafundze inombolo lesondzele lapho lutsi lume khona. Bachaza sisindvo sabo ngekutsi cishe/ kusondzele ku-/kunyenti kancane kuna-/alingana ncamashi (emakhilogremu) lebawafundza esikalini	Yini leyehlukile e**Bangeni 2** **Ebangeni 1 bekuphakanyiswe kutsi bafundzi bagcile ekusebenteni ngesikali sekulinganisa** • Kucatsanisa ngco sisindvo setintfo, • Kuhlela nekucatsanisa tisindvo talokutsatfu nobe tintfo letinyenti, ngekubeka ngatimbili tintfo kulinganisa, kute tonkhe tintfo tilandzelaniswe. • Kutfola sisindvo setintfo ngekusebentisa tintfo letingakahleleki tesisindvo. Bafundzi babuye bagcile ekutfutfukiseni lulwimi kukhuluma ngesisindvo. Bafundzi kumele bacale ngekuhlanganisa lebakwatiko ngekusebentisa sikali sekulinganisa nemayunithi langakabekelwa umgomo. Emva kwaloko bangafundziswa ngemakhilogremu. **Silinganiso sesisindvo lesingakahleleki ngekusebentisa sikali sekulinganisa nemayunithi langakahleleki.** Bafundzi bangafundza yonkhe imigomo nemisebenti yekutetayeta kukala basebentisa silinganiso lesingakabekelwa umgomo. Kukala ngemayunithi langakabekelwa umgomo akufanelanga kutsatselwe phasi nobe kutsatfwe njengentfo lengakabaluleki kunekukala ngemayunithi labekelwe umgomo. Kungasetjentiswa sikali sekukala sisindvo. Uma ungenaso sikali, ungasakha ngekutsi utsatse ihenga bese ukhungela lokubili kwaloku lokulandzelako: inkomishi yeyogathi, incenye lengentasi lejutjwe ebhodleleni lelingemalitha lamabili (tintfo tekuphatsa letifanako tikhungelwa ngala nangala kulehenga) Kukala sisindvo ngemayunithi langakabekelwa umgomo kufaka ekhatsi kutsi mangaki emayunithi lakhetsiwe lanesisindvo lesifana nesalentfo lekalwako. Sibonelo, irula inesisindvo lesilingana nemabhuloki la -9. Bafundzi kumele bakale tintfo letehlukene basebentisa tintfo letinyenti njengemayunithi langakabekelwa umgomo. Bafundzi kumele bafundziswe kusho iyunithi ngasosonkhe sikhatsi nabanika sisindvo, sib.libhuku linesisindvo lesifanako netimabuli leti -34 Nangabe bafundzi sebakalile nganobe nguyiphi iyunithi emahlandla lamanyenti, kumele bacombele kutsi kungaki kwaleyo yunithi lokunesisindvo lesilingana nesentfo lekalwako. Kucombela ngembi kwekutsi ukale kubalulekile, kodvwa kungentiwa kuphela nangabe bafundzi bake bakala basebentisa leyo yunithi.	3 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li awa 24 emaminithi)
			Kurekhoda silinganiso Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode lebakukalile ngaso sonkhe sikhatsi. **Kusebenta ngemakhilogremu** Bafundzi bangacala kwetfulelwa emakhilogremu ngekusebenta ngegilosa letsengiswa ngemakhilogremu, lapho lamakhilogremu abhalwe kulamaphakethi. Sibonelo: bafundzi bangacatsanisa sisindvo kulamaphakethi etintfo letehlukene sib. irayisi, shukela, imphuphu, flawa, insipho yekuwasha njll. titsengiswa ngesisindvo lesingu 1 kilogremu. Bangabeka letintfo esikalini kute babone kutsi nanobe isayizi yemaphakethi angafanani kodvwa sisindvo sicishe sifanane. Bafundzi banganiketwa emaphakethi lehlukene etintfo letehlukene kutsi batilandzelanise kusukela kulokusindza kakhulu kuya kulokulula. Bafundzi bangabuye banikweemaphakethi lehlukene etintfo letehlukene kutsi batilandzelanise kusukela kulokusindza kakhulu kuya kulokulula ngendlela lekuhlelwe ngayo emaphakethini sib: 2 kg irayisi, 1 kg shukela, 5 kg imphuphu, 10 kg sitambu. **Kufundza sikali sasendlini yekugezela ngemakhilogremu** Uma kunetikali tasendlini yekugezela, bafundzi bangafundza sisindvo sabo. Kunetinhlobo letimbili tetikali: tetintsi netemadijithi. Sikali semadijithi silula kusifundza ngobe sisindvo sibhalwa ngetinombolo. Uma unesikali semadijithi, ciniseka kutsi sikhombisa sisindvo ngemakhilogremu laphelele. Ungasisetha sikali kutsi sikhombise emakhilogremu lagcwele kuphela. Uma ungakhoni kusetha sikali kutsi sikhombise emakhilogremu laphelele kuphela, fundzisa bafundzi kutsi bangatinaki tincenye temakhilogremu kwanyalo. Etikalini letinyenti tetintsi kukhonjiswa inombolo lapho kungemakhilogremu la -10, kube nemugca lomudze lokhombisa 5kg. Imigca lekhombisa 1kg ivamise kungafakwa tinombolo. Loku kuyafanana nangendlela imigca netinombolo kubhaleke ngayo etukwerula. Vumela bafundzi kutsi babale kute babone kutsi kunetikhala le -10 ngembi kwemaki ye 10kg, sinye sikhala simele 1kg nekutsi lutsi loludze lumele 5kg. Bafundzi bangafundza silinganiso kusikali cobo nakutitfombe tetikali. Kulula kufundza sisindvo kusitfombe sesikali kunekufundza kusikali cobo.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li awa 24 emaminithi)
4.3 **Sisindvo**			**Kurekhoda silinganiso** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode lebakukalile ngaso sonkhe sikhatsi. Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala neBudlelwane, bafundzi bangasombulula tinkinga letisebentisa: • silinganiso sesisindvo lesingakahleleki **Sibonelo:** Idasta inesisindvo setimabuli leti -11. Libhokisi lemakhilayoni linesisindvo setimabuli leti - 8, Kutawuba nesisindvo setimabuli letingaki sekukonkhe? • kukala sisindvo ngemakhilogremu **Sibonelo:** Puleka utsenge emakhilogremu emphuphu la 12, emakhilogremu ashukela la -5 nemakhilogremu erayisi la -2. Kusindza kangakanani lakutsengile sekukonkhe? Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li awa 24 emaminithi)
4.4 Umtsamo/ Bungako	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ubuye ubhale umtsamo ngekukala ngemalitha	• Lamaresiphi lalandzelako, lokufaka ekhatsi kubhaka, kuyingcikitsi lelusito lapho bafundzi bangetetayeta kukala. Khetsa emaresiphi lekanetitsako letiniketwe ngetinkomishi, emathisipunu nobe emayunithi langakabekelwa umgomo. Kulomnyaka kuphakanyiswe kutsi bafundzi bagcile kuloku. • Kutfutfukisa lulwimi kukhuluma ngemehluko webungako, • Kucatsanisa bungako betintfo tekuphatsa letimbili, letifanako • Kucatsanisa bungako betintfo tekuphatsa letimbili letibukeka tingafani, ikakhulukati tintfo tekuphatsa letivulekile naletincama. • Kulinganisa bungako nemtsamo ngemathulusi nemayunithi langakabekelwa umgomo. Ngesikhatsi sekutisebentela bafundzi bangatetayeta kucombela, bakale, bacatsanise, bahlele babuye barekhode bungako nemtsamo ngemathulusi nemayunithi emtsamo langakahleleki. Kupheka nekubhaka kuyingcikitsi lelusito lapho bafundzi bangatetayeta kukala umtsamo. Khetsa emaresiphi lapho tilinganiso tiniketwe ngetinkomishi, emathisipunu, nalamanye emayunithi langakahleleki. **Kukala umtsamo njengengcikitsi yekusombulula tinkinga nekubala** Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala nebudlelwane, bafundzi bangasombulula tinkinga letisebentisa ingcikitsi yekukala umtsamo/ bungako lokungakahleleki. Sibonelo, Gogo usebentisa tinkomishi leti -2 telubisi kwenta iphudingi. Uma ayiphindza kabili leresiphi, utawudzinga lubisi lolungakanani? Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI (Setifundvo 1 li awa 24 emaminithi)
4.4 Umtsamo/ Bungako	• Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi.			

LIBANGA 2 ITHEMU 2 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI** (Setifundvo 1 li awa 24 emaminithi)
5.4 **Gcogca ubuye uhlele idatha**	**Gcogca ubuye uhlele idatha** • Gcogca idatha yeliklasi nobe yesikolo kute uphendvule imibuto lebutwe nguthishela. • Hlela idatha ngemathali.			
5.5 **Veta idatha**	**Veta idatha** • Veta idatha kugrafutitfombe			
5.6 **Hlatiya ubuye uhumushe idatha**	**Hlatiya ubuye uhumushe idatha.** Phendvula imibuto ngedatha lekugrafutitfombe	Hlatiya idatha kuloko lokuvetiwe.	Bafundzi kumele babenelwati lwemjikeleto wedatha lephelele eThemini 1, bangagcila ekuhlatiyeni lokuvetiwe, labaniketwe kona. Kuphakanyisiwe kutsi eThemini 2 bafundzi bahlatiya (phendvula imibuto ngaloku) lokungenani yinye igrafutitfombe Bafundzi baphendvula imibuto lebutwako ngegrafutitfombe sibonelo: • “Nguluphi luhlelo lwamabonakudze lolutsandvwako eklasini lakho?” • “Nguluphi luhlelo lwamabonakudze lolutsandvwako bafundzi labancane eklasini?” • “Ingabe bafundzi labanyenti batsandza …. nobe…..?” • “Bangaki bafundzi labanye labatsandza …. ku ….?”	1 sifundvo

LIBANGA 2 ITHEMU 3 1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKAKO NAKUPHELA UMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	
1.1 **Bala tintfo**	**Kubala tintfo letiphatsekako** Combela ubuye ubale lokungenani tintfo temalanga onkhe le-200 ngekwetsembeka. Lisu lekugcogcela ndzawonye liyakhukhutsatwa.	Bala lokungenani tintfo temalanga onkhe le-180 ngekwetsembeka. Nika kucombela lokungiko yenombolo yetintfo letingahlolwa ngekubalwa.	**Yini leyehlukile e Themini ye 2?** EThemini 2 kuhleleka kwetinombolo kukhulisiwe nebafundzi sebatawubala tintfo bafike e -180. Kubala tintfo kuleThemu kuyachubeka kusite: • emakhono ekubala ladzingekako kute bavisise simelibungako; • kubala ngenhloko; • kusho emagama etinombolo; • kubona tinombolo; • emakhono ekubala ladzingekako ekubaleni. Kugcilwe ekubaleni ngekugcogcela ndzawonye ngekusebentisa tinhlobo tetakhiwo letehlukene nobe tinsita letigcogcwa kucala.Kubalulekile kusebentisa letinye taletinsita uma wenta tibalo tesimelibungako. Sibonelo: Bafundzi bangasebentisa emabhuloki etinombolo letakha li -10 kubala ngemashumi nekukhombisa tincumbi le -10 Imibuto lelusito longayibuta bafundzi nababala tintfo ngulena: • Watingani kutsi uyibalile lenombolo? • Ungayihlola njani imphendvulo yakho kutsi iliciniso?	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
2.2 **Bala uye phambili nasemuva**	Bala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -200. • Nge -10 kusukela kunobe nguwaphi emamalthiphuli emkhatsini we- 0 ne -200. • Nge -5 kusukela kunobe nguwaphi emamalthiphuli e -5 emkhatsini we -0 ne -200. • Nga -2 kusukela kunobe nguwaphi emamalthiphuli a -2 emkhatsini we- 0 ne -200. • Nga -3 kusukela kunobe nguwaphi emamalthiphuli a -3 emkhatsini we- 0 ne -200. • Nga -4 kusukela kunobe nguwaphi emamalthiphuli a -4 emkhatsini we -0 ne -200.	Bala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -180 • Nge -10 kusukela kunobe nguwaphi emamalthiphuli emkhatsini we- 0 ne --180 • Nge 5 kusukela kunobe nguwaphi emamalthiphuli e -5 emkhatsini we -0 ne -180 • Nga -2 kusukela kunobe nguwaphi emamalthiphuli a -2 emkhatsini we- 0 ne -180. • Nga -3 kusukela kunobe nguwaphi emamalthiphuli a -3 emkhatsini we -0 ne -180. • Nga -4 kusukela kunobe nguwaphi emamalthiphuli a -4 emkhatsini wa-0 ne -180	**Yini leyehlukile e Themini 2?** Kuhleleka kwetinombolo eThemini 3 kuyakhula kusukela e -150 kuya e -180. Uma wenta tibalo tenhloko nobe kubala ngemlomo kubalulekile kwenta bafundzi bagcile etinombolweni lebatibalako.sibonelo, buta: Uma sibala ngakubili kusukela e -120 kuya e -140 sitawuyibala yini inombololo le -121? Yinindzaba? Kusabalulekile kutsi umugcatinombolo negridi ye -100 kusetjentiswe kute babone kutsi emagama labawakhulumako achumana njani nesakhiwo sekuhleleka kwetinombolo. Bafundzi bamele babe negridi yetinombolo letisuka e -100 kuya e -200 kute batisebentise nababala. **Buka emanotsi ethemu 2**.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
KUVETA TINOMBOLO LETIPHELELE				
1.3 **Tinombolo nemagama etinombolo**	**Kubona,kutfola neku-fundza tinombolo** • Kubona, kutfola nekufundza tinombolo -0 uye e-200. • Bhala tinombolo -0 uye e-200 • Kubona, kutfola ubuye ufundze tinombolo ngemagama -0 uye -100 • Bhala tinombolo ngemagama -0 uye e-100	**Kwati nekufundza tinombolo** • Kubona, kutfola nekufundza tinombolo -0 uye e -180. • Bhala tinombolo -0 uye e-180 • Kubona, kutfola ubuye ufundze tinombolo ngemagama -0 uye - 75 • Bhala tinombolo ngemagama -0 uye e -75	**Yini leyehlukile eThemini2?** Kuhleleka kwetinombolo kuloku: • Kwati, kufundza, nekubhala tinombolo kuyakhula kuya e -180. • Kwati, kufundza, kubhala uyofika e -75. Bafundzi kumele bakwati kutfola tinombolo babuye bachaze umehluko ngemagama abo. Sibonelo: Bafanele babuke emakhaditinombolo lalandzelako babuye bakhone kusho umehluko lokhona emkhatsini wetinombolo letimbili 16 11 16 13 16 Phindza ubuke emanotsi eThemini ye -2.	
1.4 **Chaza, catsanisa nekuhlela tinombolo**	**Hlela ubuye ucatsanise tinombolo uye -99** • Hlela tinombolo letiphelele kusukela kulencane uye kulenkhulu nekusukela kulenkhulu uye kulencane. • Catsanisa tinombolo letiphelele kuya 99 kusebentisa lokuncane kuna,kukhululu kuna, kunyenti kuna,na kuyalingana. **Sebentisa tinombolo letihlelekile letikhom-bisa kuhleka nobe indzawo.**	**Hlela ubuye ucatsanise tinombolo uye -75** • Hlela tinombolo letiphelele kusukela kulencane uye kulenkhulu nekusukela kulenkhulu uye kulencane. • Catsanisa tinombolo letiphelele usebentise kuncane kuna, kukhulu kuna,kunyenti kuna nakulingana na. **Sebentisa tinombolo letihlelekile letikhom-bisa kuhleka nobe indzawo** Beka tintfo emgceni kusukela ekucaleni uye emashuminilamabili nobe ekucaleni uye ekugcine-ni. sib. Wekucala wesibili, wesitsatfu...wemashumi.	**Yini leyehlukile e Themini 2?** KuleThemu bafundzi bahlela babuye bacatsanise tinombolo kuye e -70. Kuze kube ngumanje bafundzi bayacatsanisa bahlele tinombolo kute batfutfukise lwati lwesayizi yetinombolo nebudlelwane lobukhona emkhatsini wetinombolo. Imibuto lephatselene netinombolo kumele ibukwe kahle kute isite bafundzi ekut-futfukiseni emakhono ekucabanga lasezingeni leliphakeme laphatselene nebun-gako benombolo. Bafundzi kumele babutwe tinhlobo temibuto letitabakhutsata kutsi bacabange. Kumele usite bafundzi kutfutfukisa lulwimi kute bakwati kuchaza loko lebakuca-bangako. Tibonelo temibuto tingafaka loku: • Nginikete inombolo lesemkhatsini we -50 ne -60. Ngabe lenombolo isondzele e -50 ne -60? Chaza imphendvulo yakho usebentise umugcatinombolo. • Bafundzi kumele bafundziswe kucabanga ngekuhleleka kwetinombolo. Bafundzi kumele bachaze kutsi kungani e -15 abemancane kune -50. Tinchazelo tingalekelelwa ngekusebentisa tinsita letiphatsekako Ekupheleni kwethemu kumele,sibonelo; • Kumele bati kutsi ngutiphi tinombolo letincane kune -50,tinyenti kune -50 • Bakhone kukhombisa indzawo yato tonkhe tinombolo nge -30,40 njll,basebentisa igridi yetinombolo.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.4 **Chaza, catsanisa nekuhlela tinombolo**	Beka tintfo emgceni kusukela ekucaleni uye eshumini nobe ekucaleni uye ekug-cineni sib. Wekucala, wesibili,westsatfu.. wemashumi lamabili.		Esikhundleni sekutsi unikete bafundzi imishotinombolo kutsi bayicedzele, ngalesinye sikhatsi bacele batentele yabo imisho, kukhombisa isayizi yetinom-bolo. Sibonelo: Yenta lemisho lelandzelako ibe liciniso: • □ kunyenti nga -1 kuna □ • □ kuncane nga -1 kuna □ • □ kunyenti nge -10 kuna □ • □ kuncane nge-10 kuna □ Phindza ubuke emanotsi eThemu - 2.	
1.5 **Simelibungako**	**Tfola simelibungako lokungenani setinom-bolo letingemadijithi -2 uye e-** **99** • Kwati kutsi inombolo yedijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamabili uy- 99 abe ngemamalthiphuli elishumi nemivo.(SV) • Kubona nekusho bungako bedijithi ngayinye	**Tfola simelibungako lokungenani setinom-bolo letingemadijithi -2 uye -75.** • Kwati kutsi inombolo yedijithi ngayinye imeleni. • Hlahlela tinombolo letingemadijithi lamabili tibe ngemamalthiphuli elishumi nemivo.. (SV)Kubona nekusho bungako bedijithi ngayinye	**Yini leyehlukile e Themini 2?** KuleThemu bafundzi bayachubeka nekutfutfukisa lwati lwabo lwekuvisisa bun-gako uye -75.NgaleThemu bafundzi bayachubeka neku: • Bala bese ugcogcela ndzawonye kukhombisa emashumi nabo kunye ngetindlela letehlukene. • Kubala tinsita letigcogcelwe ndzawonye; • Kusebentisa emakhadi esimelibungako kukhombisa linani letintfo letigcogcelwe ndzawonye naletibaliwe • Tikhombise tinhlobo letihlukene tekuhleleka kwetinombolo, sib. 35 singamkhombisa ngalendlela, 3 wemashumi na 5 lotimele ngakunye, emacembu lamabili emashumi na 15 lotimele ngakunye Lomsebenti longenhla uhlala wentiwa emacenjini lokugcilwe kuwo kantsi nge-sikhatsi sekutentela umsebenti bangabhala loku lokulandzelako: 68 = 6 wemashumi lagcogcelwe ndzawonye kanye na 8 lotimele ngakunye 68 = 60 na 8 Loku kungasekelwa ngekutsi kusetjentiswe emakhadi esimelibungako Bafundzi kumele bakwati kuphendvula imibuto kanye neticondziso letifana naleti: • Nguyiphi inombolo lefana ne -50 ne- 7? • Ngikhombise e - 75 ube usebentisa emakhadi esimelibungako • Ngikhombise e -75 ku- abhakhasi • Ngikhombise e - 75 ube usebentisa emabhuloki langu -10 • Ngikhombise e - 75 ube usebentisa ikhiyubhu lengakahlanganiswa • Ngikhombise e - 75 ube usebentisa buhlalu • Bala tintsi temetjiso leti – 70 ube usebentise emabhandlela la-10. Utfole emabhandlela lamangaki lalishumi? Kutibhalela etincwadzini tekubhala kanye nasetincwadzini tekusebentela kuy-achubeka	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
KUSOMBULULA TINKINGA TETIBALO TEMAGAMA LETIKUSIMOGCONDVO				
1.6 **Emasu ekubala**	Sebentisa lamasu nawusombulula tinkinga tetibalo temagama ubuye uchaze tisombululo tetinkinga: • Imidvwebo nobe tinsita letiphatsekako, sib. tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Umugcatinombolo	Sebentisa lamasu nawusombulula tinkinga tetibalo temagama ubuye uchaze tisombululo tetinkinga • Imidvwebo nobe tinsita letiphatsekako, sib. tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Umugcatinombolo	Kulindzeleke kutsi bafundzi basombulule tinkinga tetibalo temagama ngekusebentisa lamasu lalandzelako: • Imidvwebo nobe tinsita letiphatsekako, sib. tibali • Kwakha nekuhlahlela tinombolo • Kuphindza kabili nekuhahfula tinombolo • Imigcatinombolo Buka emanotsi ethemu ye- 2	
1.7 **Kuhlanganisa nekususa**	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo lokufaka ekhatsi kuhlanganisa nekususa netimphendvulo ufike e- 99.	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo lokufaka ekhatsi kuhlanganisa nekususa netimphendvulo ufike e-- 75.	**Yini leyehlukile e Themini 2?** Bafundzi bayachubeka nekusebenta ngaletinhlobo tetinkinga temagama letichazwe esahlukeni -2 kodvwa kulandzelana kwetinombolo kuyakhula kuyofika e - 75 **Buka emanotsi ethemu y 2**	
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo ngekusebentisa kuphindza kuhlanganisa lokuholela ekuphindzaphindza e - 50	Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo ngekusebentisa kuphindza kuhlanganisa lokuholela ekuphindzaphindza e - 40	**Yini leyehlukile e Themini 2?** Bafundzi bayachubeka nekusebenta ngaletinhlobo tetinkingamagama letichazwe esahlukeni -2 kodvwa kulandzelana kwetinombolo kuyakhula kufike e - 40 **Buka emanotsi ethemu 2**	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.9 **Kugcogcela ndzawonye nekwabelana lokuholela ekuhlukaniseni**	Somubulula ubuye uchaze tisombululo ngekwenta tibalo letifaka ekhatsi kwabelana lokulinganako nekugcogca ufike e-99 netimphendvulo letifaka ekhatsi tinsalela	Somubulula ubuye uchaze tisombululo ngekwenta tibalo letifaka ekhatsi kwabelana lokulinganako nekugcogca ufike e-75 netimphendvulo letifaka ekhatsi tinsalela	Kulethemu bafundzi batawuchubeka basebentise imidvwebo kanye netinsita letibambekako kukhombisa timphendvulo tabo Imishotinombolo kumele isetjentiswe. Bafundzi batawusebentisa kususa lokuphindzaphindzako kukhombisa kutsi imphendvulo bayitfole njani **Buka emanotsi ethemu 2**	
1.10 **Kwabelana lekuholela etincetwini**	Somubulula ubuye uchaze tisombululo tetinkinga letentekako letifaka ekhatsi Kwabelana lekulinganako lokuholela etimphendvulo letifaka ekhatsi tincetu, sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$	Kusombulula nekuchaza tisombululo tetinkinga letentekako letifaka ekhatsi Kwabelana lekulinganako lokuholela etimphendvulo letifaka ekhatsi tincetu, sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$	Kulethemu tincetu tetinkinga temagama tivumela bafundzi ku: • Kwaba nekugcogca tintfo ngalokulinganako • Kunika tincenye tetincetu • Kutfola tincetu tetintfo letiphelele • Kubona kutsi lucetu luyincenye yentfo lephelele Kulethemu lesi bafundzi bakhuluma ngencenye yinye kulokutsatfu kanye nencenye yinye kulokusihlanu. **Tibonelo tetinkinga letingasojululwa kulethemu**: • Bangani labasi – 7 babelana ngetintsi letilinganako. Dvweba sitfombe ukhombise imphendvulo yakho. Catsanisa imphendvulo yakho neyemngani wakho • Bangani labasi – 8 babelana ngetintsi letilinganako. Dvweba sitfombe kukhombisa imphendvulo yakho. Catsanisa imphendvulo yakho neyemngani wakho • -1 ithemu **Buka emanotsi ethemu 2**	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.11 **Imali**	• Kubona nekutfola imali lebuhhehlu yaseNingizimu Afrika 5c, 10c, 20c, 50c, R1, R2, R5, kanye nemali yemaphepha R10, R20, R50 • Kusombulula tinkinga temali lokufaka ekhatsi samba nentjintji uye e R99 nasemasenti lafika e-90c	• Kubona nekutfola imali lebuhhehlu yaseNingizimu Afrika 5c, 10c, 20c, 50c, R1, R2, R5, kanye nemali yemaphepha R10, R20, R50 • Kusombulula tinkinga temali lokufaka ekhatsi samba nentjintji uye e R99 nasemasenti lafika e-90c	**Tibonelo tetinkinga letingasojululwa kuleThemu**: • Bafundzi labangema – 35 kanye nathishela munye bavakashele esiciwini setemvelo.Sikolo sibhadale R1,20 umfundzi ngamunye kungena kulesiciwi setemvelo. Kumele kubhadalwe malini? • Mahewu utsengela umndeni wakhe tinkhwa letimbili letigcwele ngelilanga. Sinkhwa sinye lesigcwele sibita R4, 99. Usebentisa imali lengakanani ngemalanga lasihlanu? **Buka emanotsi eThemu 2**	
KUBALA LOKUKHULULEKILE				
1.12 **Emasu, tindlela nobe indlelanchubo**	Sebentisa lamasu lalandzelako nawenta tibalo: • Imidvwebo nobe tinsita letiphatsekako, sib. tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Umugcatinombolo	Sebentisa lamasu lalandzelako nawenta tibalo: • Imidvwebo nobe tinsita letiphatsekako, sib. tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Umugcatinombolo	Bafundzi balindzelekile kutsi basombulule tibalo temagama ngekusebentisa lamasu: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Umugcatinombolo **Buka emanotsi eThemu 2**	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**	• Hlanganisa uye e -99 • Susa kusukela e -99 • Sebentisa timphawu letifanela (+,-,=,□) • Enta utetayete kuhlanganisa tinombolo uye e-20	• Hlanganisa uye e -75 • Susa kusukela e -75 • Sebentisa timphawu letifanela (+,-,=,□) • Enta utetayete kuhlanganisa tinombolo uye e-20	**Yini leyehlukile e Themini 2?** Bafundzi bayachubeka ngekuhlahlela tinombolo ngekutetsemba ngalesikhatsi basebentisa emasu latsite Tindlela letingasetjentiswa kukhombisa tibalo tekuhlanganisa kanye nekususa: Kuhlahlela tinombolo tibe tincenye letincane kute kubala kube lula **Kusebentisa lwati lwesimelindzawo Kuhlahlela tinombolo tibe ngemashumi nemivo** Kungeta emadijithi lamabili ngekuhlahlela tinombolo letimbili 33 + 36 = □ 33 + 36 = (30 + 3) + (30 + 6) = (30 + 30) + (3 + 6) = 60 + 9 = 69 **Kungeta tinombolo ngekuhlahlela inombolo yinye** 33 + 36 = □ 33 + (30 + 6) 33 + 30 → 63 + 6 = 69 Bafundzi bangabhidlita tinombolo ngendlela lebatayikhona bona. Loku kusho kutsi batakwenta loku ngetindlela letihlukene 33 + 36 = □ 33 + (10 + 10 + 10 + 6) 33 + 10 → 43 + 10 → 53 + 10 → 63 + 6 = 69 **Kususa** • Kuhlahlela tinombolo letimbili 75 – 54 = □ 75 – 54 = (70 + 7) – (50 + 4) = (70 – 50) + (7 -4) = 20 + 3 = 23	

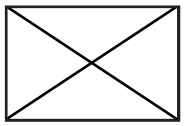
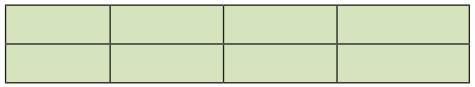
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**			• Kususa ngekuhlahlela inombolo yinye 75 – 54 = □ 75 – (50 + 4) 75 – 50 → 27 - 4 = 23 Bafundzi batawuhlahlela tinombolo ngetindlela letihlukene letitawenta kutsi kube lula kubala: 75 – 54 = □ 75 – (20 + 20 + 10 + 6) 75 – 20 → 57 -20 → 37 - 10 = 27 - 4 = 23 **Kusebentisa indlela yekuhhafula Kuhlahlela tinombolo** 59 + 12 59 + (6 + 6) 59 + 6 → 65 + 6 = 71 Kusebentisa lwati labanalo njengemasu ekwenta lokutsite Lamasu lakhonjiswe ngentasi avumela bafundzi kutsi babale ngalokuhlelekile. Kutetayeta lamasu langentasi kutawukhutsata bafundzi kutsi bakhombise budlelwane lobukhona emkhatsini wetinombolo, kufundzise nebafundzi kusebentisa lwati lebanalo nangabe babala **Kubala nekubala uye emuva** 68 – 59 = □ Kubala ngakunye ucale ema – 59 lisu lelikahle ngobe letinombolo tisondzelene **Kubona lokusedvute kwalokuphindzaphindziwe** 34 + 35 Kuchaza kutsi 34 uphindvwe kabili wahlanganiswa na ku -1 nobe 35 uphindvwe kabili kwasuswa ku -1 34 + 34 + 1 Bafundzi bangabhala basebentise umcibisholo: 34 + (30 + 4) + 1 34 + 30 → 64 + 4 → 68 + 1 = 69	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**			**Shintja letinombolo tibe ngemamalthiphuli elishumi bese uyasusa nobe uhlanganise nakunye** Kubala uye emuva nobe phambili dvutane neli - 10 58 + 19 = ☐ Bafundzi bangatikhetsela kutsi bantjintja ema – 58 nobe li – 19 lelidvutane nema-maltipuli eli - 10 Letibalo tingabhalwa ngalendlela: 58 + 19 = 58 + 20 - 1 58 + 20 → 78 - 1 = 77 Labanye bafundzi bangabhidlita ema – 20 abe tincumbi letimbili teli – 10 kute babale kahle	
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	• Kuphindzaphindza tinombolo leticala ku – 1 uye e– 10 nga 1,2,5,3, na ku - 4 • Sebentisa timphawu letifanele (+, x, =, ☐)	• Kuphindzaphindza tinombolo leticala ku – 1 uyeli – 10 nga 2,5,4 • Sebentisa timphawu letifanele (+, x, =, ☐)	**Yini leyehlukile e Themini 2?** Ngalesikhatsi sethemu sesi tsatfu bafundzi abachubeke nekutetayeta kuvisisa tibalo tekuphindzaphindza babuye basebentise igrid yekuphindzaphindza Bacubeka babhale ngalendlela: Yi -1 incumbi ye -5 ilingana ne -5 nobe -1 umphindzaphindze nga -2 kulingana na -2 nobe 1 x 2 = 4 Ti -2 tincumbi ta -2 tilingana na -4 nobe ku -2 ukuphindzaphindze nga -2 kulin-gana na -4 nobe 2 x 2 =4 Ti -3 tincumbi ta -3 kulingana ne-6 nobe ku -3 ukuphindzaphindze nga -2 kulin-gana ne -6 nobe 3 x3 =6 Ngalethemui bafundzi bacala kuphindzaphindza ngaku – 4. Bayachubeka bateta-yeta kuphindzaphindza ngaku – 2 kanye nekuphindzaphindza nge - 5 Titfombe letinyenti letiphatselene netibalo tekuphindzaphindza kumele tiniketwe bafundzi babuye batibhale etincwadzini tabo tekubhalela. Kuvisisa kutawuhlan-ganiswa eticwadzini tekusebentela. Umugcatinombolo, emaflowudayadramu kanye nemathebula kungasetjentiselwa kwakha kuvisisa kwetimphawu. Bafundzi abaniketwe imishotinombolo bayicedzele, lefana nale: 6 x 2 = ☐ 5 x 7 = ☐ 4 x 6 = ☐	

<table>
<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA</th><th>LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2</th><th>EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA</th><th></th></tr>
<tr><td>1.14
Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni</td><td></td><td></td><td>Bafundzi abasebentise igridi yekuphindzaphindza kute batfole timphendvulo. Loku kutabasita kutsi bakwati kufundza bavisise babuye batfole nemaciniso laphatselene netibalo tekuphindzaphindza.
<table><tr><td>x</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>2</td><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td><td>12</td><td>14</td><td>16</td><td>18</td><td>20</td></tr><tr><td>4</td><td>4</td><td>8</td><td>12</td><td>14</td><td>20</td><td>24</td><td>28</td><td>32</td><td>26</td><td>40</td></tr><tr><td>5</td><td>5</td><td>10</td><td>15</td><td>20</td><td>25</td><td>30</td><td>35</td><td>40</td><td>45</td><td>50</td></tr></table></td><td></td></tr>
<tr><td>1.16
Tibalo tenhloko</td><td>Lwati lwetinombolo: Kuhlelaka - 99
• Hlela lisethi letinombolo lowutiniketiwe.
• Catsanisa tinombolo uye e -99 ubuye usho kutsi nguyipi nalencane nobe lenkhulunga -1, 2,3,4,5 ne-10.
Khumbula ngekushesh-isa:
• Imigomo yekuhlanganisa nekususa uye e-15
• Hlanganisa nobe ususe emamaltuphuli eli – 10 ku – 0 uye e – 100
Emasu ekubala
Sebentisa emasu ekubala kuhlanganisa nekususa ngendlela lefanele:</td><td>Lwati lwetinombolo: Kuhlelaka - 75
• Hlela lisethi letinombolo lowutiniketiwe.
• Catsanisa tinombolo uye e -75 ubuye usho kutsi nguyipi nalencane nobe lenkhulunga -1, 2,3,4,5 ne-10
Khumbula ngekushesh-isa:
• Imigomo yekuhlanganisa nekususa uye e-15
• Hlanganisa nobe ususe emamaltuphuli eli – 10 ku – 0 uye e - 50
Emasu etibalo tenhloko
Sebentisa emasu ekubala kuhlanganisa nekususa ngendlela lefanele:</td><td>Tibonelo temibuto lengabutwa:
Lwati lwetinombolo:
Tinombolomagama kanye netimphawu
Kubhala inombolomagama ubuye ukhetsa umfundzi abhale inombolo
Lokunyenti nobe lokuncane
Kungaki
• Lokuncane ngaku – 1 e - 45
• Lokunyenti ngaku – 1 e - 69
• Lokuncane ngaku – 5 e - 36
• Lokunyenti ngeli – 10 e - 30
Nguluphi luhlavu lwesihlanu kuma – Alfabhethi?
Nguyiphi inyanga yemfica emyakeni?
Kuhlela nekucatsanisa
Nguyiphi inombolo lenkhulu: 21 nobe 171?
Nginikete inombolo lesemkhatsini weli – 154 ne li - 159
Kuhlanganisa nekususa:
• Abakwati kuhlanganisa nekususa tinombolo bafike ema - 20
□ + △ = 20
□ + △ = 16
18 = □ - △
Kuhlanganisa nekususa tonkhe tinombolo tifike e - 15</td><td></td></tr>
</table>

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.16 **Tibalo tenhloko**	• Cala ngenombolo lenkhulu kute ukwati kubalela kuyo nobe kubala uye emuva • Umugcatinombolo • Kuphindza kuhlanganisa nekuhhafula tinombolo • Kwakha nekuhlahlela tinombolo • Kusebentisa budlelwane lobukhona emkhatsini wekuhlanganisa nekususa	• Cala ngenombolo lenkhulu kute ukwati kubalela kuyo nobe kubala uye emuva • Umugcatinombolo • Kuphindza kuhlanganisa nekuhhafula tinombolo • Kwakha nekuhlahlela tinombolo • Kusebentisa budlelwane lobukhona emkhatsini wekuhlanganisa nekususa	Sibonelo 1 + 14 = 15 14 + 1 = 15 2 + 13 = 15 13 + 2 = 15 3 + 12 = 15 3 + 12 = 15 15 – 4 = 11 15 – 11 = 4 15 – 5 = 10 15 – 10 = 5 15 – 6 = 9 15 – 9 = 6 Khumbula ngekusheshisa kuhlanganisa lokuphindzako ufike eli – 15. Loku akufake ekhatsi tibalo tekususa • 1 + 1 = 2 • 2 + 2 = 4 • 3 + 3 = 6 • 4 + 4 = 8 • 5 + 5 = 10 • 6 + 6 = 12 • 7 + 7 + 14 Kombisa inombolo lotayihlanganisa ikunike li -15 (kubhala phasi nobe kusebentisa simelibungako • 8 • 2 • 9 • 11 • 3	

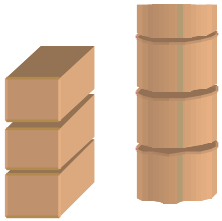
TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.16 **Tibalo tenhloko**			Khombisa inombolo lesele uma..... isuswa eli – 15 (kubhala phasi nobe kusebentisa simelibungako) • 5 • 13 • 0 • 14 • 7 10 + 10 = ☐ 10 + 20 = ☐ 10 + 30 = ☐ 10 + 40 = ☐ 50 – 40 = ☐ 40 – 30 =☐ 30 – 10 = ☐ **Emasu ekubala:** **Buka emanotsi ethemu 2**	

TIHLOKO	LWATI NEMAKHONO LADZINGEKAKO NA-KUPHELA UMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.17 **Tincetu**	• Kusebentisa nekubita tincetu letikugcikitsi letetayelekile lokufaka ekhatsi emahhafu, emakota, kunye kulokutsatfu, kunye kulokusihlanu • Kubona tincetu esimeni semdvwebo • Kubhala tincetu ngalendlela: incenye yinye kulokubili, tincenye timbili kulokutsatfu	• Kusebentisa nekubita tincetu letikugcikitsi letetayelekile lokufaka ekhatsi emahhafu, emakota, kunye kulokutsatfu, kunye kulokusihlanu • Kubona tincetu esimeni semdvwebo • Kubhala tincetu ngalendlela: incenye yinye kulokubili, tincenye timbili kulokutsatfu	**Yini leyehlukile e Themini 2?** Kulethemu bafundzi kumele basho kutsi ligama letincetu lichumana njani nelinani letincenye letilinganako tentfo lephelele lehlukanisiwe. Tinhlobo letihlukene temidvwebo tingasetjentiswa kuletsa kuvisisa lokutsite. Sibonelo:  Kungabutwa letinhlobo letilandzelako temibuto: Tingaki tincenye letilinganako letikhona? Yini ligama lencenye ngayinye?  Tingaki tincenye letilinganako letikhona? Yini ligama lencenye ngayinye?  Tingaki tincenye letilinganako letikhona? Yini ligama lencenye ngayinye? Letinhlobo talemisebenti tiyakhutsata: • Kwati kutsi tincetu titincenye letilinganako; • Kubona tincenye tetincetu • Kusho tincenye tetincetu Kubhala Bafundzi akukameli sibangenise ekubhaleni tinombolo tetincetu. Bafundzi kumele balebule tincenye tetincetu ngalendlela, incenye yinye yalokune, incenye yinye yalokusihlanu.	

LIBANGA 2 ITHEMU 3 2 EMAPHETHINI, EMAFANGISHINI NE A-LJEBHRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESIBEKIWE** **(etifundvweni teli-Awa nemaminithi 24)**
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawo-tonkhe** Tfola, chaza ngemagama ubuye utsatsele ema-phethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo.	Chubeka unikete bafundzi emaphethini lahlelekile ngendlela lefanako ethemini 2. Buka emanotsi eThemu 2. Bafundzi kumele bacale ngekutsatsela, bachubekisele phambili babuye bachaze emaphethini. Ngalesikhatsi kumele bakwati kuchaza emaphethini ngaphandle kwemibuto lebacondzisako. Chubeka ugcile ekutfutfukiseni lulwimi labataluse-bentisa nabachaza emaphethini.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni teli-Awa nemaminithi 24)
2.2 Emaphethini etinombolo	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e- 200. **Yakha emaphethini akho** Yakha emaphethini akho etinombolo	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e **-180** Kulandzelana kumele kukhombise kubala uye embili kanye nekuya emuva kuloku: • Nga-1 kusukela kunobe nguyiphi inombolo emkhatsini we- 0 ne- 200 180 • Nga- 10 kusukela kunobe nguyiphi imulthiphuli ye-10 emkhatsini we-0 ne-180 • Nge-5 kusukela kunobe nguyiphi imalthiphuli ye- 5 emkhatsini we-0 ne-180 • Nga-2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we-0 ne -180 • Nga -3 na -4 kusukela kunobe nguyiphi imalthiphuli ya -3 na -4 emkhatsini we -0 ne -180 Yakha emaphethini akho etinombolo	**Buka emanotsi eThemu 1, chubekisela phambili kuhleleka kwetinombolo kuye e - 180**	3 tifundvo

LIBANGA 2 ITHEMU 3 3. SIKHALA NABUNJWA				
TIHLOKO	**LWATI NEMAKHONO:** **TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO:** **LEKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**Budze besikhatsi** (etifundvweni teli –awa li- 1 nemaminithi lange -24)
3.1 **Kubekeka, kwetayeta nekubukeka**	**Lulwimi loluphatselene nekubekeka** Chaza kubekeka kwentfo yinye nayihambelana nalenye sib. ngetulu kwe-, ngembi kwe-, ngemuva kwe-, sencele, sekudla, etulu, phasi, edvute kwe- **Kubekeka nekubukeka** Matanisa kubukeka lokungafani kwentfo yinye lesetjentiswa malanga onkhe. **Kubekeka netinkhombandlela** Landzela tinkhombandlela kuhambahamba eklasini.	**Kubekeka nekubukeka** Matanisa kubukeka lokungafani kwentfo yinye lesetjentiswa malanga onkhe. **Kubekeka netinkhombandlela** Landzela tinkhombandlela kuhambahamba eklasini.	**Tiphakamiso lokugcilwa kuto eThemini 3: Kubekeka nekubukeka** **Yini leyehlukile eBangeni 1?** Ebangeni 2 bafundzi batetayeta babuye bahlanganise umsebenti lebawufundzile ngekumatanisa kubukeka kwetintfo letisetjentiswa malanga onkhe. **Kubekeka nekubukeka** Bafundzi beSigaba Sabokhewane badzinga kuvisisa kutsi tintfo tibukeka ngalokungafani nangabe tibekeke ngendlela leyehlukile. Bafundzi bangeke banakisise kutsi tintfo letinjengetimoto tibukeka titincane uma tikhashane. Ngalesikhatsi bafundzi basebenta kakhulu ngemabhuku nemifanekiso, kumele bevisise kutsi kungani intfo lephambili ibukeka iyinkhulu kunentfo lesemuva. Ngesikhatsi sekusebenta ngemacembu lekugcilwe kuwo, bafundzi bangalinga kubeka tandla tabo phambi kwabo, kute bavimbele kubukeka kwetintfo letinkhulu letikhashane. EBangeni 2, bafundzi kumele baniketwe imisebenti lapho batawumatanisa kubukeka lokwehlukile (kubukeka kwangetulu, kubukeka kwelicala/ eceleni, kubukeka kwaphambili) kwetintfo letehlukene letisetjentiswa malanga onkhe. Loku kutawusita bafundzi kutsi bahumushe imidvwebo yetintfo teJomethri letentiwa ngetindlela letehlukene.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminithi lange -24)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • Emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • tintfo letigicikako • tintfo letishelelako	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • Emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • tintfo letigicikako • tintfo letishelelako	**Yini lokusha eThemini 3:** Emasilinda angetiwe kuletintfo. **Tintfo letingemadayimenshini lamatsatfu (3-D) eBangeni 2** Bafundzi basebenta: • ngemabhola netintfo letakheke njengemabhola • ngemasilinda netintfo letakheke njengemasilinda • netinhlobo letehlukene temabhokisi naletinye tintfo letakheke njengemaphrizimu langucalandze nobe emakhiyubhu **Timphawu tetintfo letingemadayimenshini lamatsatfu (3-D) lokugcilwa kuto: Letigicikako naletishelelako** Lapha bachubekisa loko lebakufundze ebangeni 1 naseThemini 1, kwanyalo emasilinda nawo ayafundvwa  Bafundzi bangacwaninga batfole kutsi bangakwati kupaka baye etulu nobe bakhe takhiwo letindze kakhulu basebentisa emabhola kuphela nobe emabhokisi kuphela, nobe emasilinda kuphela  **Kubona nekunika emagama emabhola (lokusandilinga), emabhokisi (emaphrizimu) nemasilinda** Bafundzi bayachubeka nekunika emagama, kuhlunga nekugcogcela ndzawonye tintfo, kodvwa kwanyalo emasilinda angetiwe, ayafundvwa. Bafundzi kumele basebente ngetintfo letinyenti letakheke ngalendlela:	2 tifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminithi lange -24)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Imisebenti lekugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentise tintfo letiphatsekako njengabobunjwa labajutjiwe labangemadayimenshini lama (2-D), emabhuloki ekwakha, tintfo tekuvuselela kabusha, emakhithi ekwakha, naletinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D)		• lokusandilinga, sib. emabhola langemasayizi lehlukene, timabuli, emawolintji nalokunye • emaphrizimu, sib. emabhuloki, titini, emabhokisi langemasayizi lehlukene, sib. emabhokisi emetjiso, emabhokisi emasiriyeli, emabhokisi elitiya, emabhokisi emutsi wekucubha ematinyo njll • nemasilinda lamadze nalancama, sib. tincamu temaphayiphi lakheke njengesilinda, emaroli lagocotela liphepha lasendlini lencane, emasilinda lamafisha nalabanti, sib. tikotela tepholishi yeticatfula, tikotela tesinefu. Bafundzi bangakwati kutfola tintfo letakheke njengebhola (lokusandilinga), letakheke njengelibhokisi (emaphrizimu) nobe letakheke njengesilinda ngalesikhatsi baniketwe ligcogco letintfo. Bafundzi bangatfola nobe bakhombise tintfo letakheke njengelibhokisi (emaphrizimu) eklasini, sib. “Lesikotela selikhofi sakheke njengesilinda”. **Ngesikhatsi sekutisebentela bafundzi bangachubeka:** • bakhe ngetintfo letitsite • bangenta emabhola, emasilinda nabobunjwa labangemabhokisi (emaphrizimu) ngelubumba **Umsebenti lobhalwako** Nanobe umsebenti lomnyenti lophatselene netintfo letingemadayimenshini lamatsatfu (3-D) wentiwa ngekukhombisa, umsebenti uhlanganiswa ngemisebenti lebhalwako. **Lulwimi** Chubeka utfutfukise likhono lebafundzi lekukhuluma ngetintfo letingemadayimenshini lamatsatfu (3-D) **Buka emanotsi eThemu 1**	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni teli –awa li- 1 nemaminithi lange -24)
3.3 **Bobunjwa labangema-dayimenshini lamabili** **(2-D)**	**Tinhlobo tabobunjwa** Bona ubuye unike emagama abobunjwa labangemadayimenshini lamabili (2-D) **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	Akukho lokugcila kubobunjwa labangemadayimenshini lamabili lophakanyisiwe eThemini 2 nanobe kunjalo umsebenti lophatselene nabobunjwa labangemadayimenshini lamabili (2-D) kumele uhlanganiswe ngemisebenti lebhalwako nge-sikhatsi sekutisebentela. Bafundzi bangachubeka bente titfombe ngabobunjwa beJomethri labangemadayimenshini lamabili (2-D) ngesikhatsi sekutisebentela nangesikhatsi Sebuciko Bekwenta		

LIBANGA 2 ITHEMU 3 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 3**	**EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA**	**Sikhatsi lesiniketiwe** (etifundvweni letineli - awa li -1 nemaminthi lange-24
4.1 **Sikhatsi**	**Kusho sikhatsi** • Nika ubuye ulandzendzelanise emalanga eliviki • Nika ubuye ulandzelanise tinyanga temnyaka • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12 ngema-awa, ihhafu yema-awa nekota yema-awa. **Bala budze nekwend-lula kwesikhatsi** • Sebentisa emakhalenda kubala nekuchaza budze besikhatsi ngemalanga nemaviki • Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nekota yema-awa.	**Kusho sikhatsi** • Nika ubuye ulandzendzelanise emalanga eliviki • Nika ubuye ulandzelanise tinyanga temnyaka • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12 ngema-awa, ihhafu yema-awa nekota yema-awa ewashini letintsi **Bala budze nekwend-lula kwesikhatsi** • Sebentisa emakhalenda kubala nekuchaza budze besikhatsi ngemalanga nemaviki • Sebentisa emawashi kubala budze besikhatsi ngema-awa, nehhafu yema-awa.	Bafundzi bayachubeka nekutetayeta kukhuluma ngebudze besikhatsi nekulan-dzelanisa sikhatsi. Ngesikhatsi sekufundzisa liklasi lonkhe nesikhatsi sekugcila emacenjini, bafundzi bayachubeka ngekukhuluma ngemalanga eliviki, tinyanga temnyaka, nelusuku lwangalelo langa kanye nemalanga lengcile naletako. Bafun-dzi bayetayeta kusebentisa ikhalenda ngekufaka njalonjalo loku lokulandzelako. • emalanga ekutalwa; • imigidvo yetenkholo; • tigameko temlandvo; • tigameko tesikolo; • nemaholide avelonkhe ekhalendeni. Ngesikhatsi sekutisebentela, bafundzi bayachubeka nelandzelanisa tigameko tasemphilweni yabo babuye balandzelanise titfombe tetigameko ngekuhleleka kwato.. Bafundzi babuye bente imisebenti lephatselene nekukhuluma ngesikhatsi ngema a-wa nehhafu yeli a-wa. **Yini leyehlukile kusukela eThemini 2** Kusho sikhatsi ngema-awa, ihhafu yema-awa, nekota yema-awa. Lekugcilwe kuko eThemini ye- 3 kusho sikhatsi basebentisa liwashi letintsi. Loku kungagcilwa kuko etifundvweni letimbili. Bafundzi kumele betayele kusho sikhatsi iThemu yonkhe. Sibonelo: sikhatsi lekucala ngaso sikolo, sikhatsi selikhefu nesikhatsi sekuya ekhaya nobe sikhatsi sekuntjintja sifundvo baya kulesinye. Khetsa sikhatsi seliwashi lesikhombisa li-awa leligcwele. Kubalulekile kusebentisa liwashi lelikhulu lelikhomjiswe eklasini, kute kutsi bafundzi batowubuka kulo. Bafundzi bangabuye bakhe imifanekiso yemawashi. Ungabacela bakhombise tikhatsi letehlukene lokufaka ekhatsi kubala, Sibonelo: ngikhombe li-awa le -10. Ngikhombe kutsi bekungusikhatsini ngalesikhatsi kusele ikota yeli-awa.	3 tifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 3	EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA	Sikhatsi lesiniketiwe (etifundvweni letineli - awa li -1 nemaminthi lange-24
4.1 Sikhatsi			Bafundzi bangenta tibalo basebentisa liwashi, sib. Bangakhombisa sikhatsi kutsi yinsimbi ye-12 enhloko, ungababuta imibuto lefana nale; Kutawube kungusiphi sikhatsi ngemuva kwema-awa lamatsatfu. Batawuhambisa tintsi emawashini lebatentele wona bakhombise sikhatsi nobe babuke liwashi leliseklasini nobe sitfombe seliwashi kubala timphendvulo tabo. Bafundzi akukalindzeleki kutsi babale budze besikhatsi ngema- awa nobe ihhafu yeli -awa ngaphandle kwekutsi babe neliwashi embikwabo. • Sebentisa emakhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe ngemaviki Bafundzi bagcila ekufundzeni emakhalenda. Bafundza kutfola nekunika ema-langa lakhetsiwe. Bafundzi babala budze besikhatsi ngemalanga nobe emaviki babuka ikhalenda. **Bafundzi abakalindzeleki kutsi bagucule emaviki nemalanga** **Bafundzi abakalindzeleki kutsi bente tibalo letifaka ekhatsi kubala sikhatsi emkhatsini wetinsuku nangabe bangenayo ikhalenda**	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 3	EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA	Sikhatsi lesiniketiwe (etifundvweni letineli - awa li -1 nemaminthi lange-24
4.2 Budze	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-. **Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi lebekelwe umgomo yebudze.	EThemini ye -1 bekuphakanyiswe kutsi bafundzi bagcile ekucombeleni, ekukaleni, ekucatsaniseni nasekurekhodeni budze, bubanti nekuphakama ngemayunithi langakahleleki babuye bacombele bakale, bacatsanise babuye barekhode silinganiso ngemamitha Totimbili letinhlobo tekukala budze bafundzi bangatetayeta ngato ngesikhatsi sekutisebentela ithemu yonkhe. Umsebenti wonkhe kumele urekhodwe Totimbili letindlela tekukala budze bangatetayeta ngato ngesikhatsi sekutisebentela, ithemu yonkhe. Wonkhe umsebenti kumele urekhodwe. **Kukala budze njengesimongcondvo sekusombulula tinkinga nekubala** Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala neBudlelwane, bafundzi basombulula tinkinga letisebentisa ingcikitsi. • Silinganiso sebudze lesingakahleleki, sib. Kuya ehhovisi kutinyatselo leti – 27. Kuya egedeni lesikolo kutinyatselo letingema – 36. Kudze kangakanani kuya egedeni? • Kukala budze ngemamitha Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 3	EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA	Sikhatsi lesiniketiwe (etifundvweni letineli - awa li -1 nemaminthi lange-24
4.3 Sisindvo	**Kukala lokungakahlele-ki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. emabhuloki, titini. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa, hlela ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa. • Bakala sisindvo sabo. Basebentisa sikali sasendlini yekugezela.	Bafundzi bangachubeka batetayete kucombela, bakale, bacatsanise babuye barekhode sisindvo basebentisa silinganiso lesingakahleleki ngesikhatsi sekutisebentela ngamunye. **Kukala sisindvo njengesimongcondvo sekusombulula tinkinga nekubala** Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala neBudlelwane, bafundzi bangasombulula tinkinga letisebentisa: • silinganiso sesisindvo lesingakahleleki ne • kukala sisindvo ngemakhilogremu Caphela kuhleleka kwetinombolo ngethemu nekuhleleka kwetinhlobo tetinkinga tetibalo letifanele ithemu.		

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 3	EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA	Sikhatsi lesiniketiwe (etifundvweni letineli - awa li -1 nemaminthi lange-24
4.4 **Umtsamo / bungako**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine.	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine.	**Yini leyehlukile kusukela eBangeni 1?** Ebangeni 1 bekuphakanyiswe kutsi bafundzi bagcile • ekutfutfukiseni lulwimi kute kucociswane ngemehluko webungako • ekucatsaniseni bungako etintfweni tekuphatsa letimbili letifanako • ekucatsaniseni bungako etintfweni tekuphatsa letimbili letibukeka tehlukile ikakhulukati letivulekile nalencama. kukala lokungakahleleki usebentisa emayunithi langakabekelwa umgomo. Ebangeni le -2 bafundzi bayachubeka bagcila ekwenteni silinganiso lesingakahleleki basebentisa emayunithi ebungako langakabekelwa umgomo. Bafundzi baba nemcondvo lotfutfukako wekutsi ilitha ingakanani. **Uyini umtsamo? Buyini bungako?** Umtsamo samba lesingamumatfwa yintfo (nobe bungako besikhala lesingekhatsi kwentfo) Bungako busilinganiso sesikhala lesingatsatfwa yintfo letsite. Libhodlela lingaba nemtsamo welitha kodvwa ngesikhatsi lesitsite kungenteka lingagcwaliswa nswi, lingamumatsa umtsamo wenkomishi yinye yemanti. **Silinganiso semtsamo lesingakahleleki usebentisa emayunithi langakabekelwa umgomo.** Bafundzi bangafundza yonkhe imitsetfo nalokwentiwako nakukalwa ngekusebentisa emayunithi langakabekelwa umgomo. Kukala ngekusebentisa emayunithi langakabekelwa umgomo kufanele kungatsatselwa phasi kunekukala usebentisa emayunithi labekelwe umgomo. Bafundzi kumele batfole litfuba lekukala bungako/umtsamo ngekusebentisa tintfo letehlukene njengemayunithi langakahleleki sibonelo tinkomishi (kodvwa hhayi tinkomishi tekukala) tipunu (kodvwa hhayi tipunu tekukala) timbonyo temabhodlela njengetimbonyo temabhodlela elubisi emalitha la-2, tikotela letincane, emabhodlela lamancane, njll. Kukala bungako/umtsamo ngemayunithi langakabekelwa umgomo kufaka ekhatsi kubala kutsi uyigcwalisa kangaki bese utsela kuleyunithi yebungako lekhetsiwe uze ufike kulesilinganiso lesidzingekako semtsamo/ bungako.	3 tifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 3	EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA	Sikhatsi lesiniketiwe (etifundvweni letineli - awa li -1 nemaminthi lange-24
4.4 Umtsamo / bungako	**Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ngekukala ngemalitha. • Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi.	**Kungenisa kukala lokuhlelekile** Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ubuye ubhale umtsamo ngekukala ngemalitha usebentisa: • Emabhodlela lanemtsamo loyilitha • Lijeke lekukala lelikhombisa imigca yekukala ngemalitha • Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi.	Bafundzi kumele bafundziswe ngaso sonkhe sikhatsi kutsi babite iyunithi sib. Kunemathisipunu lange-48 emanti ebhodleleni nobe kunemanti langaphasi kancane kwenkomishi ebhodleleni. Bafundzi bangaze bakale nganobe nguyiphi iyunithi kube ngemahlandla lamanyenti, kufanele bacombele umtsamo/bungako ngekusebentisa leyo yunithi. Kucombela ngaphambi kwekukala kubalulekile, kodvwa kungentiwa kuphela nangabe bafundzi bake bakala ngaleyo yunithi. Bafundzi badzinga kufundziswa kutsi kute bacatsanise bungako nobe umtsamo, kufanele kusetjentiswe iyunithi lefanako. Sibonelo, nangabe ingilazi imumatsa emathisipunu la -20 emanti kantsi inkomishi imumatsa tipunu le-10 emanti, angeke usho kutsi ingilazi imumatsa emanti lamanyenti. Bafundzi badzinga kutsi bakale ngemayunithi lehlukene lalangakahleleki kute • bacale kuvisisa kutsi uma iyunithi iyincane, itawusetjentiswa kanyenti, sib. bungako ebhodleleni bungaba ngemathisipunu lange-20 kodvwa inkomishi ibe yinye; • bacala kusebentisa emayunithi lafanele loko lebakukalako, sib kukala emalitha la -2 elibhodlela ngemathisipunu kukucitsa sikhatsi. **Kungenisa kukala lokuhlelekile** • Kwetayela kusebenta ngemalitha Bafundzi batjelwa kutsi emalitha ngemayunithi latayelekile ekukala umtsamo nebungako. Kumele balati ligama nesifinyeto salo, ngobe etintfweni tekuphatsa lokutsengiswako letinyenti nasemajekeni ekukala, kusetjentiswa indlela lefinyetiwe. Lwati lwebafundzi luyatfutfuka ekwatini kutsi ilitha inganani, ngekugcwalisa nekutsela: • tintfo tekuphatsa letiyilitha letibukeka tehlukile, sib. emabhodlela esinatfo lesibandzako, emabhodlela elubisi, emabhokisi elubisi, emabhokisi ejuzi • emajeke ekukala lanemigca lekhombisa ilitha. Bafundzi bakala ngemalitha basebentisa nobe nguyiphi intfo yekuphatsa kuleti lekukhulunywe ngato ngenhla. Bayacombela bese bakala umtsamo wetintfo tekuphatsa letehlukene letifana netikotela teyogathi, tintfo tekuphatsa i-ayisikhilimu, emajeke lamakhulu, tikotela tependi letingenalutfo, emabhodlela lamakhulu, emabhakede njll. Kumele kukhetfwe tintfo letinemtsamo lowehlukene. Bafundzi bachaza umtsamo ngalendlela: lokuncane kunelitha, emalitha la -2, emkhatsini welitha nemalitha la -2, emalitha la -5 njll	

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4.4 Umtsamo / bungako			Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha, sib. Lubisi lolungemalitha la -2, sinatfo lesibandzako lesiyilitha, ipendi lengemalitha la -5 **Kurekhoda tilinganiso** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode tonkhe tilingaso ngato tonkhe tikhatsi, lokufaka ekhatsi tilinganiso letingakahleleki naletihlelekile. **Kukala bungako/ umtsamo njengesimongcondvo sekusombulula tinkinga netibalo** Ngalesikhatsi lesabelwe seTinombolo, timphawu tekubala, nebudlelwane, bafundzi bangasombulula tinkinga letisebentisa simongcondvo se • silinganiso lesingakahleleki semtsamo/ bungako sib.Gogo usebentisa tinkomishi le-2 telubisi kwenta iphudingi. Uma aphindza iresiphi, utawudzinga lubisi lolunganani? • emalitha Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga tetinombolo	

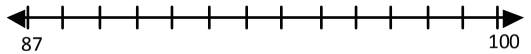
LIBANGA 2 ITHEMU 3 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO:** **TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO** **LOKUGCILWE KUKO NGALEITHEMU 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESIBEKIWE** (etifundvweni letineli - awa li -1 nemaminthi lange-24
5.4 **Gcogca ubuye uhlele idatha**	**Gcogca ubuye uhlele idatha** • Gcogca idatha lemayelana neliklasi nobe sikolo kute uphendvule imibuto lebutwe nguthishela. • Hlela idatha ngemathali	Gcogca **uhlele idatha** • Gcogca idatha lemayelana neliklasi nobe sikolo kute uphendvule imibuto lebutwe nguthishela.	**Hlela idatha** Kuphakanyisiwe kutsi bafundzi basebente ngemjikeleto lophelele wedatha eThemini 1. Kuphakanyisiwe kutsi eThemini 3 bafundzi kumele batentele emagrafutitfombe bawasusela kudatha leniketwe ngetitfombe nobe emathebula. **Veta idatha** Njengoba bafundzi batawube badvweba tonkhe titfombe letitawakha igrafutitfombe, kubalulekile kukhetsa tihloko lesinetigaba letitawenta kutsi kube lula kubafundzi kudvweba, sib. Tinhlobo lebatitsandzako tesinatfo lesibandzako, njengoba kulula kudvweba sikotela lesilula sesinatfo lesibandzako, Kulula kudvweba titselo lebatitsandzako. Kudvweba titfombe bakhombise imidlalo lebayitsandzako, tinhlelo lebatitsandzako tamabonakudze kungaba matima kubafundzi beLibanga 2. Kubalula kubafundzi kudvweba emagrafu nangabe baniketwe emaphepha lanemabhuloki. Khumbuta bafundzi ngetimphawu letibalulekile tegrafutitfombe. (buka Ithemu 1) **Hlatiya ubuye uhumushe idatha** Bafundzi kumele baphendvule imibuto lobabuta yona lephatselene negrafutitfombe Buka Ithemu 1 kute utfole tinhlobo temibuto lefanele.	3 Tifundvo
5.5 **Veta idatha**	**Veta idatha** • Veta idatha kugrafutitfombe	**Veta idatha** • Veta idatha kugrafutitfombe.		
5.6 **Hlatiya ubuye uhumushe idatha**	**Hlatiya ubuye uhumushe idatha** • Phendvula imibuto ngedatha lekugrafutitfombe	**Hlatiya ubuye uhumushe idatha** • Phendvula imibuto ngedatha lekugrafutitfombe		

LIBANGA 2 ITHEMU 4 1. TINOMBOLO, TIMPHAWU,NEBUDLELWANE				
TIHLOKO	**LWATI NEMAKHONO:** **TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO** **LOKUGCILWE KUKO NGALEITHEMU 4**	**EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA**	**SIKHATSI LESIBEKIWE** (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.1 **Kubala tintfo**	**Kubala tintfo letiphatsekako** Combela ubale onkhe emalanga lokungenani uye e-200 ngekwetsembeka. Indlelanchubo ngetincumbi ayachuchutelwa.	**Kubala tintfo letiphatsekako** Combela ubale onkhe emalanga lokungenani uye e-200 ngekwetsembeka. Indlelanchubo ngetincumbi ayachuchutelwa.	**Yini leyehlukile eThemini?** Kulethemu bafundzi babala tintfo bafike e -200. Ngasekupheleni kwalethemu bafundzi kufanele babe babone, babamba babuye banyakatisa tintfo letinge – 200. Kumele babe nelwati lokutsi tintfo letinge – 200 tingakanani. Chubeka nekugcogcela ndzawonye tintfo Ngasekupheleni kwalethemu kumele bakwati kuphendvula letinhlobo letilandzeleko temibuto neticondziso: • Bala letibali ngetincumbi talokusihlanu, talokulishumi. Phindza utihlele ubuye ubale futsi. Ngabe usanenombolo lefanako yetibali? • Nati tibali letinge – 200. Tibale ngekutsi wente tincumbi talokulishumi. Kubala tonkhe tibali letinge – 200, ngabe ukhetsa kutibala ngetincumbi te – 20 nobe nge – 25? Kungani? • Khetsa kutsi nguyiphi indlela lekahle yekubala emapeniseli lagcogciwe • Nati tibali letinge – 80. Nangabe sibala ngalokubili nobe ngemashumi, ngabe linani letibali litawusolo lifana? • Bala tibali letinge – 46 ngekutigcogca tibe tincumbi talo -2. Ngabe kuyasheshisa kubala ngalokubili kunekubala ngakunye? • Tingaki tincumbi talokulishumi lotibalile kutibali leti – 120?	

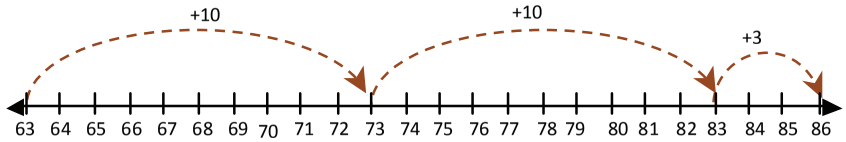
TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.2 **Kubala uye phambili nas-emuva**	**Kubala uye phambili nasemuva kuloku:** • Nga-1 kusukela kunobe nguyiphi inombolo emkhatsini we-0 ne- 200 • Nge-10 kusukela kunobe nguyiphi imaliltiphuli emkhatsini we- 0 ne-200 • Nge-5 kusukela kunobe nguyiphi imaliltiphuli ye-5 emkhatsini we- 0 ne-200 • Nga-2 kusukela kunobe nguyiphi imaliltiphuli yaku-2 emkhatsini we- 0 ne-200 • Nga-3 kusukela kunobe nguyiphi imaliltiphuli yaku-3 emkhatsini we- 0 ne-200 • Nga-4 kusukela kunobe nguyiphi imaliltiphuli yaku- 4 emkhatsini we- 0 ne-200	**Kubala uye phambili nasemuva kuloku:** • Nga-1 kusukela kunobe nguyiphi inombolo emkhatsini we-0 ne- 200 • Nge-10 kusukela kunobe nguyiphi imaliltiphuli emkhatsini we- 0 ne-200 • Nge-5 kusukela kunobe nguyiphi imaliltiphuli ye-5 emkhatsini we- 0 ne-200 • Nga-2 kusukela kunobe nguyiphi imaliltiphuli yaku-2 emkhatsini we- 0 ne-200 • Nga-3 kusukela kunobe nguyiphi imaliltiphuli yaku-3 emkhatsini we- 0 ne-200 • Nga-4 kusukela kunobe nguyiphi imaliltiphuli yaku- 4 emkhatsini we- 0 ne-200	**Yini leyehlukile eThemini?** Kulethemu bafundzi babala baye phambili nasemuva bafike ema – 200. Nas-ekuya ngasekupheleni kwethemu bafundzi kumele bahlanganise sifundvo sabo sekubala ngekutsi bachumanise kubala bashiye tinombolo nelithebula lekuphin-dzaphindza. Bafundzi kumele bachaze loko lebakubonako kulelithebula lekuphin-dzaphindza babuye bakhone kukubona loku ngalesikhatsi benta tibalo tekubala bashiye tinombolo. Kumele basebentise lelikhono kucombela kutsi nguyiphi inombolo letawubakhona nakubalwa, sib. Nangabe sibala ngakubili, ngabe sitayisebentisa inombolo lengema -20? Ngabe inombolo lengema – 20 ikhona kulelithebula lekuphindzaphindza? Ngasekupheleni kwalethemu kumele bakwati kuphendvula imibuto lefana nale: • Kubala ngemashumi kusukela e –170 kuya ema - 200 • Kubala uye emuva ngemashumi kusukela e –180 kuya e - 140 • Kubala ngesihlanu kusukela e -115 kuya e -45 • Kubala uye emuva ngesihlanu kusukela e –135 kuya e -110 • Kubala ngakutsatfu kusukela kuma – 66 kuya kuma - 81 • Kubala uye emuva ngakutsatfu kusukela e -190 kuya e- 169 • Kubala ngakune kusukela e -120 kuya e - 140 • Kubala uye emuva ngakune kusukela e – 180 kuya e - 160 Bafundzi bangasebentisa emagridi etinombolo, umugcatinombolo, ibakhusi kanye nebuhlalu bekubala kubasita ekubaleni	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.3 **Tinombolo nemagama etinombolo**	**Kubona,kutfola neku-fundza tinombolo** • Kubona, kutfola nekufundza tinombolo -0 uye e-200. • Bhala tinombolo -0 uye e-200 • Kubona, kutfola ubuye ufundze tinombolo ngemagama -0 uye -100 • Bhala tinombolo ngemagama -0 uye e-100		**Yini leyehlukile eThemini 3?** Kulethemu bafundzi nyalo bayabona, bafundze babuye babhale tinombolo tifike ema – 200. Lwati lwetinombolo luyagcizelelwa ngalesikhatsi kubalwa tintfo nangalesikhatsi babala baya phambili nasemuva. Ngasekupheleni kwalethemu bafundzi kumele bakwati kuphendvula letinhlobo temibuto letilandzelako nobe ticondziso: Bhala tinombolo: Emashumi lamabili nakutsatfu Emashumi lasihlanu nesikhombisa Emashumi layimfica nakubili Likhulu nemfica Likhulu nelishumi nakubili Likhulu nemashumi lamabili nesikhombisa Matanisa tinombolo nemagama etinombolo 66 — Emashumi layimfica nakunye 8 — Emashumi lasihlanu nakutsatfu 172 — Emashumi lamane 109 — Emashumi lamatsatfu nesiphohlongo 91 — Likhulu nemashumi lasikhombisa nakubili 40 — Emashumi lasitfupha nesitfupha 53 — Emashumi layimfica nakunye 38 — Likhulu nemfica 	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.3 **Tinombolo nemagama etinombolo**			Fundza letinombolo ekhadini ngalinye: **198** **67**	
1.4 **Kuchaza, kucatsanisa nekuhlela tinombolo**	**Hlela ubuye ucatsanise tinombolo uye -99** • Hlela tinombolo letiphelele kusukela kulencane uye kulenkhulu nekusukela kulenkhulu uye kulencane. • Catsanisa tinombolo letiphelele kuya 99 kusebentisa lokuncane kuna, kukhululu kuna, kunyenti kuna,na kuyalingana. **Kusebentisa tinombolo letimaodinali kukhombisa indzawo kulandzelana kwato** • Kuhlela tinombolo emgceni ticale kuyekucala kuye kuyelishumi nakubili nobe kusukela ekucaleni kuye kuyekugcina, sib.kwekucala, kwesibili,kwesitsatfu, kwelishumi nakubili		**Yini leyehlukile eThemini 3?** Kuhleleka kwetinombolo kukhulile kwafika ema - 99 **Ekupheleni kwethemu bafundzi kumele bakwati:** Kusebentisa, kufundza nekubhala Kwekucala, kwesibili, kwesitsatfu, kwesine, kwesihlanu kwesitfupha Kusebentisa, kufundza nekubhala lulwimi lolulandzelako lwekuhlela nekucatsanisa • Kungaki----- • Lokunyenti njenge, inombolo lefana njenge • Kulingana na, kunyenti kunaloku, kuncane kunaloku, kumbalwa kunaloku, kukhulu kunaloku, • Ngebunyenti babo, ngebuncane babo, lokuncane kakhulu, lokukhulu kakhulu • Kuhlela, kwekucala, kwekugcina, ngembi, ngemuva, edvute, emkhatsini, ehhafini nasemkhatsini Sebentisa loluphawu = kulingana Bafundzi kumele bakwati kuphendvula imibuto lefana nale: Ngubani lome endzaweni yesibili kulomugca? Nguyiphi ipeniseli lemfisha kakhulu? Hlela tinombolo tifike e -100 ubuye utibeke kumugcatinombolo ube usebentisa igridi yesikwele.	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
			Gcwalisa tinombolo letishodako kulegridi yeli -100  Bhala letinombolo endzaweni yato: 88, 90, 92... Gcwalisa inombolo leshodako: 115 | | 117 139 | | 141 187 | | 185 Phendvula lemibuto ngemlomo: Ngutiphi tinombolo letisemkhatsini wema -82 nema -87? Ngutiphi tinombolo letisemkhatsini wema -45 nema - 50? Ngutiphi tinombolo letisemkhatsini wema -69 nema -75? Hlela letinombolo kusukela kulencane kuya kulenkhulu: 127, 132, 165, 111, 189, 173, 156 Bhala letinombolo ngekulandzelana kusukela kulencane kuya kulenkhulu: 89, 62, 56, 72, 45, 39, 17 Khombisa, fundza ubuye ubhale tinombolo tema-odinali	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
SIMELIBUNGAKO				
1.5 Simelubungako	**Tfola simelibungako lokungenani setinom-bolo letingemadijithi -2 uye e- 99** • Kwati kutsi inombolo yedijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamabili uy- 99 abe ngemamalthiphuli elishumi nemivo.(SV) • Kubona nekusho bungako bedijithi ngayinye		**Ngasekupheleni kwalethemu bafundzi kumele bakwati:** • Kuvisisa nekusebentisa lwatimagama loluphatselene nesimelibungako? • Kusebentisa, kufundza nekubhala: • Emayunithi nobe imivo, emashumi, emadijithi, idijithi yinye yenombolo, emadijithi lamabili etinombolo, simelibungako • Hlukanisa tinombolo letingemadijithi lamabili tibe ngemamalthiphuli emashumi kanye nemayunithi Emashumi la - 6 nemivo le -3 _____ Emashumi la -2 nemivo le -5 _____ Emashumi la -12 nemivo le -8 _____ Emashumi la -18 nemivo le- 4 _____ • Sebentisa tinsita: Khombisa emashumi la -4 nemivo le -5 usebentise ibhakhasi Khombisa emashumi la -7 nemivo le -6 usebentise ibhakhasi Shano kutsi idijithi -8 e -28 imeleni nekutsi -2 umeleni? Shano kutsi nguyiphi inombolo lefana nale; - Emashumi la -6 - Emashumi la -9 nemivo le -3 - Emashumi la -5 nemivo le -9 Nguyiphi inombolo lekumele ingene ebhokisini ngalinye? • 34 = □ + 4 • 78 = 70 + □ **Tinsita** Tintfo letingagcogcelwa ndzawonye: • Tintsi tekubala • Tibali letingafakwa entsanjeni • Tintsi temetjiso • Tintsi te- ayisikhilimu • Emakhiyubhu lakhacelanako	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
KUSOMBULULA TINKINGA TETIBALO TEMAGAMA LETIKUSIMOGCONDVO				
1.6 Emasu ekubala	Sebentisa lamasu nawusombulula tinkinga tetibalo temagama ubuye uchaze tisombululo tetinkinga: • Imidvwebo nobe tinsita letiphatsekako, sib. tibali • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Umugcatinombolo		Kulindzeleke kutsi bafundzi basombulule tinkinga tetibalo temagama ngekusebentisa lamasu lalandzelako: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Umugcatinombolo Buka emanotsi ethemini 1 na 2: • Imidvwebo nobe tinsita letiphatsekako • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo **Umugcatinombolo** Kusebentisa umugcatinombolo kute bakwati kubala kutawusita bafundzi kutsi bakwati kurekhoda loko lebakucabangako bakhone nekulandzelela loko lokwentekako. Kubuye kusite bafundzi kutsi babe nemcondvo labangawusebentisa kuchaza kutsi bayisombulule njani inkinga. Bafundzi bebasebentisa umugcatinombolo kusukela ebangeni le -1. Ethemini ye -4 bafundzi kumele bakwati kudvweba umugcatinombolo longenalutfo lapho batawubhala khona inombolo lesekucaleni babone nekutsi batawufinyelela njani kulenye inombolo. Sibonelo lesikhombisa kutsi umugcatinombolo bangawusebentisa njani. Bafundzi labangema - 23 batsatse luhambo loluphatselene nekufundza namuhla. Esikoleni kusele bafundzi labangema – 63. Bebabangaki bafundzi sebabonke?  Kumele sivumele bafundzi basebentise tindlela lebatawukhona kutisebentisa. Nangabe bafundzi basebentisa tindlela letingasikahle kumele batfole lusito. Bafundzi baye basebentise tindlela letihlukene tekusombulula tinkinga thishela langakatilindzeli. Sib. Tibalo tekuhlukanisa tingasombululwa ngekususa lokuphindzako, ngekuhlanganisa nobe kuphindzaphindza. Indlelanchubo lesetjentiswa bafundzi itawutjintja ngekuhamba kwemnyaka, njengoba kuvisisa kwabo nekutayela tinhlobo tetinkinga kuyatfutfuka, nelwati lwetinombolo luyatfutfuka.	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.7 Kuhlanganisa nekususa	Sombulula tinkinga tetibalo temagama kusimongcondvo ubuye uchaze tisombululo lokufaka ekhatsi kuhlanganisa nekususa netimphendvulo ufike e- 99.		**Tibonelo tetinkinga bafundzi lekumele bakwati kutenta ekupheleni kwethemu** Kuhlanganisa nekususa Kunetinhlobo letintsatfu tetinkinga tekuhlanganisa nekususa letisisekelo kantsi futsi inkinga ngayinye ivetwa ngetindlela letihlukene. Letinhlobo nguleti Ntjintja Noluthando bekanemaswidi lange -25. Silo wamnika emaswidi lali -18. Unamangaki emaswidi Noluthando nyalo? Noluthando bekamaswidi lange -32. Wanika Silo emaswidi lange -32. Unamangaki emaswidi noluthando nyalo? *Hlanganisa* Liklasi lelibanga -2 linabocalantsatfu labaluhlata labangema – 37 nalabaluhlata njengesibhakabhaka labali – 19. Banabocalantsatfu labangaki? Banetindilinga letingema – 63, 37 tiluhlata, letinye tiluhlata njengesibhakabhaka. Banetindilinga letiluhlata njengesibhakabhaka letingaki? *Catsanisa* Nosisi unemabhanana la – 13. Themba unemabhanana la – 5. Nosisi unemabhanana lamanyenti kanganani kwendlula Themba? Kuveta inkinga ngayinye ngetindlela letihlukene Tinkinga kumele tivetwe ngetindlela letihlukene. Sib. Kokubili loku kutinkinga letintjintjako, kodvwa leti letingatiwa tisetindzaweni letihlukene kulenkinga Noluthando unemaswidi. Silo umnike emaswidi lamanye lali – 18. Nyalo unemaswidi lange – 43. Noluthando bekanemaswidi lamangaki ekucaleni? Noluthando unema – hhabhula lange – 25. Silo umnikete lamanye ema –hhabhula. Kwanyalo unema –hhabhula langema – 43. Silo umnikete ema – hhabhula lamangaki?	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo ngekusebentisa kuphindza kuhlanganisa lokuholela ekuphindzaph-indza e - 50		Tibonelo tetinkinga umfundzi lekumele akwati kutenta ekupheleni kwethemu **Kuphindza kuhlanaganisa** Emabhayisikili langema – 20 anemasondvo mangaki? **Lizinga** Thami uhamba emabhuloki la – 6 ngelilanga. Uhamba emabhuloki lamangaki ngeliviki? **Igridi** Umnumzane Khumalo uhlanyele emalayini lasi -7 eklabishi. Elayinini ngalinye kunemakhabishi lasi – 8. Kunemaklabishi mangaki sekahlangene onkhe?	
1.9 **Kugcogcela ndzawonye nekwabelana lokuholela ekuh-lukaniseni**	Somubulula ubuye uchaze tisombululo ngekwenta tibalo letifaka ekhatsi kwabelana lokul-inganako nekugcogca ufike e-99 netimphend-vulo letifaka ekhatsi tinsalela		Tibonelo tetinkinga umfundzi lekumele akwati kutenta ekupheleni kwethemu **Kugcogcela ndzawonye** Kugcogcela ndzawonye, Kulahla insalela Stela utsengisa ema –hhabhula la -10 esikhwameni ngasinye. Unema – hhabhula langema -80. Tingaki tikhwama tema –hhabhula tawuba nato? **Kugcogcela ndzawonye lokufaka ekhatsi insalela emphendvulweni** Umlimi unemacandza lange – 47. Mangaki emabhokisi latawadzinga uma afuna kupaka wonkhe emacandza nangabe linye libhokisi litsatsa lasitfupha? **Kucatsanisa** Kucatsanisa, Kulahla insalela Hlukanisa emaswidi langema -54 emkhatsini webangani laba -7 kute bonkhe batfole linani lemaswidi lalinganako	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.10 Kwabelana lokuholela etincetwini	Kusombulula ubuye uchaze tisombululo etintfweni letentekako letifaka ekhatsi kwabelana ngekulingana lokuholela etisombululweni letinetincetu letitimele naletingakatimeli sib. $\frac{1}{4}, \frac{1}{3}, \frac{1}{5}$ njll.		Tinkinga temagama tetincetu kulethemu tiyachubeka tivumele bafundzi kutsi bakwati: • Kwaba nekugcogcela tintfo ndzawonye ngalokulinganako • Kusho tincenye tetincetu • Kutfola tincetu tentfo lephelele • Kubona kutsi lucetu yincenye yentfo lephelele • Kubhala tincetu njengencenye yakunye kulokutsatfu Kulethemu bafundzi basho tincetu letinyenti. Kubalulekile kutsi bafundzi batibone letincetu kunekutsi babone tinombolo tetincetu kuphela **Tibonelo tetinkinga tetibalo temagama lebangatenta:** **Kwabelana lokuholela kutincetu** • Hlukanisa emashokolethi lasi -7 emkhatsini webangani laba -3 kute bonkhe batfole linani linani lelifanako neshokolethi kungasali lutfo. • Emakhekhe lamatsatfu ahlukaniswe ngalokulinganako emkhatsini webangani laba- 4. Utfola mangaki amunye? Ekupheleni kwalethemu bafundzi kumele bati lamagama lawa: Kuhlukanisa tintfo tibe: • Tincenye letimbili letilinganako tibitwa ngekutsi kuhhafula. Incenye yinye ibitwa ngekutsi ihafu • Tincenye letintsatfu letilinganako, incenye yinye ibitwa ngekutsi incenye yesitsatfu • Tincenye letine letilinganako, incenye nyinye ibitwa ngekutsi incenye yesine • Tincenye letisihlanu, incenye yinye ibitwa ngekutsi incenye yesihlanu • Tincenye letisitfupha letilinganako,incenyeyinye ibitwa ngekutsi incenye yesitfupha Tibonelo tetinkinga bafundzi lekumele bakwati kutenta ekupheleni kwethemu **Kwabelana lekuholela kutincetu** Hlukanisa emashokolethi la -11 emkhatsini webangani la -4 kute bonkhe batfole linani lelilinganako lemashokolethi, kungasali lutfo	

<table>
<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO:
TIDZINGO TEKUPHELA KWEMNYAKA</th><th>LWATI NEMAKHONO
LOKUGCILWE KUKO NGALEITHEMU 4</th><th>EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA</th><th>SIKHATSI LESIBEKIWE
(etifundvweni letineli - awa li -1 nemaminthi lange-24</th></tr>
<tr><td>1.10
Kwabelana lokuholela etincetwini</td><td></td><td></td><td>Tincetu talokugcogciwe
Gogo unika Kiki emawolintji la -12. Kiki wenta ijuzi ngencenye yinye yalokutsatfu kweliwolintji. Usebentise emawolintji mangaki?
Letinkinga tetibalo temagama kumele tivetwe ngalesikhatsi bafundzi sebake basombululula tinkinga letine nobe letisihlanu letiphatselene nekwabelana lokuholela kutincetu, nangalesikhatsi sebawati emagama etincenye tetincetu.
Kuhlanganisa tincetu ndzawonye
Umceceshi webhola yetandla unika umdlali ngamunye ihhafu yeliwolintji. Kunebedlali laba -14. Udzinga emawolintji lamangaki?
Letinkinga tetibalo temagama kumele tivetwe ngalesikhatsi bafundzi sebake basombulula tinkinga letine nobe letisihlanu letiphatselene nekwabelana lokuholela kutincetu, nangalesikhatsi sebawati emagama etincenye tetincetu.</td><td></td></tr>
<tr><td>1.11
Imali</td><td>▪ Kubona nekutfola imali lebuhhehlu yaseNingizimu Afrika 5c, 10c, 20c, 50c, R1, R2, R5, kanye nemali yemaphepha R10, R20, R50
▪ Kusombulula tinkinga temali lokufaka ekhatsi samba nentjintji uye e R99
nasemasenti lafika e-90c</td><td></td><td>Tibonelo tetinkinga bafundzi lekumele bakwati kutenta ekupheleni kwethemu
Simo setinkinga lesinebudlelwane lobuhlukene
Heila utsengisa libhanisi linye nga R4. Yenta lithebula lelitamsita kutsi atfole linani lelikhulu lema –oda.
<table>
<tr><td>Linani lemabhanisi</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr>
<tr><td>Intsengo ngemarandi</td><td>4</td><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Sebentisa lelithebula kutfola kutsi emabhanisi lasi 7 nalali 15 atawubita malini
Sedick ugadza bantfwana. Ubita R20 imali yekuhamba, R5 ngelia- wa imali yekugadza umntfwana. Cedzela lelithebula umsite
<table>
<tr><td>Linani lema a-wa</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>10</td></tr>
<tr><td>Intsengo ngemarandi</td><td>25</td><td>30</td><td></td><td></td><td></td><td></td></tr>
</table>
Ungakhohlwa kutsi inkinga yaHeila nenkinga yaSedick ayifani</td><td></td></tr>
</table>

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.12 **Emasu** **(tindlela nobe tindlelanchubo)**	Sebentisa lamasu lalandzelako nawenta tibalo: • Imidvwebo nobe tinsita letiphatsekako • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • umugcatinombolo		Bafundzi kulindzeleke kutsi bakwati kusombulula tinkinga tekubala ngaphandle kwesimongcondvo basebentisa letindlela letilendzeleko: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Imigcatinombolo Buka emanotsi ethemu -1 na 2	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.13 **Kuhlanganisa nekususa**	• Hlanganisa uye e -99 • Susa kusukela e -99 • Sebentisa timphawu letifanela (+, –, =, □) • Enta utetayete kuhlanganisa tinombolo uye e-20		Kulethemu bafundzi bayachubeka ngekuhlahlela tinombolo kute bakwati kubala Tindlela letingenteka kukhombisa kubala ngekuhlanganisa nekususa **Kuhlahlela inombolo ibe tincenye letincane kute kubala kube lula** **Kusebentisa lwati lwesimelibungako kuhlahlela tinombolo tibe ngemashumi nemayunithi** Kuhlanganisa emadijithi lamabili ngekuhlahlela tinombolo totimbili 43 + 36 = □ 43 + 36 = (40 + 3) + (30 + 6) = (40 + 30) + (3 + 6) = 70 + 9 = 79 Kuhlanganisa ngekuhlahlela inombolo yinye 43 + 36 = £ 43 + (30 + 6) 43 + 30 → 73 + 6 = 79 Bafundzi bangahlahlela tinombolo ngendlela letawuba lula kubo. Loko kusho kutsi batakwenta ngetindlela letihlukene. 43 + 36 = □ 43 + (10 + 10 + 10 + 6) 43 + 10 → 53 + 10 → 63 + 10 → 73 + 6 = 79	

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1.13 Kuhlanganisa nekususa			**Kususa** • Kuhlahlela tinombolo totimbili 87 – 56 = □ 87 – 56 = (80 + 7) – (50 + 6) = (80 – 50) + (7 -6) = 30 + 1 = 31 Kususa ngekuhlahlela inombolo yinye 87 – 56 = □ 87 – (50 + 6) 87 – 50 → 37 - 6 = 31 Lindzela kutsi bafundzi batawuhlahlela tinombolo ngetindlela letihlukene kute kube lula kubala: 87 – 56 = □ 87 – (20 + 20 + 10 + 6) 87 – 20 → 67 -20 → 47 - 10 = 37 - 6 = 31 **Kusebentisa kuhhafula kuhlahlela inombolo** 69 + 12 69 + (6 + 6) 69 + 6 → 75 + 6 = 81 **Kubala uye phambili nekubala uye emuva** 78 – 69 = □ Kubala ngakunye kusukela ema 69 yindlela lekahle ngobe tinombolo tisedvute kuletinye **Kutfola kuphindzeka lokusedvute** 34 + 35 kuphindza 34 umhlanganise na1 kuphindza 35 ususe ku 1. 34 + 34 + 1 Bafundzi bangahle barekhode tindlela tabo basebentise imicibisholo 34 + (30 + 4) + 1 34 + 30 → 64 + 4 → 68 + 1 = 69	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.13 **Kuhlanganisa nekususa**			Kutjintja inombolo ibe imaltiphuli yelishumi bese ususa kunye nobe ungete kunye Bala uye emuva nobe phambili ube dvutane neli 10 58 + 19 = □ Lapha bafundzi kumele basho kutsi banematfuba lamabili. Kutjintja 58 nobe 19 abe dvutane nemamaltipuli eli 10. Kukubo kutsi bafuna kukhetsa kuphi Lesibalo singabhalwa ngalendlela: 58 + 19 = 58 + 20 - 1 58 + 20 → 78 - 1 = 77 Labanye bafundzi bangahlukanisa emashumi lamabili abe tincumbi teli 10 leti 2 kute babale kahle **Ekupheleni kwemnyaka bafundzi kumele bakwati**: Kufundza nekuvisisa lulwimi lwekuhlanganisa Kuvisisa kutsi kungeta li -0 kwenta inombolo ingatjintji 75 + 0 = 175 0 + 75 = 75 75 = 75 + 0 75 = 0 + 75 Kuphendvula imibuto lebhaliwe letfulwe ngetindlela letihlukene letifana naleti: • Hlanganisa kanyekanye ema 43 ne 9 • Hlanganisa lishumi kuma 67 • 11 ngimhlanganisa nema 83 • Hlanganisa ema 20 kuma 50 • 80 ulingana na 62 + 8 + □ • Kungaki lokunyenti ngema 30 ku 60 • Tfola imphendvulo yema 56 neli 14 • Hlanganisa emashumi lamabili nemashumi lasikhombisa nesihlanu • Nguyiphi inombolo lenyenti ngelishumi kwengca ema 83?	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.13 Kuhlanganisa nekususa			• Nguyiphi inombolo lekumele uyihlanganise nema 45 kute utfole e 78? • Nguyiphi inombolo lekumele uyihlanganise nema 25 kute utfole e 78? • Kumele ngihlanganise kungaki ku 56 kute ngitfole ema 70? • Emashumi la- 4 uwahlanganise nemashumi la-3 • 12 wemashumi uwahlanganise nabo kunye laba 8 • 45 + 10 = ☐ 45 + 20 = ☐ 45 + 30 = ☐ **Kumele wati kutsi ¨ kumele inombolo lengatiwa** 42 + 44 = ☐ 5 + 7 + ☐ = 80 57 + ☐ = 95 ☐ + 15 = 81 Ngelusito lwetinsita: Hlanganisa tinombolo letintsatfu ndzawonye 26 + ☐ + ☐ = 72 Khetsa tintsatfu tinombolo: 15, 19, 22, 25 Tihlanganise. Utfola siphi samba? **Phendvula imibuto lebhaliwe bese uyachaza kutsi imphendvulo uyitfole njani:** • Hlanganisa 6, 12 na 14. • Nguyiphi inombolo loyitfola uma uhlanganisa 10, 5, ne 19 **Kuvisisa tibalo tekususa ekupheleni kwemnyaka** Ekupheleni kwemnyaka bafundzi kumele bakwati: Kuvisisa nekusebentisa lwatimagama lwekususa: Ngikubeka eceleni, ngiyasusa, kusele kungaki, kuncane ngakungaki, umehluko emkhatsini, kudzingeka kungaki kute kwente loko. Kumele bakwati kubhala neku-fundza luphawu lekususa (-) Kutfutfukisa kuvisisa emagama laphetselene nekususa: • Ngiyasusa • Kutfola umehluko emkhatsini	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.13 **Kuhlanganisa nekususa**			Kuvisisa kutsi kususa li 0 kwenta inombolo ingatjintji: Understand that subtracting zero leaves a number unchanged: 92 – 0 = 92 92 = 92 – 0 Kuphendvula imibuto lebhaliwe leyetfulwe ngetindlela letihlukene letifana naleti: 37 ngisusa 3 Susa ema 40 ema 80 62 ngisusa ema 42 Susa ema 45 ema 90 Tfola umehluko emkhatsini wema 38 nema 57? 17 mncane kangakanani ema 49? Nguyiphi inombolo lekumele uyisuse ema 56 kute utfole 22? Nguyiphi inombolo lekumele uyisuse ema 56 kute utfole 32? Nguyiphi inombolo lekumele uyisuse ema 56 kute utfole 42? Susa etinombolweni letimbili letitakuvumela kutsi nawususile utfole imphendvulo lengu 10 **Kumele wati kutsi ¨ kumele inombolo lengatiwa** 57 – 34 = ☐ 80 – 30 = ☐ 62 - ☐ = 48 98 – 42 = ☐ 87 - ☐ = 75 13 – 6 = 15 - ☐ ☐ - 18 = 24 Kuvisisa kutsi: 25 – 10 wehlukile ku 10 – 25 Kusebentisa budlelwane emkhatsini wekuhlangaisa nekususa	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.13 Kuhlanganisa nekususa			Kusho nekubhala budlelwane emkhatsini wekususa nekuhlanganisa, sib. 73 + 17 =90 usho kutsi 90 – 17 = 73 17 + 73 = 90 usho kutsi 90 – 73 = 17 42 – 18 = 24 usho kutsi 24 + 18 = 42 42 – 24 = 18 usho kutsi 18 + 24 = 42 Ngaphandle kwekusebentisa tinsita phendvula lemibuto: Nangabe wati kutsi 62 + 29 = 91. Kungaki loku: 29 + 62 91 – 29 91 – 62 Nangabe wati kutsi 66 – 50 = 16 Kungaki loku: 66 – 16 50 + 16 16 + 50 Bhala uphendvule lemibuto: 57 – 34 = 23 ☐ + 23 = 57 ☐ - 23 = 34 34 + 23 = ☐ 12 + 46 = 58 12 + ☐ = 58 58 - ☐ = 12 ☐ - 46 = 12 Bhala imishotinombolo lemine usebentisa tinombolo le- 3. Sib.: 20, 30 na 50 20 + 30 = 50 30 + 20 = 50 50 – 30 = 20 50 - 20 = 30	

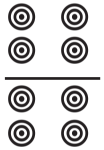
TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	• Phindzaphindza tinombolo leticala ku 1 tiye ku 10 nga 1, 2, 3, 4, 5 ufike ku 50 • Sebentisa timphawu letifanele(+, x, =, ☐)		**Yini leyehlukile eThemini -4?** Kulethemu yesine bafundzi batawube bacala kuphindzaphindza ngakutsatfu. Buka emanotsi ethemu - 1 ngekungenisa lwati lolusha Ngasekupheleni kwethemu bafundzi kumele bakwati: Kusebentisa lulwimi lwekuphindzaphindza etimeni letentekako: Kuphindza kuhlangnisa, emamaltipuli aloku, kuphindzaphindza ngaloku, kabili, kuphindzaphindza katsatfu kanye nekufundza nekubhala timphawu tekuphindzaphindza (x) Kusebentisa lulwimi kwenta tibalo tekuphindzaphindza Kuvisisa kuphindzaphindza njengekuphindza kuhlanganisa 6 ahlanganiswe ka 3 kufana naloku: 6 + 6 + 6 = 18 tincumbi leti 3 tetintfo leti 6 incumbi ngayinye = 18 3 ngimphindze ka 6 = 18 6 x 3 = 18 3 x 5 = 18 Kuvisisa kuphindzaphindza njengentfo lechaza tintfo letigcogcelwe ndzawonye ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ 5 x 3 =15 ◎ ◎ ◎ ◎ ◎ ◎ 3 x 5 = 15 Kuphendvula imibuto lefana nale: Bo 5 labane Phindza -6 6 ngimphindze nge 5	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**			Tibali letintsatfu emgceni. Kunemigca lemi 4. Tingaki tibali setitonkhe 2 umphindze nga 4 8 ngimphindze nga 2 Kubona kusetjentiswa kwesimelibungako ☐ lesimele inombolo lengatiwa 3 tincumbi tabo 2 tilingana na 6 nobe 3 ngimphindze nga 2 kulingana ne 6 nobe 3 x 2 = ☐ 4 tincumbi tabo 3 tilingana na12 nobe 4 ngimphindze nga 3 kulingana ne 12 nobe 4 x 3 = ☐ 6 tincumbi tabo 3 tilingana na18 nobe 6 ngimphindze nga 3 kulingana ne 18 nobe 6 x ☐ = 18 7 + ☐ = 14 2 tincumbi tabo 7 = ☐ 2 + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ = 14 ☐ x 7 = 14 1 x 2 = ☐ 2 x 2 = ☐ 3 x 2 = ☐ 4 x 2 = ☐ 5 x 2 = ☐ 6 x 2 = ☐ 7 x 2 = ☐ 8 x 2 = ☐ 9 x 2 = ☐ 10 x 2 = ☐ 1 x 5 = ☐ 2 x 5 = ☐ 3 x 5 = ☐ 4 x 5 = ☐	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**			5 x 5 = ☐ 6 x 5 = ☐ 7 x 5 = ☐ 8 x 5 = ☐ 9 x 5 = ☐ 10 x 5 = ☐	
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhlela tinombolo tifike ku 99** • Hlela lisethi leliniketiwe lelinetinombolo letikhetsiwe • Catsanisa tinombolo ufike ku 99 bese uyasho kutsi nguyiphi inombolo lencane nobe lenkhulu nga 1,2,3,4,5 na 10 **Khumbula ngekushesh-isa:** • Kukhumbula ne kuhlanganisa nekususa ema-20 • Hlanganisa nobe ususe emamalthiphuli e-10 kusukela e- 0 kuye e-100		**Tibonelo temibuto lengabutwa:** **Lwati lwetinombolo** Kuphakamisa likhadi nobe kubhala ligama lenombolo. Khetsa umfundzi lotawub-hala inombolo lehambelana neligama lenombolo. **Lokunyenti nobe lokuncane** Kungaki loku • 1 lokuncane ku 70 • 1 lokunyenti ku 80 • 3 lokuncane ku 51 • 4 lokuncane ku 67 • 5 lokuncane ku 85 • 10 lokunyenti ku 90 • 10 lokuncane ku 80 Nguluphi luhlavu lwesihlanu kuma alfabhethi? Nguyiphi inyanga yemfica emnyakeni? **Kuhlela nekucatsanisa** Nguyiphi lenyenti: 21 nobe 171? Nginikete inombolo lesemkhatsini we- 154 na 159 **Kuhlanganisa nekususa:** • Kwati ngenhloko tonkhe tinombolo lotatihlanganisa nobe utisuse tifike e- 20 ☐ + △ = 20 ☐ + △ = 16 1= ☐ - △	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.16 **Tibalo tenhloko**	**Tindlela tekubala ngenhloko** Sebentisa tindlela tekubala: • Faka inombolo lenkhulu kucala bese ubala ubuyela emuva • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa		Kuhlanganisa nekususa kwetinombolo letifika e- 20 1 + 11 = 12 11 + 1 = 12 2 + 10 = 12 10 + 2 = 12 3 + 9 = 12 9 + 3 = 12 18 – 4 = 14 18 – 14 = 4 18 – 5 = 13 18 – 13 = 5 18 – 6 = 12 18 – 12 = 6 Khumbula ngekusheshisa kuhlanganisa tinombolo utiphindze ufike e- 20 • 1 + 1 = 2 • 2 + 2 = 4 • 3 + 3 = 6 • 4 + 4 = 8 • 5 + 5 = 10 • 6 + 6 = 12 • 7 + 7 = 14 • 8 + 8 = 16 • 9 + 9 = 18 • 10 + 10 = 20 Khombisa tinombolo lotatihlanganisa tikunike e- 20 (kuyibhala phasi nobe kusebentisa simelibungako) • 8 • 2 • 9 • 15 • 3	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.16 **Tibalo tenhloko**			Khombisa inombolo letawusala nangabe-------asuswe e- 20 (kuyibhala phasi nobe kusebentisa simelibungako • 5 • 18 • 0 • 14 • 7 **Tindlela tekubala** Buka emanotsi ethemini-3	
1.17 **Tincetu**	• Kusebentisa nekusho tincetu letisesimeni lesitayelekile lokufaka ekhatsi bohhafu, emakota, lokutsatfu nalokusihlanu • Kubona tincetu letisesimeni semdvwebo • Bhala tincetu tibe nguhhafu munye,na kunye kulokutsatfu	• Kusebentisa nekusho tincetu letisesimeni lesitayelekile lokufaka ekhatsi bohhafu, emakota, lokutsatfu nalokusihlanu • Kubona tincetu letisesimeni semdvwebo • Bhala tincetu tibe nguhhafu munye,na kubili kulokutsatfu	**Yini leyehlukile eThemini 4?** Ngaleskhatsi sethemu ye-3 bafundzi babuka kutsi ligama lelucetu lichumana njani nelinani letincenye letiphelele letihlukaniswe entfweni lephelele. Tinhlobo temidvwebo nekusho tincetu letikumdvwebo ngalethemu. Basho tincenye tetincetu ngalesikhatsi benta tibalo temagama. Tincenye tetincetu lebatibonako batibhala ngalendlela, incenye yinye yalokubili, incenye yinye yalokutsatfu, incenye yinye yalokune. Kulethemu kumele bagcile entfweni lephelele. Bafundzi kumele bakwati ku: Cedzela lemisho Emahhafu lamabili afana ne _____ legcwele Tincenye letintsatfu talokutsatfu tifana ne ____ legcwele Tincenye letine talokune tifana ne ____ legcwele Kulethemu lesi bafundzi batawutfola tincetu tetintfo leyitincumbi Sibonelo: Kusebentisa tibali letigcogcelwe ndzawonye bafundzi batawutfola: Ihhafu yinye yetibali letingu 8 ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESIBEKIWE (etifundvweni letineli - awa li -1 nemaminthi lange-24
1.17 **Tincetu**			Bafundzi batawuhlukanisa tibali letingu 8 tibe tincumbi letingu 2 tabo 4  Vumela bafundzi basebentise tinsita lephatsekako kwenta loku babuye bahlele tibali batigcogcele ndzawonye Ekupheleni kwethemu bafundzi kumele bakwati kutfola: • Ihhafu yetintfo letigcogcelwe ndzawonye • Incenye yinye yalokune yetintfo letigcogcelwe ndzawonye • Incenye yinye yalokutsatfu yetintfo letigcogcelwe ndzawonye • Incenye yinye yalokusihlanu yetintfo letigcogcelwe ndzawonye	

LIBANGA 2 ITHEMU 4 2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBHRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-4**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	Etifundvweni teli-awa li-1 nemaminithi lange -24)
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. • **Yakha ubuye uchaze emaphethini akho** • Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	Bafundzi batawusebenta ngemaphethini laphatselene nemvelo, ngetintfo letisetjentiswa emphilweni yemalanga onkhe netemasiko nemagugu esive kusukela ebangeni 1 kuye ebangeni 6. Loku kusho kutsi akumelanga ucitse sikhatsi lesinyenti esihlokweni. Kumele futsi ukhetse imisebenti nobe emaphethini lafanele libanga ngalinye. Lenye inhlobo yemaphethini bafundzi labangayibuka umugca lowehlukanisa emkhatsini kulingane ngalokufanako, sib. emacembe lamanyenti nebuso betilwane letinyeti bukhombisa umkhatsi lohlukanisa kulingane ngalokufanako njengobe netilokatane letinyenti uma utibuka ngetulu nemaphethini lasetinyonini letinyenti uma utibuka ngaphasi. Bafundzi bangabuye babuke emaphethini kuloku: • Emafenisi (emawayela, lokusigodvo); • Imisebenti yetitini nemathayilisi aphasi; • Kufulela; • Timphahla netindvwangu; • Emapuleti, tinkomishi nemasoso; • Ibhola; • Tilwane letifana netinkhomo, emavivane, lidvuba, indlulamitsi, ingwe, tinyoni, tilokatane; • Timbali nemacembe; • Emaphepha ekuhlobisa elubondzeni; • Imisebenti leyentiwe ngebuhlalu yemdzabu neyesimanjemanje; • Netindziwo nobe timantji letilukiwe. **Bafundzi bangawachaza njani emaphethini labawabonako etindzaweni lebakuto?** Kunetindlela letehlukene tekuchaza emaphethini lesiwabonako etindzaweni lesikuto. Emaphethini lamanyenti lakhona etindzaweni lesikuto entiwe ngemigca, bobunjwa netintfo. Bobunjwa netintfo akudzingi kutsi utichumanise nabobunjwa beJomethri letingemadayimenshini lamabili (2-D) netintfo letingemadayimenshini lamatsatfu (3-D) lekusetjentwe ngato ebangeni 2. Lebakubukako bafundzi nguloku:	1 sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Etifundvweni teli-awa li-1 nemaminithi lange -24)
2.1 **Emaphethini eJomethri**			• lokuphindzekile, sib. emacashati, imigca, nobe nguyiphi inhlobo yabunjwa nekutsi • bakuphindze njani. **Sibonelo** - Imigca lecondzile, lephambanako (njengendvwangu yetitja), imigca lesekugcineni kwendvwangu nobe imigca levundlile ehembeni nobe imigca leya etulu lesebhulukweni) - Imigca legobekile lefana nalena loyitfola uma usika anyanisi. - Imigca lengakatayeleki lefana netingcivito teminwe nakumadvuba neshwabana lokusemtimbeni wendlovu, sibhejane nemuntfu lomdzala. - Imigca lenjengemagagasi leyenteka nawujuba liklabishi nobe esantini. - Emacashati layisayizi yinye, emacashati lasabalaliswe ngalokulinganako - Bobunjwa labangemasayizi lalinganako, sib. emaphethini etitini letiselubondzeni nobe epheyivini - Bobunjwa labanembala lofanako - Emaphethini lentiwe ngabunjwa munye lobuke etindzaweni letehlukene, sib. bocalantsatfu lababuke etulu nobe phasi emsebentini webuhlalu, nobe titini tekupheva letibuke etindzaweni letehlukene. - Emaphethini lentiwe ngabobunjwa labehlukene njengalabo bendlulamitsi	1 sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Etifundvweni teli-awa li-1 nemaminithi lange -24)
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e -200 **Yakha emaphethini akho** Yakha emaphethini akho etinombolo.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako letifika e -200 Kulandzelana kumele kukhombise kubala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -200 • Nge -10 kusukela kunobe nguyiphi imalthiphuli emkhatsini we -0 ne -200 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -200 • Nga -2 kusukela kunobe nguyiphi imalthiphuli yaku -2 emkhatsini we- 0 ne - 200 • Nga -3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we- 0 ne -200 • Nga -4 kusukela kunobe nguyiphi imalthiphuli ya -4 emkhatsini we -0 ne -200 **Yakha emaphethini akho etinombolo**	Buka emanotsi ethemu 1 kodvwa uchubekisele embili kuhleleka kwetinombolo kufike e- 200	3 tifundvo

LIBANGA 2 ITHEMU 4 3. SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**LIBANGA1 ITHEMU 4** **2. EMAPHETHINI, EMAFANGISHINI NE- ALJEBHRA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-4**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESIBEKIWE** (Etifundvweni teli-awa 1 nemaminithi lali-24)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • Emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • tintfo letigicikako • tintfo letishelelako	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • Emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • isayizi • tintfo letigicikako • tintfo letishelelako	**Lokuphakanyisiwe lokugcilwa kuko eThemini 4** Umsebenti uhlanganiswa ngemisebenti lebhalwako.	1 Sifundvo

TIHLOKO	LIBANGA1 ITHEMU 4 2. EMAPHETHINI, EMAFANGISHINI NE- ALJEBHRA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithi lali-24)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Imisebenti lekugcilwa kuyo** Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) usebentise tintfo letiphatsekako njengabobunjwa labajutjiwe labangemadayimenshini lama (2-D), emabhuloki ekwakha, tintfo tekuvuselela kabusha, emakhithi ekwakha, naletinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D)			
3.3 **Bobunjwa labangema-dayimenshini lamabili (2-D)**	**Tinhlobo tabobunjwa** Bona ubuye unike emagama abobunjwa labangemadayimenshini lamabili (2-D) • tindilinga • bocalantsatfu • tikwele • bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	**Tinhlobo tabobunjwa** Bona ubuye unike emagama abobunjwa labangemadayimenshini lamabili (2-D) • tindilinga • bocalantsatfu • tikwele • bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • isayizi • umbala • simo • emacala lacondzile • emacala layindilinga	Buka emanotsi eThemu 2 Kulethemu ungatetayeta, ubukete ubuye uhlanganise umsebenti lophatselene nabobunjwa labangemadayimenshini lamabili (2-D). Kumele babone, banikete emagama etindilinga, tikwele, bocalandze nabocalantsatfu babuye bakhulume ngekutsi emacele acondzile nobe ayindilinga. Abente imisebenti leyehlukene ku-leyo leseThemini ye -2, babe bagcile etimphawini tabobunjwa nekunika emagama abobunjwa	3 lessons

TIHLOKO	LIBANGA1 ITHEMU 4 2. EMAPHETHINI, EMAFANGISHINI NE- ALJEBHRA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI YE-4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESIBEKIWE (Etifundvweni teli-awa 1 nemaminithi lali-24)
3.4 **Kwehlukanisa emkhatsini kulingane ngalokufanako**	**Kwehlukanisa emkhatsini kulingane ngalokufanako** Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimeshini lamabili (2-D) nabobunjwa labangasibo beJomethri	**Kwehlukanisa emkhatsini kulingane ngalokufanako** Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimeshini lamabili (2-D) nabobunjwa labangasibo beJomethri	Buka emanotsi eThemu 2.	1 sifundvo

LIBANGA 2 ITHEMU 4 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO** **TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO** **LOKUGCILWE KUWO NGALEITHEMU 4**	**EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA**	**SIKHATSI LESINIKETIWE** (etifundvweni teli a- wa linye nemaminithi langu 24)
4.1 **Sikhatsi**	**Kusho sikhatsi** • Nika ubuye ulandzelanise emalanga eliviki • Nika ubuye ulandzelanise tinyanga temnyaka • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko letingumlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12 nakubili ngema-awa ihhafu yema-awa nekota yema-awa **Bala budze nekwendula kwesikhatsi** • Sebentisa ikhalenda kubala budze besikhatsi ngemalanga nobe emaviki • Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nekota yema-awa	**Kusho sikhatsi** • Shano sikhatsi sema-awa lalishumi nakubili ngema-awa ihhafu yema-awa nekota yema-awa ewashini letintsi **Bala budze nekwendula kwesikhatsi** • Sebentisa liwashi kubala budze nekwendula kwesikhatsi ngema-awa, ihhafu yema-awa nobe ikota yema-awa	Bafundzi bayachubeka nekutetayeta kukhuluma ngebudze besikhatsi nekulandz-elanisa sikhatsi. Ngesikhatsi sekufundzisa liklasi lonkhe nesikhatsi sekugcila emacenjini, bafundzi bayachubeka ngekukhuluma ngemalanga eliviki, tinyanga temnyaka, nelusuku lwangalelo langa kanye nemalanga lengcile naletako. Bafundzi bayetayeta kuse-bentisa emakhalenda ngekufaka njalonjalo loku lokulandzelako. • emalanga ekutalwa; • imigidvo yetenkholo; • tigameko temlandvo; • tigameko tesikolo; • nemaholide avelonkhe ekhalendeni. Kusho sikhatsi ngema-awa, ihhafu yema-awa nekota yema-awa.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUWO NGALEITHEMU 4	EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESINIKETIWE (etifundvweni teli a- wa linye nemaminithi langu 24)
4.2 **Budze**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-. **Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo.	**Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo.	**Yini leyehlukile eThemini 1?** EThemini ye-1bekuphakamiswe kutsi bafundzi bagcile ekucombeleni, ekulinganiseni, ekucatsaniseni nasekurekhodeni budze, bubanti nekuphakama ngemayunithi langakahleleki kodwa babuye bacale kukala ngemamitha. EThemini 4 batawugcila ekucombeleni, ekukaleni, ekucatsaniseni nasekurekhodeni budze, bubanti nekuphakama ngemamitha: Buka emanotsi eThemu 1 Lomsebenti lohlanganisiwe ungabhalwa phasi.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUWO NGALEITHEMU 4	EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESINIKETIWE (etifundvweni teli a- wa linye nemaminithi langu 24)
4.3 **Sisindvo**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. emabhuloki, titini. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa uhlele ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa. • Bakala sisindvo sabo ngemakhilogremu basebentisa sikali sasendlini yekugezela.	**Kungenisa kukala lokuhlelekile** Bafundzi babhala imisebenti lehlanganisa loku lokulandzelako lokufaka ekhatsi kufundza titfombe te: • Imikhicito lebhalwe sisindvo, • Titfombe tesisindvo etikalini letisendlini yekugezela lapho lutsi lukhombise ikhilogremu lephelele.	EThemini 2 bafundzi • Bakale sisindvo ngalokungakahleleki basebentisa sikali • Bahlele imikhicito ngekwesisindvo lesikhonjiswe amaphaketheni. • Bafundze tikali tasendlini yekugezela (tikali mbamba netitfombe tetikali) Buka emanotsi eThemu 2 EThemini 4 bafundzi kumele bahlanganise emakhono abo ekufundza tikali tasendlini yekugezela netitfombe tetikali kuya edvute nelikhilogremu leliphelele. Lomsebenti lohlanganisiwe ungabhalwa phasi.	1 Sifundvo

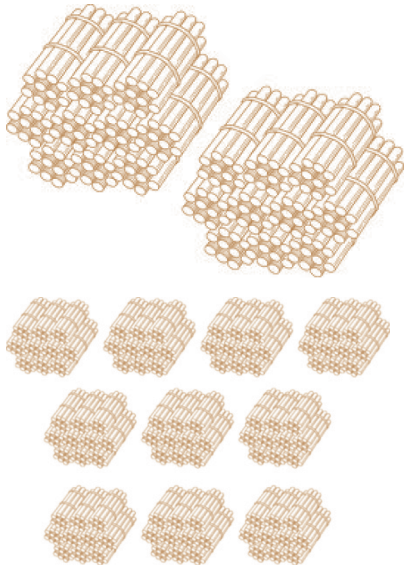
TIHLOKO	LWATI NEMAKHONO TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUWO NGALEITHEMU 4	EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESINIKETIWE (etifundvweni teli a- wa linye nemaminithi langu 24)
4.4 **Umtsamo/ bungako**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ngekukala ngemalitha.	**Kungenisa kukala lokuhlelekile** Bafundzi babhala imisebenti lehlanganisa loku lokulandzelako lokufaka ekhatsi kufundza: • Titfombe temikhicito letibhalwe utsamo kute batihle ngekulandzelana, • Titfombe temajeke lapho umtsamo usondzele enombolweni lekhombisa ilitha nobe emalitha la-2. Lokulindzelekile kutsi bafundzi bafundze kuphela kufika enombolweni lesedvute nemugca. Bachaza umtsamo wabo ngekutsi cishe/kusondzele ku-/ kunyenti kancane kuna-/ alingana ncamashi linani (lemalitha) lebawafundz ejekeni	Ngesikhatsi sekutisebentela, bafundzi kumele bachubeke: • bacombele babuye bakale, bacatsanise, bahlele babuye barekhode umtsamo wetintfo tekuphatsa nobe bungako bemtsamo etintfweni tekutsela basebentisa kukala lokungakabekelwa umgomo. Kulandzela iresiphi kufaka ekhatsi kubhaka kuyingcikitsi lelusito leyenta bafundzi batetayete kukala. Khetsa emaresiphi lanetitsako letiniketwe ngetinkomishi, emathisipunu, nobe emayunithi langakahleleki. • Catsanisa ubuye uhlele umtsamo wemabhodlela netintfo tegilosa letinebungako lebubhalwe emaphakethini. • Sebentisa emabhodlela lanemtsamo loyilitha nobe emajeke lanemtsamo loyilitha kucombela, kucatsanisa, kuhlela nekurekhoda umtsamo wetintfo tekuphatsa nobe bungako betintfo tekuphatsa letinemtsamo longemalitha. Buka emanotsi elthemu 3. Bafundzi kumele baniketwe imisebenti lebhalwako kute bahlanganise loku lokulandzelako kufaka ekhatsi kufundza titfombe te: • tintfo letinemtsamo lobhalwe kuto kute batilandzelanise ngekuhleleka kwato; titfombe temajeke lapho bungako busondzela emgceni lomakiwe lonenombolo leyilitha litha nobe emalitha -2. Lokulindzelekile kutsi bafundzi bafundze kuphela kufika enombolweni lesedvute nemugca. Bachaza umtsamo wabo ngekutsi cishe/kusondzele ku-/kunyenti kancane kuna-/alingana ncamashi linani (lemalitha) lebawafundza ejekeni **Kukala umtsamo njengesimongcondvo sekusombulula tinkinga nekubala.** Ngesikhatsi lesibekelwe Tinombolo, Timphawu tekubala neBudlelwane, bafundzi bangasombulula tinkinga letisebentisa: • kukala umtsamo/bungako lokungakahleleki sib: gogo usebentisa tinkomishi le -2 telubisi uma apheka iphudingi. Uma ayiphindza kabili leresiphi, utawudzinga lubisi lolungakanani? • emalitha Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga letifanele ithemu.	

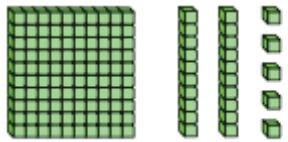
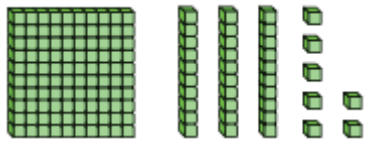
TIHLOKO	LWATI NEMAKHONO TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUWO NGALEITHEMU 4	EMANOTHI EKUCACISA NETICONDZISO TEKUFUNDZISA	SIKHATSI LESINIKETIWE (etifundvweni teli a- wa linye nemaminithi langu 24)
4.4 **Umtsamo/ bungako**	• Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi.			

LIBANGA 2 ITHEMU 4 5 KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO** **TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO** **LOKUGCILWE KUWO NGALEITHEMU 4**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESINIK-ETIWE** (etifundvweni teli a- wa linye nemami-nithi langu 24)
5.4 **Gcogca ubuye uhlele idatha**	**Gcogca ubuye uhlele idatha** • Gcogca idatha emayelana neliklasi nobe sikolo kute uphendvule imibuto lebutwe nguthishela. • Hlela idatha ngemathali			1 sifundvo
5.5 **Veta idatha**	**Veta idatha** Veta idatha kugrafutitfombe.			
5.6 **Hlatiya ubuye uhumushe idatha**	**Hlatiya ubuye uhumushe idatha** Phendvula imibuto ngedatha lekugrafutitfombe	**Hlatiya ubuye uhumushe idatha** Hlatiya idatha yalokuvetiwe, loniketwe kona	**Hlatiya ubuye uhumushe idatha loniketwe yona.** Kulesikhatsi semnyaka, bafundzi kumele babe bawetayele emagrafutitfombe. Ethemini 4 kuphakanyiswe kutsi bafundzi kumele bagcile ekuhlatiyeni idatha. Nika bafundzi idatha lebatayihlatiya kugrafutitfombe lokungenani yinye. Bafundzi kumele baphendvule imibuto loyibutako lephatselene negrafu nelithebula: Buka eThemini 1 kute utfole tinhlobo letifanele temibuto.	

3.5.3 KUCACISA LOKUCUKETFWE: LIBANGA 3

LIBANGA 3 ITHEMU 1 1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE
Bafundzi beliBanga 3 batawuhlanganisa loko lebakufundze eBangeni 2 basebentise lamakhono kusebenta ngetinombolo letisemkhatsini we-0 ne- 999 Bafundzi beliBanga 3 batawenta loku: • fundza nekubhala tinombolo nemagama etinombolo kufike e- 1000 • chubeka nekubona nekubeka tinombolo endzaweni yato • sebentisa lwati labo lwesimelibungako kukhombisa emakhulu, emashumi nemayunithi bachaze nebudlelwane lobukhona • hlukanisa tinombolo letinemadijithi lamatsatfu, basebentise lwati lwesimelibungako kucatsanisa nekuhlela tinombolo babuye banikete tizatfu taloko lebakukhetsile • chubeka babale baye emuva nasembili, babale ngalendlela 20, 25, 50 na 100; Batawucala manje kubona budlelwane lobukhona emkhatsini wekubala ngabo-2 nabo- 4 • yati kubala tintfo lebatikolekile ngekutsi batigcogcele ndzawonye. Bayakwati kubala ngekuhleleka, babale kahle banikete nendlela yekubuka timphendvulo kutsi batitfole njani • hlanganisa nekususa tinombolo ku-50 ngenhloko • sombulula tinhlobo letehlukene tetinkinga babuye bafundze kuhlela loko lebakubhalile ngendlela lehlelekile • khetsa timphawu letifanele ngalesikhatsi basombulula tinkinga kusimongcondvo • khona kurekhoda loko lebakubalile ngekusebentisa letimphawu kuhlanganisa (+), kususa (-), kulingana (=). Bangachaza timphendvulo tabo netindlela lebatisebentisile kutfola timphendvulo • sebentisa tindlela letihlelekile kurekhoda tibalo tekususa nekuhlanganisa, sib. Bangabhidlita inombolo yinye nobe timbili kuhlanganisa nekususa, • kwati kukhetsa kuletindlela letehlukene tekusombulula tinkinga. Sib. kususa:135 – 131, umfundzi utawukwati kususa ngekutsi abale aye embili nobe emuva • Ikharikhulamu ilindzele kutsi bafundzi belibanga le-3 bangatisebentisi ngasosonkhe sikhatsi tinsita letibambekako ngalesikhatsi benta tibalo tekuhlanganisa nekususa. Ekupheleni kwemnyaka bafundzi kumele bakwati kuhlanganisa nekususa babe basebentisa indlela yekubhala phasi eBangeni lesitsatfu bafundzi batawudzinga njalo ematfuba ekutitayeta kuhlahlela tinombolo • Bafundzi labacala libanga lesi -3 kumele bavisise bungako benombolo babuye babhidlite tinombolo kute bakwati kubala. Bafundzi bayavisisa kutsi e-78 ungubokunye labange-78 ne-7 labalishumi ne- 8 labangubokunye. Umfundzi akukadzingeki kutsi asebentise tinsita letiphatsekako kute avisise loku. Ebangeni le-3 bafundzi batawudzinga ematfuba ekutetayeta kuhlahlela tinombolo kute bavisise bungako betinombolo nekusebentisa lwati kute babhidlite tinombolo bahlanganise babuye basuse.

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.1 **Bala tintfo**	**Kubala tintfo letiphatsekako** Combela ubuye ubale ngekwetsembeka lokungenani tintfo letisetjentiswa malanga onkhe leti-1000. Indlela yekugcogcela ndzawonye iyakhutsatwa	• Gcogcela ndzawonye tintfo lokungenani letinge-200 kute ucombele ubuye ubale ngekwetsembeka. • Indlela yekugcogcela ndzawonye iyakhutsatwa • Combela linani letintfo letingahlolwa ngekubala	Ebangeni 3 bafundzi bayachubeka nekubala tintfo malanga onkhe. Kuhleleka kwetinombolo kutawuchubeka kufike ku 1000 ekupheleni kwemnyaka. Loku kusho kutsi kumele kubukisiswe tinhlobo tetinsita letisetjentiswako. • Emabhuloki edienes • emakhadi esimelibungako Ngalesikhatsi sethemu yekucala bafundzi batetayeta bahlanganise tintfo tekubala tifike ema-200 Lapha kugcilwe ekugcogceni tintfo ndzawonye. Bafundzi kumele babe nelwati lekutsi kulula kuyasheshisa kubala ngetincumbi telishumi, temashumi lamabili, temashumi lasihlanu nemakhulu kunekubala ngakunye. Bacala kubala ngemakhulu baye embili nasemuva ngesikhatsi sethemu yekucala. Kusekela kubala ngenhloko, bafundzi bangahlela tintfo ngetincumbi tabo 100. **Sibonelo:** Incumbi ngayinye ikhombisa likhulu  Kulethemu nasemnyakeni wonkhe bafundzi kumele bati kutsi kubala tintfo kutabasita njani ngalesikhatsi benta tintfo.	

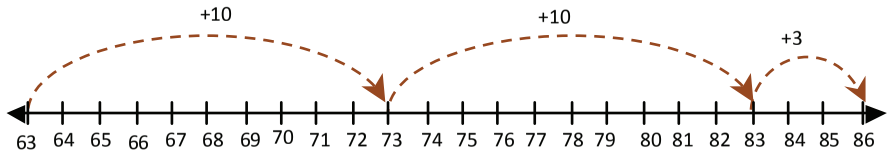
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
			Sibonelo: Kubala tintfo ngekuhlukanisa tintfo tibe tincumbi telishumi, tincumbi tema-20, tema- 50 nobe likhulu litawuvumela bafundzi kutsi babhidlite tinombolo ngalesikhatsi bahlanganisa nobe basusa. Kuhlanganisa 362+527, bafundzi bangabhidlita tinombolo tibe tincenye tesimelibungako, sib. 362 + 527 = (300 + 60 + 2) + (500 + 20 + 7). Bafundzi bangabala emakhulu kanye kanye ngobe bakwentile ngalesikhatsi babala tintfo letentiwe tincumbi temakhulu. Bafundzi batawubala emashumi (bakwentile loko kusukela eBangeni le-1) babuye babale bo-1. Bafundzi kumele bavisise kutsi kungani bacitse sikhatsi babala tintfo. Lokuchumana kumele kubekwe ebaleni. Ngalesikhatsi seithemu bafundzi bangakhombisa tinombolo ngekusebentisa emabhuloki ebheyisi 10. Bafundzi basebentisa letinsita ebangeni le-2   Bafundzi kumele bakwati kucedzela lesitatimende; Bungako bemabhuloki ebheyisi 10 bu_____ Bafundzi bangasebentisa emakhadi esimelibungako kukhombisa bungako bedijithi ngayinye Letinhlobo talemisebenti atikagcili ekubaleni tintfo kuphela. Ngalesosikhatsi bafundzi: Kuletinhlobo temisebenti akugcilwa ekubaleni tintfo. Ngaso leso sikhatsi bafundzi ba: • Batfola sikhatsi sekuvisisa emadijithi • Batfola sikhatsi sekuhlahlela nekwakha tinombolo • Batfola sikhatsi sekufundza tinombolo	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.2 **Kubala uye embili nas-emuva**	**Bala uye phambili nasemuva ku:** • Kushiyana kwetikhatsi lokuniketiwe ebangeni le- 2 lokunetinombolo letikhulako kusukela kunobe nguyiphi inombolo leniketiwe • Kuma- 20, ema-25, ema-50, ema-100 kufike ku-1000	**Bala uye phambili nasemuva ku:** • Kushiyana kwetikhatsi lokuniketiwe ebangeni le- 2 lokunetinombolo letikhulako kusukela kunobe nguyiphi inombolo leniketiwe • Kusukela e-100 kuye e- 500	**Yini lokwehlukile ebangeni 2?** Bafundzi babala kokucala ngemakhulu. Bayakwenta futsi loku ku 500. Bafundzi bandzinga tinsita tebheyisi 10 letifana naleti: • Buhlalu bekubala • Emabhuloki edienes • Umugcatinombolo • Igridi yetinombolo Kubala wece tinombolo kudzinga kutsi kuchumane nelithebula lekuphindzaphindza. Kubala ngaku-4 kutawusita bafundzi nabatsi: • 1 lokune kulingana na- 4 • 2 lokune kulingana ne- 8 • 3 lokune kulingana ne-12 Kubala wece tinombolo kwenta bafundzi bavisise tibalo tekuphindzaphindza kantsi futsi kutawusita bafundzi ngalesikhatsi bacedzela tinombolo letilandzelanako	
1.3 **Tinombolo nemagama etinombolo**	**Kukhona kubona, kutfola nekufundza tinombolo** • Bona, tfola ubuye ufundze tinombolo 0 kuye ema-1 000 • Bhala tinombolo o kuye ema- 1 000 • Bona, tfola ubuye ufundze tinombolo 0 kuye ema-1000 • Kubhala emagama etinombolo 0 kuye e- 1000	**Kukhona kubona, kutfola nekufundza tinombolo** • Bona, kutfola ubuye ufundza tinombolo 0 kuye ema-500 • Bhala tinombolo o kuye ema- 500 • Bona, tfola ubuye ufundze tinombolo 0 kuye ema-250 • Kubhala emagama etinombolo 0 kuye e- 100	**Yini leyehlukile eBangeni 2?** Kulethemu bafundzi batawubona, bafundze babhale tinombolo tifike e- 500. Bafundza emagama etinombolo bafike e- 250 babhale tinombolo bafike e-100 Kufundza nekubhala tinombolo kwentiwa ngalesikhatsi: • Kubalwa tintfo • Kubala uye phambili nasemuva • Kucedzela tinombolo letilandzelanako • Kuhlela nekucatsanisa tinombolo Tinombolo kumele tibitwe kahle, 323 kumele bambite ngalendlela ‘’emakhulu lamatsatfu ne-mashumi lamabili nakutsatfu’’ hhayi ngalendlela ‘323’ Nangabe babhala tinombolo letingemadijithi lamatsatfu, letinombolo letisemkhatsini we-100 na-110, e-200 ne-210, e-300 ne-310, e-400 ne-410, idigithi lesendzaweni yelishumi ingu 0. Labanye bafundzi bakutfola kumatima kubhala letinombolo nangabe baniketwe inombolo ngemagama. Sib. kuba matima kulabanye bafundzi kubhala emakhulu lamatsatfu nakune ngetinombolo. Bangabhala 3004. Emakhadi esimelibungako atawusita bafundzi kutsi bavisise kutsi tinombolo tibhalwa njani ngendlela lefanele. Bafundzi kumele baniketwe litfuba lelifanele lekutetayeta kub-hala letinombolo.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.4 **Chaza, catsanisa ubuye uhlele tinombolo**	**Chaza, catsanisa ubuye uhlele tinombolo kuye e- 99** • **Chaza ubuye ucatsanise** tinombolo letiphelele kuye e-99 ngekusebentisa lokuncane kuna, kukhulu kuna, lokulingana na • Chaza ubuye uhlele tinombolo letiphelele kuye ema-99 ucale kulokuncane kakhulu uye kulokukhulu kakhulu nakulokukhulu kakhulu kuye kulokuncane kakhulu **Kusebentisa tinombolo letiphelele kukhombisa kuhleleka, nendzawo** Kusebentisa, kufundza nekubhala tinombolo letiphele letifaka ekhatsi simo lesincishisiwe lesifika ku 31	**kuchaza, kucatsanisa nekuhlela tinombolo kuye e -99** • **Chaza ubuye ucatsanise** tinombolo letiphelele kuye ema-99 usebentisa lokuncane kuna lokukhulu kuna, lokulingana na • Kuchaza nekuhlela tinombolo letiphelele kuye ema-99 ucale kulokuncane kakhulu uye kulokukhulu kakhulu nakulokukhulu kakhulu kuye kulokuncane kakhulu **Kusebentisa tinombolo letiphelele kukhombisa kuhleleka, nendzawo** Kusebentisa, kufundza nekubhala tinombolo letiphele letifaka ekhatsi simo lesincishisiwe lesifika ku 31	**Yini leyehlukile eBangeni 2?** Kulethemu lesi bafundzi batawuhlanganisa kuhleleka nekucatsanisa kwetinombolo kufike e- 99 babuye bakwati kunika tizatfu tekutsi kungani lenye inombolo ibe yinkhulu kunalenye. Bavumele bafundzi basebentise umugcatinombolo, igridi yetinombolo, nobe lwati lwabo lwekuhlukanisa tinombolo tibe ngemashumi nemayunithi kukhombisa kuvisisa kwabo. Ngalesikhatsi bahlela tinombolo bafundzi kumele bati kutsi kungani inombolo ibe inkhulu kunalenye nabasebentisa bungako bemadijithi kuchaza lesimo. **Sibonelo:** 39 mncane kune- 59 ngobe: Ngiyati kutsi 39 = 30 ne-9, 59 = 50 ne- 9. 30 utincumbi telishumi letintsatfu kantsi 50 utincumbi letisihlanu telishumi. Kunetincumbi letinyenti telishumi kune- 50 kwedlula ema- 30 Kusebenta ngetinombolo letingema-odinali ikhalenda ikahle ngobe ivumela bafundzi kutsi bacoce ngelilanga le-23 nobe le-31 lenyanga. Bafundzi abatetayete kufundza nekubhala indlela lefinnyetiwe.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.5 Simelibun-gako	**Bona simelibungako setinombolo temadigithi lamatsatfu ufike ema - 99** • Bona kutsi idijithi yinye imeleni • Hlahlela tinombolo letingemadijithi lamabili ufike ema – 99 kube ngemamalthiphuli e-100, emamaltipuli elishumi kanye newakunye • Bona ubuye usho bungako bedijithi ngayinye	**Bona simelibungako setinombolo ufike ema – 99** • Bona kutsi idijithi yinye imeleni • Hlahlela tinombolo letingemadijithi lamabili ufike ema – 99 kube ngemamalthiphuli e-100, emamaltipuli elishumi kanye newakunye • Bona ubuye usho bungako bedijithi ngayinye	**Yini leyehlukile eBangeni 2?** Lethemu iphatselene nekuhlanganisa kuvisisa kwesimelibungako kusukela eBangeni le-2. Bafundzi bayachubeka nekwenta umsebenti lofanako weliBanga le-2,iThemu ye-4 **Kuvisisa nekusebentisa lwatimagama lwesimelibungako:** Sebentisa, fundza bese ucala kubhala: Emayunithi, emashumi, emadijithi, idijithi yinye yenombolo, emadijithi mabili etinombolo------ simelibungako **Hlahlela tinombolo letingemadijithi lamabili abe ngemamalthiphuli elishumi nemayunithi** Bafundzi bangahlukanisa tinombolo tibe: • Bungako belishumi nebungako bemayunithi, sib. 73 = 70 + 3 (emakhadi esimelibungako akulungele loku) • Emamalthiphuli elishumi nemayunithi, sib. 73 = 7 emashumi + 3 emayunithi **Yakha tinombolo letingemadijithi lamabili utisusela etincenyeni tesimelibungako** **Sibonelo** Bhala inombolo • 6 emashumi na 3 emayunithi _____ • 2 emashumi na 5 emayunithi _____ • 12 emashumi na 8 emayunithi _____ • 18 wemashumi na 4 emayunithi _____ **Sebentisa tinsita kukhombisa kuhlukaniswa kwetinombolo** • **I-abhakhasi** - Khombisa emashumi lama- 4 nala- 5 wemayunithi - Khombisa emashumi lasi-7 nala- 6 wemayunithi ube usebentisa i-abhakhasi 	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.5 **Simelibun-gako**			• **Emakhadi esimelibungako** Bafundzi basebentisa emakhadi esimelibungako kukhombisa tincenye tetinombolo **Sibonelo:** **Letinhlobo temibuto lelandzeleko tingabutwa:** • Shano idijithi le-8 imeleni ku- 28? 2 yena umeleni? • Shanokutsi nguyiphi inombolo lelingana nobe lefana nale: - Emashumi la -6 - Emashumia -9 nabokunye labatsatfu - Emashumi lasihlanu nemayunithi layimfica	
KUSOMBULULA TINKINGA LETIKUSIMONGCONDVO				
1.6 **Emasu eku-sombulula tinkinga**	Sebentisa lamasu lalandzelako nang-abe usombulula tinkinga uchaze ti-sombululo tetinkinga • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • umugcatinombolo • Kusondzeta emashumini	Sebentisa lamasu lalandzelako nang-abe usombulula tinkinga • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • Umugcatinombolo	**Yini leyehlukile eBangeni 2?** Bafundzi kulindzeleke kutsi basombulule tinkinga babe basebentisa lamasu lalandzelako: Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • umugcatinombolo Kudvweba ngamunye kuye kufike etintfweni leti-99 kuba ngulokungasiko kantsi kumele kun-gakhutsatwa. Khutsata kufaka ekhatsi timphawu tetinombolo ekurekhodweni, lokufaka ekhatsi kwetfulwa kwetitfombe. Bafundzi bangakhutsatwa kubhalatinombolo. Vumela bafundzi bakhetse emasu lahambisana nabo. Kuhleleka kwetinombolo kanye neluhlobo lwenkinga lutawutfola emasu lasetjentiswako. Nanobe kunjalo, nangabe bafundzi basebentisa emasu langasiwo bese badzinga kukhonjiswa kusebentisa tindlela letiningi. **Kwakha nekuhlahlela** Leli lisu lemasu labaluleke kakhulu esiGabeni saboKhwewane. Kusebentisa emasu kuvumela bafundzi ekwahlukaniseni (ekubhidliteni) kanye nekuphindza uhlanganise tinombolo kusita ekub-aleni kalula. Batawusebentisa kakhulu lamasu nasesiGabeni salabaseMkhatsini. **Kuphindza nekuhhafula tinombolo** Lelisu lilukhuni futsi ludzinga lwati lwetinombolo. Bafundzi labakwatiko kutikhetsela lelisu bakhona kumelana netimo letitsite emaswini labawasebentisako. Kwati kutsi kuphindza kutawuvumela bafundzi basebentise emasu etinombolo letisedvute letiphindzeke kabili.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.6 **Emasu eku-sombulula tinkinga**			Sibonelo: Tibalo temagama: Ngalelinye lilanga bantfwana labange-45 labasemtfolamphilo baniketwa umutsi wekugomela umkhuhlane. Ngelilanga lelilandzelako kwagonywa bantfwana laba-46. Bangaki bantfwana labagonyiwe nasebahlangene? Sibalo singabalwa ngekusebentisa kuphindza. Umfun-dzi angatsi phindza 45 uhlanganise na-1 nobe phindza 46 ukhiphe 1 **Imigcatinombolo** Kusebentisa imigcatinombolo kute basitakale ekubaleni kutawunika bafundzi indlela yekurekhoda nekutsi bahambisane nayo. Kuphindze kuvumele bafundzi kutsi babambe ngengcondvo sitfombe sengcondvo labangasisebentisa ekuchazeni kutsi batibale njani tibalo. Bafundzi bebasebentisa imigcatinombolo kusukela eBangeni le-1. Bafundzi kumele bakwati kwakha imigcatinombolo lengenatinombolo lapho batawufaka inombolo yekucala baphindze batsatse sincumo sekusukela kulenye kuya kulenye. Sibonelo sekutsi usetjentiswa njani umugcatinombolo: Bantfwana labange-23 batsetse luhambo namuhla. Kusele bantfwana labange-63 esikolweni. Bangaki bantfwana bebalapho?  	
1.7 **Kuhlan-ganisa neku-susa**	Bala tibalo temagama letikulesi-mongcondvo bese uchaza sisombu-lulo sakho setibalo lesifaka ekhatsi kuh-langanisa, kususa kuholela etimphend-vulweni kuya e-999	Bala tibalo temagama letikulesi-mongcondvo bese uchaza sisombu-lulo sakho setibalo lesifaka ekhatsi kuh-langanisa, kususa, netimphendvulo kufike e - 99.	**Tibonelo tetibalo letingentiwa ngalethemu.** Ngalethemu, bafundzi bahlanganisa umsebenti lowentiwa eBangeni 2. Buka emanotsi ngetinhlo-bo tekubala tibalo eBangeni 2, Sigaba 2.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindza-phindzeni**	Bala tibalo temagama letikulesi-mongcondvo bese uchaza imphendvulo yetibalo ngekuse-bentisa kuphin-dzaphindza net-imphendvulo kuya ku-99.	Bala tibalo temagama letikulesi-mongcondvo bese uchaza imphendvulo yetibalo ngekuse-bentisa kuphindza-phindza netimphend-vulo kuya ku-50	**Tibonelo tetibalo letingentiwa ngalethemu** • Umakhi udzinga kubeka imigca le-6 yetitini tekupheva, netitini leti-8 emgceni ngamunye. Utawudzinga tingaki titini? • Marlene unemaska emaswidi la-4. Lisaka ngalinye linemaswidi la-6. Mangaki emaswidi onkhe nasahlangene? • Make ufuna kubhaka emakhekhe la-12. Nangabe linye likhekhe lidzinga emacandza la-2, mangaki emacandzanasaphelele? • Nangabe munye umfundzi ufundza tincwadzi le-3 ngenyanga yaKholwane, mangaki emabhuku langafundvwa liklasi lebafundzi labange-20? **Luhlobo lwesibalo ngenombolo 9 Ligcogco:** • Ingadze yetibhidvo inemigca yetitjalo le-12 yetitjalo. Umugca ngamunye unetitjalo leti-7. Tingaki titjalo letisengadzini? • Ingadze yetibhidvo inemigca le-12 yetitjalo.Umugca ngamunye unenombolo lefanako yetitjalo. Nangabe kunesamba setitjalo letinge-48, tingaki titjalo emgceni ngamunye. • Ingadze yetibhidvo inetitjalo letinge-48 letihlanyelwe ngemigca. Kunetitjalo leti-7 emgceni nga-munye. Mingaki imigca lapho? **Kusebentisa kuphindza kubala tibalo** • Justin uneminyaka le-8 budzala. • Umnakabo lomkhulu mdzala ngalokuphindvwe kabili kuJustine. • Babe wakhe mdzala ngalokuphindvwe kane kuJustine. • Mkhulu wakhe mdzala ngalokuphindvwe kabili kubabe wakhe. • Itsini iminyaka yabo ngamunye? • Incwadzi yaShepi inemakhasi lange-48 budze. Usekhasini le-26; ngabe sewufundze kwenga ehhafini yencwadzi? EBangeni 3 bafundzi balindzeleke kutsi babone tibalo temagama tekuphindza. Bafundzi kumele bagcugcutelwe kusebentisa tinombolo netitfombe, kunekutsi kusetjentiswe tinsita noma titfombe ngekwabo.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.9 **Kugcogcela ndzawonye nekwabelana lokuholela ekuhlu-kaniseni**	Bala bese uchaza timphendvulo tetibalo temagama letikulesimongcond-vo bese uchaza im-phendvulo yetibalo ngekusebentisa kuphindzaphindza netimphendvulo kuya ku-99.	Bala uphindze uchaze timphend-vulo tetibalo letentiwako letifaka ekhatsi kwabelana kanye nebutsela ndzawonye kuya ku-50 netimphend-vulo letifaka ekhatsi tinsalela.	Ngalethemu kwetfulwa luphawu lekuhlukanisa. Kubalulekile kutsi bafundzi bavisise lwati lwekuh-lukanisa ngaphambi kwekutsi luphawu lusetjentiswa: Tibalo letifaka ekhatsi kwabelana tivama kuba macondzana: • Nekwabelana ngalikulinganako: kanye • Kungaki lokutfolwa ngumunye? Tibalo letifaka ekhatsi kwabelana tivama kuba macodzana: • Tingaki tincumbi letingentiwa? **Tibonelo tetibalo letingentiwa ngalethemu** • Nangabe bafundzi labange-44 kanye nabothishela la-3 baya ekhansathini bese kutsi bantfu laba-11 bangangena ebhasini lencane, ibhasi lencane itawubalandza kube kangaki, ngaphambi kwekutsi bonkhe bafundzi babe sekhonsathini? • Mongezi upaka tibali letinge -47 emigceni le -9. Tingaki tibali emgceni ngamunye? • Emantfombatane lange -35 afuna kudlala libhola letandla. Mangaki emacembu emantfombatane la -7 latawubakhona? • Cala ngeCombela: • Ngabe kutawuba kunyenti nobe kuncane kune -10? • Ngabe kutawuba kunyenti nobe kuncane kune -20? • Marlene utsenga emaswidi lange -44. Uyawahlukanisa ngalokulinganako kube ngemaphakethe la -4 ekutsengisa. Mangaki emaswidi lasesakeni? • Marlene utsenga emaswidi lange -48. Ufuna kuwahlukanisa abe ngemasaka lanemaswidi la -6 esakeni ngalinye.Mangaki emasaki lakawadzingako?	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.10 **Tincetu**	Bala bese uchaza tisombululo tetibalo letentiwako letifaka ekhatsi kwabelana ngalokulinganko lokuholela etisombululweni letifaka ekhatsi tincetu letingemayunithi netincetu letingasiwo emayunithi sib. kunye kulokubili, kunye kulokune, kutsatfu kulokune. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{3}{4}$, $\frac{2}{5}$, njll.	Bala bese uchaza tisombululo tetibalo letentiwako letifaka ekhatsi kwabelana ngalokulinganko lokuholela etisombululweni letifaka ekhatsi tincetu letingemayunithi netincetu letingasiwo emayunithi sib. kunye kulokubili, kunye kulokune, kutsatfu kulokune. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{3}{4}$, njll.	EBangeni 2 bafundzi betfulelwa tincetu kanye ne-: • Tintfo letabiwako naletigcogcelwe ndzawonye ngalokulinganako; • Kunika emagama etincenye tetincetu; • Kutfola tincetu kutimongcondvo letehlukene; • Kubhala emagama etincetu ngalendlela incenye yinye kuletintsatfu, incenye yinye kuletisihlanu; • Kutfola tincetu tetintfo letiphelele; kanye • Kutfola tincetu tetintfo letigcogcelwe ndzawonye. **Yini leyehlukile eBangeni 2?** Ngalethemu, bafundzi bachubeka nekusebenta ngetincetu letingemayunithi njengakunye kulokubili, kunye kulokutsatfu, kunye kulokune, kunye kulokusihlanu. Bafundzi betfulelwa tincetu temayunithi sib.emakota la-3 nobe lokutsatfu lo-2. Bafundzi abakafaneli kusebentisa silulumagama semayunithi nalesingasiwo emayunithi. **Tibonelo tetibalo letingentiwa ngalethemu** • Kwabelana, lokuholela etincetwini • Yaba emabhulokhi emashokolethi ebanganini la-3 kute bonkhe batfole emabhuloki eshokolethi kanye nekutsi akukho lokusele. • Lucetu lweligcogco a) Tfola ikota yinye yemaswidi la-16. b) Emaswidi la-8 anguyiphi incenye yemaswidi lange-24? c) Gogo unika Kiki R12. Kiki ufuna konga lokutsatfu kwalemali. Ngumalini lekumele ayonge? d) Loluhlobo lwesibalo kufanele icanjwe ngemuva kwekutsi bafundzi babale luhlobo lwetibalo letine nobe letisihlanu tekwabelana letiholela etincetwini bese baba nelwati lwemagama etincetu tetincenye. **Kubhala tincetu** Bafundzi abdzingeki kutsi babhale luphawu lwetincetu. Bafundzi bafundze kutsi banika njani tincenye tetincetu njengakunye kwalokusihlanu, emakota lamatsatfu nobe lokutsatfu kwalokusitfupha. Loku kucala ngekubasita kutsi bavisise emagama etincetu achaza kutsi tingaki tincenye talokuphelele letehlukanisiwe, sibonelo, bohhafu kwalokutsatsatfu, kwalokuyikota, njll kantsi kwesibili tingaki tincenye taloku lokutsatfwa ngekutsi, sib.lokubili kwalokutsatfu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.10 Tincetu			Kumela tibalo temagama tetincetu • Bafundzi kumele badvwebe timphendvulo kukhombisa kutsi bayasivisisa sibalo. • Lindzela kutsi labanye bafundzi bangadvweba lucetu ngalokungiko kodvwa banika emagama langasiwo etincetun. • Basite labafundzi kunika emagama etincenye tetincetu ngalokungiko (buka emanotsi lahambisana nekucamba tincetu ngaphasi kwetibalo letingenasimongcondvo) • Bafundzi abanike emagama etincenye lekwabelwane ngawo ngekutibhala njengakubili kulokutsatfu.	
1.11 Imali	• Bona ubuye utfoimali lebuhhehlu yaseNingizimu Afrika kanye nemali yemaphepha. • Bala tibalo temali lokufaka ekhatsi tamba nentjintji yemarandi noma yemasenti. • Gucula phakatsi kwemarandi kanye nemasenti.	• Bona ubuye utfole tinhlavumali taseNingizimu Afrika kanye nemali yemaphepha. • Bala tibalo temali lokufaka ekhatsi tamba nentjintji yemarandi noma emasenti.	Ngalethemu bafundzi bachubeka nekusombulula tibalo temali. **Sibonelo:** Bafundzi beliBanga le-3 badzinga R759 wenkambu yeliklasi. Bakoleke R250. Badzinga imali lengakanani? • Bhala 325c abe ngemarandi nemasenti. • Tingaki tindlela letehlukene longatenta nge-R400 ngekusebentisa imali yemaphepha kuphela? Wati kanjani kutsi unato tonkhe timphendvulo? • Thuli unetincenye temasenti lange-50 kanye netincenye temasenti lange-20. Emaswidi emathofi abita R1,20. Ngumalini intjintji latayitfola? • Nangabe i-track suit yesikolo ibita R150, atawubita malini ema-track suits lama-2? **Tibalo tekutsenga netekutsengisa** **Sibonelo** • Gogo waBusi umnike R5. Angatsenga waphi emaswidi? I- Choc chuckle ingu R2,70; ema-gums angu-R1,80; ema-sour worms angu-R1,40; ema- peach treats angu- R1,60; ema-magic mints angu-R2,20; ema-toffee angu-R1,20. • Bheki uletse tincwadzi le-3 letibita R80 yinye, ngumalini intjintji latayitfola ku- R300? • Emaphakethe lahamba nga-5 ema-mints abita 44c linye. Umnumzane Nkosi udzinga ema-mints lange- 88. Mangaki emaphakethe lekumele atsengwe? Utawubhadala malini?	

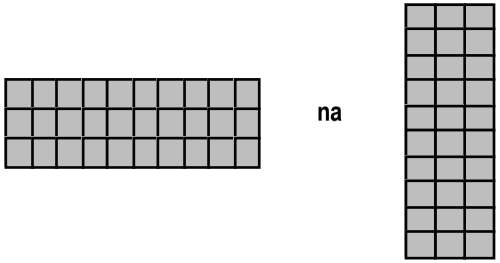
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
TIBALO LETINGENASIMONGCONDVO				
1.12 **Emasu** **(tindlela nobe emasu)**	Sebentisa lamasu lalandzelako nawenta tibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza kanye nekuhhafula • Imigcatinombolo • Kuyiosa kulokugcwele ngelishumi	Sebentisa lamasu lalandzelako nawenta tibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza kanye nekuhhafula • Imigcatinombolo	Lamasu atawusetjentiswa ekubaleni tibalo nasetibalweni letingantimongcondvo. **Kwakha nekuhlahlela** Leli lisu lelibaluleke kakhulu kunalamanye esigabeni saBokhewane. Kusebentisa lisu kuvumela bafundzi kutsi bahlukanise (kuhlahlela) kanye nekuphindza uhlanganise tinombolo kusita ekwenteni tibalo tibe lula. Batawusebentisa lelisu kakhulu esigabeni sabalaseMkhatsini. Kubalulekile kutsi bafundzi bakhombise lwati lolwatiwako nakubhidlitwa tinombolo sib.. • Kuhlahlela ngekusebentisa simelibungako; • Kuhlahlela ngekusebentisa emamalthiphuli e-10; kanye. • Kwakha tinombolo letihlanganisiwe ngemapheya. **Kubhala umugcatinombolo** Bafundzi batawuchubeka nekusebentisa nekwakha imigcatinombolo kute babale.Kuvamisile kutsi umubcatinombolo utawusetjentiswa kakhulu etibalweni tekuhlanganisa noba tekukhipha. **Kuhlanganisa nekukhipha.** Bafundzi kumele bakhe imigcatinombolo yabo bese babhidlita tinombolo tibe tincenye letingabaleka. **Sibonelo:** 45 + 27 Umugcatinombolo kumele ucale kusukela ku- 45 bese bafundzi bangacamba kweca lokubala nga-2 lokulishumi nasekuphelele bese munye uyeca akhombise ka-7. **Kuphindzaphindza** Imigcatinombolo kumele ichubeke isetjentiswe kwentela kusekelala kuhlanganisa lokuphindziwe. Kweca lokulinganako kurekhodwa emgcenitinombolo kanye nemisho lesekelako ingarekhodwa nayo.	

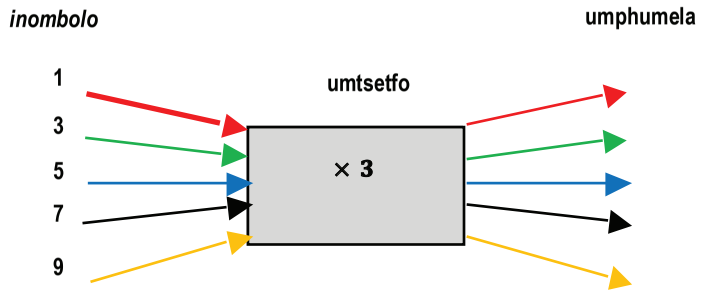
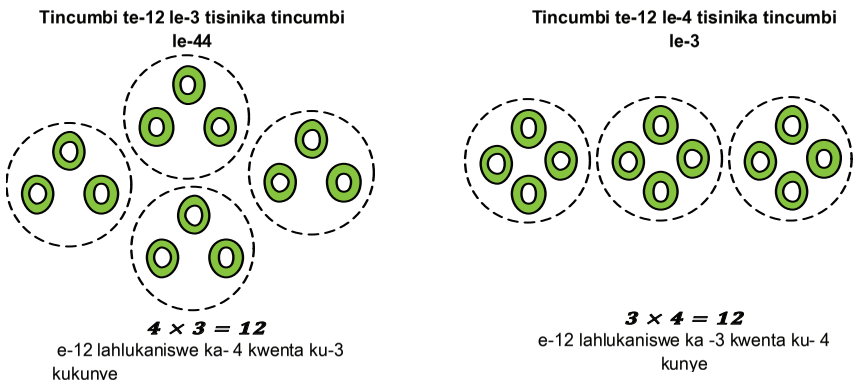
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.13 **Kuhlanganisa nekususa**	• Hlanganisa e -999 • Susa e -999 • Sebentisa timphawu letifanele (+, –, =, □) • Kutetayeta tibalo tekuhlanganisa letifika e -30	• Hlanganisa e -99 • Susa e -99 • Sebentisa timphawu letifanele (+, –, =, □) • Kutetayeta tibalo tekuhlanganisa letifika e -20	Ngalesikhatsi salethemu bafundzi bayatetayeta babuye bahlanganise umsebenti lebawente ebangeni 2 Nangabe bafundzi: • Basebenta ngetibali letingakabutselwa ndzawonye • Badvwebe imifanekiso ya -1kuphela • Babale konkhe ngakunye Nangabe usebenta ngesamba lesingetulu kwe -30, yenta kutsi batsatse sikhatsi, kodvwa ibuye ingete ematfuba ekwenta emaphutsa ekubala. Loku kwenta kutsi kubaluleke kubo kutfutfukisa emasu lamanyenti lakahle. Kwakha nekuhlahlela tinombolo kuba ngemasu labalulekile, bafundzi labatawasebentisa ngalethemu Tindlela letingasetjentiswa kukhombisa tibalo tekuhlanganisa nekususa **Kuhlahlela tinombolo tibe tincenye letincane letitawenta kubala kube lula** Bafundzi bangahlahlela tinombolo basebentisa tindlela labangatikhona. Loku kusho kutsi bangasebenta ngetindlela letehlukene. **Kusebentisa lwati lwesimelibungako kuhlahlela tinombolo tibe ngemashumi nemivo** • Kuhlanganisa tinombolo letingemadijithi lamabili ngekuhlahlela tinombolo letimbili 43 + 36 = □ 43 + 36 = (40 + 3) + (30 + 6) = (40 + 30) + (3 + 6) = 70 + 9 = 79 • Kuhlanganisa ngekuhlahlela inombolo yinye 43 + 36 = □ 43 + (30 + 6) 43 + 30 → 73 + 6 = 79 • Kuhlahlela kube tincumbi telishumi 43 + 36 = □ 43 + (10 + 10 + 10 + 6) 43 + 10→ 53 + 10→ 63 + 10→ 73 + 6 = 79	

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1.13 **Kuhlan-ganisa nekususa**			**Kususa** • Kusuasa ngekuhlahlela tinombolo totimbili 87– 56 = □ 87– 56 = (80 + 7) – (50 + 6) = (80– 50) + (7– 6) = 30 + 1 = 31 • Kususa ngekuhlahlela inombolo yinye 87–56 = □ 87– (50 + 6) 87– 50 → 37 – 6 = 1 Lindzela kutsi labanye bafundzi bangahle bahlahlele inombolo ngetindlela letehlukene kute kube lula kubala: • Kuhlahlela kube ngemamalthiphuli e -10 87– 56 = □ 87– (20 + 20 + 10 + 6) 87– 20 → 67–20 → 47– 10 → 37– 6 → 31 **Kusebentisa lwati lebanalo njengemasu** • Kusebentisa kuhhafula kute ahlahlele inombolo 69 + 12 69 + (6 + 6) 69 + 6 → 75 + 6 = 81 • Bala uchubeke ubuye ubale uye emuva 78 – 69 = □ Bala ngakunye kusukela e -69 kulisu lelifanele ngobe letinombolo tisondzelene. Bona lokusondzelene nekuphindza 34 + 35 uchaze kutsi utawuphindza e -34 umhlanganise na-1 nobe kuphindza e- 35 ususe ku -1 34 + 34 + 1	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.13 **Kuhlanganisa nekususa**			Bafundzi bangahle barekhode emasu abo basebentisa imicibisholo kute bakwati kulandzela tibalo tabo tekubala 34 + (30 + 4) + 1 34 + 30 → 64 + 4 → 68 + 1 → 69 • Ntjinja inombolo ibe ngemamalthiphuli eli-10 ubuye ususe nobe uhlanganise imivo **Bala uchubeke nobe uye emuva usondzete e -10** 58 + 19 = □ Lapha bafundzi kumele batitjele kutsi bangatikhetsela kulokubili. Ntjintja e -58 nobe e -19 asondzele kumamalthiphuli e -10. Bangatikhetsela tinombolo Tibalo tingabhalwa ngalendlela: 58 + 19 = 58 + 20 – 1 58 + 20 → 78 – 1 = 77 Labanye bafundzi bangahlahlela e -20 abe tincumbi le-2 tema -10 kute babale ngalokungiko **Kutetayeta tibalo tekuhlanganisa ufike e-20** Hlanganisa tinombolo tifike e -20 kumele kwentiwe kusetjentiswe imifanekiso yekwesekela lehlukene. **Kutfutfukisa nekutetayeta emakhono ekuhlanganisa nekususa.** Bafundzi badzinga kutetayeta letinye tinhlobo temakhono ekuhlanganisa nekususa • Hlanganisa nobe susa inombolo leyidijithi yinye kunobe nguyiphi inombolo lengemadijithi lamabili ngaphandle kwekundlula emashumini: Sibonelo: a) 65 + 4 b) 89 – 3 • Hlanganisa inombolo leyidijithi yinye ibe ngemamalthiphuli eli -10 Sibonelo: a) 70 + 5 b) 90 + 3	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
			Susa inombolo leyidijithi yinye kumamalthiphuli e -10 Sibonelo: a) 80 – 6 b) 50 – 3 • Hlanganisa nobe susa li -10 kunobe nguyiphi inombolo lengemadijithi lamabili Sibonelo: a) 56 + 10 b) 68 + 10 c) 79 – 10 d) 57 – 10 • Hlanganisa nobe susa emapheya emamalthiphuli eli-10 ngaphandle kwekundlula e-100 a) 40 + 30 b) 80 – 50 **Kuhlola imiphumela yalokubaliwe** Kutsatsa tincumo ngetisombululo letamukelekako Bafundzi kufanele baceceshelwe kutsatsa tincumo ngetisombululo letamukelekako Lenye indlela yekwenta loku kucombela imphendvulo ngembi kwekubala. Uma uhlanganisa tinombolo letimbili letisondzelene sib. e -45 ne -46 bafundzi bangasebentisa kuphindza njengendlela yekucombela timphendvulo tabo. **Kuhlola imiphumela** Bafundzi kufanele bati kutsi banga: • hlola sibalo sekuhlanganisa ngekususa, • Sibonelo: Uma 36 + 18 = 54 ngaloko-ke 54 – 18 = 36 • hlola sibalo sekususa ngekuhlanganisa, • Sibonelo: Uma 84 – 48 = 36 ngaloko-ke 36 + 48 = 84 Kusebentisa lubhalokuhlanekela kuhlola imphendvulo ngulesinye sizatfu sekufundzisa kuhlanganisa nekususa kanyekanye.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindza-phindzeni**	• Phindzaphindza tinombolo kusukela ku-1 kuya e -10 nga -2, 3, 4, 5, 10 kuya kusamba se -99 • Sebentisa timphawu letifanele (x, =, ☐)	• Phindzaphindza tinombolo kusukela ku-1 kuya e -10 nga -2, 3, 4, 5, kuya • Sebentisa timphawu letifanele (x, =, ☐)	Ebangeni 2 bafundzi baphindzaphindza tinombolo kusukela ku -1kuye e -10 nga -1, 2, 5, 3, na ku-4 kuye e -50. Bebatfulelwe timphawu babuye batisebentisa emishwenitinombolo Bafundzi eBangeni 3 kumele batetayete babuye basebentise lulwimi lwekuphindzaphindza etimeni letentekako, phindza, kabili, phindzaphindza, lokuphindzaphindze nge, lokunyenti, tincumbi te, lokuphindziwe, lokuphindzeke katsatfu. Lolulwimi kumele lusetjentiswe nangabe benta tibalo tekuphindzaphindza. Ngalesikhatsi salethemu bafundzi batawube baphindzaphindza ngakutsatfu kwekucala Bafundzi labacala libanga le -3 kumele bakwati kukhombisa kuhlanganisa lokuphindzako basebentisa luphawu lwekuphindzaphindza. Bafundzi bayakwati kuchaza kuphindzaphindza ngetindlela letehlukene. Bayavisisa kutsi lokunyenti lo-3 kwalokusitfupha nobe tincumbi letintsatfu talokusitfupha kungabhalwa ngalendlela 6 + 6+ 6. Kunekuvisisa lokutsi ku -3 ngimphindze nge -6 angabhalwa ngalendlela 3 x 6. Lolwati lolu luyachubeka luyatfutfukiswa ebangeni 3. Bafundzi batawuchubeka basebentise emathulusi laphatsekako, ligcogco, umugcatinombolo kuvisisa nekukhombisa tibalo tekuphindzaphindza. Kusukela ebangeni 3 bafundzi kumele bati kutsi kuphindzaphindza kungentiwa nobe ngayiphi indlela. Sibonelo: Bafundzi kumele bakwati kuvisisa nekubhala loku lokulandzelako: • 36 + 18 = 54; then 54– 18 = 36 • 84– 48 = 36, then 36 + 48 = 84 Lesitatimende lesingenhla kumele sisekelwe ngekusebentisa imifanekiso lebayibona malanga onkhe letsi 3 x 10 na 10 x 3 kusinika imphendvulo yinye. Sibonelo:  **na** Ngasekupheleni kwethemu bafundzi kumele bacale kuvisisa kutsi tibalo tekuphindzaphindza tingentiwa ngalenye indlela. Lolwati lwetibalo kumele luchubeke lwentiwe umnyaka wonkhe.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindza-phindzeni**			Bafundzi bangabuye basebentise emaflodayagramu kurekhoda tibalo tekuphindzaphindza. Sibonelo:  	
1.15 **Kuhlukanisa**	• Kuhlukanisa tinombolo kuye ema-99 nga- 1, 2, 3, 4, 5, 10 • Sebentisa timphawu letifanele (÷,=, □)	• Kuhlukanisa tinombolo kuye ema-99 nga- 1, 2, 3, 4, 5, 10 • Sebentisa timphawu letifanele (÷,=, □)	Ebangeni 3 luphawu lwekuhlukanisa luyetfulwa. Eminyakeni lemibili lwati loluphatselene nekwabelana nekugcogca tintfo belusolo lwentiwa, nyalo-ke sikhatsi sekuchumanisa lolwati lwaletintfo letimbili. Luphawu lwekuhlukanisa lungetfulwa ngalesikhatsi bafundzi benta tibalo temagama. Lokwetfulwa kwaleliphawu kungasekelwa ngalemifanekiso lengentasi. Kubalulekile kutsi sisebentise imifanekiso letayelekile. **Sibonelo:**  ***4 × 3 = 12*** e-12 lahlukaniswe ka- 4 kwenta ku-3 kukunve ***3 × 4 = 12*** e-12 lahlukaniswe ka -3 kwenta ku- 4 kunye **12 ÷ 3 = 4 kusho:** e-12 lahlukaniswe tincumbi le- 3 asinika tincumbi le- 4, ne-12 lahlukaniswe emkhatsini ka- 3 asinika lo- 4 ngakunye.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhlela tinombolo kuye ema- 999** • Hlela lisethi letinombolo letikhetsiwe letiniketiwe • Catsanisa tinombolo kuye e-999 ubuye usho kutsi nguyiphi lenyenti nobe lencane nga: -1,2,3,4, 5 ne li -10 **Khumbula ngekusheshisa** • Kukhumbula emaciniso laphatselene nekuhlanganisa nekususa kufike e -20 • Hlanganisa nobe ususe emamalthiphuli e -10 kusukela e -0 kuye e -100 • Kuphindzaphindza nekuhlukanisa: • Iithebula lakubili kufike ekuphindzaphindzeni ku -2 x 10 • Lithebula lelishumi kufike ekuphindzaphindzeni li -10 x 10	**Lwati lwetinombolo: Kuhlela tinombolo kuye ema- 200** • Hlela lisethi letinombolo letikhetsiwe letiniketiwe kuye e -200 • Catsanisa tinombolo kuye e -200 ubuye usho kutsi nguyiphi lenyenti nobe lencane nga: -1,2,3,4, 5 ne li -10 **Khumbula ngekusheshisa:** • Kukhumbula emaciniso laphatselene nekuhlanganisa nekususa kufike e -20 • Hlanganisa nobe ususe emamalthiphuli e -10 kusukela e -0 kuye e -100 **Emasu ekubala tibalo tenhloko** Sebentisa tindlela tekubala letilandzelako:	Emasu ekubala, lwati lwetinombolo, lwati nemaciniso laphatselene netinombolo latiwako ayatfutfukiswa ngekusombulula tibalo tekubala. Loku kwentiwa ngesikhatsi setibalo tenhloko. Loku kusita bafundzi kutsi bakwetayele babuye bakusebentise lula ngalesikhatsi babala basombulula tinkinga letikusimongcondvo Ngalesikhatsi sethemu bafundzi bayachubeka kutfutfukisa likhono lekusebenta ngetinombolo. Emasu etibalo tenhloko bafundzi labawatfutfukisako atawusita ngetibalo letibhalwako abuye asite bafundzi ekucombeleni. Tibonelo temibuto lengabutwa: Lwati lwetinombolo: Tinombolo nemagama etinombolo Phakamisa likhadi nobe ubhale phansi ligama lenombolo. Khetsa umfundzi kutsi abhale inombolo lehambelana neligama lenombolo. **Lokunyenti nobe lokuncane** Kungaki loku • Lokuncane nga -1 kune -200 • Lokunyenti nga -1 kune - 199 • Lokunyenti nga -2 kune - 102 • Lokuncane nga -2 kune - 105 • Lokunyenti nga -3 kune - 77 • Lokuncane nga -3 kune -51 • Lokunyenti nga -4 kune- 68 • Lokuncane nga -4 kune -167 • Lokunyenti nga -5 kune -129 • Lokuncane nga -5 kune-185 • Lokunyenti nge -10 kune -490 • Lokuncane nge -10 kune -660	

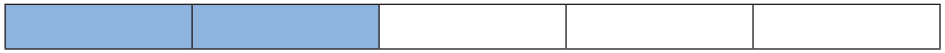
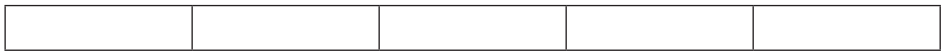
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.16 **Tibalo tenhloko**	**Tindlela tekubala ngenhloko** • Sebentisa lamasu ekubala laland-zelako Faka in-ombolo lenkhulu kucala bese ubala uyachubeka nobe ubala uya emuva • Umugcatinombolo • Kuphindza nekuh-hafula • Kwakha nekuh-lahlela tinombolo • Kusebentisa budlelwane em-khatsini wekuhlan-ganisa nekususa • Kusebentisa budlelwane em-khatsini weku-phindzaphindza nekuhlukanisa	• Faka inombolo lenkhulu kucala bese ubala uyachubeka nobe ubuyela emuva • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela tinombolo • Kusebentisa budlelwane emkhatsini wekuhlanganisa nekususa	Nguluphi luhlavu lwesihlanu lwe-alfabhethi? Nguyiphi inyanga yemfica emnyakeni? **Kuhlela nekucatsanisa** Nguyiphi lenkhulu: 21 nobe 171? Nika inombolo lesemkhatsini we -154 ne -159. **Khumbula ngekusheshisa** Emaciniso laphatselene nekuhlanganisa nekususa: • Kwati ngenhloko tonkhe tinombolo tekuhlanganisa nekususa tifike e -20 Sibonelo a) _____+ △ = 20 b) _____+ △ = 16 Hlanganisa ubuye ususe emaciniso laphatselene nato tonkhe tinombolo tifike tibuye tifake e -20 Tibonelo a) 1 + 11 = 12 b) 18 – 4 = 14 c) 11 + 1 = 12 d) 18 – 14 = 4 e) 2 + 10 = 12 f) 18 – 5 = 13 g) 10 + 2 = 12 h) 18 – 13 = 5 i) 3 + 9 = 12 j) 18 – 6 = 12 k) 9 + 3 = 12 l) 18 – 12 = 6 Khumbula ngekusheshisa kuphindza kuhlanganisa kufike e -20. Loku kutawufaka ekhatsi tibalo tekususa letihambelanako Tibonelo: a) 1 + 1 = 2 b) 6 + 6 = 12 c) 2 + 2 = 4 d) 7 + 7 = 14 e) 3 + 3 = 6 f) 8 + 8 = 16 g) 4 + 4 = 8 h) 9 + 9 = 18 i) 5 + 5 = 10 j) 10 + 10 = 20	

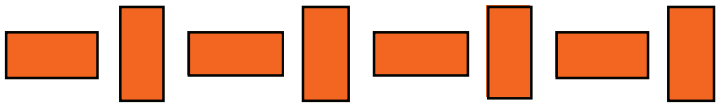
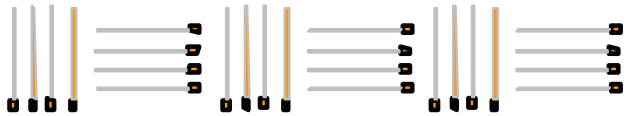
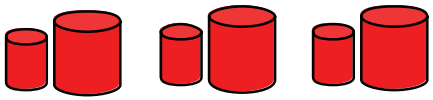
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.16 **Tibalo tenhloko**			Nguluphi luhlavu lwesihlanu lwe-alfabhethi? Nguyiphi inyanga yemfica emnyakeni? **Kuhlela nekucatsanisa** Nguyiphi lenkhulu: 21 nobe 171? Nika inombolo lesemkhatsini we -154 ne -159. **Khumbula ngekusheshisa** Emaciniso laphatselene nekuhlanganisa nekususa: • Kwati ngenhloko tonkhe tinombolo tekuhlanganisa nekususa tifike e -20 Sibonelo a) _____+ △ = 20 b) _____+ △ = 16 Hlanganisa ubuye ususe emaciniso laphatselene nato tonkhe tinombolo tifike tibuye tifake e -20 Tibonelo a) 1 + 11 = 12 b) 18 – 4 = 14 c) 11 + 1 = 12 d) 18 – 14 = 4 e) 2 + 10 = 12 f) 18 – 5 = 13 g) 10 + 2 = 12 h) 18 – 13 = 5 i) 3 + 9 = 12 j) 18 – 6 = 12 k) 9 + 3 = 12 l) 18 – 12 = 6 Khumbula ngekusheshisa kuphindza kuhlanganisa kufike e -20. Loku kutawufaka ekhatsi tibalo tekususa letihambelanako Tibonelo: a) 1 + 1 = 2 b) 6 + 6 = 12 c) 2 + 2 = 4 d) 7 + 7 = 14 e) 3 + 3 = 6 f) 8 + 8 = 16 g) 4 + 4 = 8 h) 9 + 9 = 18 i) 5 + 5 = 10 j) 10 + 10 = 20	

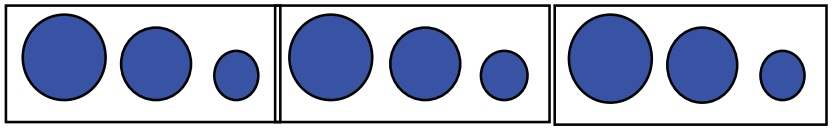
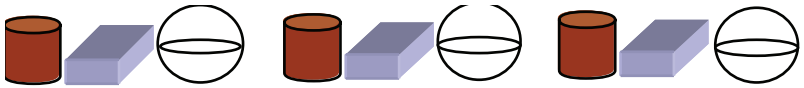
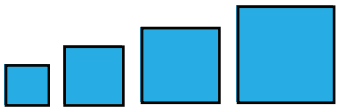
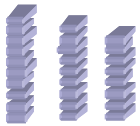
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.16 **Tibalo tenhloko**			**Tibonelo:** Ngikhombe inombolo lotayihlanganisa ne… kute wente e- 20 (kubhala phasi nobe kusebentisa simelibungako nobe emafladikhadi) a) 8 b) 2 c) 9 d) 15 e) 3 **Sibonelo:** Ngikhombe inombolo lesele nangabe …. asusiwe e -20 (kubhala phasi nobe kusebentisa simelibungako nobe emafladikhadi) a) 5 b) 18 c) 0 d) 14 e) 7 Hlanganisa nobe susa emamalthiphuli e -10 kusukela e -100 Sibonelo: a) Shano kutsi tingaki tinyatselo lekumele batitsatse emgcenitinombolo kute bafike e -30 kuya e-100 nobe kusukela e -100 kuya e -50 b) Ttola emapheya emakhadi kute kwentiwe li-100 c) Faka tinombolo ebhokisini kute wakhe li-100 □ + 70 = 100 20 + □ = 100 100 – □ = 90 100 – 40 = □	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.16 **Tibalo tenhloko**			**Emasu ekubala tibalo** Sebentisa lamasu ekubala kuhlanganisa nekususa ngalokufanele: Hlanganisa tinombolo letinyenti ngekusebentisa tindlela letifana naleti: • Buka emapheya etinombolo letitawenta li -10 ubuye usebentise loku kucala 2 + 7 + 8 2 + 8 kwenta li -10 ubuye uhlanganise ne -7. Faka inombolo lenkhulu kucala kute ubale uchubeke uye phambili nobe uye emuva • Cala ngenombolo lenkhulu kakhulu 5 + 15 Phindza uhlele umushotinombolo: 15 + 5 ubuye uchubeke ubale ufike e -20 • Ntjintja inombolo ibe li- 10 ubuye ususe nobe uhlanganise ku -1 **Sibonelo:** 8 + 9 = 17 ubuye uchaze kutsi lomunye angenta loku 8 + 9 = 8 + 10 – 1 6 + 11 = 17 ubuye uchaze kutsi lomunye angenta loku 6 + 10 + 1 17 – 9 = 8 ubuye uchaze kutsi lomunye angenta loku 17 – 10 + 1 • Hlahlela inombolo ibe tincenye tayo ubuye uhlanganise tinombolo Kwakha nekuhlahlela tinombolo: Chubeka nekuhlahlela tinombolo tibe tincenye letincane 8 + 12 = 8+ (10+2) = 8 + 2 + 10 = 10 + 10 = 20 • Sebentisa kuphindzaphindza njengelisu lekubala tibalo tenhloko Bona kuphindza lokusedvute Sibonelo: 5 + 6 = 11 uchaze kutsi kuphindza sihlanu 5 usihlanganise na-1 nobe phindza si -6 ususe ku -1	

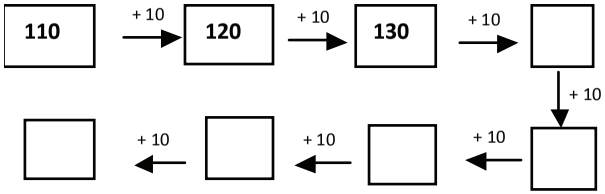
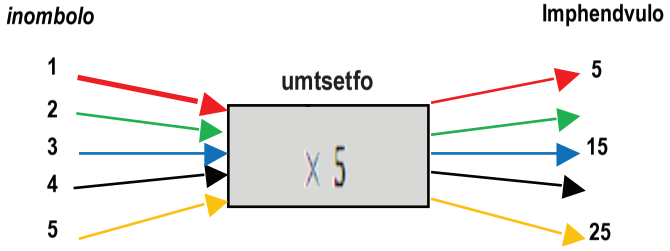
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.16 **Tibalo tenhloko**			Bona kutsi nangabe tinombolo letimbili tisedvute kulenye ngesayizi kuba lula kutfola umehluko ngekubala uchubeke uye phambili, hhayi kubala uye emuva. 15 – 11 = 4 ubuye uchaze kutsi kubala kusukela e-11 kuye e-15 kusinika lo -4 Letinye tibalo tenhloko tingentiwa ngaphandle kwekusebentisa tinsita, kepha kubalulekile kwenta tibalo tenhloko usebentisa kusita, Tinsita letiphakanyisiwe • Umugca tinombolo(lehlelekile lengakagcwaliswa) • Igridi yetinombolo • Timelibungako (emafladikhadi) • Tinsita tekubala	
1.17 **Tincetu**	• Sebentisa ubuye unike emagama etincetu letisesimeni lesetayelekile letifaka bohhafu, emakota, kunye kulokusiphohlongo, kunye kulokusitfupha, kunye kulokusihlanu • Bona tincetu letisesimeni semadayagremu • Bacala kubona kutsi emahhafu lamabili nobe kunye kulokutsatfu kwenta intfo yinye legcwele nekutsi ihhafu yinye iyalingana nemakota lamabili. • Bhala tincetu tibe nguhhafu munye, kubili kulokutsatfu	• Sebentisa ubuye unike emagama etincetu letisesimeni lesetayelekile letifaka bohhafu, emakota, kunye kulokusiphohlongo, kunye kulokusitfupha, kunye kulokusihlanu • Bona tincetu letisesimeni semadayagremu • Bacala kubona kutsi emahhafu lamabili nobe kunye kulokutsatfu kwenta intfo yinye legcwele nekutsi ihhafu yinye iyalingana nemakota lamabili. • Bhala tincetu tibe nguhhafu munye, kubili kulokutsatfu	Ebangeni le 2 bafundzi batfulelwe tincetu: • Bayaba babuye babutsele ndzawonye tintfo ngekulingana; • Banike emagama etincenye tetincetu letihamba ngakunye; • Babone tincetu letikusimongcondvo lesihlukene; • Babhale emagama etincetu ngalendlela, kunye kulokutsatfu; • Batfola tincetu tetintfo letiphelele; • Batfola ligcogco letintfo tetincetu Ngalesikhatsi salethemu bafundzi batfulelwa tincetu letingahambi ngakunye, sib. Emakota lamatsatfu nobe kubili kwalokutsatfu. Bayachubeka basebente ngetincetu. Basebenta nangetincenye letisiphohlongo nesitfupha. Tibonelo temibuto: Uhlukaniswe tincenye letingaki letilinganako bunjwa ngamunye? Tingaki tincenye tabunjwa ngamunye lolufakwe umbala? Nguliphi lucetu lwabunjwa ngamunye lolufakwe umbala? Nguliphi lucetu lwabunjwa ngamunye lolungakafakwa umbala?	

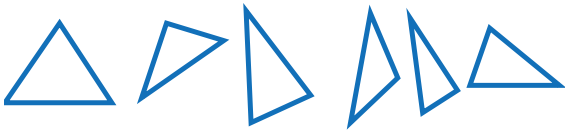
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE
1.17 **Tincetu**			A.  B  C  D  Bafundzi kumele banikwe litfuba lekutifakela umbala kubobunjwa Sibonelo: Faka umbala kulobunjwa encenyeni yesibili yalokutsatfu A.  Faka umbala kulamakota lamabili alobunjwa B  Faka umbala kulobunjwa encenyeni yesine yalokusihlanu C  Faka umbala kulobunjwa encenyeni yesitfupha yalokusiphohlongo D 	

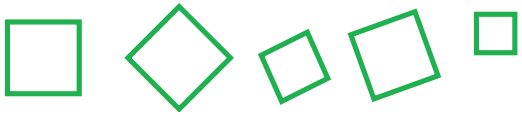
LIBANGA 3 ITHEMU 1 2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI 1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI NGEMA-AWA**
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawo-tonkhe** Tfola, chaza ngemagama ubuye utsatsele ema-phethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Tinhlobo temaphethini**: Emaphethini lalula lapho bobunjwa, nobe tincumbi tabobunjwa tiphindzeka ngendlela lefanako. **Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo.	Ebangeni 3 bafundzi bangasebenta ngemaphethini lapho: • tincenye tiphindzeke ngendlela lefanako; • isayizi yabobunjwa intjintja ngendlela lelindzelekile kanye, • nelinani labobunjwa nobe letintfo lintjintja ngendlela lelindzelekile. Emaphethini angentiwa ngekusebentisa intfo yinye kodvwa imibala yayo intjintja ngendlela leyetayelekile, sib.  Emaphethini angentiwa ngekusebentisa bunjwa munye nobe intfo yinye kodvwa kubekeka kwayo kuntjintje ngendlela leyetayelekile. Sibonelo**:** a)  b)  Lamanye emaphethini anetincumbi letiphindziwe tabobunjwa nobe tintfo letifa-nako, lapho isayizi yabunjwa encunjini ngayinye intjintja ngendlela lelindzelekile, sib. isayizi yabunjwa iba yinkhulu nobe ibe yincane. Tibonelo**:** Isayizi yabunjwa iba yinkhulu 	Sifundvo sinye

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI NGEMA-AWA
2.1 **Emaphethini eJomethri**			Sibonelo: Isayizi yabunjwa iba yincane  Emaphethini angentiwa ngekwenta tincumbi letifanako, lapho incumbi ngayinye ineluhlobo lunye lwetintfo kepha kubekeka kwaletintfo encunjini kuyantjintja. Tincumbi letifanako tiyaphindvwa. Sibonelo:  Lamanye emaphethini akhiwe ngeluhlobo lunye lwabunjwa, kodvwa sibonelo ngasinye sabunjwa siyakhula nobe sinciphe ngesayizi. Sibonelo:  Lamanye emaphethini akhiwe asukela etincunjini lapho kunetimo letifanako tetintfo, kodvwa linani lweluhlobo ngalunye lwabunjwa nobe lwetintfo luyandza nobe luyancipha ngendlela leyetayelekile. Sibonelo:   • **Kutsatsela** iphethini kusita bafundzi kutsi babone kuhleleka nendlela iphethini leyakheke ngayo. • **Kuchubekisela phambili** iphethini kusita bafundzi kuhlola kutsi bakuvisisile kuhleleka kwephethini.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI NGEMA-AWA
2.1 **Emaphethini eJomethri**			• **Kuchaza** iphethini kusita bafundzi kutsi batfutfukise emakhono abo elulwimi nekukhuluma. Kubuye kukusite kutsi ubone kutsi bafundzi bayihumushe njani iphethini. Kuvamise kuba lula kutsi bafundzi bakhulume ngephethini emva kwekuyenta. Ngalesikhatsi bafundzi balindzeleke kutsi bachaze emaphethini ngaphandle kwekusebentisa imibuto lebacondzisako. Chubeka ugcile ekutfutfukiseni lulwimi loludzingekako nakuchazwa emaphethini.	
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e -1000**Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho etinombolo.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e -1000 Kulandzelana kumele kukhombise kubala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -200 • Nge -10 kusukela kunobe nguyiphi imalthiphuli emkhatsini we -0 ne -200 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -200 • Nga -2 kusukela kunobe nguyiphi imalthiphuli yaku -2 emkhatsini we- 0 ne - 200	Kulandzelanisa tinombolo kungachunyaniswa nekubala. Uma emakhono ebafundzi ekubala atfutfuka, tinhlobo tekulandzelana kwetinombolo lebasebenta ngalo bafundzi, lungatfutfuka. Kulandzelana kwetinombolo kumele kukhombise kubala uye phambili nasemuva kuloku: • Nga-1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -200 • Nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 ne -200 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -200 • Nga -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -200 • Nga -3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne -200 • Nga -4 kusukela kunobe nguyiphi imalthiphuli ya -4 emkhatsini we -0 ne -200 • Nge -100 kusukela kunobe nguyiphi imalthiphuli ye -100 kuye kulokungenani e -500 Bafundzi bangakhomba tinombolo ngalesikhatsi babala. Kulusito kunika bafundzi kulandzelana kwetinombolo ngemifanekiso leyehlukene sib. • Kulandzelana kwetinombolo lokubhalwe phasi • Imigcatinombolo - Kukhonjiswa kuphela tinombolo letibalwako - Tincenye temigcatinombolo sib: 150 - 200 • Emagridi etinombolo • Luchungechunge lwetinombolo Bafundzi bangambonya, bafake umbala, nobe bafake indilinga etinombolweni nababala emgcenitinombolo nakumagridi etinombolo.	3 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI 1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI NGEMA-AWA
2.2 **Emaphethini etinombolo**		• Nga -3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we- 0 ne -200 • Nga -4 kusukela kunobe nguyiphi imalthiphuli ya -4 emkhatsini we -0 ne -200 • Nge -100 uye lokungenani e -500	Bafundzi bangagcwalisa tinombolo letisele emgcenitinombolo, kumagridi etinombolo, etinombolweni letibhaliwe letilandzelanako nakuluchungechunge lwetinombolo sib. Sibonelo  Njengobe kulandzelana kwetinombolo kungasekela kubala, ngaloko ke bafundzi bangabala ngemacembu, nobe kungaba tintfo nobe titfombe, baphindze babhale letinombolo ngemathebula neflodayagramu njengelisu lekutfutfukisa nekusekela kuphindzaphindza. EThemini 1 gcila etinombolweni -2, -5 ne-10 sib. Bala nge -5 **R5 buhhehlu** 1 2 3 4 5 6 7 8 9 **Samba semali** R5 R10 R15 R20 R25 R30 R35 R40 R45  Ekupheleni kweThemu bafundzi basebenta ngekulandzelana kwekubala tinombolo kuye nekusukela e -100.	

LIBANGA 3 ITHEMU 1 3. SIKHALA NABUNJWA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** **(etifundvweni teli-awa linye nemaminithi lange-24)**
3.3 **Bobunjwa labangema-dayimenshini lamabili (2-D)**	**Tinhlobo tabobunjwa** • tindilinga • bocalantsatfu • tikwele • bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • simo • emacala lacondzile • emacala layindilinga **Dvweba bobunjwa** • tindilinga • bocalantsatfu • tikwele • bocalandze	**Tinhlobo tabobunjwa** • tindilinga • bocalantsatfu • tikwele • bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • simo • emacala lacondzile • emacala layindilinga	**Yini leyehlukile eBangeni 2?** EBangeni 3 bafundzi bahlanganisa umsebenti wabobunjwa labangemadayimenshini lamabili (2-D) lowentiwe ebangeni 2 kodvwa ungagcili ekusebenteni ngesayizi nobe imibala uma usebenta ngabobunjwa. Loku kusita bafundzi kutsi babe nesikhatsi lesinyenti sekugcila emsebentini lomusha wetintfo letingemadayimenshini lamatsatfu (3-D), kubekeka, kwetayeta nebukeka kanye nekuhlukanisa ekhatsini kulingane ngalokufanako. Imisebenti leminyenti yabobunjwa ebangeni 3 yentiwa ngetintfo letiphatsekako. Yonkhe imisebenti kumele ihlanganiswe ngemisebenti lebhalwako. **Kubona nekunika emagama etindilinga, bocalantsatfu, tikwele nabocalandze Kubona nekunika emagama etindilinga, bocalantsatfu netikwele** Bafundzi kumele basebente ngetindilinga netikwele letingemasayizi lehlukene, kanye nabocalantsatfu labakheke ngalokwehlukene. Kubalulekile kutsi bafundzi bangaboni kuphela sibonelo sinye sabunjwa ngamunye. Emasethi lamanyenti abobunjwa labatsengiswako anika sibonelo sinye kuphela sacalantsatfu. Bafundzi kufanele bakwati kubona: • Tindilinga letinengemasayizi lahlukene Sibonelo:  • Bocalantsatfu labakheke ngalokwehlukile babuye babekeka etindzaweni letehlukene. Sibonelo: 	Tifundvo leti-2

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24)
3.3 **Bobunjwa labangema-dayimenshini lamabili (2-D)**			• Tikwele letingemasayizi lehlukene letibekeke etindzaweni letehlukene Sibonelo:  • Bocalandze labakheke ngalokwehlukile, babuye babekeka etindzaweni letehlukene. Sibonelo:  Kulusito kutsi bafundzi basebente ngemifanekiso yabobunjwa bemabhokisi lajutjiwe. Loku kwenta bafundzi kutsi babone bocalantsatfu, tikwele nabocalandze lababekwe ngetindlela letehlukene. Bafundzi bahlunga bobunjwa ngekutsi banemacala lacondzile nobe layindilinga. Bafundzi bahlunga babuye bente tincumbi tabobunjwa ngekwabocalantsatfu, bocalandze, tikwele nobe tindilinga. Imisebenti ihlanganiswa ngemisebenti lebhalwako.	

LIBANGA 3 ITHEMU 1 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** **(etifundvweni teli-awa linye nemaminithi lange-24)**
4.1 **Sikhatsi**	**Kusho sikhatsi** • Fundza tinsuku ekhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi etinombolo lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa ikhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe emaviki nobe tinyanga kufaka ekhatsi	**Kusho sikhatsi** • Fundza tinsuku ekhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi etinombolo lakhombisa sikhatsi sib. bomakhalekhikhini.	**Yini leyehlukile eBangeni 2?** Kungeniswa emathulusi edijithi. EBangeni 2 bafundzi bafundza sikhatsi ngema-awa, ihhafu yema-awa kanye nekota yema-awa ewashini letintsi. EBangeni 3 bafundzi bacala kusebenta ngemathulusi edijithi. Bayachubeka nekugcina indlela yema-awa la-12 babuye basebentise ekuseni nantsambama lapho kudzingeke khona. Bafundzi bayachubeka nekutetayeta kucoca ngebudze besikhatsi nekulandzelanisa sikhatsi. Ngesikhatsi sekufundzisa likilasi lonkhe nangesikhatsi semacembu, bafundzi bayachubeka bacoce ngemalanga eliviki, tinyanga temnyaka kanye nelusuku lwangalelolanga, lilanga lelindlulile nelilanga lelilandzelako. Bafundzi kumele batetayete kusebenta ngemakhalenda ngekukhombisa njalo • Lusuku lwekutalwa • Imigidvo yetenkholo • Tigameko letendlulile • Tigameko tesikolo • Emaholide emphakatsi Chubeka utjele bafundzi basho sikhatsi ngema-awa, ihhafu yema-awa, ikota yema-awa ngekusebentisa liwashi letintsi ngekushiyanisa tikhatsi malanga onkhe. Sibonelo, bafundzi bangatjelwa kutsi basho sikhatsi sekucala kwesikolo, selikhefu nesikhatsi sekuya ekhaya nobe nabantjintja tifundvo kusukela esifundvweni sinye kuye kulesinye. Khetsa tikhatsi lapho liwashi likhombisa li-awa nobe ihhafu yeli-awa nobe ikota yeli-awa. Kuyasita kuba neliwashi lelikhulu laseklasini, kute bafundzi babuke kulo. Bafundzi bangenta imifanekiso yemawashi. Ungacela bafundzi kutsi bakhombise tikhatsi letehlukene ufake ekhatsi kubala sib. “Khombisa insimbi ye-10. Bekusikhatsini ngalesikhatsi kusele ikota ngaphambi kwekutsi kushaye insimbi ye-10?	3 Tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24)
4.1 **Sikhatsi**	• kuntjintja emkhatsini wemalanga nemaviki. • kuntjintja emkhatsini wemaviki neminyaka. Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nobe ikota yema-awa		Ngesikhatsi sekutisebentela bafundzi bachubeka nekwenta imisebenti lephatselene nekusho sikhatsi ngema-awa, ngehhafu yema-awa, nekota yema-awa emawashini etintsi. Bafundzi bangenta tibalo ngemaviki nemalanga nangabe banikwe ikhalenda nobe sigaba sekhalenda, sib. kutfola emalanga nekubala kuhlukana kwetikhatsi. **Sikhatsi sedijithi** • Sikhatsi sikhonjiswa ngendlela yemadijithi ema-awa la-12 etintfweni letinyenti letisetjentiswa ekhaya sib.makhalekhikhini, sifutfumeti, sidlali se-CD nesidlali se-DVD njll. Kungenteka bafundzi babe bayetayele lendlela yesikhatsi kunalena yeliwashi letintsi. Ungenta tifundvo letintsatfu kwetayeta bafundzi ngesikhatsi sedijithi sema-awa la-12. • Khumbuta bafundzi kutsi (a.m) usho sikhatsi sasekuseni, (p.m) usho sikhatsi sasemini. • Khombisa bafundzi kutsi nguwaphi emadijithi ngekubhekisa kuma-awa nekutsi nguwaphi emadijithi ngekubhekisa kumaminithi esikhatsi sedijithi. • Chaza kutsi kunemaminithi lange-60 e-aweni linye, kunemaminithi la-30 ehhafini yeli-awa nemaminithi la-15 ekoteni yeli-awa. Loku kutawusita bafundzi kuhlanganisa emaminithi ngekufundza ngema-awa, ema-awa lahhafu nema-awa layikota ewashini letintsi, lokungumsebenti lebawentile eBangeni 2. • Nika bafundzi litfuba lekutetayeta kufundza sikhatsi sedijithi yema-awa la-12. Bani neliwashi ledijithi lelikhonjiswa eklasini. Bafundzi abanike sikhatsi sasemini njalonjalo umnyaka wonkhe. Bafundzi abente imifanekiso yemawashi, labangawasebentisa kusho sikhatsi nekubala umehluko esikhatsini.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24)
4.2 **Budze**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-. **Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi lebekelwe umgomo yebudze. • Combela ubuye ukale budze usebentisa irula. (Asikho sidzingo sekugucula emamitha nemasentimitha)		EBangeni 2 kuphakanyiswe kutsi bafundzi bagcile ekucombeleni, ekulinganiseni, ekucatsaniseni nasekurekhodeni budze, bubanti nekuphakama • ngemayunithi langakahleleki ne • kukala ngemamitha basebentisa indvuku leyimitha nobe intsambo leyimitha yinye. Ngetikhatsi tekutisebentela bafundzi bangatetayeta emakhono ekukala. **Kukala budze njengesimongcondvo sekusombulula tinkinga tetibalo nekubala** Ngesikhatsi lesibekelwe tinombolo, tibalo nebudlelwane. Bafundzi bangabala tibalo letisebentisa ingcikitsi lephatselene netlinganiso • Silinganiso sebudze lesingakahleleki; • Kukala budze ngemamitha Caphela kuhleleka kwetinombolo ngethemu netinhlobo tetinkinga tetibalo tethemu. Tifundvo letigcile ekukaleni budze titawucala ethemini 2	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24)
4.3 Sisindvo	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa, hlela ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa nobe ngemagremu sib. 500 emagremu asawoti. • Uma kunesikali sasendlini yekugezela, bafundzi bakala sisindvo sabo. (Asikho sidzingo sekugucula emagremu nemakhilogremu).	Ebangeni 2 bafundzi • bakale sisindvo ngalokungakahleleki basebentisa sikali sekulinganisa; • bahlele tintfo ngekwesisindvo lesibhalwe ephakethini; babuye • bafundze sikali sasendlini yekugezela (tikali mbamba netitfombe tetikali). Ngesikhatsi sekutisebentela bafundzi bangatetayeta lamakhono ekulinganisa. **Kukala budze njengesimongcondvo sekusombulula tinkinga tetibalo nekubala.** Ngesikhatsi lesibekelwe tinombolo, timphawu tekubala nebudlelwane bafundzi bangasombulula tinkinga letisebentisa simongcondvo lesiphatselene • nekukala sisindvo lokungakahleleki; • kukala sisindvo ngemakhilogremu. Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga tetinombolo letifanele ithemu. Tifundvo letigcile ekukaleni sisindvo titawucala ethemini 2		

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24)
4.4 **Umtsamo/ Bungako**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekubala nekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ubuye ubhale umtsamo ngekukala ngemalitha, ihhafu yemalitha nekota yemalitha usebentisa:	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekubala nekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi letine. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ubuye ubhale umtsamo ngekukala ngemalitha, ihhafu yemalitha nekota yemalitha usebentisa:	**Yini leyehlukile eBangeni 2?** Ebangeni 2 bafundzi • Bacombelile babuye bakala, bacatsanisile, bahlela, babuye barekhoda umtsamo wetintfo tekuphatsa nobe bungako bemtsamo ngekusebentisa silinganiso lesingakabekelwa imigomo; • Bacatsanise babuye bahlela umtsamo wemabhodlela netintfo tegilosa letinebungako lobuvetwe emaphakethini; • Basebentise emabhodlela layilitha yinye nobe lijeke leliyilitha yinye kucombela nekukala, kucatsanisa, kuhlela kanye nekurekhoda bungako betintfo tekuphatsa ngemalitha. EBangeni 3 bafundzi bangeniswa kumamililitha. **Uyini umtsamo? Buyini bungako?** Libhodlela lingaba nemtsamo welitha kodvwa kungenteka lingagcwaliswa nswi, lingamumatsa umtsamo wenkomishi yinye yemanti. Umtsamo samba lesingamumatfwa yintfo (nobe bungako besikhala lesingekhatsi kwentfo), Bungako busilinganiso sesikhala lesingatsatfwa yintfo letsite. Ngalesinye sikhatsi bafundzi batawukala kutsi kungakanani lokusamanti (nobe isanti nobe letinye tintfo) letisentfweni yekutsela. Ngalesinye sikhatsi bafundzi batawukala kutsi intfo yekuphatsa ingatfwala lokunganani nangabe igcwele kakhulu. Bafundzi kufanele bachubeke nekukala ngekusebentisa emayunithi langakahleleki emtsamo. **Kukala umtsamo lokungakahleleki usebentisa emayunithi langakabekelwa umgomo.** Bafundzi bangafundza yonkhe imitsetfo nalokwentiwako nakukalwa ngekusebentisa emayunithi langakabekelwa umgomo. Kukala ngekusebentisa emayunithi langakabekelwa umgomo kufanele kungatsatselwa phasi kunekukala usebentisa emayunithi labekelwe umgomo. Bafundzi kumele batfole litfuba lekukala bungako/umtsamo ngekusebentisa tintfo letehlukene njengemayunithi langakahleleki sibonelo tinkomishi (kodvwa hhayi tinkomishi tekukala) tipunu (kodvwa hhayi tipunu tekukala) timbonyo temabhodlela njengetimbonyo temabhodlela elubisi emalitha la-2, tikotela letincane, emabhodlela lamancane, njll.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24)
4.4 Umtsamo/ Bungako	• Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi nobe ngemamililitha sib. 500 emamililitha elubisi, 340 emamililitha esinatfo lesibandzako, 750 emamililitha e-oyila. • Yati kutsi inkomishi lelingene ingemamililitha la -250 • Yati kutsi ithisipunu ingemamililitha la -5 (Asikho sidzingo sekugucula emamililitha nemalitha).	- Emabhodlela lanemtsamo loyilitha nobe tintfo tekuphatsa letinemtsamo lokhonjiswe ngemamililitha sib. tikotela tesinatfo lesibandzako. - Emajeke ekukala lakhombisa imigca yekukala ngemamililitha. - Tinkomishi tekukala nemathisipunu lakhombisa umtsamo wawo. • Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi nobe ngemamililitha sib. 500 emamililitha elubisi, 340 emamililitha esinatfo lesibandzako, 750 emamililitha e-oyila. • Yati kutsi inkomishi lelingene ingemamililitha la -250	Kukala bungako/umtsamo ngemayunithi langakabekelwa umgomo lokufaka ekhatsi kubala kutsi uyigcwalisa kangaki bese utsela kuleyunithi yebungako lekhetsiwe. Bafundzi kumele bafundziswe ngaso sonkhe sikhatsi kutsi babite iyunithi sib. Kunemathisipunu lange-48 emanti ebhodleleni nobe kunemanti langaphasi kancane kwenkomishi, ebhodleleni. Bafundzi bangaze bakale nganobe nguyiphi iyunithi kube tikhatsi letinyenti, kufanele bacombele umtsamo/bungako ngekusebentisa leyo yunithi. Kucombela ngaphambi kwekukala kubalulekile, kodvwa kungentiwa kuphela nangabe bafundzi bacedzile kukala ngaleyo yunithi. Bafundzi abafundziswe loko kute bacatsanise bungako nobe umtsamo, iyunithi lefanako kufanele isetjentiswe. Sibonelo, nangabe ingilazi imumatsa emathisipunu la -20 emanti kantsi inkomishi imumatsa tipunu le-10 emanti, angeke usho kutsi ingilazi imumetse emanti lamanyenti. Bafundzi kufanele bakale basebentisa emayunithi lehlukene lalangakahleleki kute • bacale kuvisisa kutsi uma iyunithi iyincane, itawusetjentiswa kanyenti, sib. bungako ebhodleleni bungaba ngemathisipunu lange-20 kodvwa inkomishi ibe yinye; • bacala kusebentisa emayunithi lafanele loko lebakukalako, sib kukala emalitha la -2 elibhodlela ngemathisipunu kukucitsa sikhatsi. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo nebungako ngemalitha. Khumbuta bafundzi kutsi emalitha angemayunithi lavamile ekukala umtsamo nebungako. Lendlela yekufinyeta (l) isetjentiswa emajekeni ekukala nasetintfweni letitsengiswa ngebungako. Hlola kutsi bafundzi bayasikhumbula sifinyeto semalitha. Bafundzi bakala ngemalitha basebentisa: • Tintfo tekuphatsa letiyilitha -1 njengemabhodlela esinatfo lesibandzako, emabhodlela elubisi, emakhathoni elubisi, emakhathoni ejuzi; kanye • nemajeke ekukala lakhombisa imigca yekukala ilitha.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24)
4.4 **Umtsamo/ Bungako**		• Yati kutsi ithisipunu ingemamililitha la -5 (Asikho sidzingo sekugucula emamililitha nemalitha).	• Bacombela babuye bakale umtsamo wetintfo tekuphatsa letehlukene njengetintfo tekuphatsa iyogathi, tekuphatsa i-ayisikhilimu, tekuphatsa kudla kwasemini, emajeke lamakhulu, emabhodlela lamakhulu, emathini langenalutfo ependi, emabhakede, njll. Kufanele kukhetfwe tintfo letinemtsamo lowehlukene. Bafundzi bachaza umtsamo njengekutsi “kuncane kunelitha yinye, emalitha la-2, emkhatsini welitha -1 nemalitha la-2, emalitha la-5” njll. Bafundzi bacatsanisa, bahlele babuye barekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lobhalwe ngemalitha sib. emalitha la -2 elubisi, ilitha -1 yesinatfo lesibandzako, emalitha la -5 ependi. • Combela, linganisa, catsanisa, hlela ubuye urekhode bungako nemtsamo ngemamililitha. Khuluma nebafundzi ngemamililitha njeyunithi lebekelwe imigomo levamile kukala umtsamo kanye nebungako. Chaza kutsi emamililitha angemayunithi lamancane kunemalitha. Kufanele bafundze ligama nesifinyeto, ngobe etintfweni tekuphatsa lokutsengiswako kanye nasemajekeni ekukala kusetjentiswa lendlela yemagama lefinyetiwe. Bafundzi kumele bacatsanise, bahlele, babuye barekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lovetwe ngemamililitha, sib. 500 ml elubisi, 750 ml eviniga, 330 ml tinatfo letibandzako, 200 ml tinatfo letibandzako, 400 ml ipholishi yaphasi,njll. Bafundzi abakale njalonjalo ngalokwanele nge: • Tinkomishi tekukala letilingene kucala kutfola kutsi kunganani lokunge-250 ml; • Emathisipunu ekukala kutfola kutsi kunganani loku -5ml; • Emajeke ekukala lanemigca yekulinganisa ngemamililitha- lapha lokulindzelekile kutsi bafundzi bafundze kuphela imigca yekukala – batawugcila ekufundzeni tinombolo tekulinganisa letingakakhonjiswa esigabeni lesiseMkhatsini. Kulandzela emaresiphi, lokufaka ekhatsi kubhaka, kusimongcondvo lesilusito lapho bafundzi bangatetayeta kukala. Bafundzi abakalindzeleki kutsi • bati kutsi i- 1 000 ml = 1 litha, • bantjintje emkhatsi wemamililitha nemalitha, nobe	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24)
4.4 **Umtsamo/ Bungako**			• bafundze imigca yekulinganisa lengafakwa tinombolo emajekeni ekukala (loku kwentiwa eBangeni 4). **Kurekhoda tilinganiso** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode tonkhe tilingaso ngato tonkhe tikhatsi, lokufaka ekhatsi tilingsniso letingakahleleki naletihlelekile. **Kukala bungako/ umtsamo njengesimongcondvo sekusombulula tinkinga netibalo** Ngalesikhatsi lesibekiwe seTinombolo, timphawu tekubala, nebudlelwane, bafundzi bangasombulula tinkinga letisebentisa simongcondvo se • silinganiso lesingakahleleki semtsamo/ bungako sib.Gogo usebentisa tinkomishi le-2 telubisi kwenta iphudingi. Uma aphindza iresiphi, utawudzinga lubisi lolunganani? • emalitha • emamililitha Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga tetinombolo letifanele ithemu.	

LIBANGA 3 ITHEMU 1 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** **(etifundvweni teli-awa linye nemaminithi lange-24) Tifundvo le-3**
5.4 **Gcoca ubuye uhlele idatha**	**Gcoca ubuye uhlele idatha** • Gcoca idatha ngeliklasi nobe ngesikolo kuphendvula imibuto lebutwa nguthishela. • Hlela idatha leniketwa nguthishela nobe libhuku. • Hlela idatha: - ngetinhla - ngemathali - ngemathebula	**Gcoca ubuye uhlele idatha** Gcoca idatha ngeliklasi nobe ngesikolo kuphendvula imibuto lebutwa nguthishela. Sebentisa emathali kurekhoda idatha ngetigaba letinikiwe. **Veta idatha** Veta idatha: • ngelithebula • ngebhagrafu **Hlatiya ubuye uhumushe idatha** Phendvula imibuto ngedatha lekubha	**Yini leyehlukile eBangeni 2?** • Bafundzi bahlela idatha ibe tinhla, emathali, emathebula • Bafundzi bangeniswa kumabhagrafu • Bafundzi bayachubeka basebenta ngemagrafutitfombe –bayawakha njengencenye yemjikeleto wedatha babuye bahlatiye emagrafutitfombe lebawaniketiwe. **Umjikeleto wedatha lophelele** Emjikeletweni wekusebenta ngedatha, • Bafundzi bagcogca lwati lwekuphendvula umbuto. ESigabeni Sabokhewane neSasemkhatsini lombuto uvamise kuniketwa nguthishela nobe incwadzi yekufundzisa; • Bafundzi bahlunga babuye bavete lwati ngetindlela letenta kube lula kuhlatiya. Indlela yekuveta lebasebenta ngayo kutsi bafundzi beLibanga 3 tinhla, emathali, emathebula, emagrafutitfombe nemabhagrafu kanye nekutsi • bafundzi bahlatiya lwati ngekuphendvula imibuto lebutwe nguthishela. Ibhagrafu yeliklasi Kuphakanyisiwe kutsi bafundzi beLibanga 3 basebente ngawo wonkhe umjikeleto wedatha lokungenani kanye ngemnyaka: Kusebenta kanyekanye njengeliklasi kusita bafundzi kutsi batimbandzakanye kuto tonkhe tigaba tenchubo ngaphandle kwekulahleka kumininingwane yanobe ngusiphi sigaba. Kwenta ibhagrafu yeliklasi kukuvumela kutsi wente bafundzi bagcile etintfweni letibalulekile tekusebenta ngedatha kanye nekungenisa bafundzi kutimphawu letibalulekile tebhagrafu. • kutsi igrafu ilebulwa kuphi futsi njani (sihloko segrafu) • kutsi emacala alebulwa kuphi futsi njani (tihloko temacala) • kutsi emabha advwetjwa njani. - dvweba emabha abe budze lobungibo kukhombisa idatha. - yenta emabha nebubanti lobufanako.	
5.5 **Veta idatha**	**Veta idatha** Veta idatha • ngegrafutitfombe • ngemabhagrafu			
5.6 **Hlatiya ubuye uhumushe idatha**	**Hlatiya ubuye uhumushe idatha** Phendvula imibuto ngedatha lekhonjiswe • ngemagrafutitfombe • ngemabhagrafu			

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24) Tifundvo le-3
			- shiya sikhala emkhatsini wemabha. - lebula kahle ibha ngayinye. • ifundvwa njani igrafu Bafundzi kufanele bati kutsi kubalulekile kufundza sihloko segrafu kucala, khona batekwati kutsi idatha iphatselene nani. Kufanele babuye bafundze tihloko temacele lavundlile nalamile. Bafundzi abadzingi kutsi bati emagama eSayensi lasetjentiswa kuchaza tincetu tegrafu, kufanele bafundze kuphela ngaphansi kanye nasemaceleni kubona kutsi igrafu iphatselene nani. Sivamise kufundza kusukela esandleni sesancele kuya kusekudla kanye naphasi kuya etulu. Loku kudzinga kutsi kuchazelwe bafundzi. Kufanele babuye bateta-yete lamakhono. Kusebenta ngemjikeleto lophelele wedatha kungatsatsa tifundvo le -3. **Gcoca ubuye uhlele idatha.** EBangeni 3 kufanele ubute imibuto levumela bafundzi kutsi bagcoce idatha sib. Nguyiphi imibala letsandvwa liklasi? Bothishela beSigaba kumele bente siciniseko sekutsi tihlobo letehlukile tetihloko tikhetselwa kugcogca idatha kanye nekuhlahlela ebangeni ngalinye. Tihloko letifanele tifaka ekhatsi temid-lalo letitsandvwako, tinatfo letibandzako letitsandvwako, imibala letsandvwako, tikhatsi letengcile letitsandvwako, kudla lokutsandvwako, tinhlelo tamabonakudze letitsandvwako njll. Bafundzi bangacala ngekubita labakukhetsile. Ungaze utfole umcondvo wet-imphendvulo letinyenti, kufanele uhlele tigaba labatawukhetsa kuto bafundzi. Bafundzi abatetayete tonkhe timo tekwetfula letingesiwo emagrafu letivetiwe njengetinhla, emathali kanye nemathebula sib. • luhla lwemagama lwemfundzi ngamunye ngaphasi kwetigaba labatikhetsile njengalabakutsandzako; • khombisa bafundzi kutsi entiwa njani emathebula ethali laseluhlwini (kufundzisa bafundzi kutsi kwentiwa njani ithali kungatsatsa sifundvo sonkhe) kanye • yenta lithebula ngetinombolo letisuka ethebulini lethali. Idatha ingaze ibe sethebulini, khombisa bafundzi kutsi idvwetjwa njani ibhagrafu (buka tinkhombandlela letingenhla).	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-1	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli-awa linye nemaminithi lange-24) Tifundvo le-3
			Hlahlela ubuye uhumushe idatha Bafundzi baphendvula imibuto loyibutako ngegrafusitfombe Sibonelo: a) “Nguwuphi umbala lotsandvwa kakhulu eklasini?” b) “Nguwuphi umbala lotsandvwa ngulabambalwa bafundzi eklasini?” c) “Ngabe bafundzi labanyenti batsandza...nobe...?” d) “Banyenti ngabangaki bafundzi labancoma...kuna...?”	

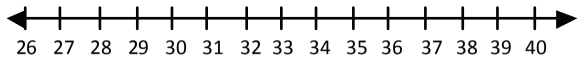
LIBANGA 3 ITHEMU 2 1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA**	**LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	
1.1 **Kubala tintfo**	**Kubala tintfo letiphatsekako** Combela ubuye ubale ngekwetsembeka lokungenani tintfo letisetjentiswa malanga onkhe leti-1000. Lisu lekwenta tincumbi liyakhutsatwa.	Gcoca lokungenani tintfo letisetjentiswa malanga onkhe le- 500 kucombela nekubala ngekwetsembeka. Nika kucombela lokwamukelekile kwelinani letintfo lokungahlolwa ngekubala.	**Yini leyehlukile eThemini 1?** Kuhleleka kwetinombolo kukhula kuye e -500. Kukhula kwekuhleleka kwetinombolo kuchaza kutsi bafundzi banga: • Gogcela ndzawonye tintfo kute ubale • Bala nge-10 kuya e -500 bese usho emagama etintfo ngekulandzelana; • Matanisa luphawu nelinani lelibaliwe ngekubhala inombolo nobe kukhombisa inombolo nemakhadi esimelibungako. Buka emanotsi eThemu ye-1.	
1.2 **Bala uye phambili nasemuva**	Bala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi imalthiphuli emkhatsini we -0 ne-1000 • Nge-10 kusukela kunobe nguyiphi imalthiphuli emkhatsini we-0 ne-1000 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne-1000 • Nga -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne-1000 • Nga -3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne-1000	• Nga-1 kusukela kunobe nguyiphi inombolo emkhatsini wa -0 kuya ne-500 • Nge -10 kusukela kunobe nguyiphi imalthiphuli emkhatsini we-0 ne -500 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -3 emkhatsini we -0 ne-500 • Nga -2 kusukela kunobe nguyiphi imalthiphuli emkhatsini we -0 ne-500 • Nga -3 kusukela kunobe nguyiphi imalthiphuli emkhatsini we -0 ne-500 • Nga -4 kusukela kunobe nguyiphi imalthiphuli emkhatsini we -0 ne -500	**Yini leyehlukile eThemini 1?** Ngalesikhatsi sethemu bafundzi bacala kubala nge -50. Kuhleleka kwetinombolo kuyakhula kuya -1000. Ngalesikhatsi sethemu bafundzi bachubeka nekusebentisa kubala ngekuzuba emathebuleni ekuphindza kanye nekuhleleka kwetinombolo. Buka emanotsi eThemu ye-1.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.2 **Bala uye phambili nasemuva**	• Nga -4 kusukela kunobe nguyiphi imalthiphuli emkhatsini we-0 ne-1000 • Nge -20, nge-25, 50,100 kuya kulokungenani e -1000	• Nge- 20, nge-25, 50,100 kuya kulokungenani e -1000		
1.3 **Tinombolo nemagama etinombolo**	**Tfola, bona nekufundza tinombolo** • Tfola, bona nekufundza tinombolo kusukela e -0 kuya e-1000 • Bhala tinombolo kusukela e -0 kuya e-1000 • Tfola, bona nekufundza tinombolo kusukela e -0 kuya e -1000 • Bhala tinombolo kusukela e -0 kuya e -1000	**Tfola, bona nekufundza tinombolo** • Tfola, bona nekufundza tinombolo kusukela e -0 kuya e -1000 • Bhala tinombolo kusukela e -0 kuya e -1000 • Tfola, bona nekufundza tinombolo kusukela e-0 kuya e -250 • Bhala tinombolo kusukela e -0 kuya e -250	Kufundza nekubhala tinombolo kuyachubeka ngalesikhatsi: • Babala tintfo; • Babala baye phambili nasemuva; • Bacedzela kulandzelana kwetinombolo; kanye • Bahlela bacatsanisa tinombolo. Buka emonotsi ethemini 1	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.4 **Tinombolo nemagama eti-nombolo**	**Kuhlela nekucatsanisa tinombolo kuya e -999** • Chaza ubuye ucatsanise tinombolo letiphelele kuya e -999 ngekusebentisa kuncane kuna, kukhulu kuna, kunyenti kuna, kumbalwa kuna kubuye kulingane na. • Chaza ubuye ucatsanise tinombolo letiphelele kuya e -999 kusukela kulokuncane kakhulu kuya kulokukhulu kakhulu, kanye nalokukhulu kakhulu kuya kulokuncane kancane. **Sebentisa tinombolo letingema- odinali kukhombisa indzawo nekubekeka** • Sebentisa, fundza ubuye ubhale tinombolo letingema –odinali letifaka ekhatsi sakhiwo lesifinyetiwe lesifika e -31	**Kuhlela nekucatsanisa tinombolo kuya e -500** • Chaza ubuye ucatsanise tinombolo letiphelele kuya e -500 ngekusebentisa kuncane kuna, kukhulu kuna, kunyenti kuna, kumbalwa kuna kubuye kulingane na. • Chaza ubuye ucatsanise tinombolo letiphelele kuya ku-999 kusukela kulokuncane kakhulu kuya kulokukhulu kakhulu, kanye nalokukhulu kakhulu kuya kulokuncane kancane. **Sebentisa tinombolo letingema- odinali kukhombisa indzawo nekubekeka** • Sebentisa, fundza ubuye ubhale tinombolo letingema –odinali letifaka ekhatsi sakhiwo lesifinyetiwe lesifika e -31	Ngalesikhatsi salethemu kuhleleka kwetinombolo kuyakhula kusukela e -99 kuya e -500. Bafundzi bahlela tinombolo letingemadijithi lamatsatfu. Kuhlela tinombolo letimadijithi lamatsatfu, bafundzi badzinga kutsi: • Basho ligama lenombolo; • Babhale inombolo; kanye • Babone bungako bedijithi ngayinye.. Vumela bafundzi basebentise umugcatinombolo, kutfola tinombolo, emagridi etinombolo nobe lwati lwekuhlahlela tinombolo ngemakhulu, ngemashumi kanye nemivo kukhombisa kuvisisa. Nakuhlelwa tinombolo bafundzi kufanele bakwati kusho kutsi kungani inombolo ibe yinkhulu kunalenye ngekusebentisa bungako bemadijithi kute bakwati kuchaza. Sibonelo: E -339 mancane kune- 239 ngobe Ngiyati kutsi e -339 = 300 ne-30 kanye ne- 9 kanye ne-239 = 200 ne- 30 ne- 9. Umfundzi kufanele akwati kuchaza kutsi e -300 manyenti kune -200 ngekuse-bentisa tincumbi tetintfo kukhombisa inombolo ye-100 kunombolo ngayinye. Bafundzi kufanele bakhombe indzawo yenombolo lesemgcenitinombolo ngekutsi e- 339 eta emva kwe-239, ngako-ke ngiyati kutsi kukhulu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.5 **Simelibungako**	**Bona simelibungako setinombolo letingemadijithi lamatsatfu kuya e- 999** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi la -3 kuya e -999 tibe ngemamalthiphuli emakhulu, emashumi kanye nemivo (HTU) • Tfola ubuye usho bungako bedijithi ngayinye.	**Bona simelibungako setinombolo kuya e -500** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi la -3 kuya e -999 tibe ngemamalthiphuli emakhulu, emashumi kanye nemivo (HTU) • Tfola ubuye usho bungako bedijithi ngayinye.	**Yini leyehlukile eThemini 1?** Ngesikhatsi sethemu yesibili bafundzi bahlahlela tinombolo letingemadijithi lamatsatfu kwekucala. Indlela yekusebentisa simelibungako ikhulisiwe yafaka ekhatsi emakhulu. Kuvisisa kwebafundzi kwesimelibungako kungatfutfukiswa ngekubuta imibuto lefana nale, tfola lokunyenti ngelishumi nobe lokuncane kunenombolo. Ngekwemphumela yelwati lolutayelekile ekutfutfukiseni lwati lwesimelibungako, bafundzi kumele bakwati kubala ngekutetsemba ngema-100, tfola emaphethini laphatselene nesimelibungako bese kwakhiwa kubuye kuhlahlelwe tinombolo letingemadijithi lamabili kanye nalamatsatfu. Bafundzi kumele baniketwe sikhatsi lesanele sekwakha tinombolo letingemadijithi lamatsatfu nemabhuloki edienes nobe emabhuloki lanetinombolo letakha li-10. Kubalulekile kutsi bakhe bafike e-100 babuye bacale kubona li-100 njengentfo letihambela yodvwa. Bafundzi kumele babutwe kutsi tingaki tincumbi temakhulu lebanato. Emakhadi esimelibungako kudzingeka asetjentiswe kute akhombise tinombolo. Nangabe usebentisa emabhuloki emadienes nemabhuloki lanetinombolo letakha li-10, imibuto lelandzelako nobe ticondziso ingabutwa nobe inikwe: • Mangaki ema-100 lase-: 300, 400, 500? • Yakha letinombolo letilandzelako: 256, 378, 499? Ngalethemu bafundzi bafundza kutsi basho babuye babhale phasi bungako bedijithi enombolweni. E - 452 bungako be- 5 ngemashumi lasihlanu. E - 325, bungako be-5 sihlanu. Kubalulekile kuchumanisa kuvisisa ema-50 nemabhandlela la -5 elishumi nalokusihlanu lokuhamba ngakunye kwaloku -5. Loku kutawusita bafundzi ngalesikhatsi bahlela babuye bacatsanise tinombolo. Emakhadi esimelibungako abalulekile ngalokulinganako. Emakhadi ebungako asetjentiselwa kuhlahlela tinombolo kukhombisa bungako bedijithi ngayinye. 637 = 600 + 30 + 7 Bafundzi bangenta isethi yabo yemakhadi esimelibungako. Imvilophu inganamatseliswa emuva kwencwadzi yekusebentela kanye nemakhadi lagcinwe ngekhatsi emvilophini. Emakhadi angasetjentiswa ngalesikhatsi kwentiwa tibalo tekuhlanganisa angabuye asetjentiselwe kuhlola timphendvulo tabo.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.5 **Simelibungako**			Basebentisa emafuladikhadi kukhombisa loku.  **Hlahlela tinombolo letingemadijithi lamabili tibe ngemamalthiphuli emakhulu, emashumi kanye nemivo** Bafundzi bangahlahlela tinombolo tibe: • Emakhulu, bungako bemashumi kanye nebungako bemivo sib.. 273 = 200 + 70 + 3 (emakhadi esimelibungako asetjentiselwa kwenta loku) • Emamalthiphuli emashumi kanye newemivo sib. 273 = 2 emakhulu, 7 emashumi + 3 imivo **Kwakha tinombolo letingemadijithi lamabili kusukela eticenyeni tesimelibungako** Sibonelo Bhala inombolo: 1 likhulu kanye nemashumi la -3 2 emakhulu kanye nemashumi la -4 nemivo le -5 3 emakhulu + 9 emashumi + 2 imivo 4 emakhulu + 5 emashumi + 7 imivo Sibonelo**:** Cedzela: a) 346 = 300 + ☐ + 6 b) 400 + 20 + 8 = ☐	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
SOMBULULA TINKINGA TETIBALO KUSIMONGCONDVO				
1.6 **Emasu ekusombulula tinkinga tetibalo**	Sebentisa lamasu lalandzelako nawusombulula tinkinga tetibalo bese uchaza tisombululo tetibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula tinombolo • umugcatinombolo • kusondzeta eshumini	Sebentisa lamasu lalandzelako nawusombulula tinkinga tetibalo bese uchaza tisombululo tetibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • umugcatinombolo • kusondzeta eshumini	Bafundzibayachubeka neku sombulula tinkinga tetibaloa ngekusebentisa lamasu: • Kwakha nekuhlahlela tinombolo • Kuphindza nekehhafula • umugcatinombolo Buka emanotsi ethemini ye -1. **Yini leyehlukile eThemini 1?** **Kusondzeta edvute** Ngalethemu bafundzi bacala kusondzeta tinombolo eshumini. Kusondzeta edvute indlela letayeleke kakhulu yekucombela.Uma umfundzi angumcombeli lokahle indlela yakhe yekusondzeta edvute kumele ibe ngulekhululekile nalevisisekako. Ngembikwekutsi bafundzi basebentise kusondzeta edvute njengelisu nabahlanganisa nobe basusa tibalo, badzinga kutetayeta lamasu kucala. Loku kungenteka ngekusebentisa umugcatinombolo. Sibonelo:  Ngabe ema -33 asedvute ne -30 nobe e -40? Ngabe ema -37 asedvute ne -30 nobe e -40? Bafundzi badzinga kuvisisa loku: E -35 ayihhafu lesemkhatsini we -30 ne -40. Singatsi lishumi lelisedvute e -35 nge -40 ngobe sisondzeta edvute uma inombolo isemkhatsini wemashumi mabili. Buka emanotsi ethemini ye -2.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.7 Kuhlanganisa nekususa	Bala tibalo temagama letikulesimongcondvo bese uchaza sisombululo sakho setibalo lesifaka ekhatsi kuhlanganisa, kususa lokuholela etimphendvulweni ufike e-999	Bala tibalo temagama letikulesimongcondvo bese uchaza sisombululo sakho setibalo lesifaka ekhatsi kuhlanganisa, kususa lokuholela etimphendvulweni ufike e-400	**Sibonelo setinkinga tetibalo letingentiwa kulethemu.** Tibalo tekuhlanganisa nekususa • Pamela ugcogce tibhonyo temabhodlela la -413. Uma Keny amuphe timbonyo le- 29, utawuba nelinani lelifanako nelaPamela. - Batawuba natingaki timbonyo temabhodlela? - Ken bekanatingaki timbonyo temabhodlela? • Nkz Zibi ubolekise R80, 00 ku Nkz Magadla. Nkz Zibi nyalo sewusele ne R366, 00 Bekanamalini ekucaleni Nkz Zibi? • Jan ufundze emakhasi la-115. Nandi ufundze emakhasi la-126. Manyenti kangakanani emakhasi lafundvwe ngu Nandi kunalawo lafundvwe nguJan? • Ben unetimabuli le -218. Unetimabuli letimbadlwana le -97 kuna Anna. Unetimabuli letingaki Anna?	
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	Bala tibalo temagama letikulesimongcondvo ubuye uchaze sisombululo sakho setibalo ngekusebentisa kuphindzaphindza lokunetimphendvulo ufike e -99.	Bala tibalo temagama letikulesimongcondvo ubuye uchaze sisombululo sakho setibalo lesifaka ekhatsi kuphindzaphindza lokunetimphendvulo ufike e -75	**Sibonelo setinkinga tetibalo letingentiwa kulethemu** Buka ithemu ye -1 kutfola tibonelo letinyenti nekutjintja kuhleleka kwetinombolo kahle. • Umphatsi u -ode emasondvo emabhasi la -8. Uma yinye ibhasi idzinga emasondvo lasitfupha nasinye sipele selivili, Utawu -oda mangaki emasondvo umphatsi? • Lidamu lekugeza esikolweni lingemamitha la-10 budze. Luvuyo ugeze kwaba imjikeleto le -6. Ugeze libanga lelingakanani? **Tinhlobo tetinkinga tetibalo: Ligcogco** • Ingadze yetibhidvo inemigca le -12 yetitjalo. Munye umugca unetijalo leti -7. Tingaki tonkhe titjalo letisengadzeni? • Ingadze yetibhidvo inemigca le -12 yetitjalo. Umugca ngamunye unelinani letitjalo lelifanako. Uma kunetitjalo le - 48, munye umugca unetitjalo letingaki? • Ingadze yetibhidvo inemigca le -48 yetitjalo letihlanyelwe emigceni. Kunetitjalo le-7 kumunye umugca Mingaki imigca lelapho? **Kucatsanisa /budlelwane emkhatsini wesamba nelinani** • Samuel unemaswidi la-6.Samuel unemaswidi laphindvwe katsatfu ngebunyenti kunemaswidi a Moeketsi.Unemaswidi lamangaki Moeketsi? • Marlene unemaswidi la-18 Loku kuphindvwe katsatfu ngebunyenti njengemaswidi a Samuel. Unemaswidi lamangaki Samuel? Letinhlobo tetinkinga tetibalo titfulwa kwekucala ethemini ye -2. Bafundzi bangatsatsa sikhatsi lesidze kusombulula letinhlobo letinkinga tetibalo.	

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1.9 **Kugcogca nekwabelana lokuholela ekuhlukaniseni**	Bala tibalo ubuye uchaze tisombululo tekwenta tinkinga tetibalo lokufaka ekhatsi kwabelana lokulinganako nekugcogca ufike e-200 netimphendviulo letifaka insalela.	Bala tibalo ubuye uchaze tisombululo tekwenta tinkinga tetibalo lokufaka ekhatsi kwabelana lokulinganako nekugcogca ufike e-100 netimphendviulo letifaka insalela.	**Sibonelo setinkinga tetibalo letingentiwa kulethemu** Tingaki timoto letindzingekako kuhambisa bafundzi laba -24 uma bafundzi labane bangenela emotweni yinye? Kunemakawosi la- 65 eshelufini. Mangaki emapheya lalapho? **Kugcogca** David utsengisa tikhwama temawolintji letinemawolintji lalishumi ngasinye. Unemawolintji la-40.Angagcwalisa tingaki tikhwama temawolintji? Tony unemaswidi la -66. Ngelilanga udla emaswidi lamatsatfu. Mangaki emalanga langadla ngawo emaswdi?	
1.10 **Kwabelana lokuholela ekuh-lukaniseni**	Bala tibalo ubuye uchaze tisombululo tekwenta tinkinga tetibalo lokufaka ekhatsi kwabelana lokuholela etisombululweni letifaka ekhatsi tincetu letihamba ngakunye naleto letingahambi ngakunye, sibonelo $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{3}{4}, \frac{2}{5}$, njll.	Bala ubuye uchaze tisombululo tekwenta tinkinga tetibalo lokufaka ekhatsi kwabelana lokuholela etisombululweni letifaka ekhatsi tincetu letihamba ngakunye naleto letingahambi ngakunye, sibonelo $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{3}{4}, \frac{2}{5}$, njll.	Ngalethemu ye -1 bafundzi bangeniswe etincetwini letingesiwo emayunithi sibonelo. 3 emakota nobe ku -2 kulokutsatfu. Litfuba lelanele kumele liniketwe bafundzi kute batati letincetu. **Sibonelo setinkinga tetibalo letingentiwa kulethemu** a) Kwabelana lokuholela etincetwini b) Yabela bangani la-3 emabha eshokolethi kute bonklhe batfole lokulinganako kungasali lutfo. c) Ligcogco letincetu d) Tfola ikota yi-1 yemaswidi la-20. e) Emaswidi la-6 anguluphi lucetu lwemaswidi la -24? f) Gogo unike Kiki R12. Kiki ufuna konga lokutsatfu kwalemali. Kumele abeke malini? Loluhlobo lwetinkinga tekubala kumele luvetwe emva kwekutsi bafundzi basombulule tibalo letine nobe letisihlanu tekwabelana,lokuholela etinhlobeni tetincetu nekwati emagama etincetu.. **Kubhala** Bafundzi akukavumeleki kutsi babhale timphawu tetincetu. Bafundzi kumele bachubeke nekulebula tincenye tetincetu ngalendlela kunye kulokusihlanu, emakota la-3 nobe tincenye letintsatfu kuletisitfupha. **Kumela tinkinga tetibalo temagama tetincetu** Bafundzi kumele badvwebe timphendvulo tabo kukhombisa kuvisisa tibalo. Lindzela kutsi labanye bafundzi batawudvweba ngalokungiko kepha bangalati kahle ligama lelicetu.Sita labobafundzi banike emagama etincetu ngalokungiko (buka emanotsi ngekwetsiwa kwetincetu) Bafundzi kumele basho emagama etincenye letabiwe ngekutsi batibhale ngalendlela kubili kwalokutsatfu.	

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1.11 **Imali**	• Bona ubuye utfole imali lebuhhehlu yaseNingizimu Afrika kanye nemali yemaphepha. • Bala tibalo temali lokufaka ekhatsi tamba nentjintji yemarandi nobe emasenti. • Gucula phakatsi kwemarandi nemasenti.	• Bona ubuye utfoimali lebuhhehlu yaseNingizimu Afrika kanye nemali yemaphepha. • Bala tibalo temali lokufaka ekhatsi tamba nentjintji yemarandi nobe emasenti.	**Sibonelo setinkinga tetibalo letingentiwa kulethemu** • Kubaluleka kwemali nekwenta tamba value - Bhala 525c njengemarandi nemasenti. - Ungayenta ngetindlela letingaki letehlukene imali le-R400 ngemali yeliphepha? - Utawati ngani kutsi unato tonkhe tisombululo? - Travis unemali lengu 50c lebuhhehlu kanye nabo 20c labane. Emathofi abita R1,20. - Utawutfola itjintji lengumalini? • Mandla ubhadale R2,50 kugibela ithekisi aye esikoleni. - Kutambita malini kuya nekubuya esikoleni ngelilanga linye? - Sitimela sibita R6 yelithikithi lekubuyela emuva. Ngukuphi lokushiphile,ngabe sitimela nobe ithekisi? • Tinkinga tetibalo tekutsenga nekutsengisa - Gogo waPedro umnike R5. Nguwaphi emaswidi la-3 langawatsenga? - Ishokolethi ibita R2,70; emachephisi R1,80; emakip kip R1,40;emapentjisi R1,60; emaminti R2,20; emathofi R1,20. - Damon utsenge emabhuku lamatsatfu nge- R80 ngayinye; Utawutfola intjintji yamalini R300? - Emaphakethe emaminti la-5 abita 44c ngayinye.Mnu.King udzinga emaminti la-88. Mangaki emaphakethe lokumele awatsenge? Utawubhadala ini? • Emabhasi lamatsatfu ahamba emgwacweni we-toll abuye abhadale R40 ngayinye. Abhadala malini samba seka wonkhe? (Kulindzelekile kutsi bafundzi basebentise kuphindza kuhlanganisa tibalo lapho bungako belirandi bubukhulu)	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
TIBALO LETINGANASIMONGCONDVO				
1.12 **Emasu (tindlela nobe tindlela nchubo)**	Sebentisa lamasu lalandzelako nawenta tibalo tekubala: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo • Kusondzeta eshumini	Sebentisa lamasu lalandzelako nawenta tibalo tekubala: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo • Kusondzeta eshumini	Bafundzi balindzeleke kusebentisa emasu lalandzelako uma benta tibalo tengcikitsi lekukhululekile: • Kwakha nekuhlahlela tinombolo • tinombolo • Kuphindza nekehhafula • IMigcatinombolo • Kusondzeta eshumini. Vumela bonkhe bafundzi bakhetse emasu lebakhululekile kuwasebentisa. Nanobe, bafundzi bangasebentisa emasu langasikahle badzinga kucondziswa ngekusebentisa tindlela letikahle kakhulu. Buka emanotsi ethemu 1 • Kwakha nekuhlahlela tinombolo; • Kuphindza nekuhhafula; ne • umugcatinombolo **Kusodzeta edvute ngemashumi** Buka incazelo yenkinga yekubala tibalo esigabeni ethemini 2.	

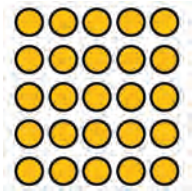
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**	• Hlanganisa e -999 • Susa e -999 • Sebentisa timphawu letifanele (+, –, =, ☐) • Kutetayeta tibalo tekuhlanganisa letifika e -30	• Hlanganisa e -400 • Susa e- 400 • Sebentisa timphawu letifanele (+, –, =, ☐) • Kutetayeta tibalo tekuhlanganisa letifika e -30	**Yini lokwehlukile ethemini 2?** Kulethemu bafundzi bacala kubala basebentisa emadijithi lamatsatfu. Kute babale basebentisa emadijithi lamatsatfu ngekutetsemba, bafanele babe sebakhona ku: • fundza nekubhala tinombolo kufike e -400 • hlela nekucatsanisa tinombolo kufika lokungenani e -400 • bala ngetincumbi kufike e- 400 • bala ngetigaba talo -2, 3, 4, 5, 10, 50 nalo -100 kuya e -400 Kulethemu bafundzi bayachubeka bahlahlela tinombolo kute babale. Kwakha nekuhlahlela tinombolo kungulelinye lemasu labalulekile lekufanele bafundzi babe nawo kulethemu. **Tindlela letingasetjentiswa kukhombisa tibalo tekuhlanganisa nekususa** • Kuhlahlela tinombolo tibe tincenye letincane letitawenta kubala kube lula. Emasu lamanyenti lasetjentiswa bafundzi afaka ekhatsi kuhlahlela tinombolo. Bayachubeka kwenta njalo ngetinombolo letingemadijithi lamatsatfu. • Kuhlanganisa ngekuhlahlela yinye inombolo. Kuhlanganisa emadijithi lamatsatfu nemadijithi lamabili. Sibonelo: 324 + 82 = ☐ 324 + 82 = (300 + 20 + 4) + (80 + 2) = 300 + (20 + 80)+ (4 + 2) = (300 + 100) + 6 = 400 + 6 = 406	

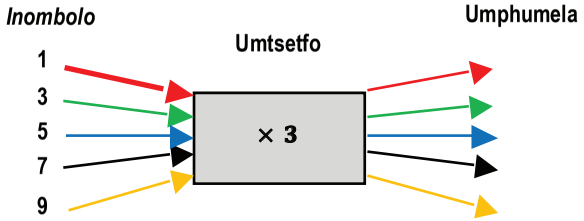
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**			Sibonelo: Kuhlanganisa emadijithi lamatsatfu nemadijithi lamatsatfu. Hlahlela tinombolo totimbili 323 + 136 = □ 323 + 136 =(300 + 20 + 3) + (100 + 30 + 6) = (300 + 100) + (20 + 30) + (3 + 6) = 400 + 50 + 9 = 459 • Kuhlanganisa (ngekuhlahlela tinombolo lokufanele tihlanganiswe) Bafundzi bahlahlela tinombolo ngetindlela lebatikhonako. Loku kusho kutsi batawenta ngetindlela letehlukene. Sibonelo:: 324 + 82 = □ 324 + (40 + 40 + 2) 324 + 40→ 364 + 40→ 404 + 2 = 406 Sibonelo Kuhlanganisa emadijithi lamatsatfu nemadijithi lamatsatfu 323 + 136 = □ 323 + 136 = 323 + (100 + 30 + 6) = (323 + 100) + 30 + 6 = (423 + 30) + 6 = 453 + 6 = 459 Kubala nge -40 kusukela e -324 kungentiwa ngekubala nge -10. • Kususa • Kuhlahlela totimbili tinombolo Emadijithi lamatsatfu ususa emadijithi lamabili Sibonelo: 389 – 137 = □ 389 – 137 = (300 + 80 + 9) – (100 + 30 + 7) = (300 – 100) + (80 – 30) + (9 – 7) = 200 + 50 + 2 = 252	

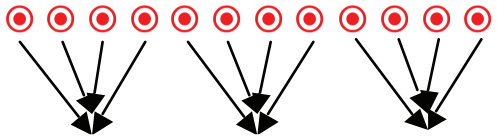
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**			• Kususa ngekuhlahlela inombolo yinye. • Sibonelo: 389- 137 = □ 389 – (100 + 30 + 7) 389- 100 → 289- 30 → 259- 7 = 252 • Kusebentisa kuhhafula kute uhlahlele inombolo. Sibonelo: 225 + 16 = 225 + 8 +8 = (225 + 8) + 8 = 233 + 8 = 241 • Bala uchubeke ubuye ubale uye emuva 305 + 298 = □ Bala ngakunye kusukela e -298 kulisu lelifanele ngobe letinombolo tisondzelene. Bona lokusondzelene nekuphindza Sibonelo: 145 + 146 = 191 uchaze kutsi kuphindza li -145 umhlanganise na -1 nobe phindza li-146 ususe ku -1. 145 + 145 + 1 (100 + 40 + 5) + (100 + 40 + 5) + 1 (100 + 100) + (40 + 40) + (5 + 5 + 1) 200 + 80 + 11 280 + 11 280 + 10 + 1 290 + 1 291	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**			• Kugucula inombolo ibe yimalthiphuli ye -10 ubuye ususe nobe wengeta kunye. **Bala uchubeke nobe uye emuva usondzete e -10** Sibonelo**:** 288 + 11 288 + 10 = 298 298 – 1 = 297 Sibonelo**:** 188 + 19 188 + 20 = 208 208 – 1 = 207 **Kutfutfukisa nekutetayeta emakhono ekuhlanganisa nekususa.** Bafundzi badzinga kutetayeta letinye tinhlobo temakhono ekuhlanganisa nekususa. • Kutetayeta kuhlanganisa tibalo kufike e -30 • Hlanganisa ubuye ususe emamalthiphuli e -10 • Bafundzi bafanele babe nematfuba ekwenta letinhlobo letilandzelako tetibalo tekubala ngetinombolo letifika e - 400: Hlanganisa nobe susa emamalthiphuli e -10 lahamba ngamabili, landlula e -100 40 + 70 70 + 80 120 – 30 150 – 60 Hlanganisa nobe susa li -10 kunobe nguyiphi inombolo lengemadijithi lamabili nobe lamatsatfu kufaka ekhatsi kundlula e - 100 Sibonelo: 65 + 10 124 + 10 326 – 10 358 - 10	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**			Hlanganisa nobe susa inombolo leyidijithi yinye kunombolo lengemadijithi lamatsatfu ngaphandle kwekundlula emashumi. Sibonelo: 234 +5 475 + □ = 479 768 – 4 Hlanganisa ubuye ususe idijithi yinye kumalthiphuli e-100. Sibonelo: 200 + 4 300 + 3 300 - 6 400 - 5 Kucala kuhlanganisa nekususa emapheya emamalthiphuli e -100 100 + 100 100 + 200 Bafundzi kufanele baniketwe litfuba lekutetayeta emaphethini ekuhlanganisa nekususa. Uma wati kutsi 1+ 1 = 2 Ngaloko -ke kulingana nani loku: 10 + 10 100 + 100 **Kuhlola imiphumela yalokubaliwe** Kutsatsa tincumo ngetisombululo letamukelekako Bafundzi kufanele baceceshelwe kutsatsa tincumo ngetisombululo letamukelekako Lenye indlela yekwenta loku kucombela imphendvulo ngembi kwekubala. Uma uhlanganisa tinombolo letimbili letisondzelene sib. li -145 ne -146 bafundzi bangasebentisa kuphindza njengendlela yekucombela timphendvulo tabo.	

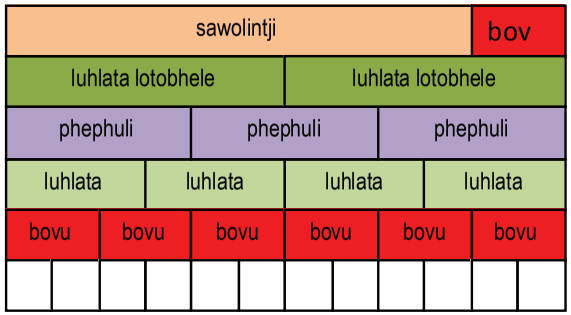
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.13 **Kuhlanganisa nekususa**			**Kuhlola imiphumela** Bafundzi kufanele bati kutsi banga: • hlola sibalo sekuhlanganisa ngekususa, Sibonelo: Uma 236 + 18 = 254 ngaloko-ke 254 – 18 = 236; neku • hlola sibalo sekususa ngekuhlanganisa, Sibonelo: Uma 384 – 48 = 336 ngaloko-ke 336 + 48 = 384 Kusebentisa lubhalokuhlanekela kuhlola imphendvulo ngulesinye sizatfu sekufundzisa kuhlanganisa nekususa kanyekanye.	
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	• Phindzaphindza tinombolo kusukela ku-1 kuya e -10 nga -2, 3, 4, 5, 10 kuya kusamba se -99 • Sebentisa timphawu letifanele (x, =, ☐)	• Phindzaphindza 2, 4, 5, 10, 3 kuya kusamba se -50 • Sebentisa timphawu letifanele (x, =, ☐)	Kulethemu bafundzi bachubeka ba: • sebentisa babuye bavisise lulwimi lwekuphindzaphindza; • mela kuphindzaphindza njengeligcogco • sebentisa timphawu letifanele kuhumusha imishotinombolo; • visisa kutsi kuphindzaphindza kuhlanganisa kungamelwa kusebentisa luphawu lwekuphindzaphindza; • tetayete babuye bavisise kutsi kuphindzaphindza kungentiwa nobe ngayiphi indlela (umtsetfo longalandzeli umgomo nobe luphawu); ne • sebentisa umugcatinombolo kukhombisa tibalo tekuphindzaphindza babuye bakhone kuchaza indlela lekumelwa ngayo (kutsi kuzuba kukukhombisa njani kuphindzaphindza kuhlanganisa) Bafundzi bangachubeka basebentise ligcogco kubhala kuphindza kuhlanganisa nemishotinombolo yekuphindzaphindza. Sibonelo Bhala imishotinombolo lemibili yekuhlanganisa nalemibili yekuphindzaphindza yaloligcogco  Lemifanekiso letisetjentisiwe kuchaza kuphindzaphindza ingakhuliswa.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**			Lithebula lekuphindzaphindza lingangeniswa. Sibonelo: x | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 1 2 3 4 5 Basho emathebula. Akukadzingeki kutsi bafundzi balati lithebula ebangeni le -3. Lekubukwe kona kakhulu lulwimi, lelivumela umfanekiso wengcondvo nakwen-tiwa emacembu. Sibonelo: • Kubili kunye kwenta kubili • kubili lokubili kwenta kune • kutsatfu lokubili kwenta sitfupha • Kune lokubili kwenta siphohlongo • Kuhlanu lokubili kwenta lishumi • Kubili lokusitfupha kwenta emashumi lamabili • Kubili lokuyinkhotsa kwenta lishumi nakune • Kubili lokusishiyagalombili kwenta lishumi nesitfupha • Kubili lokuyimfica kwenta lishumi nesiphohlongo • Kubili lokulishumi kwenta emashumi lamabili. Kusho loku ngalendlela kusekela kutfutfuka kwelwati lwekuphindza kuhlanganisa. Kuphindza kuhlanganisa kumele kusekelwe ngekukhomba kubala lokulandzela-nako nobe kumugcatinombolo. Bafundzi bangabuye basebentise emaflodayagramu kurekhoda tibalo tekuphin-dzaphindza. Sibonelo  	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.15 **Kuhlukanisa**	• Kuhlukanisa tinombolo kuye ema-99 nga- 1, 2, 3, 4, 5, 10 • Sebentisa timphawu letifanele (÷, =, □)	• Kuhlukanisa tinombolo kuye ema-50 nga- 2, 4, 5, 10 • Sebentisa timphawu letifanele (÷, =, □)	Ethemini yesesibili bafundzi bayachubeka batetayete babuye bahlanganise tibalo basebentisa luphawu lwekuhlukanisa. Kufanele bavisise kutsi umushotinombolo wekuhlukanisa ungachaza simo lesifaka ekhatsi kugcogca nekwaba. **Yini leyehlukile ethemini 1?** Kulethemu bafundzi kufanele bakwati kubhala babuye bachaze imisho yekuhlukanisa lehambisanako: Bafundzi kufanele bakwati kurekhoda loku lokulandzelako: 30 ÷ 6 = □ nekutsi 30 ÷ 5 = □ Bafundzi badzinga futsi kutsi batfutfukise emasu ekubhala tibalo tekuhlukanisa. Sibonelo: **Kususa lokuphindzako** Kute ubale 12 ÷ 4 = □. Bafundzi badzinga kusebentisa titfombe letikhombisa kugcogcela ndzawonye nobe kwaba.  **incumbi yetintfo le-4** **incumbi yetintfo le-4** **incumbi yetintfo le-4** Aba incumbi yinye yalokune bese waba incumbi yesibili yalokune ulandzele ngencumbi yesitsatfu yalokune. 12- 4 → 8 – 4 → 4- 4 = 0 Ngalesikhatsi incumbi yinye yalokune ibekwa eceleni, bafundzi bangasusa lokune kwekucala bese bayabala kutsi banakungaki lokusele. Bayachubeka bente loku baze basuse konkhe. Ebangeni 3 kufanele kugcizelelwe kugcogcela tintfo ndzawonye kunekwaba. Kwenta kususa lokuphindzako ngaloluhlelo lwetinombolo kufanelekile. Bafundzi kufanele banikwe imishotinombolo yekuhlukanisa kutsi bayicedzele letabavumela kutsi bente kususa lokuphindzako. Kwenta kususa lokuphindzako kwa 96 ÷ 3 akusilo lisu lelikahle ngobe kuhleleka kwenombolo kuphakeme. Nabasacala bafundzi kungaba matima kutsi babone kutsi nguyiphi imishotinombolo lefanele kwenta kususa lokuphindzako.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhlela tinombolo kuye ema- 999** • Hlela lisethi letinombolo letikhetsiwe letiniketiwe • Catsanisa tinombolo kuye e-1000 ubuye usho kutsi nguyiphi lenyenti nobe lencane nga: -1,2,3,4, 5 ne li -10 **Khumbula ngekushesh-isa:** • Kukhumbula emaciniso laphatselene nekuhlanganisa nekususa kufike e -20 • Hlanganisa nobe ususe emamalthiphuli e -10 kusukela e -0 kuye e -100 • Kuphindzaphindza nekuhlukanisa: • lithebula lakubili kufike ekuphindzaphindzeni ku -2 x 10 • Lithebula lelishumi kufike ekuphindzaphindzeni li -10 x 10	**Lwati lwetinombolo: Kuhlela tinombolo kuye ema- 500** • Hlela lisethi letinombolo letikhetsiwe letiniketiwe kuye e -500 • Catsanisa tinombolo kuye e -500 ubuye usho kutsi nguyiphi lenyenti nobe lencane nga: -1,2,3,4, 5 ne li -10 **Khumbula ngekushesh-isa:** • Kukhumbula emaciniso laphatselene nekuhlanganisa nekususa kufike e -20 • Hlanganisa nobe ususe emamalthiphuli e -10 kusukela e -0 kuye e -100 **Emasu ekubala tibalo tenhloko** Sebentisa tindlela tekubala letilandzelako: • Faka inombolo lenkhulu kucala bese ubala uyachubeka nobe ubuyela emuva • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela tinombolo	**Lwati lwetinombolo** Tibonelo temibuto lengabutwa: **Tinombolo nemagama etinombolo** Phakamisa likhadi nobe ubhale phansi ligama lenombolo. Khetsa umfundzi kutsi abhale inombolo lehambelana neligama lenombolo. **Lokunyenti nobe lokuncane** Kungaki loku • Lokuncane nga -1 kune -500 • Lokunyenti nga -1 kune - 499 • Lokunyenti nga -2 kune - 502 • Lokuncane nga -2 kune - 405 • Lokunyenti nga -3 kune - 477 • Lokuncane nga -3 kune -251 • Lokuncane nga -4 kune -185 • Lokunyenti nge -10 kune -490 • Lokuncane nge -10 kune -660 Nguluphi luhlavu lwesihlanu lwe-alfabhethi? Nguyiphi inyanga yemfica emnyakeni? **Kuhlela nekucatsanisa** Nguyiphi lenkhulu: 621 nobe 671? Nika inombolo lesemkhatsini we -154 ne -159. Kuhlanganisa nekususa: Buka emanotsi ethemini ye -1 Hlanganisa nobe ususe emamalthiphuli e -10 e -100 Shano kutsi tingaki tinyatselo lekufanele titsatfwe kumugcatinombolo kusukela e -30 uye e -100 nobe kusukela e -100 uye e -50	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.16 **Tibalo tenhloko**	**Emasu ekubala tibalo tenhloko** Sebentisa lamasu ekubala lalandzelako: • Faka inombolo lenkhulu kucala bese ubala uyachubeka nobe ubalaubuyela emuva • Umugcatinombolo • Kuphindza nekuhhafula tinombolo • Kwakha nekuhlahlela tinombolo • Kusebentisa budlelwane emkhatsini wekuhlanganisa nekususa • Kusebentisa budlelwane emkhatsini wekuphindzaphindza nekuhlukanisa.	• Kusebentisa budlelwane emkhatsini wekuhlanganisa nekususa	Tfola emapheya emakhadi kute kwentiwe li-100 Faka tinombolo ebhokisini kute wakhe li-100 □ + 70 = 100 20 + □ = 100 100 – □ = 90 100 – 40 = □ **Emasu ekubala tibalo:** Buka emanotsi ethemini ye -1	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.17 **Tincetu**	• Sebentisa ubuye unike emagama etincetu letisesimeni lesetayelekile letifaka bohhafu, emakota, kunye kulokusiphohlongo, kunye kulokusitfupha, kunye kulokusihlanu • Bona tincetu letisesimeni semadayagremu • Bacala kubona kutsi emahhafu lamabili nobe kunye kulokutsatfu kwenta intfo yinye legcwele nekutsi ihhafu yinye iyalingana nemakota lamabili. Bhala tincetu tibe nguhhafu munye, kubili kulokutsatfu		Kulethemu bayachubeka ba: • fundza emagama etincenye tetincetu; • sebentisa emagama kutimongcondvo letehlukene • bona incenye yelucetu; • cala kuvisisa isayizi yetincetu; • tfola tincetu tetintfo • fundza ngetincetu letilinganako Kulethemu bafundzi bacatsanisa tincetu. • Basebentisa emabhande emaphepha etincetu. Sibonelo: Lemifanekiso ifanele kufundzisa bafundzi kunika emagama etincetu nekuticatsanisa. Sibonelo:   Khombisa lubondza lwetincetu lolukhombisa kunye lokugcwele, emahhafu, kunye kulokutsatfu, emakota, kunye kulokusihlanu, kunye kulokusiphohlongo, kunye kulokulishumi. Kuncono kutsi bafundzi basebente ngetintfo letiphatsekako hhayi kucatsanisa tincetu ngekusebentisa lubondza lwetincetu etitfombeni. Bafundzi kufanele basebente ngetintfo lucobo lwato batilinganise.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHOMO LEKUGCILWA KUWO ETHEMINI YE-2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	
1.17 **Tincetu**			Lemibuto lelandzelako ingabutwa: • Mangaki emahhafu lenta lokugcwele? • Mangaki emakota lenta lokugcwele? • Mangaki emakota lakhona ehhafini yinye? Vumela bafundzi kutsi babeke emabhande • emaphepha, linye eceleni kwalelinye kute batfole timphendvulo. • Tingaki tincetu talokutsatfu letenta intfo yinye legcwele? • Tingaki tincetu talokusitfupha letenta kunye kulokutsatfu? • Tingaki tincetu talokusitfupha letenta ihhafu? • Ngukuphi lokukhulu, kunye kulokutsatfu nobe ihhafu? • Ngukuphi lokukhulu, kubili kulokutsatfu nobe emakota lamatsatfu?	

LIBANGA 3 ITHEMU 2 2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBRA				
TIHLOKO	**LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESINIKETIWE** (ngema-awa)
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawo-tonkhe** Tfola, chaza ngemagama ubuye utsatsele ema-phethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela,chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lekentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Tinhlobo temaphethini**: Emaphethini lalula lapho bobunjwa nobe tincumbi tabobunjwa letiphindzeke ngendlela lefanako. Emaphethini lapho linani nobe isayizi yabobunjwa esigabeni ngasinye in-tjintja ngendlela lelind-zelekile. Sib. emaphethini lakhula ngalokwetayele-kile **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo.	Chubeka unike bafundzi tinhlobo temaphethini letifana naleto teThemu 1 kodvwa ufake ekhatsi bonkhe bobunjwa labasha netintfo kumaphethini njengoba entiwe nakwentiwa Sikhala nabunjwa. Buka emanotsi emaphethini eThemu 1kanye neSikhala nabunjwa eThemini 2. Vumela bafundzi kutsi batsatsele kucala, babuye bachubekisele phambili, bagcine ngekuchaza emaphethini. Ngalesikhatsi bafundzi kumele babe bakwati kuchaza emaphethini ngaphandle kwekusitwa imibuto letinkhomba. Chubeka ugcile ekutfutfukiseni lulwimi lebaludzingako kute bachaze emaphethini.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE (ngema-awa)
2.2 Emaphethini etinombolo	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e -1000 **Yakha emaphethini akho** Yakha emaphethini akho etinombolo.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e -1000 Kulandzelana kumele kukhombise kubala uye phambili nasemuva kuloku: • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -500 • Nge -10 kusukela kunobe nguyiphi imalthiphuli emkhatsini we -0 ne -500 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -500 • Nga -2 kusukela kunobe nguyiphi imalthiphuli yaku -2 emkhatsini we- 0 ne - 500 • Nga -3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we- 0 ne -500 • Nga -4 kusukela kunobe nguyiphi imalthiphuli ya -4 emkhatsini we -0 ne -200 • Nge -50, e -100 uye lokungenani e -1000	Buka emanotsi eThemu 1 Chubekisela phambili kuhleleka kwetinombolo ubuye uchubeke ubale tinombolo ngekutilandzelanisa ngalendlela lelandzelako. • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne-500 • Nge -10 kusukela kunobe nguyiphi imalthiphuli ye-10 emkhatsini we-0 ne-500 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye-5 emkhatsini we-0 ne-500 • Nga-2 kusukela kunobe nguyiphi imalthiphuli ya-2 emkhatsini we-0 ne -500 • Nge -100 kusukela kunobe nguyiphi imalthiphuli ye -100 kuye kulokungenani e-1 000 • Nga-50 kusukela kunobe nguyiphi imalthiphuli ye -50 kuye kulokungenani e-1 000 • Nga-3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we-0 ne-500 • Nga-4 kusukela kunobe nguyiphi imalthiphuli ya -4 emkhatsini we -0 ne -500 Sebentisa tintfo, titfombe, emathebula nemaflodayagramu kusekela kutfutfuka kwebafundzi kusukela ekubaleni ngekweca kanye nekulandzelanisa tinombolo kuye ekuphindzaphindzeni nge -10, si -5, ku-2, ku-4. Sita bafundzi kutsi basebentise emaphethini labawatiko njengesisekelo sekutetayeta nekufundza lamanye emaphethini. Sibonelo • Kulandzelanisa nga -2 kwenta sisekelo sekulandzelanisa nga -4; ne • Kulandzelanisa nge -5 kwenta sisekelo sekulandzelanisa nge -50.	Tifundvo 3

LIBANGA 3 ITHEMU 2 3. SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESINIKETIWE** (ngetifundvo teli-awa 1 nemaminithi lange 24)
3.1 **Kubekeka, kwetayeta nekubukeka**	**Kubekeka nekubukeka** • Matanisa kubekeka lokwehlukene kwetintfo letifanako letisetjentiswa malanga onkhe. • Shano ligama lentfo lesetjentiswa malanga onkhe uma ikhonjiswe ngekubekeka kwayo lokungakatayeleki. • Fundza, humusha ubuye udvwebe emabalave langakahleleki nobe kubukeka kwangetulu kweligcogco letintfo. • Tfola tintfo kumabalave **Kubekeka netinkhom-bandlela** • Landzela tinkhombandlela kuhambahamba eklasini nasesikoleni • Nika tinkhombandlela tekuhambahamba eklasini nasesikoleni. • Landzela tinkhombandlela kusukela endzaweni yinye uye kulenye ebalaveni lelingakahleleki.	**Kubekeka nekubukeka** • Matanisa kubekeka lokwehlukene kwetintfo letifanako letisetjentiswa malanga onkhe. • Shano ligama lentfo lesetjentiswa malanga onkhe uma ikhonjiswe ngekubekeka kwayo lokungakatayeleki. **Kubekeka netinkhom-bandlela** • Landzela tinkhombandlela kuhambahamba eklasini nasesikoleni • Nika tinkhombandlela tekuhambahamba eklasini nasesikoleni.	**Yini leyehlukile ebangeni 2?** • Akukho lokugcilwa kuko lokucondzene nekutfutfukiswa kwelulwimi lwekubekeka, njengoba loku kwentiwe emabangeni 1 na 2 • Landzela inkhombandlela lechaza kabanti njengekuhambahamba esikoleni kunekuhambahamba eklasini. • Nika tinkhombandlela letiya etindzaweni letiseklasini nasesikoleni. • Emabalave nekubukeka lokungetulu kweligcogco letintfo. Loku kugcilwa kuko eThemini ye-3. **Lokuphakanyisiwe lekugcilwa kuko eThemini 2** Ethemini 2, kuphakanyisiwe kutsi umsebenti welibanga 2 ubuyeketwe, ubuye wengete • kutfola tintfo esitfombeni lesikhombisa kubukeka lokungakavami kwayo ne • kulandzela tinkhombandlela kuya etindzaweni letingaphandle kweliklasi. Cala ngekuhlola lebakwatiko nalebakukhumbulako bafundzi ngekubekeka ne-kutayeta. **Kubekeka netinkhombandlela** • Kulandzela tinkhombandlela Loku kufanele kube imisebenti leyentiwako lapho bafundzi batihambela bona ngekweticondziso. Ebangeni 3, bafundzi banganiketwa tinkhombandlela ngem-lomo nobe tibhalwe phasi. - kuhambahamba eklasini sib. “Buya phambili kweliklasi”; “mani eceleni kwesitulo sakho”; “zuba umgcoma wetibi waseklasini” ubuye - uhambahambe eklasini nobe esikoleni sib: tinkhombandlela letindze, “Hamba uphume emnyango, jikela esancele, chubeka wehle ngephaseji, ndlula inkhundla yetemidlalo, ukuphi nyalo?” • Kunika tinkhombandlela	2 tifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE (ngetifundvo teliawa 1 nemaminithi lange 24)
3.1 **Kubekeka, kwetayeta nekubukeka**			Labanye bafundzi batakutfola kulula kunika tinkhombandlela ngekukhombisa loko lokushiwo yinkhombandlela leniketiwe. Kulabanye bafundzi kutawusita kunika ticondziso tetintfo letimcoka njengetimphawu tenkhombandlela. • Shano kutsi uyachubeka yini nobe uhamba ngendlela lobuke yona nobe uyajika. • Shano kutsi uhamba ngendlela lecondzile, ujikele esencele nobe sekudla. • Nika timphawu letibekiwe lapho kufanele ujike khona sib: nawufika ehhovisi lamabhalane, jikela esancele, ubuye • Shano kutsi uhambe kangakanani. Kunetindlela letinye tekusho kutsi utawuhamba kangakanani sib: - hamba tinyatselo letinge -30 nobe emamitha la -10; - hamba wendlule emaklasi la -3 nobe hamba uze wengce liklasi laMnu. Radebe; nobe - hamba lokungenani liminithi linye. **Kubekeka nekubukeka** Ebangeni 3 bafundzi kufanele baniketwe imisebenti lebatawumatanisa kubukeka lokwehlukene (kubukeka kwangetulu, kubukeka kwelicala, kubukeka kwaphambili) kwekubukeka lokwehlukene kwetintfo letisetjentiswa malanga onkhe. Loku kutawusita bafundzi kutsi bakwati kuhumusha imidvwebo yetintfo teJomethri letentiwa ngetindlela letehlukene. Bafundzi kufanele babuye banikwe tibalo lapho batawutfola intfo esitfombeni lesidvwetjiwe nobe esitfombeni lesitfwetjulwe ngekubukeka lokwetayelekile sib: kubukeka kwelingetulu lenkhomo,nobe kubukeka kwaphambili kwelibhulashi lekugeza ematinyo.	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE (ngetifundvo teliawa 1 nemaminithi lange 24)
3.2 **Tintfo letingemadayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • Emasilinda • Emaphiramidi • Emakhoni **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • Bobunjwa labangemadayimenshini lamabili (2-D) labakha buso betintfo letingemadayimenshini lamatsatfu (3-D) • Tindzawo letisicaba nobe letigobekile.	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo letingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • Emasilinda **Timphawu tetintfo** Chaza, hlunga ubuye ucatsanise tintfo letingemadayimenshini lamatsatfu (3-D) mayelana naloku: • Bobunjwa labangemadayimenshini lamabili (2-D) labakha buso betintfo letingemadayimenshini lamatsatfu (3-D) • Tindzawo letisicaba nobe letigobekile.	**Yini leyehlukile eBangeni 2?** • Bafundzi abasabuki kutsi tintfo tingagicika nobe tingashelela; babuka kuphela kutsi tindzawo ngabe tisicaba nobe tigobekile. • Lapho tintfo tinetindzawo letisicaba, bafundzi babuka kutsi letindzawo tisikwele, tibocalandze, tibocalantsatfu nobe titindilinga. • Kungeniswa emakhoni nemaphiramidi (loku kungagcilwa kuko ethemini ye -3 neye -4) **Lokuphakanyisiwe lekugcilwa eThemini 2** Bafundzi basebenta ngetintfo letifanako nalebasebente ngato ebangeni 2 sib: • emabhola netintfo letime njengemabhola; • emasilinda netintfo letime njengemasilinda; • emabhokisi lehlukene naletinye tintfo letime njengemaphrizimu labocalandze nobe emakhiyubhu Bafundzi bangagcila kuletintfo letinsha (emaphiramidi nemakhoni) eThemini ye-3 neye -4 **Kubona nekunika emagama emabhola (lokusandilinga) nemabhokisi (emaphrizimu) nemasilinda** • Bafundzi bayachubeka nekunika emagama, kuhlunga nekugcogcela ndzawonye tintfo. Bafundzi kumele banikwe tintfo letitinhlobonhlobo kute basebente ngato: • letime njengendilinga, sib. emabhola langemasayizi lehlukene, timabuli, emawolintji njll • letime njengemaphrizimu, sib. emabhuloki, titini, emabhokisi langemasayizi lehlukene, sib. emabhokisi emetjiso, emabhokisi emasiriyeli, emabhokisi elitiya, emabhokisi emutsi wekucubha ematinyo njll • letime njengemasilinda, kufaka ekhatsi emasilinda lamadze nalancama, sib. tincamu temaphayiphi leme njengesilinda, emaroli lagocotela liphepha lasendlini lencane, emasilinda lamafisha nalabanti Bafundzi bangakwati kutfola tintfo letakheke njengebhola (lokusandilinga), letakheke njengelibhokisi (emaphrizimu) nobe letakheke njengesilinda ngalesikhatsi baniketwe ligcogco letintfo. Bafundzi bangatfola nobe bakhombise tintfo letakheke njengelibhokisi (emaphrizimu) eklasini, sib. “Lesikotela sematamatisi sime njengesilinda”.	3 tifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE (ngetifundvo teliawa 1 nemaminithi lange 24)
3.2 **Tintfo letingemadayimenshini lamatsatfu (3-D)**	**Imisebenti lekugcilwa kuyo** • Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) ngekusebentisa tintfo letiphatsekako njengabobunjwa • labangemadayimenshini lamabili (2-D) labajutjiwe, lubumba, tintsi tekuvungula, tintsi tekunatsa naletinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D).	**Imisebenti lekugcilwa kuyo** • Buka ubuye wakhe tintfo letingemadayimenshini lamatsatfu (3-D) ngekusebentisa tintfo letiphatsekako njengabobunjwa • labangemadayimenshini lamabili (2-D) labajutjiwe, lubumba, tintsi tekuvungula, tintsi tekunatsa naletinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D). **Tinhlobo tabobunjwa** • Indilinga • Calantsatfu • Sikwele • Calandze	Ngesikhatsi sekutisebentela bafundzi bangachubeka bente emabhola nemasilinda nabobunjwa labangemabhokisi (emaphrizimu) ngelubumba nenhlama yekudlala. **Kugcila kutimphawu tetintfo letingemadayimenshini lamatsatfu (3-D): Tindzawo letisicaba nobe letigobekile, timo tetindzawo letisicaba.** • Kwakha intfo yinye lengemadayimenshini lamatsatfu. Bafundzi basebentisa emakhadibhodi lajutjwe aba tikwele nobe bocalandze kwakha emabhokisi. Loku kwenta bafundzi bagcile kulesimo salendzawo lesicaba yelibhokisi. Bafundzi babuye babuke indzawo lesicaba kumaphrizimu nemasilinda bese bayayichaza kutsi iyindilinga, isikwele nobe ingucalandze. • Tindzawo letisicaba nobe letigobekile. Kwakha libhokisi (iphrizimu) kusita bafundzi kutsi bagcile etindzaweni letisicaba tetintfo. Bafundzi bangabuye babuke kutsi ngabe tonkhe tintfo teJomethri tinetindzawo letisicaba kuphela. Ebangeni 1 na 2, bafundzi bahlukanisa tintfo teJomethri ngekutsi tiyagicika nobe tiyashelela. Loku kulungiselela bafundzi kutsi bagcile ekuchazeni kutsi intfo inendzawo lesicaba (tintfo letishelelako) nobe letigobekile (tintfo letigicikako). Emasilinda anetindzawo letisicaba abuye abe naletigobekile). **Imisebenti lebhalwako** Nanobe imisebenti leminyenti yetintfo letingemadayimenshini lamatsatfu (3-D) yentiwa ngetandla, imisebenti kumele ihlanganiswe ngemisebenti lebhalwako. Ebangeni 3, kufanele kugcilwe ekunikeni emagama etintfo nekukhuluma ngetindzawo letisicaba nobe letigobekile. Bafundzi abakalindzeleki kutsi babale nobe bati kutsi intfo inatingaki tindzawo letisikwele, letibocalandze, letibocalantsatfu nobe letitindilinga. **Lulwimi** Lwati lwelulwimi lolulusito nawukhuluma ngetintfo letingemadayimenshini lamatsatfu (3-D): Indzawo, lesicaba, legobekile, emabhokisi, emabhola, emasilinda.	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE (ngetifundvo teli-awa 1 nemaminithi lange 24)
3.3 **Bobunjwa be-madayimenshini lamabili** **(2-D)**	**Tinhlobo tabobunjwa** • Indilinga • Calantsatfu • Sikwele • Calandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • simo • emacala lacondzile • emacala layindilinga **Dvweba bobunjwa** • tindilinga • bocalantsatfu • tikwele • bocalandze	Ethemini 2, akukho lokuphakanyisiwe lokuphatselene nabobunjwa labangemadayimenshini lamabili (2-D), kodvwa bafundzi bangah-langanisa lebakufundzile ngekubona nekunika emagama abobunjwa labangemadayimenshini lamabili (2-D), ngekwenta imisebenti lebhalwako ngesikhatsi sekutisebentela.		

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE (ngetifundvo teli-awa 1 nemaminithi lange 24)
3.4. **Kwehlukanisa emkhatsini kulingane ngalokufanako**	**Kwehlukanisa emkhatsini kulingane ngalokufanako** • Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimeshini lamabili (2-D) nabobunjwa labangasibo beJomethri • Tfola umugca lowehlukanisa emkhatsini kulingane ngalokufanako ngekugoca liphepha nekukhombisa.	**Kwehlukanisa emkhatsini kulingane ngalokufanako** Tfola umugca lowehlukanisa emkhatsini kulingane ngalokufanako ngekugoca liphepha nekukhombisa.	**Yini lensha eBangeni 3?** Kutfola umugca lowehlukanisa emkhatsini kulingane ngalokufanako ngekusebentisa emaphepha lagociwe. Imisebenti yekugoca emaphepha letfutfukisa kuvisisa kuhlukanisa emkhatsini kulingane ngalokufanako: • Imisebenti lapho ipendi lemanti itselwa ephepheni ngembi kwekuligoca • Imisebenti lapho liphepha lijutjwa/ lidzatjulwa emgceni lekugocwe kuwo. Lemisebenti ingentiwa etifundvweni teTibalo neteMakhono Ekuphila Buta bafundzi kutsi bacombele kutsi ngusiphi simo lesitawuvela uma basombulula liphepha lelijutjiwe. Loku kusita kulolonga likhono labo lekubona timo letihlukaniswe emkhatsini kulingane ngalokufanako.	2 Tifundvo

LIBANGA 3 ITHEMU 2 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESINIKETIWE** (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.1 **Sikhatsi**	**Kusho sikhatsi** • Fundza tinsuku ekhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi etinombolo lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa ikhalenda kubala nekuchaza budze besikhatsi semalanga nobe emaviki nobe tinyanga kufaka ekhatsi: • kugucula emkhatsini wemalanga nemaviki.	**Kusho sikhatsi** • Fundza tinsuku ekhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi etinombolo lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa ikhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe emaviki nobe tinyanga.	Bafundzi bayachubeka batetayeta kukhuluma ngebudze besikhatsi nekulandzelanisa sikhatsi. Ngalesikhatsi sekufundzisa liklasi lonkhe nesikhatsi sekufundzisa licembu, bafundzi bayachubeka nekukhuluma ngelilanga leliviki, inyanga yemnyaka nelusuku babuye bakhulume ngemalanga lengcile nemalanga latako. Bafundzi bayachubeka bakhombisa loku lokulandzelako ekhalendeni ngalesikhatsi lekwenteka ngaso: • emalanga ekutalwa • imigidvo yetenkholo • tigameko temlandvo • tigameko tasesikolweni • emaholide Chubeka utjele bafundzi kutsi basho sikhatsin ngema-awa, emahhafu ema-awa nemakota ema-awa basebentisa emawashi etintsi babuye basho ngema-awa nemaminitsi emawashini edijithi ngetikhatsi letitsite temalanga onkhe. Buka emanotsi elthemu 1 **Sikhatsi sedijithi** Sebentisa tifundvo letimbili kubuketa kufundvwa kwesikhatsi ewashini ledijithi. Buka emanotsi elthemu 1 Ngalesikhatsi bafundzi batisebentela bodvwa, bayachubeka benta imisebenti lephatselene nekusho sikhatsi: • ngema-awa, ihhafu yema-awa nekota yema-awa emawashini etintsi • ngema-awa nemaminithi emawashini emadijithi. Bafundzi bangabala ngemaviki nobe emalanga uma baniketwe ikhalenda nobe incenye yekhalenda. sib: kutfola tinsuku nekubala sikhatsi emkhatsini wato.	2 tifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.1 **Sikhatsi**	• kugucula emkhatsini wemaviki netinyanga Sebentisa emawashi kubala budze besikhatsi ngema-awa nehhafu yema-awa.	• Sebentisa emawashi kubala budze besikhatsi ngema-awa nobe ihhafu yema-awa		
4.2 **Budze**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-. **Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo.	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-. **Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi yebudze lebekelwe umgomo.	**Yini leyehlukile eBangeni 2?** EBangeni 2, bafundzi: • Bagcile ekulinganiseni lokungakahleleki basebentisa emayunithi ekukala budze langakahleleki. • Bangeniswe ekukaleni basebentisa emamitha. Ethemini 2 seLibanga 3, bafundzi bangachubeka bakale ngalokungakahleleki basebentisa emayunithi ekukala langakahleleki nekukala ngemamitha. Ethemini 3 bangacala kukala ngemasentimitha basebentisa irula. **Kucombela, kukala, kucatsanisa nekurekhoda budze nebubanti basebentisa emayunithi ekukala budze langakabekelwa umgomo.** Bafundzi bangafundza yonkhe imigomo netindlela tekukala basebentisa emayunithi ekukala langakahleleki. Kukala basebentisa emayunithi ekukala langakabekelwa umgomo kufanele kungabukelwa phasi kunekukala ngemayunithi labekelwe umgomo. Kukala budze ngekusebentisa emayunithi labekelwe umgomo kufaka ekhatsi kutsi kungaki kwalokukhetsiwe lokunebudze lobulinganako nebaloko lokukalwako. Sibonelo: budze belitafula lemfundzi bungangetandla le -8 Bafundzi kumele bakale tintfo letehlukene basebentisa tintfo letinyenti letingemayunithi ekukala langakabekelwa umgomo. Kunetindlela letintsatfu tekusebentisa emayunithi ekukala langakabekelwa umgomo: • Beka tintfo letitawukalwa ticondzane netintfo letinyenti letinebudze lobulinganako, sib: emabhokisi emetjiso, timbonyo temabhodlela letifananako nobe tibali, emapeniseli lamasha njll. Sibonelo: kukala bubanti belideski lemfundzi, emapeniseli lamasha angabekwa lenye ekugcineni kwalenye macondzana nelitafula lelitawukalwa.	2 tifundvo

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4.2 **Budze**	• Combela ubuye ukale budze ngemasentimitha usebentisa irula. (Asikho sidzingo sekugucula emamitha nemasentimitha)		Kubalulekile kutsi: - Tonkhe tintfo tibenebudze lobulinganako. Angeke usho kutsi libhuku lakho linebubanti lobungangetimbonyo temabhodlela letilishumi nakubili uma letimbonyo tingemasayizi lehlukene sib: timbonyo temabhodlela elubisi langemalitha lamabili, timbonyo temabhodlela tepulasitiki, timbonyo temabhodlela letisansimbi njll - Kungabi netikhala emkhatsini wetintfo: kufanele tibekwe teyamane. • Usebentise titfo letibili letifana ncimishi njengemayunithi ekukala langakahleleki. Beka yinye eceleni kwalenye bese ususa leyekucala ufaka leyesibili esikhundleni salena yekucala. Loku kwenteka sikala ngetandla, budze betinyawo nobe tinyatselo. • Usebentise intfo yinye njengentfo yekukala lengakahleleki, lentfo ungayigucula nobe ukale lapho igcina khona emva kwaloko uyishelelise iye kulelinye licele. Bafundzi kufanele bafundziswe kutsi basho iyunithi ngasosonkhe sikhatsi, bubanti belibhuku butimbonyo le -12, budze beliklasi butinyatselo le -38. Bafundzi bangaze bakale basebentisa nobe nguyiphi iyunithi emahlandla lamanyenti, kufanele bacombele kutsi kungasetjentiswa emayunithi lamangaki kukala lentfo. Kubalulekile kucombela ngembi kwekukala kodvwa kungentiwa kuphela uma bafundzi bake bakala basebentisa leyunithi. Babundzi kufanele bafundziswe kutsi kute bacatsanise budze nobe bubanti, kufanele basebentise iyunithi yinye. Sibonelo, uma bubanti bemnyango butandla le -20 nebubanti belideski lemfundzi bungemapeniseli la -8, angeke usho kutsi umnyango ubanti kunelideski. Bafundzi kumele bakale ngetintfo letehlukene letingakahleleki kute: • bacale kuvisisa kutsi uma iyunithi iyincane itawusetjentiswa kaningi sib: bubanti bendlu yekufundzela bungaba tinyatselo le -20 kodvwa tinyawo ti -48. • bacale kusebentisa emayunithi lafanele loko lebakukalako sib: kukala bubanti bendlu yekufundzela ngetimbonyo temabhodlela kukucitsa sikhatsi.	

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4.2 **Budze**			**Kucombela, kukala, kucatsanisa nekurekhoda budze nebubanti usebentisa emamitha** Bafundzi kufanele bahlanganise lebakuvisisako ngebudze lobuyimitha nekusebentisa imitha nabakala. Loku kwenteka kahle uma umfundzi akala ngekusebentisa lithulusi lelinebudze lobuyimitha (irula leyimitha, indvuku lejutjwe yalingana nemitha, intsambo lejutjwe yalingana nemitha) Kubona budze lobuyimitha kusita bafundzi kutsi bakhe sitfombe sekutsi imitha inganani. Kungenteka kutsi ukale ngelivili lekulinganisa kodvwa lobudze lobuyimitha abubonakali kalula. Bafundzi bangatfola tintfo letinebudze lobuyimitha yinye. Kulusito kuba netintfo letinyenti letingasetjentiswa kucatsanisa sib: bubanti bemnyango nebudze belifasitelo buvamise kuba yimitha. Loku kusita bafundzi kutsi basebentise lobudze nebubanti betintfo lebangatibona kute bacombele budze baletinye tintfo lebatikalako. Bafundzi kufanele bacombele ngembi kwekukala. Bafundzi bangatfola tintfo letindze nobe letimfisha kunemitha. Bafundzi bangakala tintfo letehlukene basebentisa emamitha. Budze lobehlukene kufanele bucatsaniswe **Kurekhoda lokukaliwe** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode lebakukalile (basebentisa emayunithi langakahleleki nemamitha) ngaso sonkhe sikhatsi. **Kukala budze njengengcikitsi yekusombulula tinkinga nekubala.** Ngesikhatsi lesibekelwe Tinombolo, Timphawu tekubala neBudlelwane, bafundzi bangasombulula tinkinga letisebentisa: • kukala budze lokungakahleleki ne- • kukala budze ngemamitha Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga letifanele ithemu.	

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4.3 Sisindvo	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo nesikali sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa, hlela ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa nobe ngemagremu sib. 500 emagremu asawoti. • Bakala sisindvo sabo ngemakhilogremu basebentisa sikali sasendlini yekugezela. (Asikho sidzingo sekugucula emagremu nemakhilogremu).	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo nesikali sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa, hlela ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa nobe ngemagremu sib. 500 emagremu asawoti.	**Yini leyehlukile eBangeni 2?** Ebangeni 2, bafundzi bagcile ekukaleni sisindvo basebentisa emayunithi ekukala langakahleleki. Bafundzi basebentise sikali sekulinganisa kwenta loku. Bacale nekusebenta ngemakhilogremu. Bahlele tintfo letisetjentiswa malanga onkhe letinesisindvo lesingemakhilogremu. Bafundze sisindvo sabo kusikali sasendlini yekugezela. **Kukala lokungakahleleki kwesisindvo usebentisa sikali sekulinganisa nemayunithi langakabekelwa umgomo.** Bafundzi bangafundza yonkhe imigomo netindlela tekukala basebentisa emayunithi ekukala langakabekelwa umgomo. Kukala basebentisa emayunithi ekukala langakabekelwa umgomo kufanele kungatsatselwa phasi kunekukala ngemayunithi labekelwe umgomo. Bafundzi kumele bahlanganise emakhono abo ekukala ngekukala sisindvo basebentisa emayunithi langakabekelwa umgomo. **Sisindvo** Kungasetjentiswa sikali sekukala sisindvo. Uma ungenaso sikali, ungasakha ngekutsi utsatse ihenga bese ukhungela lokubili kwaloku lokulandzelako: inkomishi yeyogathi, incenye lengentasi lejutjwe ebhodleleni lelingemalitha lamabili (tintfo tekuphatsa letifanako tikhungelwa ngala nangala kulehenga) Kukala sisindvo usebentisa emayunithi langakabekelwa umgomo kufaka ekhatsi kubala kutsi kungaki kwaloko lokukhetsiwe lokunesisindvo lesifanako naloko lekukalwako. Sibonelo: irula inesisindvo lesifanako nemabhuloki la -9. Bafundzi kufanele bakale tintfo letehlukene basebentisa titfo letehlukene njengemayunithi langakahleleki. Bafundzi kumele bafundziswe kutsi basho iyunithi ngasosonkhe sikhatsi uma banika sisindvo, sib. Libhuku linesisindvo lesilingana nesetimabuli le -34. Uma bafundzi sebakalile basebentisa nobe nguyiphi iyunithi emahlandla lamanyenti, kufanele bacombele kutsi bangasebentisa kungaki kwaleyo yunithi lokungaba nesisindvo lesilingana naloko lokukalwako. Kubalulekile kucombela ngembi kwekukala kodvwa kungentiwa kuphela uma bafundzi bake bakala basebentisa leyunithi.	3 tifundvo

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4.3 **Sisindvo**	**Kungenisa kukala lokuhlelekile** • Catsanisa, hlela ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawannobe ngemagremu sib. 500 emagremu asawoti. (Asikho sidzingo sekugucula emagremu nemakhilogremu).	• Uma kunesikali sasendlini yekugezela, bafundzi bakala sisindvo sabo. Lokulindzelekile kutsi bafundzi bafundze kuphela inombolo lesondzele lapho lutsi lume khona. Bachaza sisindvo sabo ngekutsi cishe/kusondzele ku-/kunyenti kancane kuna-/ alingana ncamashi (emakhilogremu) lebawafundza esikalini • Uma kunetikali tekulinganisa letikhombisa sisindvo ngemagremu, bafundzi bangakala sisindvo setintfo letehlukene. (Asikho sidzingo sekugucula emagremu nemakhilogremu).	Bafundzi badzinga kufundziswa kutsi kute bakwati kucatsanisa sisindvo setintfo letehlukene kufanele basebentise iyunithi yinye. Sibonelo: Uma irula inesisindvo semabhuloki la -20, sikelo sinesisindvo setimabuli le -20, angeke usho kutsi letintfo letimbili tinesisindvo lesifanako nobe cha nekutsi nguyiphi lesindza kunalenye. **Kurekhoda silinganiso** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode lebakukalile ngaso sonkhe sikhatsi. **Kusebenta ngemakhilogremu** • Kuhlela tintfo ngekwesisindvo Bafundzi bangasebenta ngegilosa letsengiswa ngemakhilogremu, lapho lamakhilogremu abhalwe kulamaphakethi. Bafundzi bangacatsanisa sisindvo kulamaphakethi etintfo letehlukene sib. irayisi, shukela, imphuphu, flawa, insipho yekuwasha njll. titsengiswa ngesisindvo lesingu 1 kilogremu. Bangabeka letintfo esikalini kute babone kutsi nanobe isayizi yemaphakethi angafanani kodvwa sisindvo sicishe sifanane. Bafundzi banganiketwa emaphakethi lehlukene etintfo letehlukene kutsi batilandzelanise kusukela kulokusindza kakhulu kuya kulokulula. Bafundzi bangabuye banikweemaphakethi lehlukene etintfo letehlukene kutsi batilandzelanise kusukela kulokusindza kakhulu kuya kulokulula ngendlela lekuhlelwe ngayo emaphakethini sib: 2 kg irayisi, 1 kg shukela, 5 kg imphuphu, 10 kg sitambu. Bafundzi kufanele bati kutsi “kg” umele “khilogremu” **Kusebenta ngemagremu** • Kuhlela tintfo ngekwesisindvo Bafundzi bangasebenta ngegilosa letsengiswa ngemagremu, lapho lamagremu abhalwe kulamaphakethi. Bafundzi bangacatsanisa sisindvo kulamaphakethi etintfo letehlukene (njenge: liphakethi lelitiya, likhofi, sawoti, emabhontjisi, emaphakeshana ashukela, emaphakeshana elubisi, emaphakethi ejeli, emaphakeshana erayisi njll) letitsengiswa ngemagremu. Bafundzi bangabuye banikweemaphakethi lehlukene etintfo letehlukene kutsi batilandzelanise kusukela kulokusindza kakhulu kuya kulokulula ngendlela lekuhlelwe ngayo emaphakethini sib: 2 kg irayisi, 1 kg shukela, 5 kg imphuphu, 10 kg sitambu.	

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4.3 **Sisindvo**			Kubalulekile kutsi bafundzi bavetelwe emaphakethi lamancane lasindzako njengasawoti nemaphakethi lamakhulu lalula njengemarayisi khrispisi nobe emakhoni flekisi. Loku kubavumela kutsi bavisise kutsi tintfo letinkhulu atibi nesisindvo lesikhulu ngasosonkhe sikhatsi ngaphandle kwekutsi kucatsaniswa intfo yinye. Ungaba nesiciniseko sekutsi intfo lenkhulu inesisindvo lesikhulu kuphela uma: - kucatsaniswa tintfo letifanako - ubuka sisindvo esikalini (lokungakadzingeki eSigabeni Sabokhewane) Bafundzi kufanele bati kutsi “g” umele “gremu” Bafundzi abakalindzeleki kutsi bafundze sikali ngemagremu. Loku kwentiwa eSigabeni lesiseMkhatsini. **Kufundza sikali sasendlini yekugezela ngemakhilogremu** Uma kunetikali tasendlini yekugezela, bafundzi bangafundza sisindvo sabo. Kunetinhlobo letimbili tetikali: letinetintsi naletinemadijithi. Sikali semadijithi silula kusifundza ngobe sisindvo sibhalwa ngetinombolo. Uma unesikali semadijithi, ciniseka kutsi sikhombisa sisindvo ngemakhilogremu laphelele. Ungasisetha sikali kutsi sikhombise emakhilogremu lagcwele kuphela. Uma ungakhoni kusetha sikali kutsi sikhombise emakhilogremu laphelele kuphela, fundzisa bafundzi kutsi bangatinaki tincenye temakhilogremu kwanyalo. Kutikali letinyenti tetintsi kukhonjiswa inombolo lapho kungemakhilogremu la -10, kube nemugca lomudze lokhombisa 5kg. Imigca lekhombisa 1kg ivamise kungafakwa tinombolo. Loku kuyafanana nangendlela imigca netinombolo kubhaleke ngayo etukwerula. Vumela bafundzi kutsi babale kute babone kutsi kunetikhala le -10 ngembi kwemaki ye 10kg, sinye sikhala simele 1kg nekutsi lutsi loludze lumele 5kg. Bafundzi bangafundza silinganiso kusikali cobo nakutitfombe tetikali. Kulula kufundza sisindvo kusitfombe sesikali kunekufundza kusikali cobo. **Kurekhoda silinganiso** Nanobe kukala kulikhono lekwenta, bafundzi kumele barekhode lebakukalile ngaso sonkhe sikhatsi.	

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4.3 **Sisindvo**			**Kukala budze njengengcikitsi yekusombulula tinkinga nekubala.** Ngesikhatsi lesibekelwe Tinombolo, Timphawu tekubala neBudlelwane, bafundzi bangasombulula tinkinga letisebentisa: • kulinganisa sisindvo lokungakahleleki • kukala sisindvo ngemakhilogremu Cikelela kuhleleka kwetinombolo kusifanele yini ithemu, nekutsi tinhlobo tetinkinga tisilungele yini ithemu. Bafundzi abakalindzeleki kutsi: • bati kutsi 1000g = 1kg • bagucule emagremu nemakhilogremu Kubala ngemagremu kungakhetfwa kute bafundzi bangengci ku 1 000 g	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.4 Umtsamo/ Bungako	**Kukala lokungakahleleki** • Combela, kala, catsanisa ubuye uhlele umtsamo wetintfo tekuphatsa (njenge mtsamo longamumatfwa tintfo tekuphatsa natigcwalisiwe) ngekusebetisa kukala lokungenasilinganiso. sib. Tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekubala usho kutsi mangaki emayunithi langakahleleki langagcwalisa lentfo yekutsela sib: libhodlela linemtsamo wetinkomishi le -4. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo umtsamo ngekukala ngemalitha, ihhafu yemalitha nekota yemalitha usebentisa:	Ngesikhatsi sekusebentela, bafundzi kumele bachubeke: Bacombele babuye bakale, bacatsanise, bahlele babuye barekhode umtsamo wetintfo tekuphatsa nobe bungako bemtsamo etintfweni tekutsela basebentisa kukala lokungakabekelwa umgomo. Kulandzela iresiphi kufaka ekhatsi kubhaka kuyingcikitsi lelusito leyenta bafundzi batetayete kukala. Khetsa emaresiphi lanetitsako letiniketwe ngetinkomishi, emathisipunu, nobe emayunithi langakahleleki. • Catsanisa ubuye uhlele umtsamo wemabhodlela netintfo tegilosa letinebungako lebubhalwe emaphakethini. • Sebentisa libhodlela lelitha -1 nobe lijeke lelitha -1 kucombela, kucatsanisa, kuhlela nekurekhoda umtsamo wetintfo tekuphatsa nobe bungako betintfo tekuphatsa letingemalitha. Buka emanotsi elthemu 3. Bafundzi kumele baniketwe imisebenti lebhalwako kute bahlanganise loku lokulandzelako kufaka ekhatsi kufundza titfombe te: • tintfo letinemtsamo lobhalwe kuto kute batilandzelanise ngekuhleleka kwato; • titfombe temajeke lapho bungako busondzela emgceni lomakiwe lonenombolo leyilitha -1 litha nobe emalitha -2 • lokulindzelekile kutsi bafundzi bafundze kufika edvute nemugca lomakiwe. **Kukala umtsamo njengesimongcondvo sekusombulula tinkinga nekubala.** Ngesikhatsi lesibekelwe Tinombolo, Timphawu tekubala neBudlelwane, bafundzi bangasombulula tinkinga letisebentisa: • kukala umtsamo/bungako lokungakahleleki sib: gogo usebentisa tinkomishi le -2 telubisi uma apheka iphudingi. Uma ayiphindza kabili leresiphi, utawudzinga lubisi lolungakanani? • emalitha Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	SIKHATSI LESINIKETIWE (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.4 Umtsamo/ Bungako	• Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi nobe ngemamililitha sib. 500 emamililitha elubisi, 340 emamililitha esinatfo lesibandzako, 750 emamililitha e-oyila. • Yati kutsi inkomishi lelingene ingemamililitha la -250 • Yati kutsi ithisipunu ingemamililitha la -5 (Asikho sidzingo seku-gucula emamililitha nemalitha).			

LIBANGA 3 ITHEMU 2 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**SIKHATSI LESINIKETIWE** (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
5.4 **Gcoca ubuye uhlele idatha**	**Gcoca ubuye uhlele idatha** • Gcogca idatha yeliklasi nobe yesikolo kute uphendvule imibuto yathishela. • Hlela idatha leniketwe nguthishela nobe libhuku. Hlela idatha: • ngetinhla • ngemathali • ngemathebula			1 sifundvo
5.5 **Veta idatha**	**Veta idatha** Veta idatha ku: • magrafutitfombe • mabhagrafu			
5.6 **Hlatiya ubuye uhumushe idatha**	**Hlatiya ubuye uhumushe idatha** Phendvula imibuto lemayelana nedatha levetwe ku: • magrafutitfombe • mabhagrafu	Hlatiya idatha yalokuvetiwe lokuniketiwe	Uma bafundzi bawente wonkhe umjikeleto wedatha ethemini 1, kuhlatiya tinhlobo letehlukene tekuveta idatha kuba mcoka kakhulu. Kuphakanyisiwe kutsi ethemini 2 bafundzi ubanikete idatha lebatayihlatiya, lokungenani • igrafutitfombe yinye. • lithebula. Bafundzi kufanele baphendvule imibuto lobabuta yona ngegrafu nelithebula, buka ethemini 1 kute utfole tinhlobo letifanele temibuto.	

LIBANGA3 ITHEMU 3 1 1. TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**Budze besikhatsi**
1.1 **Bala tintfo**	**Kubala tintfo letiphatsekako** Combela ubuye ubale ngekwetsembeka lokungenani tintfo letisetjentiswa malanga onkhe leti-1000. Lisu lekwenta tincumbi liyakhutsatwa	Gcoca lokungenani tintfo letisetjentiswa malanga onkhe le- 700 kucombela nekubala ngekwetsembeka Nika kucombela lokwamukelekile kwelinani letintfo letingahlolwa ngekubalwa.	**Yini leyehlukile ethemini ye -2?** Kuhleleka kwetinombolo sekukhulile, bafundzi kumele baniketwe litfuba lekubamba, lekuhambisa nekubala tintfo le -700 letentiwe tincumbi letihlukene Buka emanotsi ethemini 1 neye -2	
1.2 **Bala uye phambili nasemuva**	**Bala uye phambili nasemuva kuloku:** • Nga -1 nobe nguyiphi imalthiphuli emkhatsini we -0 ne -200 • Nge -10 nobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 ne -1000 • Nge -5 nobe nguyiphi imalthiphuli yesi -5 emkhatsini we -0 ne 1000 • Nga -2 nobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -1000 • Nga -3 nobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne -1000 • Nga -4 nobe nguyiphi imalthiphuli ya -4 emkhatsini we -0 ne -1000 • Nge -20, 25, 50, neli -100 lokungenani kuye e-1000	**Bala uye phambili nasemuva kuloku:** • Nga -1 nobe nguyiphi imalthiphuli emkhatsini we -0 ne -700 • Nge -10 nobe nguyiphi imalthiphuli ye 10 emkhatsini we -0 ne -700 • Nge -5 nobe nguyiphi imalthiphuli yesi -5 emkhatsini we -0 ne 700 • Nga -2 nobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -700 • Nga -3 nobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne -700 • Nga -4 nobe nguyiphi imalthiphuli ya -4 emkhatsini we -0 ne -700 • Ema -20, 25,50, neli -100 lokungenani kuye e -1000	**Yini leyehlukile ethemini ye -2?** Kuhleleka kwetinombolo kuyakhula kufike e-700 Buka emanotsi ethemini 1 neye -2	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.3 **Tinombolo nemagama etinombolo**	**Bona, tfola ubuye ufundze tinombolo** • bona, tfola ubuye ufundze tinombolo kusukela e -0 kuye e - 1000 • Bhala tinombolo kusukela e - 0 kuye e -1000 • bona, tfola ubuye ufundze emagama etinombolo kusukela e- 0 kuya e - 1000 • Bhala emagama etinombolo kusukela e -0 kuye e - 1000	**Bona, tfola bese ufundza tinombolo** • bona, tfola ubuye ufundze tinombolo kusukela e -0 kuye e - 1000 • Bhala tinombolo kusukela e - 0 kuya e -1000 • bona, tfola ubuye ufundze emagama etinombolo kusukela e- 0 kuye - 500 • Bhala emagama etinombolo kusukela e -0 kuye e - 500	**Yini leyehlukile ethemini 2?** Bafundzi batfola, bafundze babuye babhale: • Tinombolo tike e-1000 • Nemagama etinombolo afike e-500 Buka emanotsi ethemini 2	
1.4 **chaza, catsanisa ubuye uhlela tinombolo**	**Hlela ubuye ucatsanisa tinombolo tifike e -999** • Hlela tinombolo letiphelele tifike e -999 kusukela kuletincane kakhulu kuye kuletinkhulu kakhulu nekusukela kuletinkhulu kuye kuletincane • catsanisa tinombolo letiphelele tifike e -999 asebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna, kulingana na	**Hlela ubuye ucatsanisa tinombolo tifike e -500** • Hlela tinombolo letiphelele tifike e – 500 kusukela kuletincane kuye kuletinkhulu nekusukela kuletinkhulu kuye kuletincane • catsanisa tinombolo letiphelele tifike e -500 asebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna, kulingana na	**Yini leyehlukile ethemini ye -2?** Bafundzi bahlela babuye bacatsanise tinombolo tifike e-500 babuye bachubeke basebentise indlela lefinyentiwe yekubhala tinombolo letingemaodinali Buka emanotsi ethemini 2	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.4 **chaza, catsanisa ubuye uhlela tinombolo**	**Sebentisa tinombolo te -odinali kukhombisa kuhleleka, indzawo nobe** **kubekeka** • Sebentisa, fundza ubuye ubhale tinombolo lokufaka ekhatsi tindlela letifinyetiwe letifika e -31	**Sebentisa tinombolo te -odinali kukhombisa kuhleleka, indzawo nobe kubekeka** • Sebentisa, fundza ubuye ubhale tinombolo lokufaka ekhatsi tindlela letifinyetiwe letifika e -31		
1.5 **Simelibungako**	**Bona simelibungako setinombolo letingemadijithi lamatsatfu tifike e -999** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamatsatfu tifike e -999 tibe ngemamalthiphuli e -100, emashumi imivo	**Bona simelibungako setinombolo letingemadijithi lamatsatfu tifike e -750** • Yati kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letingemadijithi lamatsatfu tifike e -750 tibe ngemamalthiphuli elikhulu, emashumi, imivo	**Yini leyehlukile ethemini 3?** Tinhlobo letifanako temibuto neticondziso tiyaniketwa ethemini 3. Kuhleleka kwetinombolo kuyakhula kepha bafundzi basasebenta ngetinombolo letingemadijithi Kulethemu kumele bachubeke bagcile kuloku: • Bungako benombolo • Kuhlahlela tinombolo tibe ngemakhulu, ngemashumi nemayunithi usebentisa emakhadi esimelibungako nemabhuloki esisekelo selishumi • Kubhala tinombolo ngendlela lekhulisako Buka emanotsi ethemini 2	
KUSOMBULULA TINKINGA TETIBALO TEMAGAMA LETIKUSIMOGCONDVO				
1.6 **Emasu ebala**	Sebentisa lamasu lalandzelako nawenta tibalo ubuye uchaze tisombululo tetibalo • Kwakwa ngekuhlahlela tinombolo • Kuphindza nekuhhafula • Umugcatinombolo • Kusondzeta eshumini	Sebentisa lamasu lalandzelako nawubala tibalo: • Kwakwa ngekuhlahlela tinombolo • Kuphindza nekuhhafula • Umugcatinombolo • Kusondzeta eshumini	Bafundzi kulindzeleke kutsi babale tibalo temagama basebentisa lamasu lalandzelako: • Kwakwa ngekuhlahlela tinombolo • Kuphindza nekuhhafula • Imigcatinombolo • Kusodzeta eshumini Buka emanotsi ethemini 2	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.7 **Kuhlanganisa nekususa**	Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo letifaka ekhatsi kuhlanganisa nekususa lokuholela etimphendvu-leni letifika e -999	Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo letifaka ekhatsi kuhlanganisa nekususa lokuholela etimphendvu-leni letifika e -800	Tibonelo tetinhlobo tetibalo letingentiwa kulethemu • Tibalo tekuhlanganisa nekususa • Pamela ugcogce timbonyo temabhodlela le -413. Nangabe Ken amnika timbonyo temabhodlela la -29, utawuba nelinani lelifanako nelaPamela. - Batawuba netimbonyo temabhodlela letingaki bobaili? - Ken utawuba netimbonyo temabhodlela letingaki lekumele acale ngato? • Bafundzi belibanga le-2 baneligcogco letimabuli le -500. Bafundzi belibanga le -3 banetimabuli le -170 letimbalwa kunaleto tebafundzi belibanga le -2. Banetimabuli letingaki bafundzi belibanga le-3? • Mark na Martha bagcogce titikha le -250. Mark watfola titikha le -160. Martha utfole titikha letingaki?	
1.8 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombu-lulo tetibalo usebentisa kuphindzaphindza loku-netimphendvulo letifika e -99	Sombulula tinkinga tetibalo temagama letikusimogcondvo ubuye uchaze tisombululo tetibalo lokufaka ekhatsi kuphindzaphindza lokune timphendvulo letifika e -75	Tibonelo tetinhlobo tetibalo letingentiwa kulethemu **Tinhlobo tetibalo 9: Ligcogco** ▪ Ingadze yetibhidvo inemigca le -12 yetitjalo. Umugca ngamunye unetitjalo le -7. Kunetitjalo letingaki engadzini? ▪ Ingadze yetibhidvo inemigca le -12 yetitjalo. Umugca ngamunye unelinani letitjalo lelifanako. Nangabe kunesamba setitjalo le -48, tingaki titjalo emgceni ngamunye? ▪ Ingadze yetibhidvo inetitjalo le -48 letihlanyelwe ngemigca. Kunetitjalo le -7 emgceni ngamunye. Mingaki imigca lekhona? **Kucatsanisa / budlelwane lobusemkhatsini welinani letinombolo letimbili** Samuel unemaswidi lasitfupha. Samuel unemaswidi lamanyenti laphindvwe kat-satfu kunalawo aMoketsi. Unemaswidi lamangaki Moketsi? Marlene unemaswidi la -18. Loku ngemaswidi lamanyenti laphindvwe katsatfu njengalawo Samuel lanawo. Unemaswidi lamangaki Samuel? Linani Emapentjisi atsengwe ngemali le R8 ikhilogremu ngayinye. Nangabe ngitsenga emakhilogremu la -4, atawubita malini? Emapentjisi abita e R8 ikhilogremu ngayinye. Nangabe nginemali le R32, ngingat-senga emakhilogremu lamangaki? Ngitsenga emakhilogremu la -4 emapentjisi, angibita imali le R32. Ikhilogremu yinye itawubita malini? **Kusebentisa kusondzeta eshumini** Ithekisi itsatsa bagibeli la -15. Ngabe ebantfu la -73 bangenela yini emathekisini lasihlanu?	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.9 **Kugcogcela ndzawonye nekwabelana lokuholela ekuhlukaniseni**	Bala tibalo temagama ubuye uchaze sisombululo setibalo letifaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye ufike e - 200 lanetimphendvulo letifaka ekhatsi tinsalela.	Bala tibalo temagama ubuye uchaze sisombululo setibalo letifaka ekhatsi kwabelana lokulinganako nekugcogcela ndzawonye ufike e – 150 lanetimphendvulo letifaka ekhatsi tinsalela.	Tibonelo tetinhlobo tetibalo letingentiwa kulethemu • Make Tshongwe upake emamafini la -66 emaphaketheni la -6. Unemaphakethe lamangaki make Tshongwe? • Remi utfole imali le R72 ngekutsengisa emathikithi erafuli labita e R9,00. Mangaki emathikithi lawatsengisile? • Ummango usita imindeni le -9 lelahlekelwe timphahla tayo emlilweni. Kunetingubo le -75 lekumele umndeni uhlukaniselane tona ngekulingana. - Umndeni ngamunye utfole tingaki? - Kusele tingaki? Linani • Emapentjisi abita imali le R8 ikhilogremu ngayinye. Nangabe nginemali le R32, ngitawutsenga emakhilogremu lamangaki? • Ngitsenge emakhilogremu la -4 emapentjisi ngasebentisa imali le R32. Ikhilogremu ngayinye ibita malini? Tibalo tekubala ngelinani luhlobo lolusha lwekubala ethemini ye -3. Bafundzi batawudzinga sikhatsi lesanele nabasebenta letibalo. Buka emanotsi ethemini ye -2	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.10 **Kwabelana lokuholela etincetwini**	Sombulula tibalo ubuye uchaze tisombululo tetibalo etibalweni te-kwenta letifaka ekhatsi kwabelana lokulinganako lokuholela etisombu-lulweni letinetincetu letihamba ngakunye na-letingahambi ngakunye sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{5}$, njll. .	Sombulula tibalo ubuye uchaze tisombululo tetibalo etibalweni te-kwenta letifaka ekhatsi kwabelana lokulinganako lokuholela etisombu-lulweni letinetincetu letihamba ngakunye na-letingahambi ngakunye sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, njll.	Tibonelo tetinhlobo tetibalo letingentiwa kulethemu Kwabelana lokuholela etincetwini • Hlukanisa ibha yeshokoleti emkhatsini webangani la -3 kute bonkhe batfole linani lelifanako lebha yeshokoleti kungasali lutfo. • Hlukanisa emabha eshokoleti la -13 ngekulingana ekhatsini webantfwana la -4. Umntfwana ngamunye utawutfola mangaki? Ligcogco letincetu • Gogo unike Kiki imali le- R12. Kiki ufuna kubeka incenye yesitsatfu yemali. Kumele abeke imali lenganani? • Kunemabhesikiti la -12 epuletini. Nomonde utsatsa incenye yalokune yemabhisikiti. Kusele emabhisikiti lamangaki? **Kubhala** Bafundzi akukalindzeleki kutsi babhale luphawu lwelucetu. Bafundzi batawufundza kulebula tincenye telucetu ngalendlela, incenye yi -1 yalokusihlanu, emakota lamatsatfu nobe tincenye le -3 talokusitfupha. Loku kutabasita kokucala bavisise kutsi ligama lelucetu lichaza kutsi intfo lephele yehlukaniswe tincenye letilinganako letingaki, sib. emahhafu, tincenye letintsatfu, emakota, njll. kwesibili tingaki letotincenye letitawubukwa, sib. tincenye letimbili talokutsatfu. **Kuveta tinkinga tetincetu temagama** Bafundzi kumele badvwebe timphendvulo tabo kute bakhombise kutsi inkinga bayivisisile Lindzela kutsi labanye bafundzi bangadvweba kahle kodvwa banike incenye yelucetu ligama lelingasilo Bafundzi kumele banike emagama etincenye letifakwe umbala ngekubhala njengetincenye letimbili talokutsatfu	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.11 **Imali**	▪ Bona, tfola imali lebuhhehlu neyemaphepha yase Ningizimu Afrika ▪ Sombulula tinkinga temali letifaka samba nentjintji yemarandi nobe emasenti ▪ Gucula emarandi nemasenti	▪ Bona, tfola imali lebuhhehlu neyemaphepha yase Ningizimu Afrika ▪ Sombulula tinkinga temali letifaka samba nentjintji yemarandi nobe emasenti ▪ Sombulula tinkinga temali letifaka samba nentjintji yemaRandi neSenti ▪ Gucula emarandi nemasenti	Tibonelo tetinhlobo tetibalo letingentiwa kulethemu Bungako bemali nekwenta samba semali, sib. Bhala e -325c abe ngemarandi nemasenti Ungawenta ngetindlela letingaki letinyenti letihlukene e R400 usebentisa imali yemaphepha? Ungati njani kutsi unato tonkhe tisombululo? Umnumzane Lebethe ungumakhi wabuye watfola ibhonasi ngekucedza umsebenti ngesikhatsi. Watsatsa sincumo sekwaba ibhonasi emkhatsini wakhe nekhapenta. Umuntfu ngamunye watfola imali le R400. Buyini bungako bebhonasi? Nina nebengani bakhe labatsatfu babelane ngemali le R20,60. Umuntfu ngamunye utfole malini?	
KUTIBALELA NJE				
1.12 **Emasu (tindlela nobe tindlelanchubo)**	Sebentisa lamasu lalandzelako nawubala tibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • umugcatinombolo • Kusondzeta eshumini	Sebentisa lamasu lalandzelako nawubala tibalo: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • umugcatinombolo • Kusondzeta eshumini	Bafundzi kulindzeleke kutsi babale tibalo temagama basebentisa lamasu lalandzelako: • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • umugcatinombolo • Kusondzeta eshumini Buka emanotsi ethemini 1	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.13 **Kuhlanganisa nekususa**	• Hlanganisa kuye ema -999 • susa ema -999 • Sebentisa timphawu tekubala letifanele (+, –, =, □) • Tetayete kuhlanganisa tinombolo tifike ema -30	• Hlanganisa kuye ema -800 • susa ema -800 • Sebentisa timphawu tekubala letifanele (+, –, =, □) • Tetayete kuhlanganisa tinombolo tifike ema -30	Ngalesikhatsi salethemu bafundzi batawuchubeka nekubala ngetinombolo letingemadijithi lamatsatfu bafike e -800. Kute bakwati kubala ngetinombolo letingemadijithi lamatsatfu bafundzi kumele bakwati: • kufundza babuye babhale tinombolo ngekutetsemba tifike e -800 • kuhlela babuye bacatsanise tinombolo ngekutetsemba lokungenani tifike e -800 • kubala ngetincumbi tifike e -800 • kubala ngekutetsemba ngetigamu ta -2, 3, 4, te - 5, te -10, te -50 ne -100 bafike e -800 **Tindlela letingasetjentiswa kukhombisa kubala tibalo tekuhlanganisa nekususa.** • hlanganisa ngekuhlahlela tinombolo totimbili 524 + 82 = □ = (500 + 20 + 4) + (80 + 2) = 500 + (20 + 80+ (4 + 2) = (500 + 100) + 6 = 600 + 6 = 606 hlanganisa tinombolo letingemadijithi lamatsatfu naletinye letingemadijithi lamatsatfu 323 + 436 = □ 323 + 436 = (300 + 20 + 3) + (400 + 30 + 6) = (300 + 400) + (20 + 30) + (3 + 6) = 700 + 50 + 9 = 759 • hlanganisa (ngekuhlahlela tinombolo letitawuhlanganiswa) • Bafundzi batawuhlahlela tinombolo ngetindlela lebatawukhona kutisebentisa. Loku kusho kutsi batakwenta ngetindlela letihlukene. 524 + 82 = □ 524 + (40 + 40 + 2) 524 + 40 564 + 40 604 + 2 = 606	

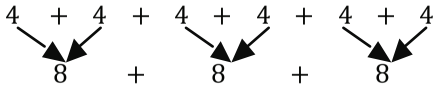
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.13 **Kuhlanganisa nekususa**			kubala nge -40 kuma -524 kungentiwa ngekubala ngemashumi Kuhlanganisa tinombolo letingemadijithi lamatsatfu naletinye letingemadijithi lamatsatfu 323 + 436 = □ = 323 + (400 + 20 + 6) = (323 + 400) + 20 + 6 = (723 + 20) + 6 = 743 + 6 = 749 • Kususa ngekuhlahlela tinombolo totimbili Etinombolweni letingemadijithi lamatsatfu ususa tinomboloLetingemadijithi lam-abili 889 – 137 = □ 889 – 137 = (800 + 80 + 9) – (100 + 30 + 7) = (800 – 100) + (80 – 30) + (9 – 7) = 700 + 50 + 2 = 752 • Kususa ngekuhlahlela inombolo yinye 889 – 137 = □ 889 – (100 + 30 + 7) 889 – 100 789 – 30 759 – 7 = 752 Kusebentisa kuhhafula kuhlahlela inombolo 525 + 16 = 525 + 8 + 8 = (525 + 8) + 8 = 533 + 8 = 541	

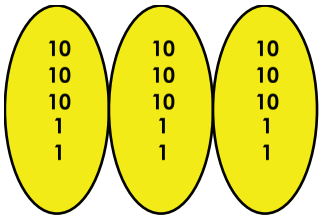
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.13 **Kuhlanganisa nekususa**			• Kubala uchubeke uye phambili nekubala uye emuva 805 = 798 = □ Kubala ngakunye kusukela e-798 indlela lekahle ngobe tinombolo tisondzelene • Tfola kuphindza lokusedvute 245 + 246 Lomunye angasho lesibalo lesingenhla ngalendlela, kuphindza 245+1 kuphindza 246 -1 245 + 245 + 1 = (200 + 40 + 5) + (200 + 40 + 5) + 1 = (200 + 200) + (40 + 40) + (5 + 5) + 1 = 400 + 80 + 10 + 1 = 400 + (80 + 10) + 1 = 400 + 90 + 1 = 491 • Ntjintja inombolo ibe ngemamalHtiphuli elishumi bese uyasusa nobe uhlanganise nakunye Kubala uye phambili nobe emuva usondzete eshumini 588 + 10 = 598 598 - 1 = 597 588 + 19 588 + 20 = 608 608 – 1 = 607 **Kutfutfukisa nekwetayeta emakhono ekuhlanganisa nekususa** Bafundzi badzinga kutetayeta letinye tinhlobo temakhono ekuhlanganisa nekususa Bafundzi kumele batfole ematfuba ekwenta letinhlobo tetibalo ngetinombolo letifika e -800	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.13 **Kuhlanganisa nekususa**			Hlanganisa nobe ususe emapheya emamalthiphuli e -10, ladlula e -100 40 + 70 70 + 80 120 – 30 150 – 60 Hlanganisa nobe susa li -10 kunobe nguyiphi inombolo lenemadijithi lamabili nobe lamatsatfu lokufaka ekhatsi kudlula e -100 Sibonelo: 65 + 10 124 + 10 326 – 10 358 - 10 Hlanganisa nobe susa idijithi lehamba ngakunye uye nobe kusukela etinombol-weni letingemadijithi lamatsatfu ngaphandle kwekudlula emashumini Sibonelo 634 +5 775 + □ = 779 768 – 4 Hlanganisa ubuye ususe idijithi lehamba ngakunye uye nobe kusukela kumamalt-iphuli e -100 Sibonelo: 600 + 4 500 + 3 700 - 6 800 - 5 Kucala kuhlanganisa nekususa lipheya lemamalthiphuli e -100 100 + 100 100 + 200 200 + 200 300 + 400	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.13 **Kuhlanganisa nekususa**			Bafundzi kumele baniketwe ematfuba ekutetayeta emaphethini ekuhlanganisa nekususa Nangabe ngati kutsi 1+1=2 Ngaloko- ke kungaki loku: 10 + 10 100 + 100 cala kuhlanganisa nobe kususa lipheya lemamaltipuli kusukela kunobe nguyiphi inombolo lenemadijithi lamatsatfu Sibonelo: 675 + 100 762 - 100 **Kuhlola imiphumela yetibalo tekubala** Kuhlola kutsi ngabe tisombululo tiliciniso Bafundzi kumele baceceshwe kuhlola kutsi ngabe timphendvulo tiliciniso yini Lenye indlela yekwenta loku kucombela timphendvulo tabo ngembikwekutsi babale. Nangabe bahlanganisa tinombolo letimbili letisondzelene, sib.145 na 146, bafundzi bangaphindza inombolo njengendlela yekucombela timphendvulo tabo **Kuhlola tisombululo** Bafundzi kumele bati kutsi: • Bangahlola tibalo tekuhlanganisa ngekususa, sib. Nangabe 436 + 118 = 454; ngako-ke 454 – 118 = 436 • Bangahlola tibalo tekususa ngekuhlanganisa, sib.684 – 248 = 436, ngako-ke 436 + 248 = 684 Kusebentisa luphawu lekubala loluphikisako kuhlola tisombululo ngulenye yeti-zatfu tekufundzisa kuhlanganisa nekususa ndzawonye.	

<table>
<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA</th><th>LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3</th><th>EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA</th><th>Budze besikhatsi</th></tr>
<tr>
<td>1.14
Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni</td>
<td>• Phindza tinombolo 2, 3, 4,5, 10 ufike kusamba lesi nge -99
• Sebentisa timphawu tekubala letifanele (x, =, ☐)</td>
<td>• Phindza tinombolo 2, 3, 4,5, 10 ufike kusamba lesi nge -99
• Sebentisa timphawu tekubala letifanele (x, =, ☐)</td>
<td>Ngalesikhatsi salethemu bafundzi bayachubeka ne:
• Kusebentisa nekuvisisa lulwimi loluphatselene nekuphindzaphindza
• Kuveta tibalo tekuphindzaphindza njengeligcogco
• Kusebentisa timphawu letifanele kuhumusha imishotinombolo
• Kuvisisa kutsi kuphindza kuhlanganisa kungavetwa ngekusebentisa luphawu lwekuphindzaphindza
• Kutetayeta nekuvisisa kutsi tibalo tekuphindzaphindza tingetiwa nobe ngayiphi indlela (kukhombisa tibalo tekuphindzaphindza letifanako)
• Kusebentisa umugcatinombolo kukhombisa tibalo tekuphindzaphindza ubuye ukhone kuchaza kutsi ukuvete njani loko kumugcatinombolo (kukhombisa kuzupha lokukhomba kuphindza kuhlanganisa)
• Bacala kuvisisa kuhlahlela tincenye tetibalo tekuphindzaphindza
Bafundzi bayachubeka nekusebentisa imifanekiso leyehlukene kuvisisa tibalo tekuphindzaphindza
Buka emanotsi ethemini 2
Emasu lasebentisekako etibalweni tekuphindzaphindza
• Kusebentisa kuphindzaphindza
Sibonelo
Gcwalisa lithebula lemugca wekuphindzaphindza ngesihlanu. Ubona yiphi iphet-hini?
<table>
<tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr>
<tr><td>X 5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>X 10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Phindza tinombolo letisemgceni welithebula lekuphindza ngesihlanu kute utfole tinombolo letisemgceni welithebula lelishumi. Ubona yiphi iphethini?
Gcwalisa lithebula lemugca wekuphindza ngakubili
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<tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr>
<tr><td>X 2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>X 4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Phindza tinombolo letisemgceni welithebula lekuphindza ngakubili kute utfole tinombolo letisemgceni welithebula lekuphindza ngakune. Ubona yiphi iphethini?</td>
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TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**			• Kusebentisa kuhhafula Tincumbi letintsatfu te -8 tilingana ne -24 Tincumbi letisitfupha ta -4 tilingana ne -24  Ngako- ke Tincumbi le -6 ta -4 tifana netincumbi le -3 te -8	
1.15 **Kuhlukanisa**	• Hlukanisa tinombolo ufike e-99 nga -2, 3, 4, nge -5, 10 • Sebentisa timphawu tekubala letifanele (÷, =, ☐)	• Hlukanisa tinombolo ufike e-99 nga -2, 3, 4, nge -5, 10 • Sebentisa timphawu tekubala letifanele (÷,=, ☐)	**Yini leyehlukile ethemini 2?** Ngalesikhatsi salethemu kuhleleka kwetinombolo bafundzi labatawusebenta ngako kukhulile kufika e -99. Kusebenta ngekuhleleka kwetinombolo lokukhulile kusho kutsi bafundzi kudzingeka bassebente ngemasu lakahle etibalo tekubala nemsebenti lobhalwako kute bafike etimphendvulweni tabo. **Emasu ekurikhoda** Ngesikhatsi sethemu ye -3 neye -4 bafundzi batawubebatetayeta kurikhoda tibalo tekuhlukanisa basebentisa tinombolo bancike kancane kumidvwebo. Letindlela tekurikhoda atinawutfolakala kubafundzi nangabe bangativisisi timphawu tekuba-la. Kuzama kwenta indlela lebangayivisisi kutawuletsa umphumela lonemaphutsa lotawenta bafundzi bangabi nalo likhono lokushesha bawabone emaphutsa. Kub-alulekile kutsi bafundzi bakwati kubona kuchumana lokukhona emkhatsini wetiba-lo tekuhlanganisa netibalo tekususa. Injongo yekurikhoda umsebenti lobhalwako kutfutfukisa kuvisisa kwebafundzi lekuphatselene nebudlelwane betinombolo **Kusebentisa lwati lwekuphindzaphindza tibalo** Bafundzi kumele bakwati kusebentisa lwati lwabo letibalo tekuphindzaphindza. Kumele bacale basho kutsi: ‘’Ngatini ngetibalo tekuphindzaphindza kute ngitfole imphendvulo? 96 ÷ 3 = ☐ ngiyati: 10 x 3 = 30 ngako-ke: 96 – 30 = 66 ngiyati 10 x 3 = 30 ngako-ke: 66 – 30 = 36 ngiyati 10 x 3 = 30 ngako-ke: 36 – 30 = 6 6 ÷ 3 = 2	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.15 **Kuhlukanisa**			Kulendlela lengetulu, bafundzi basebentise luphawu lwekuphindzaphindza bese bahlukanisa ngalokuphindziwe e -96. Baphindze bahlanganise kutsi basuse kangaki 2 + 10 + 10 + 10 = 32 **Kuhlahlela tinombolo** Bafundzi bangahlahlela e -96 abe tinombolo letihlobene na -3. Bafundzi bayaphindza futsi basebentisa lwati lwabo loluphatselene netibalo tekuphindzaphindza kute bakwati kwenta tibalo tekuhlukanisa. 96 ÷ 3 = □ 96 = 30 + 30 + 30 + 6 ↓ ↓ ↓ ↓ 10 tincumbi ta -3 / 10 tincumbi ta -3 / 10 tincumbi ta -3 / 2 tincumbi ta-3 Lokwentiwa bafundzi kuletibonelo letimbili kusebentisa kususa lokuphindziwe ngekuhlahlela tinombolo. Njengoba kuphindzaphindza tinombolo kwakha tinombolo, kuhlukanisa tinombolo kungatsatfwa njengekuhlahlela tinombolo. Ngalendlela kuvisisa tibalo tekuhlukanisa kuyagcizelelwa njengeliphawu lekuphindzaphindza leliphikisako. Bafundzi bangasebentisa kususa lokuphindzaphindzako njengekuhlahlela bese bakurikhoda ngetindlela letifanako letikhonjiswe ngentasi:  96 ÷ 3 = □ 96 ÷ 3 = 32	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.15 **Kuhlukanisa**			**Kusebenta ngetinsalela** Bafundzi batawube basebente ngetinsalela ngalesikhatsi basebenta ngetincumbi nekwabelana kwetibalo temagama. Kubalulekile kutsi yetfulwe nemishotinombolo yekuhlukanisa (ngekubala nje) lokutawuvumela kutsi kube netinsalela Chazela bafundzi kutsi: Nangabe bati kutsi 28 ÷ 7 = 4. Utawuba ngubani **29** ÷ 7 = 4 b? Kulindzeleke kutsi bafundzi barikhode timphendvulo tabo ngalendlela: 29 ÷ 7 = 4 insalela ku -1. Sifuna bafundzi bakwati kusho kutsi nguwaphi emaciniso laphatselene netibalo tekuhlukanisa lebawatiko, sb. Ngiyati kutsi 25 ÷ 5 = 5 ngako-ke 26 ÷ 5 = 5 insalela yi-1	
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhlela tinombolo tifike e -999** • Hlela lisethi letinombolo letikhetsiwe naletiniketiwe • Catsanisa tinombolo tifike e -999, usho kutsi ngukuphi lokunyeti nobe lokumbalwa • Yati kutsi nguyiphi inombolo lenyenti nga -1 nobe lokumbalwa nga -1 • Yati kutsi nguyiphi inombolo lenyenti nga -2 nobe lokumbalwa nga -2 • Yati kutsi nguyiphi inombolo lenyenti nga -3 nobe lencane nga -3 • Yati kutsi nguyiphi inombolo lenyenti nga -4 nobe lembalwa nga -4	**Lwati lwetinombolo: Kuhlela tinombolo tifike e -700** • Hlela lisethi letinombolo letikhetsiwe naletiniketiwe • Catsanisa tinombolo tifike e -999, usho kutsi ngukuphi lokunyeti nobe lokumbalwa • Yati kutsi nguyiphi inombolo lenyenti nga -1 nobe lokumbalwa nga -1 • Yati kutsi nguyiphi inombolo lenyenti nga -2 nobe lokumbalwa nga -2 • Yati kutsi nguyiphi inombolo lenyenti nga -3 nobe lencane nga -3 • Yati kutsi nguyiphi inombolo lenyenti nga -4 nobe lembalwa nga -4	**Tibalo tenhloko** Buka emanotsi ethemini 2, kodvwa sebentisa kuhleleka kwetinombolo lokusetulu lokuniketiwe ethemini 3	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.16 **Tibalo tenhloko**	• Yati kutsi nguyiphi inombolo lenyenti nge -5 nobe lembalwa nge -5 • Yati kutsi nguyiphi inombolo lenyenti nge -10 nobe lembalwa nge -10 **Khumbula ngekushesh-isa:** • Khumbula emaciniso laphatselene nekuhlanganisa nekususa ufike e – 20 • Hlanganisa nobe ususe emamalthiphuli e -10 kusukela e -0 ufike e-100 • Emaciniso laphatselene netibalo tekuhlanganisa nekuhlukanisa: • elithebula lekuphindzaphindza ngalokubili ufike ku – 2 x10 • elithebula lelishumi lekuphindzaphindza ufike ku-2 x 10 **Emasu ekubala tibalo** Sebentisa lamasu laland-zelako ekubala tibalo: • Faka inombolo lenkhulu kucala kute ubale uchubeke nobe ubale uye emuva	• Yati kutsi nguyiphi inombolo lenyenti nge -5 nobe lembalwa nge -5 • Yati kutsi nguyiphi inombolo lenyenti nge -10 nobe lembalwa nge -10 **Khumbula ngekushesh-isa:** • Khumbula emaciniso laphatselene nekuhlanganisa nekususa ufike e-20 • Hlanganisa nobe ususe emamalthiphuli e -10 kusukela e -0 kuya e -1000 **Emasu etibalo tenhloko** Sebentisa lamasu laland-zelako ekubala tibalo: • Faka inombolo lenkhulu kucala kute ubale uchubeke nobe ubale uye emuva • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela tinombolo. • Sebentisa budlelwane lobukhona emkhatsini wekuhlanganisa nekususa		

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
1.16 **Tibalo tenhloko**	• Umugcatinombolo • Kuphindza nekuhhafula tinombolo • Kwakha nekuhlahlela tinombolo • Sebentisa budlelwane lobukhona emkhatsini wekuhlanganisa nekususa • Sebentisa budlelwane lobukhona emkhatsini wekuphindzaphindza nekuhlukanisa	• Sebentisa budlelwane lobukhona emkhatsini wekuphindzaphindza nekuhlukanisa		
1.17 **Tincetu leti-tayelekile**	• Sebentisa ubuye unike emagama etincetu letetayelekile letifaka bohhafu, emakota, kunye kulokusiphohlongo, kunye kulokusitfupha, kunye kulokusihlanu • Bona tincetu letisesimeni semidvwebo • Kucala kubona kutsi bohhafu lababili nobe tincenye letitsatfu kulokutsatfu kwenta intfo yinye legcwele nekutsi ihhafu yinye nemakota lamabili kuyalingana • Bhala tincetu tibe nguhhafu munye,nakubili kulokutsatfu.		Ngalesikhatsi salethemu bafundzi batawuchubeka: • Bafundze emagama etincenye tetincetu • Basebentise emagama kutimongcondvo letihlukene • Babone tincenye telucetu • Bacale kuvisisa isayizi yetincetu • Batfole tincetu tetintfo • Bafundze ngetincetu letifanako • Bacatsanise tincetu Ngalesikhatsi salethemu bafundzi batawucala **kubala tincenye tetincetu** babuye bafundze emagama etincetu lamasha. Kubala tincenye tetincetu kuvumela bafundzi kutsi babone tincenye letinyenti tetincetu babuye babanike lulwimi loluphatselene netincetu letinenyumereyitha lenkhulu nedinomineyitha lencane kanye nenombolo lephelele nelucetu. Tincetu letiyindilinga tikulungele kusebentisa lolwati. Khutsata bafundzi kutsi babale ngendlela lebatawubala ngayo nababala ligcogco letintfo, sib.incenye yinye yalokune, tincenye timbili talokune, tincenye tintsatfu talokune, tincenye letine talokune, tincenye letisihlanu talokune. Ungacela bafundzi kutsi bente intfo yinye lephelele basebentisa tincenye letine bese uyabuta kutsi ngabe sinetincenye letisihlanu kuletine, ngabe loku kungetulu kunencenye yinye lephelele, kunga-phasi kwencenye yinye lephelele nobe kufana nencenye yinye lephelele? Tsatsa lelitfuba ulungiselele umsebenti lophatselene netincetu letinenombolo lephelele nelicetu ngekutsi ubute imibuto: Tsatsa tincenye letiyinkhotsa talokutsatfu. Un-genta tintfo letiphelele letingaki? Tingaki tincenye letisele? Sifuna bafundzi basho batsi: ''kunetintfo letimbili letiphelele nencenye yinye yalokutsatfu lesele'' Lenhlobo yalomsebenti ikhutsata: • kuvisisa inombolo yabohhafu labasentfweni lephelele • Tindlela letihlukene tekukhuluma ngemamalthiphuli etinombolo tabohhafu	

LIBANGA 3 ITHEMU 3 2. EMAPHETHINI, EMAFANGISHINI NE-ALJEBRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**Budze besikhatsi**
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawo-tonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. Emaphethini lapho linani nobe isayizi yabobunjwa esigabeni ngasinye intjintja ngendlela lelindzelekile, lokungukutsi **tinhlobo temaphethini** tiyangeteka njalo: Emaphethini lapho inombolo yabobunjwa esigabeni ngasinye intjintja ngendlela yekucombela, lokufana nekuhleleka kwemaphethini latayelekile kuyachubeka. **Yakha emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo.	Chubeka unike bafundzi tinhlobo temaphethini letifana neteThemu 1, kodvwa faka bonkhe bobunjwa labasha netintfo kulamaphethini njengoba kusetjetwe ngawo kuSikhala nabunjwa. Buka emanotsi eThemu 1 laphatselene nemaphethini nemanotsi eThemu 2 laphatselene neSikhala nabunjwa. Vumela bafundzi bacale ngekutsatsela, bachubele phambili, bagcine ngekuchaza emaphethini. Ngalesikhatsi kumele babe sebakwati kuchaza emaphethini nga-phandle kwelusito lwemibuto lebacondzisako. Chubeka nekugcila ekutfutfukiseni lulwimi lebaludzingako kuchaza emaphethini	1 sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze kulandzelana kwetinom-bolo letilula kuye lokun-genani e -1000 **Yakha emaphethini akho** Yakha emaphethini akho etinombolo.	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze kulandzelana kweti-nombolo letilula kuye lokungenani e -750 Kulandzelana kumele kukhombise kubala uye phambili nasemuva: • Nga -1 kusukela kunobe nguyiphi inombolo lesemkhatsini weli -0 ne -750 • Nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 ne -750 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -750 • Nga -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -750 • Nga -3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne -750	Buka emanotsi eThemu 1 Chubekisela phambili kulandzelana kwetinombolo kufaka ekhatsi loku lokulandz-elako: • Nga -1 kusukela kunobe nguyiphi inombolo lesemkhatsini we -0 ne -750 • Nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we -0 ne -750 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -750 • Nga -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -750 • Nge -100 kusukela kunobe nguyiphi imalthiphuli ye -100 kuye lokungenani e -1000 • Nge -50 kusukela kunobe nguyiphi imalthiphuli ye -50 kuye lokungenani e -1000 • Nge -25 kusukela kunobe nguyiphi imalthiphuli ye -25 kuye lokungenani e-1000 • Nge -20 kusukela kunobe nguyiphi imalthiphuli ye -20 kuye lokungenani e-1000 • Nga -3 kusukela kunobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne -750 • Nga -4 kusukela kunobe nguyiphi imalthiphuli ya -4 emkhatsini we -0 ne -750 Sebentisa tintfo, titfombe, emathebula nemaflodayagramu kute usekele bafundzi ekutjintjeni kubala bece nekulandzelanisa tinombolo baye ekuphindzaphindzeni nge -10, 5, nga -2, 4, 3 Sita bafundzi kusebentisa emaphethini lebawatiko njengesisekelo sekutetayeta nekufundza lamanye emaphethini. Sib. • Kulandzelanisa nga -2 kute kube sisekelo sekulandzelanisa nge -20	3 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKU-PHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi
2.2 **Emaphethini etinombolo**		• Nga -4 kusukela kunobe nguyiphi imalthiphuli ya -4 emkhatsini we -0 ne -80 • Nge -20, nge -25, nge -50, nge -100 kufike lokungenani e -1000 **Yakha ubuye uchaze emaphethini akho** Yakha ubuye uchaze emaphethini akho eti-nombolo		

LIBANGA 3 ITHEMU 3 3. SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**Budze besikhatsi** (etifundvweni letinemaminitsi la-24
3.1 **Kubekeka, kwetayeta nekubukeka.**	**Kubekeka nekubukeka** • Matanisa kubekeka lokwehlukene kwetintfo letifanako letisetjentiswa malanga onkhe. • Shano ligama lentfo lesetjentiswa malanga onkhe uma ikhonjiswe ngekubekeka kwayo lokungakatayeleki. • Fundza, humusha ubuye udvwebe emabalave langakahleleki nobe kubukeka kwangetulu kweligcogco letintfo. • Tfola tintfo kumabalave **Kubekeka netinkhombandlela** • Landzela tinkhombandlela kuhambahamba eklasini nasesikoleni • Nika tinkhombandlela tekuhambahamba eklasini nasesikoleni. • Landzela tinkhombandlela kusukela endzaweni yinye uye kulenye ebalaveni lelingakahleleki.	**Kubekeka nekubukeka** • Fundza, humusha ubuye udvwebe emabalave langakahleleki nobe kubukeka kwangetulu kweligcogco letintfo. • Tfola tintfo kumabalave **Kubekeka netinkhombandlela** • Landzela tinkhombandlela kusukela endzaweni yinye uye kulenye ebalaveni lelingakahleleki.	**Yini lokusha eBangeni 3?** • Emabalave, tinhlelo nelingetulu lekubekeka kweligcogco letintfo • Kutfola tintfo ebalaveni • Kulandzela tinkhombandlela ebalaveni ▪ Kudvweba emabalave langakahleleki, luhlelo lwekwakha nobe lingetulu lekubekeka kweligcogco letintfo **Kufundza nekuhumusha emabalave** Emabalave akhombisa kubukeka kwangetulu kwendzawo. Ebangeni 3 bafundzi basebenta kuphela ngemabalave langakahleleki; loku akufaki ekhatsi emabalave emigwaco lahlelekile nobe emabalave etendzawo lahlelekile. Loku kungasita bafundzi kutsi bacale ngeluhlelo lwekwakha nobe ngekubukeka kwangetulu kwendzawo lencane, sib.ithileyi yetintfo nobe luhlelo lwekwakha liklasi ngembi kwekubuka libalave letindzawo letinkhulu. Ethemini 2 sebenta ngengekubukeka kwangetulu, kwemacala nekubukeka kwaphambili. Kubukeka lokuvundlile kubukeka lokuvela kancane ngetulu nakancane emaceleni. Bafundzi labasebancane babona kubukeka lokuvundlile kwemhlaba ngasosonkhe sikhatsi kunekubukeka kwangetulu. Kungabasita bafundzi kutsi bacale bamatanise kubukeka lokuvundile kwetindzawo ngemabalave etindzawo lefanako. Nangabe kubukeka lokubili kwetindzawo (kubukeka lokuvundlile nekubukeka kwangetulu) kuniketiwe, bafundzi bangacatsanisa loko lebakubonako encenyeni yinye yekubukeka nalenye. Sita bafundzi bacale kuvisisa emabalave neluhlelo lwekwakha, bese ubacela kutsi batfole intfo eluhlelwenzi lwekwakha nobe etindzaweni letisebalaveni, sib. Funa umtfolamphilo, yini leseceleni kwawo? Nangabe bafundzi sebakwati kutfola tindzawo letitsite ebalaveni, sewungacala kubanika tinkhombandlela ebalaveni kusukela endzaweni yinye uye kulenye.	3 tifundvo

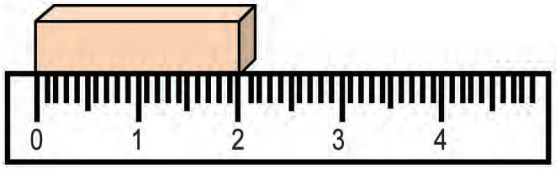
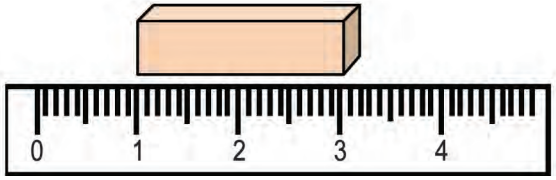
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni letinemaminitsi la-24
3.1 **Kubekeka, kwetayeta nekubukeka.**			**Kudvweba kubukeka kwangetulu kweligcogco letintfo nemabalave langakahleleki** Kulula kubafundzi kudvweba kubukeka kwangetulu kwentfo letsite lebangayibukela phasi kunekudvweba libalave lemfanekiso wemcondvo. Indzawo yekucala kudvweba kubukeka kwangetulu kuvumela bafundzi kutsi babuke ligcogco letintfo balibukela phasi, sib.tintfo letisetafuleni lathishela nobe ithileyi yetintfo lebekwe phasi, bese ucela bafundzi badvwebe kubukeka kwayo kwangetulu. Bafundzi bangachubeka badvwebe luhlelo lwekwakha lolungakahleleki nemabalave etindzawo letincane, sib.liklasi, libala lesikolo	
3.2 **Tintfo letine-madayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo let-ingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangema-bhola (indilinga) • Bobunjwa labangema-bhokisi (emaphrizimu) • Emasilinda • Emaphiramidi • Emakhoni **Timphawu tetintfo** Chaza, hlunga ubuye uc-atsanise tintfo letingema-dayimenshini lamatsatfu (3-D) mayelana naloku: • Bobunjwa labange-madayimenshini lama-bili (2-D) labakha buso betintfo letingemadayi-menshini lamatsatfu (3-D) • Tindzawo letisicaba nobe letigobekile.	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo let-ingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangema-bhola (indilinga) • Bobunjwa labangema-bhokisi (emaphrizimu) • Emasilinda • Emaphiramidi • Emakhoni **Timphawu tetintfo** Chaza, hlunga ubuye uc-atsanise tintfo letingema-dayimenshini lamatsatfu (3-D) mayelana naloku: • Bobunjwa labange-madayimenshini lama-bili (2-D) labakha buso betintfo letingemadayi-menshini lamatsatfu (3-D) • Tindzawo letisicaba nobe letigobekile.	**Lokuphakanyisiwe lokumele kugcilwe kuko ethemini 3** • Bafundzi bangagcila etintfweni letinsha ebangeni 3, njengaloku: emaphiramidi nemakhoni • Bafundzi batawakha tintfo ngekusebentisa tintsi tekunatsa nobe kwekuhlobisa emaphayiphi nobe tintsi tekuvungula ematinyo nobe emaphepha lagociwe entiwa lishubhu. Yetfulela bafundzi emakhoni nemaphiramidi. **Timphawu tetintfo letingemadayimenshini lamatsatfu (3-D): Tindzawo letisicaba nobe letigobekile, simo sendzawo lesicaba** • Indzawo lesicaba nobe legobekile. Ethemini 2 • Bafundzi bagcile ekubukeni kutsi tintfo tinendzawo lesicaba nobe legobekile • Bafundzi bachaze simo sendzawo lesicaba basho kutsi ngabe bebatindilinga, bebabocalantsatfu, bebatikwele nobe bebabocalandze Bafundzi bayachubeke bente loku ethemini 3, kodvwa nyalo batawubuka emaphiramidi nemakhoni. • Kwakha tintfo letihamba ngakunye letingemadayimenshini lamatsatfu Bafundzi basebentisa tintsi tekuvungula ematinyo, emaphepha lagociwe entiwa lishubhu nobe tintsi tekumunya nobe emaphayiphi ekuhlobisa tintfo kwenta iphiramidi. Loku kutawenta bafundzi bagcile emngcengcemeni wephiramidi. Bafundzi akukalindzeleki kutsi babale linani lemingcengcema nobe emakhona (loku kwentiwa ebangeni le -6)	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni letinemaminitsi la-24
3.2 **Tintfo letine-madayimenshini lamatsatfu (3-D)**	**Imisebenti lekugcilwa kuyo** • Buka ubuye wakhe tintfo letingemadayi-menshini lamatsatfu (3-D) ngekusebentisa tintfo letiphatsekako njengabobunjwa labangemadayimen-shini lamabili (2-D) labajutjiwe, lubumba, tintsi tekuvungula, tintsi tekunatsa nal-etinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D).	**Imisebenti lekugcilwa kuyo** • Buka ubuye wakhe tintfo letingemadayi-menshini lamatsatfu (3-D) ngekusebentisa tintfo letiphatsekako njengabobunjwa labangemadayimen-shini lamabili (2-D) labajutjiwe, lubumba, tintsi tekuvungula, tintsi tekunatsa nal-etinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D).	**Kubona nekunika emagama etintfo** Bafundzi kumele banikwe tintfo letehlukene kute basebente ngato: • lokume njengendilinga, sib. emabhola langemasayizi lehlukene, timabuli, emawolintji nalokunye • lokume njengemaphrizimu, sib. emabhuloki, titini, emabhokisi langemasayizi lehlukene, sib. emabhokisi emetjiso, emabhokisi emasiriyeli, emabhokisi elitiya, emabhokisi emutsi wekucubha ematinyo njll • leme njengemasilinda, lamadze nalancama, sib. tincenye temaphayiphi lakheke njengesilinda, emaroli lagocotela liphepha lasendlini lencane, emasilinda lamafisha nalabanti, sib. sikotela sepholishi yeticatfulo, sikotela sesinefu. • Leme njengemakhoni • Leme njengemaphiramidi Bafundzi kumele bacelwe kutsi batfole babuye bakhombise tintfo letime njengebhola (indilinga), nobe letime njengelibhokisi (iphrizimu) nobe letime (besilinda), letime njengephiramidi, letime njengekhoni • Nangabe banikwe ligcogco letintfo nobe • eklasini, sib. Lesitini sime njengelibhokisi lofana nobe leliwolintji lime njengebhola Ngesikhatsi sekutisebentela, bafundzi bangeta emabhola nemasilinda nabobunjwa labangemabhokisi (iphrizimu), emaphiramidi nemakhoni ngelubumba nobe inhlama yekudlala. **Umsebenti lobhalwako** Nanobe umsebenti lomnyenti lophatselene netintfo letingemadayimenshini lamatsatfu (3-D) wentiwa ngetandla, umsebenti kumele uhlanganiswe ngemisebenti lebhalwako. Ebangeni le-3 kumele kugcilwe ekunikeni emagama etintfo nekukhuluma ngebuso bato. Bafundzi akukalindzeleki kutsi babale nobe bati linani letikwele, lokusacalandze, lokusacalantsatfu, intfo lenebuso lobuyindilinga nobe linani lemingcengcema nobe emakhona etintfo. **Lulwimi** Lwati lwelulwimi lolulusito nawukhuluma ngetintfo letingemadayimenshini lamatsatfu (3-D): Indzawo, lesicaba, legobekile, emabhokisi, emabhola, emasilinda, emaphiramidi, emakhoni..	1 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	Budze besikhatsi (etifundvweni letinemaminitsi la-24
3.3 **Bobunjwa lab-anemadayimen-shini lamabili (2-D)**	**Tinhlobo tabobunjwa** • tindilinga • bocalantsatfu • tikwele • bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • simo • emacala lacondzile • emacala layindilinga **Dvweba bobunjwa** • tindilinga • bocalantsatfu • tikwele • bocalandze	**Tinhlobo tabobunjwa** • tindilinga • bocalantsatfu • tikwele • bocalandze **Timphawu tabobunjwa** Chaza, hlunga ubuye ucatsanise bobunjwa labangemadayimenshini lamabili (2-D) mayelana naloku: • simo • emacala lacondzile • emacala layindilinga **Dvweba bobunjwa** • tindilinga • bocalantsatfu • tikwele • bocalandze	Buka emanotsi eThemu 1 Bafundzi kumele bagcile kuloko lebakwentako, kodvwa bente imisebente lehlukene Bafundzi basebenta ngetindilinga netikwele temasayizi lahlukene, bocalantsatfu nabocalandze labanabobunjwa labehlukene. Bayabatihlunga ngekwemacele lacondzile nobe layindilinga. Bafundzi bahlunga babuye bente tincumbi tabobunjwa ngabocalantsatfu, ngetikwele, ngabocalandze nobe ngetindilinga Umsebenti uhlanganiswa ngemmisebenti lebhalwako, lokutawufaka ekhatsi bonkhe bobunjwa labadzingekako	2 tifundvo

LIBANGA 3 ITHEMU 3 4: SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** (etifundvweni teli –awa nemaminithi lange -24)
4.1 **Sikhatsi**	**Kusho sikhatsi** • Fundza tinsuku ekhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi etinombolo lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa ikhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe emaviki nobe tinyanga kufaka ekhatsi • kuntjintja emkhatsini wemalanga nemaviki. • kuntjintja emkhatsini wemaviki neminyaka.	**Kusho sikhatsi** • Fundza tinsuku ekhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi etinombolo lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa ikhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe emaviki nobe tinyanga kufaka ekhatsi • kuntjintja emkhatsini wemalanga nemaviki. • kuntjintja emkhatsini wemaviki neminyaka.	Bafundzi bayachubeka nekutetayeta kukhuluma ngebudze besikhatsi nekulandzelanisa sikhatsi Ngesikhatsi sekufundzisa liklasi lonkhe nesikhatsi sekugcila emacenjini bafundzi batawuchubeka nekukhuluma ngelilanga leliviki, tinyanga temnyaka nelusuku langalelo lilanga kanye nemalanga lengcile nemalanga letako. Bafundzi bayachubeka nekukhombisa loku lokulandzelako ekhalendeni ngekuvela kwetigameko • emalanga ekutalwa; • imigidvo yetenkholo; • tigameko temlandvo; • tigameko tasesikolweni; • emaholide avelonkhe Chubeka ucele bafundzi kutsi basho sikhatsi ngetikhatsi letivamile malanga onkhe - Ngema-awa nangemaminithi ewashini lemadijithi - Ngema-awa, ngehhafu yema-awa nangekota yema- awa Sibonelo, bafundzi bangacelwa kutsi basho sikhatsi lebangena ngaso esikoleni, sikhatsi selikhefu nangesikhatsi sekuya ekhaya nobe ngalesikhatsi bantjintja sifundvo baya kulesinye. Khetsa sikhatsi lapho liwashi litawukhombisa li-awa enhloko nobe ihhafu yeli-awa nobe ikota yeli-awa. Kubalulekile kubaneliwashi lelikhulu lelisebentako lelibekiwe eklasini, kute bafundzi babuke kulo sikhatsi. Bafundzi bangenta imifanekiso yemawashi. Ungabacela bakhombise tikhatsi letehlukene ufake ekhatsi kubala sikhatsi, sib. Ngikhombe li -awa le -10 enhloko. Bekungusiphi sikhatsi ngekota yeli-awa ngembikwekutsi kushaye insimbi yelishumi? Buka emanotsi ethemu 1 Ngesikhatsi sekutisebentela bafundzi batawucubeka bente imisebenti lephatselene nesikhatsi - Ngema-awa, ngehhafu yema-awa nekota yema-awa ewashini letintsi - Ngema-awa nangemaminitsi ewashini ledijithi.	2 Tifundvo)

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli –awa nemaminithi lange -24)
4.1 **Sikhatsi**	Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nobe ikota yema-awa	• Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nobe ikota yema-awa	Bafundzi bangabala ngemaviki nobe emalanga nangabe banikwe ikhalenda nobe incenye yekhalenda, sib. Kutfola tinsuku nekubala umehluko wesikhatsi emkhatsini wato. **Kufundza liwashi letintsi ngemaminithi** Sebentisa tifundvo le -3 ugcilise bafundzi kumakhono labatawadzinga nabafundza liwashi letintsi ngemaminithi - Khumbuta bafundzi ngeshokutsi yasekuseni neyantsambama - Khumbuta bafundzi kutsi li-awa linemaminithi la -60, kunemaminitsi la-30 ehhafini yeli-awa nemaminithi lali-15 kukota yeli-awa. Bavumele babale nge -5 ngalesikhatsi ukhomba tinombolo ewashini letintsi - Chazela bafundzi indlela sikhatsi lesisetjentiswa ngayo, sib. Kudlule emaminithi lasihlanu ishayile insimbi yelishumi, kusele emaminitsi lasihlanu kushaye insimbi yelishumi. - Nika bafundzi sikhatsi lesanele sekutetayeta kufundza liwashi letintsi ngemaminithi Cela bafundzi kutsi basho sikhatsi ngasosonkhe sikhatsi ngekuhamba kwelusuku umnyaka wonkhe. Bafundzi bangabuka ewashini letintsi kuhlola kutsi ngabe banike imphendvulo lekungiyo ngalesikhatsi bafundza liwashi letintsi. Bafundzi abente imifanekiso yemawashi lebangayisebentisa kusho sikhatsi nekubala umehluko wesikhatsi.	

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4.2 Budze	**Kukala lokungakahlele-ki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-. **Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi lebekelwe umgomo yebudze.	**Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi lebekelwe umgomo yebudze. • Combela, ukale ubuye urekhode budze ngemasentimitha usebentisa irula.	**Yini leyehlukile ethemini 2?** EThemini 2 bafundzi batawugcila • Silinganiso lesingakahleleki lesinemayunithi ebudze langakabekelwa umgomo. • Nekukala ngemamitha Ethemini 3 bafundzi batawucala kukala ngemasentimitha basebentisa irula. Loku kutawuba lithulusi lekucala lekukala bafundzi labatalisebentisa lapho badzinga kufundza silinganiso lesinemalayini labhalwe tinombolo **Kucombela, kulinganisa, kucatsanisa nekurekhoda budze, kuphakama nebubanti usebentisa emamitha** • Bafundzi kumele bahlanganise kuvisisa kwabo lokuphatselene nebubanti bemitha -1 babuye basebentise budze bemamitha kukala. Buka emanotsi eThemu 2 **Kucombela, kulinganisa, kucatsanisa nekurekhoda budze, kuphakama nebubanti kumasentimitha basebentisa irula** • Kusebentisa irula Khomba bafundzi indlela yekucala kukala kusukela ecandzeni Nangabe bafundzi basebentisa emayunithi langakahleleki, batawubeka lentfo la-batayisebentisa njengeyunithi ekucaleni kanye nasekucaleni kwalentfo lekalwako. Ubeka lentfo lekalwako ecandzeni lalerula.  Iraba inebudze bemasentimitha la -2 (2cm) Indzawo lecalako yalentfo letawukalwa ingalungiseka kanye nalenye inombolo eruleni bese ususa inombolo ekucaleni kwalentfo kusukela ekugcineni kwalentfo  Iraba inebudze (3 cm - 1 cm) = 2 cm	

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4.2 Budze	• Combela, ukale ubuye urekhode budze ngemasentimitha usebentisa irula. (Asikho sidzingo sekugucula emamitha nemasentimitha)		Ngaphandle kwekutsi bafundzi babute ngaloku nobe batitfolele bona ngekwabo, kungashiyelwa bafundzi belibanga 4 • Kucombela ngemasentimitha Bafundzi kumele bazame kutfola tintfo letinebudze lobuyisentimitha -1. Mhlawumbe iminwe yabo inebubanti lobuyisentimitha yi -1. Loku kungasetjentiswa njengendzawo lekususelwa kuyo nangabe bacombela budze, bubanti nekuphakama ngemasentimitha. Nangabe bafundzi sebanalo lwati lwekukala ngemasentimitha kumele bacombele ngembi kwaloko naloko kulinganisa • Imigca, imidvwebo netintfo Bafundzi abacale ngekukala imigca. Kulula kukala budze bemigca letawenta budze, kuphakama nobe bubanti bemidvwebo yetintfo nangabe usebentisa irula. Kulukhuni kukala budze, kuphakama nobe bubanti betintfo letibonakalako usebentisa irula. Ebangeni 4 bafundzi batawukala ngemasentimitha nemamilimitha. Ebangeni 3 bafundzi akukalindzeleki kutsi basebentise emamilimitha • Kucatsanisa silinganiso ngemasentimitha Bafundzi kumele bacatsanise budze, bubanti nekuphakama kwetintfo letikalwa ngemasentimitha • Kurekhoda silinganiso Nanobe silinganiso kulikhono lekwenta, bafundzi kumele barekhode silinganiso sabo (ngemayunithi langakahleleki kanye nemamitha) ngasosonkhe sikhatsi **Kukala budze njengesimongcondvo sekusombulula tinkinga netibalo** Ngesikhatsi lesiniketiwe seTinombolo, Timphawu tekubala neBudlelwane bafundzi batawubala tibalo letisebentisa simongcondvo se: • Silinganiso sebudze lesingakahleleki • Kukala budze ngemamitha • Kukala budze ngemasentimitha Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga tetinombolo letifanele ithemu. Bafundzi akukalindzeleki kutsi • bati kutsi 100cm = 1m • bagucule emkhatsini wemasentimitha nemamitha • bafundze budze ngemamilimitha (loku kutawenteka kusukela ebangeni -4) • bati kutsi 10mm = 1cm • bagucule emasentimitha abe ngemamilimitha Kubala ngemasentimitha kungakhetfwa kute bangabali badlule e -100cm	tifundvo

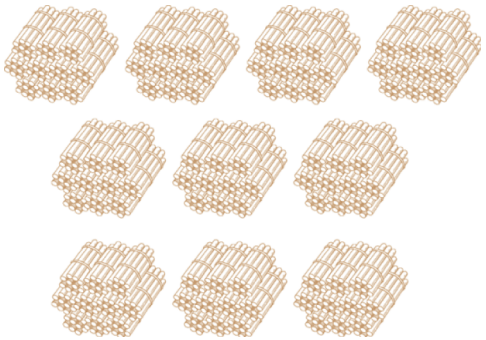
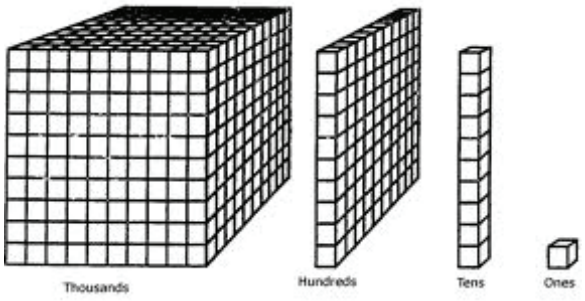
TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli –awa nemaminithi lange -24)
4.3 **Sisindvo**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo nesilinganiso sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa, hlela ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa nobe ngemagremu sib. 500 emagremu asawoti. • Bakala sisindvo sabo ngemakhilogremu basebentisa sikali sasendlini yekugezela. (Asikho sidzingo sekugucula emamililitha nemalitha).		Ngesikhatsi sekutisebentela bafundzi batawuchubeka • bacombele, bakale, bahlele, bacatsanise babuye barekhode sisindvo setintfo basebentisa sikali sekulinganisa lesinemayunithi ekukala langakahleleki. • bacatsanisa, bahlele babuye barekhode loko lebakutfolile - Igilosa lenesisindvo sayo lesikhonjiswe ngemakhilogremu - Igilosa lenesisindvo sayo lesikhonjiswe ngemagremu Buka emanotsi eThemu 2 **Kukala sisindvo njengesimongcondvo sekusombulula tinkinga netibalo** Ngesikhatsi lesiniketiwe seTinombolo, Timphawu tekubala neBudlelwane bafundzi batawubala tibalo letisebentisa simongcondvo • sesilinganiso sesisindvo lesingakahleleki • sesisindvo ngemakhilogremu; • sesisindvo ngemagremu Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga tetinombolo letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli –awa nemaminithi lange -24)
4.4 **Umtsamo/ bungako**	**Kukala lokungakahlelekí** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekubala nekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi le -4. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ubuye ubhale umtsamo ngekukala ngemalitha, ihhafu yemalitha nekota yemalitha		Ngesikhatsi sekutisebentela bafundzi kumele bachubeke: bacombele, bakale, bacatsanise, bahlele babuye barekhode umtsamo wetintfo tekuphatsa nobe umtsamo losetintfweni tekuphatsa letisebentisa silinganiso lesingakahleleki. Kulandzela emaresiphi, kufaka ekhatsi kubhaka kusimongcondvo lesilusito lapho bafundzi batetayeta khona kukala. Khetsa iresiphi lapho titsako tiniketwe ngetinkomishi, emathisipunu nobe emayunithi langakahleleki • Catsanisa ubuye uhlele umtsamo wemabhodlela lehlukene netintfo tegilosa letinemtsamo lokhonjiswe ephakethini. • Sebentisa lokungenani emabhodlela layilitha -1 nobe emajeke layilitha -1 kute bacombele, bakale, bacatsanise, bahlele babuye barekhode umtsamo wetintfo tekuphatsa nobe bungako etintfweni tekuphatsa letingemalitha • Sebentisa tintfo tekuphatsa letimakwe ngemamililitha, sib, tinkomishi tekukala letikhomba 200 ml, 330 ml, 500 ml, 750 ml, nobe 250 ml nobe tipunu tekukala letikhomba 5ml nobe emajeke lanemigca lebhaliwe yemamililitha yekukala umtsamo nobe bungako betintfo tekuphatsa letingakalebulwa. Buka emanotsi eThemu ye-1 Bafundzi kumele baniketwe umsebenti wekubhala kute bahlanganise loku lokulandzeleko, lokufaka ekhatsi kufundza titfombe: • Tintfo letinemtsamo lobhalwe ngemalitha kute tilandzeleniswe kahle ngekuhleleka • Titfombe temajeke lapho umtsamo usedvute nemugca lobhalwe ilitha yi-1 nobe emalitha la-2. Lokulindzelekile kutsi bafundzi bafundza kuphela inombolo lesedvute nemugca. Bachaza umtsamo ngalendlela, kusedvute ne, kunyenti kuna, kuncane kuna, kulingana nenombolo yemalitha lebayifundze ejekeni. • Tintfo letinemtsamo lobhalwe ngemamililitha kute batilandzelanise kahle ngekuhleleka • Titfombe temajeke lapho bungako busedvute nemugca lobhalwe ngemamililitha Lokulindzelekile kutsi bafundzi bafundze kuphela inombolo lesedvute nemugca	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli –awa nemaminithi lange -24)
4.4 **Umtsamo/ bungako**	• Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi nobe ngemamililitha sib. 500 emamililitha elubisi, 340 emamililitha esinatfo lesibandzako, 750 emamililitha e-oyila. • Yati kutsi inkomishi lelingene ingemamililitha la -250 • Yati kutsi ithisipunu ingemamililitha la -5 (Asikho sidzingo sekugucula emamililitha nemalitha).		**Kukala umtsamo njengesimongcondvo sekusombulula tinkinga netibalo** Ngesikhatsi lesiniketiwe seTinombolo, Timphawu tekubala neBudlelwane bafundzi batawubala tibalo letisebentisa simongcondvo • sesilinganiso sebungako /semtsamo lesingakahleleki, sib.Gogo usebentise tinkomishi le-2 telubisi kwenta iphudingi. Nangabe aphindza iresiphi, utawudzinga lubisi lolunganani? • emalitha • emamililitha Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga tetinombolo letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (etifundvweni teli –awa nemaminithi lange -24)
4.5 **Ipherimitha nebungako bendzawo**	**Ipherimitha** • Cwaninga libanga lemjikeleto wabobunjwa labangemadayimenshini lamabili (2-D) netintfo letingemadayimenshini lamatsatfu (3-D) usebentisa intsambo **Bungako bendzawo** • Cwaninga bungako bendzawo ngekufaka emathayilisi	Ipherimitha • Cwaninga libanga lemjikeleto wabobunjwa labangemadayimenshini lamabili (2D) netintfo letingemadayimenshini lamatsatfu usebentisa intsambo	**Kukala ujikelete tintfo nobe kukala ipherimitha kusha eBangeni 3** Ipherimitha ikalwa kuphela ngalokungakahleleki eBangeni 3 Nika bafundzi sikhatsi lesinyenti sekutetayeta kusebentisa intsambo kukala ujikelete tintfo letihlelekile letehlukene letifana netinhloko tabo, emabhodlela (lokufaka ekhatsi emabhodlela lamadze labukeka abanti, emabhodlela lamafisha labukeka abanti) tikotela, emamagi, emabhokisi njll.. Bafundzi abacale ngekucombela kutsi nguyiphi intfo lebacabanga kutsi ineperimitha lenkhulu bese bayahlola ngekutsi babeke luphawu kukhombisa libanga kulesiceshana sentsambo bese bayaticatsanisa Bafundzi bangabuye bakale iperimitha yabobunjwa labangemadayimenshini lamabili (2D)basebentisa siceshana sentsambo Bafundzi bangaphindza bente silinganiso sepherimitha basebentisa emayunithi langakahleleki lafana netimbonyo temabhodlela, emabhokisi emetjiso njll	

LIBANGA 3 ITHEMU 3 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
5.4 **Gcoca ubuye uhlele idatha**	**Gcoca ubuye uhlele idatha** • Gcogca idatha yeliklasi nobe yesikolo kute uphendvule imibuto yathishela. • Hlela idatha leniketwe nguthishela nobe libhuku. • Hlela idatha: - ngetinhla - ngemathali - ngemathebula Veta idatha: • kumathebula • kubhagrafu Khuluma ngempendvulo, buta ngedatha kumathebula naku bhagrafu.	**Gcoca ubuye uhlele idatha** Gcogca idatha yeliklasi nobe yesikolo kute uphendvule imibuto yathishela. **Veta idatha** Veta idatha egrafu yebha **Hlatiya ubuye uhumushe idatha** Phendvula imibuto lemayelana nedatha levetwe ku:	Kwaphakanyiswa ethemini 1 kuttsi bafunndzi igrafu yeliklasi yebha, nekutsi ethemini2 bahlatiya igrafutitfombe nemathebula le ubanika wona. Ethemini 3 bafundzi bangasebanta ngemjikeleto wonkhe wedatha (buka emanotsi ethemu 1) nobe cala ngekuveta idatha eluhlwini nobe kuthali neku hlela kabusha loku egrafini yebha. Kulula kubafundzi kudvweba igrafu yebha usebentisa emakhuloki emaphepha. Utawundzinga kukhumbuta bafundzi ngekuchaza timphawu tebhagrafu(bika emanotsi ethemu 1) Bafundzi kumele baphendvule imibuto lesegrafini yebha; buka ithemu 1 kute utfole tinhlobo letikahle temibuto.	3 tifundvo
5.5 **Veta idatha**	**Veta idatha** Veta idatha ku: • Grafu yetitfombe • Bha grafu			
5.6 **Hlatiya ubuye uhumushe idatha**	**Hlatiya ubuye uhumushe idatha** Phendvula imibuto lemayelana nedatha levetwe ku: • Grafutitfombe • Bha grafu	Hlatiya idatha levetiwe		

LIBANGA 3 THEMU 4 1.TINOMBOLO, TIMPHAWU TEKUBALA NEBUDLELWANE				
TIHLOKO	**LWATI NEMAKHONO:** **TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO** **LOKUGCILWE KUKO NGALEITHEMU 4**	**EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA**	**BUDZE BESIKHATSI** (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.1 **Bala tintfo**	**Kubala tintfo letiphat-sekako** • Combela ubuye ubale ngekwetsembeka lokungenani tintfo leti-1000 malanga onkhe. Indlelanchubo yekugcogcela ndzawonye tintfo iyakhutsatwa		Ekupheleni kwalethemu bafundzi kumele babe babone, batsintse babuye ba-hambise tintfo leti-1 000. Kumele babenemcondvo wetintfo “letilingana ne -1 000. Indlela yekugcogcela ndzawonye kumele ikhutsatwe.    	

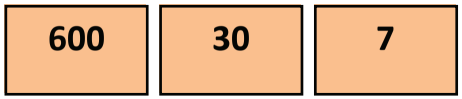
TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.1 Bala tintfo			Ekupheleni kwethemu kumele babe bakwati kuphendvula letinhlobo temisho neticondziso letilandzelako: • Bala tibali ngetincumbi letisihlanu, letingemashumi. • Phindza uhlele ubuye ubale futsi. Ngabe usanenombolo lefanako yetibali? • Nati tibali le-200. Tibale ngekutigcogcela ndzawonye ngetincumbi temashumi. Bala tonkhe tibali le-200,ngabe utawukhetsa kubala tibali ngetincumbi te-20 nobe e-25? Kungani? • Tsatsa sincumo sekutsi nguyiphi indlela lelula yekubala emapeniseli lagcogcelwe ndzawonye. • Nati tibali le-80 • Uma ubala ngakubili nobe emashumi, ngabe lesamba setibali sisafana na? • Bala nge-46 etibali ngekugcogcela ndzawonye tibali ngatimbili. Ngabe kuyaphangisa kubala ngakubili kunekubala ngakunye?	

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1.2 Bala uye phambili nasemuva	**Bala uye phambili nasemuva kuloku:** • Ngaku -1 nobe nguyiphi imaltiphuli emkhatsini we -0 ne -1000 • Ngema -10 nobe nguyiphi imaltiphuli ye -10 emkhatsini we -0 ne -1000 • Ngesi -5 nobe nguyiphi imalthiphuli yesi--5 emkhatsini we -0 ne-1000 • Ngaku -2 nobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -1000 • Ngaku -3 nobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne -1000 • Ngaku -4 kusukela kunobe nguyiphi imalthiphuli ya-4 emkhatsini we -0 ne -1000 nge -20,nge-25,nge-50,nge-100 kuye kulokungenani 1 000.	**Bala uye phambili nasemuva kuloku:** • Ngaku -1 nobe nguyiphi imaltiphuli emkhatsini we -0 ne -1000 • Ngema -10 nobe nguyiphi imaltiphuli ye 10 emkhatsini we -0 ne -1000 • Ngesi -5 nobe nguyiphi imalthiphuli yesi -5 emkhatsini we -0 ne-1000 • Ngaku -2 nobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -1000 • Ngaku -3 nobe nguyiphi imalthiphuli ya -3 emkhatsini we -0 ne -1000 • Ngaku -4 kusukela kunobe nguyiphi imalthiphuli ya-4 emkhatsini we -0 ne -1000 nge -20,nge-25,e-50,e-100 kuye kulokungenani ti-1 000.	**Ekupheleni kwethemu bafundzi kumele bakwati kwenta:** Bala ngekutsembeka, ngekusho ngakunye, ngemashumi, ngetihlanu,ngakubili, ngemashumi lamabili, emashumi lamabili nesihlanu, emashumi lasihlanu nemakhulu kuye e-1000 Kuphendvula imibuto lenjenga le: Kubala ngemashumi kusukela e-400 kuye e-500. Nyalo phindza ubale ubuyele emuva. Bala ngabokubili 2 kusukela e-564 kuye e-580. Bala ngemashumi lasihlanu kusukela e-600 kuye e- 800. Mangaki emashumi lasihlanu lowabalile? Bala uye emuva nge-300 kuye e-1 000. Bala uye emuva nge-100 kuye e- 620.Mangaki emakhulu lowabalile? Bala ngabokunye kusukela e-876 e-866. Kungaki kubala ngakunye lokubaliwe? Ungaciniseka njani kutsi ubale kahle? Bala uye emuva tinyatselo leti-15 ngaku -5 kusukela e-305. Ubala kuphi nyalo? Uma ubala nge-25 kusukela e- 525 kuye e- 850 ngabe utawusebentisa inombolo ye-725? Bala ubuye uhlole. Nguyiphi inombolo leta edvute? 467, 468, 469, 725, 750, 775, 420, 440, 460 820, 800, 780 **Bala usebentise imigcatinombolo** Dvweba umugcatinombolo longenalutfo bese ukhombisa tinombolo. 602, 604, 610. Nyalo sewungafaka e-606? Bala usebentise umugcatinombolo kusukela e-602 kuye e-610. Bala ngemashumi kusukela e- 314 kuye e- 344. Nguyiphi idijithi lentjintjako? Nguyiphi idijithi lengantjintji? Kungani emakhulu angantjintji? Uma ubala uya emuva,Uma ubala uya emuva,kwentekani?	

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1.3 **Tinombolo nemagama eti-nombolo**	**Bona, tfola bese ufundza tinombolo** • bona, tfola,bese ufundza tinombolo kusukela e -0 kuya e - 1000 • Bhala tinombolo kusukela e - 0 kuya e -1000 • Bona, tfola bese ufundza emagama etinombolo kusukela e- 0 kuya e - 1000 • Bhala emagama etinombolo kusukela ku -0 kuya e - 1000	**Bona, tfola bese ufundza tinombolo** • Bona, tfola,bese ufundza tinombolo kusukela e -0 kuya e - 1000 • Bhala tinombolo kusukela e - 0 kuya e -1000 • bona, tfola bese ufundza emagama etinombolo kusukela e- 0 kuya e - 1000 • Bhala emagama etinombolo kusukela ku -0 kuya e - 1000	**Ekupheleni kwalethemu bafundzi kumele bakwati kwenta loku:** Fundza ubuye ubhale tinombolo kuye kulokungenani i-1 000. Phendvula imibuto lenjengalena: • Nguyiphi inombolo lekulelikhadi? **642** • Tfola likhadi leline-738 nobe emakhulu layinkhotsa nemashumi lamatsatfu nesiphohlongo. Fundza letinombolo letilandzelako ngekuphimisela: 534, 947, 974, 345 Fundza lamagama: • Emakhulu lamatsatfu nemashumi lamane nakubili • Emakhulu lasiphohlongo nemashumi lamabili nakunye • Emakhulu lamane nemashumi lasitfupha nemfica. • Inkhulungwane yinye • Emashumi lamabili nemfica Bhala imifanekiso ubuye uyisho ngemagama. • Emakhulu lasihlanu nemashumi lasikhombisa. • Emakhulu lamane. • Emakhulu lasitfupha nemashumi lasiphohlongo nesihlanu.	

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1.4 **Chaza, catsanisa ubuye uhlele tinombolo**	**Chaza ubuye ucatsanisa tinombolo tifike e -999** • Chaza ubuye ucatsanise tinombolo letiphelele tifike e -999 kusukela kuletincane kuye kuletinkhulu nekusukela kuletinkhulu kuna, letincane kuna kanye nalokulingana na. • Chaza ubuye uhlele tinombolo letiphelele tifike e -999 kusukela kuletincane kuna kuye kulokukhulu kakhulu nalokukhulu kuye kulokuncane kakhulu. **Sebentisa tinombolo te-odinali kukhombisa kuhleleka nendzawo** • Sebentisa, fundza ubuye ubhale tinombolo lokufaka ekhatsi tindlela letifinyetiwe letifika e -31 • catsanisa tinombolo letiphelele tifike e -999 asebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna, kulingana na	**Chaza ubuye ucatsanisa tinombolo tifike e -999** • Chaza ubuye ucatsanisa tinombolo letiphelele tifike e -999 kusukela kuletincane kuye kuletinkhulu nekusukela kuletinkhulu kuna, letincane kuna kanye nalokulingana na. • Chaza ubuye uhlele tinombolo letiphelele tifike e -999 asebentisa lokuncane kuna kuye kulokukhulu kakhulu nalokukhulu kuye kulokuncane. **Sebentisa tinombolo te-odinali kukhombisa kuhleleka nendzawo** • Kusebentisa, kufundza nekubhala tinombolo lokufaka ekhatsi tindlela letifinyetiwe letifika e -31 • catsanisa tinombolo letiphelele tifike e -999 asebentisa lokuncane kuna, lokukhulu kuna, lokunyenti kuna, kulingana na	**Ekupheleni kwethemu bafundzi kumele bente loku lokulandzelako:** Hlela tinombolo kuye kulokungenani i-1 000 Phendvula imibuto levetwe ngetindlela letinyenti: Fundzani lomugcatinombolo.  Atfolakalaphi e-450 kulomugcatinombolo? Atfolakalaphi e-700 kulomugcatinombolo? Atfolakalaphi e-350 kulomugcatinombolo? Nyalo gcwalisa letinombolo letisele. Bhala tinombolo kusukela kulenkhulu kakhulu kuye kulencane. 345, 428, 389, 561, 600, 739, 620, 824 Catsanisa tinombolo kuye e- 999 • Nguyiphi inombolo lenkhulu nga-1 kune-563. • Nguyiphi inombolo leta emva kwe- 768 • Nguyiphi inombolo lencane nga-1 ku-431 • Nguyiphi inombolo lenkhulu nge-10 kune- 620 • Nguyiphi inombolo lencane nge-10 kune- 650 • Nguyiphi inombolo lenkhulu nge-20 kune-480 • Nguyiphi inombolo lencane nge-20 kune- 740 • Nguyiphi inombolo lenkhulu nge-25 kune- 625 • Nguyiphi inombolo lenkhulu nge-50 kune-250 • Nguyiphi inombolo lencane nge-50 kune- 700 • Nguyiphi inombolo lenkhulu nge-100 kune-300 • Nguyiphi inombolo lencane ng-100 kune 800	

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1.4 **Chaza, catsanisa ubuye uhlele tinombolo**	• Kusebentisa, kufundza nekubhala tinombolo lokufaka ekhatsi tindlela letifinyetiwe letifika e -31		Phendvula ngekutsi kuliciniso nobe kungemanga. Nika sizatfu semphendvulo yakho ema-220 asedvute ne- 200 kune- 250 e-403 akakasondzeli edvute ne - 400 kune- 420 15 alikasondzeli edvute n-0 e-kuna ku-30 Gcwalisa ngalokunyenti nalokumbalwa e-145 _____ 154 e-823 _____ 789 e-466 _____ 664 Sebentisa lamadijithi i-9, 0, 6 kwenta inombolo lenkhulu kakhulu longaphumelela kuyenta. Nguyiphi inombolo lencane longayenta?	
1.5 **Simelibungako**	**Bona simelibungako setinombolo letinemadijithi lamatsatfu tifike e -999** • Bona kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letinemadijithi la-3 tifike e -999 tibe ngemamalthiphuli e -100, emamalthiphuli emashumi nemamalthiphuli eyunithi • Tfola ubuye usho simelibungako sedijithi ngayinye.	**Bona simelibungako setinombolo letinemadijithi lamatsatfu tifike e -999** • Bona kutsi idijithi ngayinye imeleni • Hlahlela tinombolo letinemadijithi la-3 tifike e -999 tibe ngemamalthiphuli e -100, emamalthiphuli emashumi nemamalthiphuli eyunithi • Tfola ubuye usho simelibungako sedijithi ngayinye.	Ngalesikhatsi salethemu kuhlanganiswa kwalokulandzelako kwekutsi imicondvo idzinga kutfutfukiswa nekukhutsata: • Tinombolo tingahlahlelwa kuye emakhulwini, emashumi nangakunye. • Kuvisisa kutsi li-51 likhudlwane kune li-15 ngobe li-51 licuketse si-5 setincumbi /emabhandlela emashumi kanye ne-15 lencumbi/emabhandela alokulishumi kuphela. • Uma kubalwa ngemashumi, uma bafundzi bafinyelela e-40 batawukwaati kutsi babale emashumi la-4. **Ekupheleni kwethemu bafundzi batawukwati kwenta loku:** **Sebentisa, fundza ubuye ubale lulwimi lwekusebenta ngesimelibungako nekusivisisa.** Emayunithi nobe imivo, emashumi, emakhulu, idijithi, idijithi yinye, emadijithi lamatsatfu, simelibungako… **Bona li-0 njengesimeli bukangako emadijithini lamabili-nobe emadijithi lamatsatfu etinombolo njengaleti:** 60 305 720	

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1.5 Simelibungako			**Kuhahlela inombolo kukhombisa bungako bedijithi ngayinye.** 637 = 600 + 30 + 7  Sebentisa emafladikhadi kukhombisa loku: Sebentisa emabhuloki e-dienes kukhombisa bungako benombolo. **Kuphendvula imibuto lenjenga leyi:** Shano kutsi emadijithi la-7 ameleni kulenombolo ye-127 kanye na-2? Kanye na-1? Mangaki emakhulu lakhona kuleyo naleyo nombolo kuleti letilandzelako: 300, 500, 700, 412, 568 Mangaki emabhandlela emashumi lakhona kuleyo naleyo nombolo? 50, 80, 100, 200, 700, 120 **Bhala letinombolo:** Likhulu linye nesihlanu Emakhulu lasitfupha nemashumi lasihlanu Emakhulu lamane nemashumi lasiphohlongo nemfica Emakhulu lamatsatfu nakutsatfu **Bhala letinombolo:** Likhulu li-1 + emashumi la-2 Emakhulu lamabili + emashumi la-3 + imivo 7 Emakhulu lamane + emashumi la-9 +imivo le- 3 Esinyatselweni sinye: Yenta e-654 nge- 54 Kugucula e- 456 abe- nge-466 Chaza kutsi nguyiphi inombolo lekumele iye ebhokisini. 872 = ☐ + 70 + 2 129 = 100 + ☐ + 20 + 9 346 = 300 + 40 + ☐ Bhala bungako baleyo naleyo dijithi yalenombolo 762.	

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SOMBULULA TINKINGA TETIBALO KUSIMONGCONDVO				
1.6 Emasu ekusombulula tibalo	Sebentisa lamasu lalandzelako nawenta tibalo ubuye uchaze tisombululo tetibalo • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Umugcatinombolo • Kusondzeta eshumini		Bafundzi balindzeleke kutsi babale tibalo temagama basebentisa lamasu lalandzelako: • Kwakwa nekuhlahlela tinombolo • Kuphindza nekuhhafula • Umugcatinombolo • Kusondzeta eshumini Buka emanotsi eThemini ye -2 ngalamasu lalandzelako • Kwakha nekuhlahlela tinombolo • Kuphindza nekuhhafula • Umugcatinombolo **Kusondzeta eshumini** Kulethemu bafundzi bangasebentisa emasu ekusondzeta edvute nabenta tinkinga tekubala sib.: Noah une R48,00. Liphakethe lemakhadi lekawabutsile abita R5,00. Mangaki emaphakethe emakhadi lakangawatsenga? Umfundzi angasondzeta edvute eshumini R48,00, lokwenta R50,00.Loku kusho kutsi ‘angacishe’ atsenge 10 emaphekethe. Bafundzi batawubala babuye basebente timphendvulo tabo tivakale tibe sedvute nelinani lelisondzetwe edvute. Vumela bafundzi bakhetse tindlela letibalungele.Ngaloko-ke, Uma bafundzi basebentisa emasu langakafaneli badzinga kusitwa kutsi bakhetse emasu lafanelekile.. Bafundzi akufuneki kutsi bawatisise emasu. Batawukwati kutisebentisa futsi esiGabeni Lesisemkhatsini.	

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1.7 Kuhlanganisa nekususa	Sombulula tinkinga tetibalo temagama letikusimogcondvo bese uchaza tisombululo tetibalo lokufaka ekhatsi kuhlanganisa nekususa lokuholela etimphendvu-leni letifika e -999		**Ekupheleni kwalethemu bafundzi kumele bakwati kwenta letinkinga tetibalo.** **Kuhlanganisa nekususa** Kunetinhlobo letintsatfu letisisekelo setinkinga tekubala ngekuhlanganisa nekususa bese luhlobo ngalunye lungavetwa ngetindlela letehlukene.Letinhlobo nguleti: Kuntjintja Noluthando ubutse tinamatselisi le- 234. Silo umnike tinamatselisi letingetulu nge-80. Tingaki tinamatselisi lese anato nyalo? Bagibeli besitimela la-500. Kwehla bagibeli la- 176.Bangaki bagibeli labasele esitimeleni? Hlanganisa Nosisi ubutse tintfo tephrojekhthi yesikolo yekuvuselela kabusha. Wabutsa emabhodlela eplasitiki la-124 netikotela.Tingaki tintfo lekatibutsile? Sitolo sinemaphakethe ema-chips lange- 368, lange-82 angema- chippos kutsi onkhe lalamanye angemazikineki. Mangaki emaphakethe nobe emazikineki lakhona? Catsanisa Libanga 2 libutsele ndzawonye R446.Libanga 3 libutsele ndzawonye R729. Yimalini legcogcwe belibanga 3? **Kwetfula inkinga yekubala ngayinye ngetindlela letehlukene** Tinkinga tekubala kumele tetfulwe ngetindlela letehlukene Sibonelo, konkhe kwaloku tinkinga tekubala intjintji, kepha “lokungatiwa” tiba ngetindlela letehlukene kulenkinga yekubala. Sitolo sinemaphakethe emphuphu; kwa-odwa lange-55 ngetulu.Nyalo sekunemaphakethe emmbila la-170.Mangaki emaphakethe labekakhona ekucaleni? Sitolo sinemaphakethe ashukela la-500.Emva kwekutsengisa lamanye emaphakethe, basala nemaphakethe la-324 ashukela.Mangaki emaphakethe lebawatsengisile?	

<table>
<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO:
TIDZINGO TEKUPHELA KWEMNYAKA</th><th>LWATI NEMAKHONO
LOKUGCILWE KUKO NGALEITHEMU 4</th><th>EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA</th><th>BUDZE BESIKHATSI
(ngetifundvo letitsatsa 1 li-awa 24 emaminithi)</th></tr>
<tr><td>1.8
Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni</td><td>Sombulula tinkinga te-tibalo temagama letikusi-mogcondvo bese uchaza tisombululo tetibalo usebentisa</td><td></td><td>Sibonelo setibalo tetinkinga letingentiwa kulethemu
Kuphindza kuhlanganisa lokuhlolela ekuphindzaphindzeni
Mangaki emasondvo etimoto letinge-36?
Linani
Thami ulondvolote e-35c njalo ngeliviki. Ngumalini lekayonga ngemaviki la-8?
Emagridi
UMnu.Khumalo uhlanyele titjalo le-20 tetihlahla temawolintji. Kunetihlahla le-12 letisemgceni.Tingaki tihlahla letikhona setitonkhe?
Kubala ngetimongcondvo letehlukene ngebudlelwane bemafangishini lobe-hlukene
Heila utsengisa ihothidogi ngayinye nge-R4. Yenta lithebula kumsita kutfola linani lelikhulu lema-oda.<table><tr><td>Inombolo yema-hothidogi</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>10</td><td>20</td></tr><tr><td>Linani nge- R</td><td>4</td><td>8</td><td></td><td></td><td></td><td></td><td></td></tr></table>Sebentisa lelithebula kutfola linani lemahothidogi lasikhombisa nemahothidogi la-23.
Sediki ubita e- R20 etindleko tekuhamba, bese ubita e-R5 ekugadza umntfwana ngeli-awa.Cedzela lelithebula lakhe.</td><td></td></tr>
<tr><td>1.9
Kugcogcela ndzawonye nekwabelana lokuholela ekuhlukaniseni</td><td>Bala tibalo temagama bese uchaza sisombululo setibalo letifaka ekhatsi kwabelana lokulinga-nako nekugcogcela ndzawonye ufike e - 200 lanetimphendvulo letifaka ekhatsi tinsalela.</td><td></td><td>Sibonelo setinkinga setibalo letitawentiwa kulethemu
Kugcogcela ndzawonye
Kugcogcela ndzawonye, kulahla insalela. Umbhaki utsengisa emaroli esinkhwa etikhwameni le-12. Banemaroli la-118.Tingaki tikhwama temaroli la-12 ngasinye labangatenta?
Kugcola ndzawonye, kufake ekhatsi insalela emphendvulweni.
Umlimi unemacandza la-227. Mangaki emabhokisi emacandza langaphatsa ema-candza la-6 ebhokisini ngalinye langawadzinga kupaka onkhe lamacandza?
Kwabelana
Kwabelana,kulahla insalela
Bangani labasihlanu babelana emaswidi lange-84 kute bonkhe batfole inombolo lelinganako yemaswidi.Mangaki emaswidi lekatawutfolwa ngumunye.</td><td></td></tr>
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1.10 **Kwabelana lokuholela etincetwini**	Sombulula tibalo ubuye uchaze tisombululo tetibalo etibalweni te-kwenta letifaka ekhatsi kwabelana lokulinganako lokuholela etisombu-lulweni letinetincetu letihamba ngakunye na-letingahambi ngakunye sib. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{2}{5}$, njll.		**Tibonelo tetinkinga tekubala letingentiwa kulethemu.** Kwabelana lokuholela etincetwini Yaba emabha eshokolethi la-15 kubangani laba-6 kute bonkhe batfole tincetu letilinganako kute kungasali lutfo. Yaba emabha eshokolethi la-7 kubangani laba-3 kute bonkhe batfole tincetu letilinganako kute kungasali lutfo. **Ligcogco letincetu** Gogo unike Kiki imali le- R12. Kiki ufuna kubeka incenye yesitsatfu yemali. Kumele abeke imali lenganani? Loluhlobo lwekubala kumele lukhonjiswe uma bafundzi sebabale tinkinga teibalo letine nobe letisihlanu tekwabelana, lokuholela etinhlotjeni tetincetu babuye bati emagama aletincetu. **Beka tincetu ndzawonye** Umceceshi welibhola letandla unika ihhafu yeliwolintji umdlali ngamunye. Kunebadlali la-14. Udzinga mangaki emawolintji? Letinhlobo tekubala tiniketwa emva kwekutsi bafundzi babale tinkinga tetibalo letine nobe letisihlanu tekwabelana, lokuholela etinhlotjeni tetincetu babuye bati letinhlobo tetincetu. **Kubhala tincetu** Bafundzi akukalindzeleki kutsi babhale luphawu lwelucetu. Bafundzi batawufundza kulebula tincenye telucetu ngalendlela, incenye njenge-1 yekucala yalokusihlanu, tincenye letintsatfu talokune nobe tincenye le -3 emakota nobe 3 labasitfupha.Loku kubasita kutsi bevisise kutsi emagama etincetu achaza kutsi tingaki tincenye talokuphelele letihlukanisiwe taba sibonelo,emahhafu,bokutsatfu, emakota njll kantsi kwesibili tingaki taletincenye letamukelekako sib. bo-2 labatsatfu. **Kumela tibalo tinkinga tekubala tincetu ngemagama** Bafundzi kumele badvwebe timphendvulo tabo kute bakhombise kutsi inkinga bayivisisile Lindzela kutsi labanye bafundzi bangadvweba kahle kodvwa banike incenye yelucetu ligama lelingasilo Bafundzi kumele banike emagama etincenye letifakwe umbala ngekubhala njengetincenye le-2 talokutsatfu	

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1.11 Imali	• Bona, tfola imali lebuhhehlu neyemaphepha yase Ningizimu Afrika • Sombulula tinkinga temali letifaka samba nentjintji yemaRandi neSenti • Kuntjintja emarandi nemasenti		**Tibonelo tetinhlobo tetibalo letingentiwa kulethemu** • Bungako bemali nekwenta samba semali, sib. - Bhala 325c babe ngemarandi nemasenti - Ungamenta ngetindlela letingaki letinyenti letehlukene R400 usebentisa imali yemaphepha? Ungati njani kutsi unato tonkhe tisombululo? - Travis unetincetu 50c kanye netincetu 20c. Emathofi abita R1,20. Ngumalini intjintji lekatayitfola? • Mandla ubhadale R5,50 ethekisini leya esikoleni. - Utawubhadala malini kuya nekubuya esikoleni ngelilanga ngalinye? **Tinkinga tetibalo tekutsenga nekutsengisa** Gogo waGcinumuzi umnike R5. Nguwaphi emaswidi la-3 langawatsenga? Emashokholedi R2,70; emashephisi R1,80; ema-R1,40; ema-peach treats R1,60;ema- magic mints R2,20; ema-toffee R1,20. • Thabo utsenge emabhuku lamatsatfu nge- R80 ngayinye; ingakanani intjintji lekatayitfola ema- R300? • Emaphakethe la-5 eminti abita ema-44c ngalinye. Umnu.Nkhosi udzinga-88 emaminti. Mangaki emaphakethe lekangawatsenga? Utawubhadala malini?	
KUBALA				
1.12 Emasu (tindlela)	Sebentisa lamasu lalandzelako nawenta tibalo: • Yakha nekuhlahlela tinombolo • Phindza ubuye uhhafule • umugcatinombolo • Kusondzeta emashumini		Buka emanotsi eThemini 3.	

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1.13 **Kuhlanganisa nekususa**	• Hlanganisa kuye ema -999 • Susa ema -999 • Sebentisa timphawu tekubala letifanele (+, –, =, □) • Tetayete kuhlanganisa tinombolo tifike ema -30		Ngalesikhatsi salethemu bafundzi batawuchubeka bahlahlele tinombolo kute batibale.Tindlelanchubo letikhombisa kuhlanganisa nekubala ngekususa. **Kuhlahlela inombolo ibe tincenye tekwenta kubala kube lula.** **Kusebentisa simelibungako kute kuhlahlelwe tinombolo tibe ngemakhulu, emashumi nemivo.** • Kuhlanganisa nekuhlahlela tinombolo totimbili 524 + 82 = □ = (500 + 20 + 4) + (80 + 2) = 500 + (20 + 80+ (4 + 2) = (500 + 100) + 6 = 600 + 6 = 606 Kuhlanganisa emadijithi lamatsatfu 323 + 436 = □ 323 + 436 = (300 + 20 + 3) + (400 + 30 + 6) = (300 + 400) + (20 + 30) + (3 + 6) = 700 + 50 + 9 = 759 • Kuhlanganisa (ngekuhlahlela tinombolo letitawuhlanganiswa Bafundzi batawuhlahlela tinombolo ngendlela lebalungele.Loku kusho kutsi batawenta ngendlela lehlukile. 524 + 82 = □ 524 + (40 + 40 + 2) 524 + 40 564 + 40 604 + 2 = 606	

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1.13 Kuhlanganisa nekususa			Kuhlanganisa emadijithi lamatsatfu nemadijithi lamatsatfu. 323 + 436 = £ = 323 + (400 + 20 + 6) = (323 + 400) + 20 + 6 = (723 + 20) + 6 = 743 + 6 = 749 • Kususa ngekuhlahlela tinombolo totimbili Tinombolo temadijithi lamatsatfu susa tinombolo letingemadijithi lamatsatfu 889 – 137 = □ 889 – 137 = (800 + 80 + 9) – (100 + 30 + 7) = (800 – 100) + (80 – 30) + (9 – 7) = 700 + 50 + 2 = 752 • Kususa ngekuhlahlela inombolo yinye Emadijithi lamatsatfu susa emadijithi lamatsatfu 889 – 137 = □ 889 – (100 + 30 + 7) 889 – 100 789 – 30 759 – 7 = 752 • Kusebentisa kuhhafula kuhlahlela inombolo 525 + 16 = 525 + 8 + 8 = (525 + 8) + 8 = 533 + 8 = 541	

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1.13 **Kuhlanganisa nekususa**			• Kubala uchubeke nekubala uye emuva 805 = 798 = □ Kubala ngakunye kusukela e-798 indlela lekahle ngobe tinombolo tisondzelene. • Tfola lokusondzele ekuphindzeni 245 + 246 Lomunye angasho lesibalo lesingenhla njengekuphindza 245+1 nobe kuphindza 246 -1 245 + 245 + 1 = (200 + 40 + 5) + (200 + 40 + 5) + 1 = (200 + 200) + (40 + 40) + (5 + 5) + 1 = 400 + 80 + 10 + 1 = 400 + (80 + 10) + 1 = 400 + 90 + 1 = 491 **Kutfutfukisa nekwetayeta emakhono ekuhlanganisa nekususa** Bafundzi badzinga kutetayeta letinye tinhlobo temakhono ekuhlanganisa nekususa **Kubala uye etulu nobe edvute ne-10** 588 + 9 588 + 10 = 598 598 - 1 = 597 588 + 19 588 + 20 = 608 608 – 1 = 607 • Bafundzi kumele batfole ematfuba ekwenta letibalo tetinombolo letilandzelako kuye 800.	

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1.13 Kuhlanganisa nekususa			Hlanganisa nobe ususe emapheya emamalthiphuli e -10, kwendlula e -100 40 + 70 70 + 80 120 – 30 150 – 60 Hlanganisa nobe susa li -10 kunobe nguyiphi inombolo lenemadijithi lamabili nobe lamatsatfu lokufaka ekhatsi kwedlula e -100 Sibonelo: 65 + 10 124 + 10 326 – 10 358 - 10 Hlanganisa nobe susa idijithi lehamba ngakunye uye nobe kusukela etinombol-weni letinemadijithi lamatsatfu ngaphandle kwekudlula emashumini Sibonelo 634 +5 775 + □ = 779 768 – 4 Hlanganisa ubuye ususe idijithi lehamba ngakunye uye nobe kusukela kumamalt-iphuli e -100 Sibonelo: 600 + 4 500 + 3 700 - 6 800 – 5	

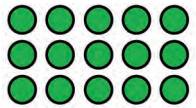
TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.13 **Kuhlanganisa nekususa**			Kucala kuhlanganisa nekususa lipheya lemamalthiphuli e -100 100 + 100 100 + 200 200 + 200 300 + 400 Bafundzi kumele baniketwe ematfuba ekutetayeta emaphethini ekuhlanganisa nekususa Nangabe ngati kutsi 1+1=2 Ngaloko- ke kungaki loku: 10 + 10 100 + 100 **Kuvisisa kuhlanganisa ekupheleni kwemnyaka** Ekupheleni kwemnyaka bafundzi kumele bakwati kwenta ku: Sebentisa babuye bavisise lulwimi lwekuhlanganisa: Kunyenti, hlanganisa, sibalo, samba, sekukonkhe, kulingana,luphawu…,kufundza nekubhala luphawu lwekuhlanganisa(+) kanye neluphawu lwalokulingana (=) Kuchubekisa kuvisisa kwekuhlanganisa uma kubeka nekubala emgcenitinombolo. Sibonelo, phendvula loku lokulandzelako, Yini lodzinga kuyihlanganisa ku- 67 kwenta e-85? Nawu umusho tinombolo wembuto wami: 67 + ☐ = 85. Kuphendvula kuloku lokulandzelako: • Hlanganisa konke e-43 ne- 19 • Hlanganisa lishumi kufike e- 167 • e-51 hlanganisa 83 • Hlanganisa e- 70 e- 50 • 280 = 120 + 80 + ☐ • Kunyenti ngakanani lokunge-160 kune -30	

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1.13 **Kuhlanganisa nekususa**			• Tfola sambase-156 ne-14 • Hlanganisa lishumi nakubili ekhulwini nemashumi lasikhombisa nesihlanu. • Nguyiphi inombolo lenkhulu ngelishumi kuene- 483? • Nguyiphi inombolo longayihlanganisa e-45 kutfola 178? • Nguyiphi inombolo longayihlanganisa e-25 kutfola 178? • Nguyiphi inombolo lengingayihlanganisa e- 56 kwenta li- 170? • Emakhulu lamatsatfu uwahlanaganisa nemivo le-3. • Emashumi la-12 ahlanganiswe nabokunye laba-8 • 245 + 10 = ☐ 245 + 20 = ☐ 245 + 30 = ☐ Yati kutsi £ kumele inombolo lengatiwa 45 + 81 = ☐ 67 + ☐ = 125 47 + 32 + 8 = ☐ 31 + ☐ + 20 = 160 ☐ + Δ = 100 ☐ + Δ = 120 ☐ + Δ = 450 Kuvisisa nekusebentisa lwati lwekuhlanganisa kungentiwa nganobe ngukuphi kuhleleka. Ema-178 + 12 = 190 ngaloko-ke 12 + 178 = 190 **Kuvisisa kususa ekupheleni kwemnyaka** Sebentisa ubuye uvisise lulwimi lwekususa: Tsatsa ulahle, susa, kusele kungaki, kungaki lokuncane kuna……umehluko emkhatsini wa-kungaki lokunyenti kuna….,kungakanani lokunyenti lokungenta……na kufundza nekubhala kususa (-)	

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1.13 **Kuhlanganisa nekususa**			Chubeka utfutfukise kuvisisa kususa njenga: • Kutsatsa ulahle; ne • Tfola umehluko emkjatsini Kuvisisa kususa emacembe lalicandza enombolweni lengagucuki: 192 – 0 = 192 192 = 192 – 0 Kuphendvula imibuto lebhaliwe lehlelwe ngalenye indlela njenge: e- 37 susa e-13 Susa e- 40 kulenombolo e-280 e-162 ususe e-42 Susa e- 45 kulenombolo e-390 Yini umehluko emkhatsini we- 738 ne- 157? Mancane ngakanani e-117 kune- 449? Nguyiphi inombolo longasusa kuyo e-56 kutfola 122? Nguyiphi inombolo longasusa kuyo 56 kutfola 142? Tfola emapheya etinombolo letinemehluko nge-10. Kunemapeniseli la-45 elayini lathishela.Wanika ngemapeniseli la-17.Mangaki lasele? Tfola emapheya etinombolo lanemehluko lo-20. Yati kutsi ☐ kumele inombolo lengekho. 557 – 134 = ☐ 800 – 530 = ☐ 762 - ☐ = 448 598 – 42 = £ 687 - ☐ = 375 13 – 6 = 15 - ☐ ☐ - 18 = 24	

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			174 – 14 = ☐ 199 - ☐ = 25 Cala kuvisisa kutsi: 125 – 10 kunemehluko kune- 10 - 125 Visisa budlelwane emkhatsini wekuhlanganisa nekususa. Sebentisa budlelwane emkhatsini wekuhlanganisa nekususa.Shano ubuye ubhale emaciniso ekuhambelana kwekususa kulokungemaciniso ekuhlanganisa lokuniketiwe kungabuywe kwentiwe ngekuguculela. Sibonelo: 25 + 68 = 93 kusho kutsi 93 – 68 = 25 68 + 25 = 93 kusho kutsi 93 – 25 = 68 122 – 104 = 18 kusho kutsi 18 + 104 = 122 Ngaphandle kwekusebentisa tinsita kuphendvula lokulandzelako: Uyati kutsi 145 + 120 = 265 Yini loku: 120 + 145 265 – 120 265 – 145 Uyati kutsi 154 – 38 = 116 Yini loku: 154 – 116 116 + 38 38 + 116 Bhala ubuye uphendvule loku lokulandzelako: 64 – 37 = ☐ ngaloko-ke 37 + ☐ = 64 137 – 17 = ☐ ngaloko-ke ☐ + Δ = 137 200 - 100 = ☐ ngaloko-ke ☐ + 100 = 200 89 – 38 = 51; 51 kunemehluko ngobe ☐ + Δ = 89 Bhala imisho tinombolo usebentise letinombolo. 160, 35, 125	

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1.13 **Kuhlanganisa nekususa**			**Hlola umphumela wekubala** **Tsatsa tincumo letibonakalako tetisombululo** Bafundzi kumele bafundziswe kutsatsa tincumo letivakalako tetisombululo. Yinye yaletindlela tekwenta loku kucombela ngetimphendvulo tabo ngembi kwekutsi ubale. Uma uhlanganisa tinombolo letimbili letisedvute nalenye.sib.e-45 na ne-46, bafundzi bangasebentisa kuphindza njengendlela yekucombela tinombolo tabo. **Kuhlola tisombululo** Bafundzi batawukwati kutsi banga: • Hlola kubala lokuhlanganisako ngekususa. Sibonelo: Uma ngabe e- 36 + 18 = 54;ngaloko-ke 54 – 18 = 36 • Hlola ngekubala lokususasako ngekutsi uhlanganise. Sibonelo 84 – 48 = 36, bese 36 + 48 = 84 Sebentisa kubala ngetimphawu letiphikisanako kuhlola tisombululo kungulesinye sizatfu sekufundzisa kuhlanganisa nekususa kanye kanye.	
1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**	• Phindzaphindza tinombolo 1kuye 10 nga-1, 2, 3, 4, 5, 10 • Sebentisa timphawu letifanele (x, =, □)		Kulethemu bafundzi bachubeka neku: • Sebentisa nekuvisisa lulwimi loluphatselene nekuphindzaphindza • Veta tibalo tekuphindzaphindza njengeligcogco • Visisa kutsi kuhlanganisa lokuphindzako kungavetwa ngekusebentisa luphawu lwekuphindzaphindza: • Sebentisa timphawu letifanele kuhumusha imisho tinombolo; • Visisa kutsi kuhlanganisa lokuphindzako kungakhonjiswa ngekusetjentiswa kwekuphindzaphindza; • Tetayeta nekuvisisa kutsi tibalo tekuphindzaphindza tingetiwa nobe ngayiphi indlela (kukhombisa tibalo tekuphindzaphindza letifanako) • Sebentisa umugcatinombolo kukhombisa tibalo tekuphindzaphindza ubuye ukhone kuchaza kutsi ukuvete njani loko kumugcatinombolo (kukhombisa kuzupha lokukhomba kuhlanganisa lokuphindziwe) • Shano lithebula lekuphindzaphindza • Bacala kuvisisa kuhlahlela tincenye tetibalo tekuphindzaphindza	

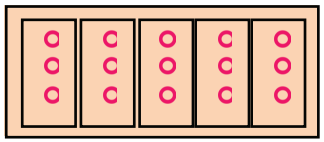
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1.14 **Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni**			Ngasekupheleni kwalethemu bafundzi kumele bakwati kwenta loku: Kusebentisa lulwimi lwekuphindzaphindza ngekwenta mbamba: Kuphindzaphindza, tikhatsi, kuphindzaphindza nga, emamalthiphuli e…, emamalthiphuli a…, lokunyenti kwa,tincumbi te…, kuphindzaphindza njenge (lokukhulu, lokudze, lokubanti), kabili, katsatfu, nekufundza nekubhala timphawu tekuphindzaphindza (x) Sebentisa lulwimi kwenta tibalo tekuphindzaphindza **Kuvisisa kuphindzaphindza njengekuhlanganisa lokuphindzako.** 6 hlanganisa kanyekanye kube ka-3 kuyafana neku: 6 + 6 + 6 = 18 3 labanyenti be- 6 = 18 3 phindzaphidza 6 = 18 6 x 3 = 18 3 x 6 = 18  $5\times3=15$ $3\times5=15$ **Kuvisisa kuphindzaphindza njengekuchaza ligcogco letintfo** Cala kubona kutsi kuphindzaphindza kungentiwa nganobe nguyiphi indlela **Kuphendvula imibuto yetfulwa ngetindlela letehlukene** Bosihlanu lababili Phindzaphindza si-5 3 phindzaphindza nge- 5 Tibali letintsatfu emgceni. Kunemigca le-4.Tingaki tibali setitonkhe? 2 kuphindvwaphindvwa ka- 7 16 siphindvwaphindvwa nga- 2	

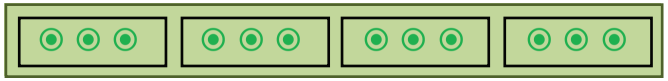
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(ngetifundvo letitsatsa 1 li-awa 24 emaminithi)</th></tr>
<tr><td>1.14
Kuphindza kuhlanganisa lokuholela ekuphindzaphin-dzeni</td><td></td><td></td><td>
Kuvisisa umtsetfo wekuphindzaphindza
3 x 4 = 12 kuyefana neku 4 x 3 = 12
Kubona kusebentisa sitsatsandzawo £ kumela inombolo lengatiwa.
2 + 2 + 2 = ☐
2 x ☐ = 6
5 + 5 +5 + 5 + 5 ngaloko-ke 5 x Δ = 25
4 + 4 + 4 ngaloko-ke 4 x 3 = ☐
10 + 10 + 10 + 10 + 10 ngaloko-ke 10 x ☐ = 50
5 x ☐ = ☐ x 5 = 45
4 x 8 = ☐ x 4
8 + 8 + 8 = 3 tiphohlongo = 8 x ☐ = 24
Kuvisisa budlelwane emkhatsini wekuphindza nekuphindzaphindza
Tsatsela lelithebuli ngentasi.Gcwalisa’kubala ngemigca ya-4”
<table>
<tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr>
<tr><td>bo-4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>bo-2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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Sebentisa imifanekiso leyehlukene yekwenta kuphindzaphindza
• Emagridi yekuphindza
• Emafloshathi
• Emathebuli
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TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.15 Kuhlukanisa	• Kuhlukanisa tinombolo kuye ema-99 nga- 1, 2, 3, 4, 5, 10 • Sebentisa timphawu letifanele (÷, =, □)		**Yini leyehlukile eThemini 3?** Ekupheleni kwethemu kumele sicinisekise kutsi bafundzi bangenta loku: • Visisa kutsikuhhafula kuphikisana nekuphindzaphindza kanye nekukhumbula kuphindzaphindza kwato tonkhe tinombolo kufike e-20 nabohhafu labahambiisana nako; • Fundza ngekwehlukanisa njengekugcogcela ndzawonye; • Visisa nekutusa budlelwane emkhatsini wekuphindzaphindza nekuhlukanisa nekutsi timphawu tekubala letphikisanako. • Sebentisa tindlelanchubo tekwenta naletingakahleleki tekwenta kuhlukanisa kwemadijithi lamabili nobe tinombolo tedijithi. • Sebentisa lwati lwabo lwesimeli bungako kwenta tibalo tekuphindza nekuhlukanisa. • Chaza kutsi ngukuphi kubala labakwentile nekutsi bebakwentelani; • Cocisanani ngetimphendvulo tabo nibuye nichaze kucabanga kwabo;babuya • Sebentisa lwati lwetimphawu tekusebenta ngetinombolo nekuchumana kwalokuphikisanako, lokufaka ekhatsi umgomo wekuphindzaphindza,kufake kuphindzaphindza nekuhhafula,kucombela nekuhlola kubala. **Emasu ekurekhoda** Kunemasu latsite ekurekhoda langasetjentiswa bafundzi belibanga le-3. Bafundzi angeke bawatisise onkhe lamasu.Badzinga kusitwa ekubukeni kuhlukanisa imisho tinombolo nekutsi bancume kutsi nguliphi lisu lengasetjentiswa. Kulindzelekile kutsi bafundzi angeke basaphindza bangakwati kutimela ngekudvweba titfombe babuye basebentise tinombolo kuchaza kucabanga kwabo. **Kususa lokuphindziwe** Lelisu belisetjentiswa uma kubalwa tinkinga tetibalo temagama kantsi futsi bafundzi badzinga kusitwa uma basebenta ngekulandzelana kwetinombolo babuye batsatse sincumo kutsi bangabala basebentise kuphindzaphindza kususa. 40 ÷ 8 = □ 40 - 8 → 32 – 8 → 24 – 8 → 16 – 8 → 8 - 8 = 0 Bafundzi babala tinombolo tetikhatsi nabasusa 8 kutfola 0.	

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1.15 Kuhlukanisa			**Kuhlanganisa lokuphindziwe** Labanye bafundzi bangasebentisa lelisu uma bevisisa budlelwane emkhatsini wekuphindza nekuhlukanisa. Kantsi futsi kuhleleka kwetinombolo kutawukhombisa nangabe lelisu lifanelekile nobe cha 40 ÷ 8 = □ 8 + 8 → 16 + 8 → 24+ 8 → 32 + 8 → 40 Bafundzi babala inombolo yesikhatsi lapho bahlanganisa si-8 kuyofika e-40. **Sebentisa kuphindzaphindza** Bafundzi kumele bakwati kutsi: “Ngatini ngekuphindza lokungangisita kutsi ngibale ngekwehlukanisa? Bafundzi bangabhala phasi emaphuzu ekuphindza lebawatiko ebhodini yetink-homba, kute basitakale ekwahlukaniseni. **Ibhodi yetinkhomba** Ngiyati: 10 x 3 = 30 Ngiyati: 4 x 3 = 12 72 ÷ 3 = □ 10 x 3 = 30 10 x 3 = 30 30 + 30 = 60 72 – 60 = 12. 4 x 3 = 12 10 + 10 + 4 = 24 Ngaloko-ke 72 ÷ 3 = 24	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.15 Kuhlukanisa			**Kubala ngekuhlukanisa tinombolo** Lendlela yekubala kwekwehlukanisa ngetulu kwekuhlanganisa kusho kutsi inombolo ingahlukaniswa ibe tincenye letilula kubala. 39 ÷ 3 = ☐ = (30 + 9) ÷ 3 = (30 ÷ 3) + (9 ÷ 3) = 10 + 3 = 13 Kuhlahlela tinombolo tibe bohhafu:kuhhafula e-60 Lapha bafundzi batisho batsi “Ngatini ngekwehlukanisa nge-5?” Bafundzi bayati kutsi e-30 ayahlukaniseka nge-5 angashiyi insalela. 60 ÷ 5 = ☐ 30 ÷ 5 = **6** 30 ÷ 5 = **6** **6** + **6** = 12 Sebentisa kuhhafula kute uhlukanise nga-4 Bafundzi bebaphindzaphindza eminyakeni lemitsatfu. Badzinga kusebentisa lamakhono njengemasu ekubala.Lwati lwekuphindza nekuhhafula lungasetjentiswa ekuhlukaniseni: 96 ÷ 4 = ☐ 96 ÷ 2 = 48 48 ÷ 2 = 24	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.15 Kuhlukanisa			**Ekupheleni kwesifundvo kumele bafundzi kumele bakwati kwenta:** Visisa,sebentisa ubuye ucale kufundza: Ngayinye,kubili, yinye…kwabelana,hhafu,lokuphelele,kwehlukanisa,kwehl ukanisa nga-3,kwehlukanisa nga-4,kwehlukanisa nga-2,kwehlukanisa nga-3,kwehlukaniseka nga-…tincumbi te…,lokusele Fundza,bhala ubuye usebentise luphawu lwekwehlukanisa (÷) Sebentisa lulwimi kwenta tibalo tekuhlukanisa Visisa kuhlukanisa tincumbi,nobe kususa lokuphindzaphindziwe Phendvula imibuto lebhalwako leyetfulwa ngetindlela letinengi: Kwaba e-16 nga-2 Kuhlukanisa e- 20 nge- 5 Bangaki bo-5 labenta 50? Mangaki ema10c ebuhhohlo lakenta 50c? Bangaki bokune e-20,e-28,e-36? Bangaki bosihlanu e-20, ku- 40, ku- 50, ku- 60? Annina utsi ufundza si-5 semagama lamasha onkhe malanga. Utsatsa ☐ ema-langa kufundza emagama la-40. 6 emashumi ÷ 3 = ☐ emashumi Bona kusebenta kwetimphawu njenge ☐ ngetinombolo letingatiwa Buka tibali ngaphasi bese ucedzisa tibalo temagama. 	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.15 Kuhlukanisa			Kune ☐ tincumbi le-3 15 – 3 – 3 - ☐ - ☐ - ☐ = 0 15 ÷ 3 = ☐ Buka lemidvwebo bese ucedzela lemisho.  Kune ☐ emacashati onkhe sekawonkhe kanye ne r letincumbi ta-3 licashati ngalinye. Ngaloko-ke: ☐ ÷ 3 = △ Kune ☐ emacashati sekawonkhe kanye netincumbi le-4 temacashati la-3 incumbi ngayinye. Ngaloko-ke: ☐ ÷ 4 = △ Tsatsisela ubuye ucedzele: 20 ÷ 2 = ☐ 20 ÷ ☐ = 10 20 ÷ ☐ = 2 21 ÷ 3 = ☐ 21 ÷ ☐ = 7 21 ÷ 7 = ☐ Kuvisisa imitsetfo yekuhlukanisa nga- 1 kanye ne-0 6 ÷1 = ☐ 8 ÷ 1 = ☐ 12 ÷ ☐ = 12 6 ÷ 0 = ☐ ☐ ÷ 4 = 0 1 ÷ 1 = ☐ 0 ÷ 7 = ☐	

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<tr><th>TIHLOKO</th><th>LWATI NEMAKHONO:
TIDZINGO TEKUPHELA KWEMNYAKA</th><th>LWATI NEMAKHONO
LOKUGCILWE KUKO NGALEITHEMU 4</th><th>EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA</th><th>BUDZE BESIKHATSI
(ngetifundvo letitsatsa 1 li-awa 24 emaminithi)</th></tr>
<tr><td>1.15
Kuhlukanisa</td><td></td><td></td><td>Sebentisa, fundza ubuye ucale kubhala:
Lokusele, insalela....
Bala insalela uma wenta tibalo tekuhlukanisa tibalo:
12 ÷ 5 kwenta 2 insalela 2
23 ÷ 7 kwenta 3 insalela
Visisa budlelwane emkhatsini wekuphindza nekuhhafula.
Phendvula letinhlobo temibuto lelandzelako:
Tsatsisela lelithebula leilandzelako
Gcwalisa tikhatsi nga-4. Nguyiphi iphethini loyibonako?
<table><tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>bo-4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>bo-2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>Hhafula tinombolo ‘ngekuphindza nga-4’ kutfola tinombolo “ekuphindzeni nga-2” Nguyiphi iphethini loyibonako?
Kuvisisa kutsi kuhlukanisa kubuyisela emuva kuphindzaphindza.
Khombisa lemishotinombolo ngemidvwebo
4 x 5 = ☐ 20 ÷ 5 = ☐
12 x 4 = ☐ 48 ÷ 4 = ☐</td><td></td></tr>
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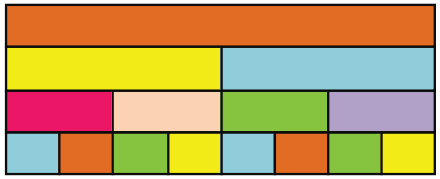
TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.16 **Tibalo tenhloko**	**Lwati lwetinombolo: Kuhlela tinombolo kuye ema- 999** • Hlela luhla lwetinombolo letikhetsekile letiniketiwe • Catsanisa tinombolo kufike 999 ubuye usho kutsi nguyiphi lenyenti nobe lembalwa nga: 1,2,3,4, 5 na 10 lokunyenti nalokumbalwa **Khumbula ngekushesh-isa:** • Kuhlanganisa nekususa emaciniso kufika ku -20 • Hlanganisa nobe ususe emamalthiphuli e-10 kusukela ku 0 kuye ku-100 • Kuphindzaphindza nekuhlukanisa emaciniso: • lithebula lekubala ngakubili kuyofika ku -2 x 10 • Lithebula lekubala ngelishumi kuyofika ku-10 x 10		**Tibonelo temibuto letingabutwa:** **Emagama etinombolo netinombolo** Phakamisa likhadi nobe ubhale phasi ligama lenombolo. Khetsa umfundzi kutsi abhale inombolo lehambelana neligama lenombolo. **Lokunyenti nobe lokuncane** Kwenta yiphi inombolo loku: Lencane nga 1 ku-900 Lenyenti nga 1 ku- 999 Lenyenti nga 2 ku- 702 Lencane nga 2 ku -405 Lenyenti nga 3 ku -477 Lencane nga 3 ku- 251 Lencane nga 4 kuna- 685 Lenyenti nga 10 ku -490 Lencane nga 10 ku- 660 Nguluphi luhlavu lwesihlanu lwe-alfabhethi? Nguyiphi inyanga yemfica emnyakeni? **Kuhlelembisa nekucatsanisa** Nguyiphi lokunyenti: e-621 nobe e-671? Nika inombolo lesemkhatsini we -154 ne- 159. **Kuhlanganisa nekususa:** Kwati kuhlanganisa nekususa tinombolo kufike e-20. ☐ + Δ = 20 ☐ + Δ = 16 20 = ☐ - Δ	

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1.16 **Tibalo tenhloko**	**Tindlela /Emasu ekubala ngenhloko** Sebentisa tindlela tekubala letilandzelako: • Faka inombolo lenkhulu kucala bese ubala uyachubeka nobe ubuyela emuva • Umugcatinombolo • Kuphindza nekuhhafula • Kwakha nekuhlahlela • Kusebentisa budlelwane emkhatsini wekuhlanganisa nekususa • Kusebentisa budlelwalwano emkhatsini wekuphindzaphindza nekuhlukanisa.		Kuhlanganisa nekususa tonkhe tinombolo kuye ku nekfaka ekhatsi e-20. 1 + 11 = 12 11 + 1 = 12 2 + 10 = 12 10 + 2 = 12 3 + 9 = 12 9 + 9 = 12 18 – 4 = 14 18 – 14 = 4 18 – 5 = 13 18 – 13 = 5 18 – 6 = 12 18 – 12 = 6 Kukhumbula ngekuphangisa kuhlanganisa nekuphindza kuye e-20. Loku kufaka ekhatsi emaphuzu lahambisana nekususa. • 1 + 1 = 2 • 2 + 2 = 4 • 3 + 3 = 6 • 4 + 4 = 8 • 5 + 5 = 10 • 6 + 6 = 12 • 7 + 7 = 14 • 8 + 8 = 16 • 9 + 9 = 18 • 10 + 10 = 20 Khombisa inombolo letawuhlanganiswa kwente e-20.(bhala phasi nobe usebentisa simelibungako nobe emafledikhadi) • 8 • 2 • 9 • 15 • 3	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.16 Tibalo tenhloko			Ngikhombise inombolo leshiyiwe…lesusiwe ku-20 (kubhala phasi nobe kusebentisa simelibungako nobe ifledikhadi) • 5 • 18 • 0 • 14 • 7 **Emasu ekubala:** Sebentisa emasu ekubala kuhlanganisa nekususa ngalokungiko. Hlanganisa tinombolo letehlukene usebentisa lamasu njengeku: • Buka emapheya etinombolo lekenta li-10 bese usebentisa loku lokusihlanu kwekucala. 2 + 7 + 8 2 + 8 kwenta 10 bese uhlanganisa si-7. • Cala ngenombolo lenkhulu kucala kute ubale uye phambili nobe ubale uye emuva. 5 + 15 Phindza ucale kabusha umushotinombolo: 15 + 5 bese ubala uchubekele e- 20 • Ntjintja inombolo ifike e-10 bese uyasusa nobe uhlanganise na-1. Sibonelo: 8 + 9 = 17 bese uchaza kutsi munye angenta 8 + 9 = 8 + 10 – 1 6 + 11 = 17 bese uchaza kutsi munye angenta 6 + 10 + 1 17 – 9 = 8 bese uchaza kutsi munye angenta 17 – 10 + 1 • Hlahlela inombolo ibe tincenye bese uhlanganisa Hlahlela ubuye ubhidlite tinombolo	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO LOKUGCILWE KUKO NGALEITHEMU 4	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
1.16 **Tibalo tenhloko**			Sibonelo bala ngenhloko ubuye uchaze: Chubeka ngekuhlahlela tinombolo 8 + 12 = 8 plus (10 + 2) = 8 + 2 + 10 = 10 + 10 = 20 • Sebentisa kuphindza njengendlela yekubala ngenhloko Tfola kuphindza lokusedvute.Sibonelo: 8 + 7 = 15 kuchaza kutsi kuphindvwe ka-7 kwahlanganiswa 1 nobe kuphindza nge- 8 susa 1 Kubona kutsi uma tinombolo letimbili tisedvute kwalenye ngesayizi,kuba lula kutfola umehluko ngekuchubeka ubale,hhayi kubala uye emuva. 17- 13 = 4 bese uchaza kutsi kubala uye embili kusukela ku- 13 kuye 17 kwenta 4 Tibalo tenhloko tingentiwa ngaphandle kwetinsita. **Tinsita letiphakanyisiwe** • Umugcatinombolo (lehlelekile nalengenalutfo) • Igridi yetinombolo • Simelibungako (ifledi khadi) • Kubala buhlalu	

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1.17 Tincetu	• Sebentisa ubuye unikete tincetu letisesimeni lesetayelekile letifaka bohhafu, emakota, kulokusiphohlongo, kulokutsatfu, kulokusitfupha, kulokusihlanu • Bona tincetu letisesimeni semidvwebo • Cala kubona kutsi emahhafu lamabili nobe lokutsatfu kwenta intfo yinye legcwele nekutsi ihhafu yinye nemakota lamabili kuyalingana. • Bhala tincetu tibe ngehhafu yinye munye, 2 kulokutsatfu.		Ekupheleni kwlethemu bafundzi kumele bakwati ku: • Kubona tincetu tabobunjwar nekutfutfukisa kuvisisa kutsi emahhafu kumele alingane ngesayizi. • Kwati kutsi emakota enta kunye kwalokuphelele kanye nekutsi ikota ngayinye yenta kumele ilingane ngesayizi. • Tfola tincetu tencumbi yetintfo; • Fundza ubuye ubhale emagama etincetu;bese • Hlela, chaza ubuye ucatsanise tincetu. Ekupheleni kwalethemu bafundzi batawuvisisa ngetincetu njengencenye yalokuphelele babuye bakwati kuphendvula imibuto lefananako: • emahhafu =kunye lokugcwele • emakota = kunye lokuphelele • kulotsatfu = kunye lokuphelele • emahhafu =kunye lokuphelele • kulohlanu =kunye lokuphelele • kulokusitfupha = kunye lokuphelele Phendvula lemibuto lenjengaleyi: Uma bunjwa ahlukaniselwe etincenyeni le-2 tincenye letilinganako, letincenye sitibita nge ___ Uma bunjwa ahlukaniswe etincenyeni le-3 letilinganako,letincenye sitibita nge___ Uma bobujwa bahlukaniselwe e ____ tincenye letilinganako sitibita ngekutsi emakota.	

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1.17 Tincetu			**Kukwati kucatsanisa isayizi yetincetu**  Ngabe ihhafu 1 yinkhulu nobe yinncane kunemakota la-3? Mangaki emakota lalingana na-1 lokuphelele? Bangaki bosiphohlongo labalingana na -1 lokuphelele? Ngabe emakota lamabili alingana nehhafu yinye? Tfola lucetu lwetintfo letigcogcelwe ndzawonye. Kunebuhlalu lo-12. Lo-8 bupinki kutsi lo-4 bumhlophe. Nguluphi lucetu lwebuhlalu lolumhlophe?	

LIBANGA 3 ITHEMU 4 2. EMAPHETHINI, EMAFANGISHINI NE ALJEBRA				
TIHLOKO	**LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA**	**LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 3**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE SIKHATSI**
2.1 **Emaphethini eJomethri**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze ngemagama • Emaphethini lalula lentiwe ngetintfo letibonakalako. • Emaphethini lalula lentiwe ngekudvweba imigca, bobunjwa nobe tintfo. **Yakha ubuye uchaze emaphethini akho** Yakha emaphethini akho eJomethri • Ngetintfo letibonakalako. • Ngekudvweba imigca, bobunjwa netintfo. **Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	**Emaphethini ndzawotonkhe** Tfola, chaza ngemagama ubuye utsatsele emaphethini eJomethri • Laphatselene nemvelo • Etintfweni tesimanje letisetjentiswa malanga onkhe. • Etintfweni temasiko nemagugu etfu	Bafundzi batawusebenta ngemaphethini laphatselene nemvelo, ngetintfo letisetjentiswa emphilweni yemalanga onkhe netemasiko nemagugu esive kusukela ebangeni 1 kuye ebangeni 6. Loku kusho kutsi akumelanga ucitse sikhatsi lesinyenti esihlokweni. Kumele futsi ukhetse imisebenti nobe emaphethini lafanele libanga ngalinye. Lenye inhlobo yemaphethini bafundzi labangayibuka umugca lowehlukanisa emkhatsini kulingane ngalokufanako, sib. emacembe lamanyenti nebuso betilwane letinyeti bukhombisa umkhatsi lohlukanisa kulingane ngalokufanako njengobe netilokatane letinyenti uma utibuka ngetulu nemaphethini lasetinyonini letinyenti uma utibuka ngaphasi. Ebangeni 3 kugcilwa ekutfoleni umugca lowehlukanisa emkhatsini kulingane ngalokufanako ngekugoca liphepha nekukhombisa. Bafundzi bangenta emaphethini ngekujuba bobunjwa babe ngemaphepha lagociwe. Loku kungafaka ekhatsi kwakha emadoyila nemaphepha akadzeni ekufaka emashelufini ngemaphethini lajutjiwe. Bafundzi batawubuka babuye bakhulume ngemaphethini lasemadoyileni lakoloshiwe netitfombe temaphethinii letisikiwe/letijutjiwe tenta emaphepha ekufaka emashelufini. Bafundzi bangabuye babuke emaphethini kuloku: • Emafenisi (emawayela, lokusigodvo); • Imisebenti yetitini nemathayilisi aphasi; • Kufulela; • Timphahla netindvwangu; • Emapuleti, tinkomishi nemasoso; • Ibhola; • Tilwane letifana netinkhomo, emavivane, lidvuba, indlulamitsi, ingwe, tinyoni, tilokatane; • Timbali nemacembe; • Emaphepha ekuhlobisa elubondzeni; • Imisebenti leyentiwe ngebuhlalu yemdzabu neyesimanjemanje; • Netindziwo nobe timantji letilukiwe.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE SIKHATSI
2.1 **Emaphethini eJomethri**			**Bafundzi bangawachaza njani emaphethini labawabonako etindzaweni lebakuto?** Kunetindlela letehlukene tekuchaza emaphethini lesiwabonako etindzaweni lesikuto. Emaphethini lamanyenti lakhona etindzaweni lesikuto entiwe ngemigca, bobunjwa netintfo. Bobunjwa netintfo akudzingi kutsi utichumanise nabobunjwa beJomethri letingemadayimenshini lamabili (2-D) netintfo letingemadayimenshini lamatsatfu (3-D) lekusetjentwe ngato ebangeni 2. Lebakubukako bafundzi nguloku: • lokuphindzekile, sib. emacashati, imigca, nobe nguyiphi inhlobo yabunjwa nekutsi • bakuphindze njani. **Sibonelo** • Imigca lecondzile, lephambanako (njengendvwangu yetitja), imigca lesekugcineni kwendvwangu nobe imigca levundlile ehembeni nobe imigca leya etulu lesebhulukweni) • Imigca legobekile lefana nalena loyitfola uma usika anyanisi. • Imigca lengakatayeleki lefana netingcivito teminwe nakumadvuba neshwabana lokusemtimbeni wendlovu, sibhejane nemuntfu lomdzala. • Imigca lenjengemagagasi leyenteka nawujuba liklabishi nobe esantini. • Emacashati layisayizi yinye, emacashati lasabalaliswe ngalokulinganako • Bobunjwa labangemasayizi lalinganako, sib. emaphethini etitini letiselubondzeni nobe epheyivini • Bobunjwa labanembala lofanako • Emaphethini lentiwe ngabunjwa munye lobuke etindzaweni letehlukene, sib. bocalantsatfu lababuke etulu nobe phasi emsebentini webuhlalu, nobe titini tekupheva letibuke etindzaweni letehlukene. • Emaphethini lentiwe ngabobunjwa labehlukene njengalabo bendlulamitsi	

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE SIKHATSI
2.2 **Emaphethini etinombolo**	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e -1000 **Yakha ubuye uchaze emaphethini akho** Yakha ubuye uchaze emaphethini akho etinombolo	**Tsatsela, chubekisela phambili ubuye uchaze** Tsatsela, chubekisela phambili ubuye uchaze tinombolo letilula letilandzelanako lokungenani kuye e -1000 Kulandzelana kufanele kukhombise kubala uye phambili nasemuva • Nga -1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -1000. • Nge -10 kusukela kunobe nguyiphi imalthiphuli ye -10 emkhatsini we- 0 ne-1000 • Nge-5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -1000. • Nga -2 kusukela kunobe nguyiphi imalthiphuli ya -2 emkhatsini we -0 ne -1000. • Nge -100 kusukela kunobe nguyiphi imalthiphuli ye -100 emkhatsini we -0 ne -1000.	Buka emanotsi eThemu 1 Chubekisela embili kulandzelana lokufaka ekhatsi loku lokulandzelako: • Nga-1 kusukela kunobe nguyiphi inombolo emkhatsini we -0 ne -1000 • Nge -10 kusukela kunobe nguyiphi imalthiphuli ye- 10 emkhatsini we- 0 ne-1000 • Nge -5 kusukela kunobe nguyiphi imalthiphuli ye -5 emkhatsini we -0 ne -1000. • Nga -2 kusukela kunobe nguyiphi imalthiphuli ye -2 emkhatsini we -0 ne -1000. • Nge -100 kusukela kunobe nguyiphi imalthiphuli ye -100 kuye lokungenani e -1000. • Nge -50 kusukela kunobe nguyiphi imalthiphuli ye -50 kuye lokungenani e -1000. • Nge -25 kusukela kunobe nguyiphi imalthiphuli ye -25 kuye lokungenani e -1000 • Nge -20 kusukela kunobe nguyiphi imalthiphuli ye -20 kuye lokungenani e -1000 Sebentisa tintfo, titfombe, emathebula kanye neflodayagramu kwesekela kutfutfuka kwebafundzi kusukela ekubaleni ngekweca nekulandzelanisa kuye ekuphindzaphindzeni nge -10, 5, 2, 4, 3.	3 tifundvo

TIHLOKO	LWATI NEMAKHONO LADZINGEKA EKUPHELENI KWEMNYAKA	LWATI NEMAKHONO LEKUGCILWA KUWO ETHEMINI 3	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE SIKHATSI
2.2 **Emaphethini etinombolo**		• Nge -50 kusukela kunobe nguyiphi imalthiphuli ye -50 emkhatsini we -0 ne -1000. • Nge-25 kusukela kunobe nguyiphi imalthiphuli ye -25 emkhatsini we -0 ne -1000 • Nge -20 kusukela kunobe nguyiphi imalthiphuli ye-20 emkhatsini we -0 lokungenani kuye -1000 **Yakha ubuye uchaze emaphethini akho** Yakha ubuye uchaze emaphethini akho eti-nombolo • Tigaba letichazwe ebangeni 2 letinekuhleleka kwetinombolo lokwengetekile. • Nge -20, -25, -50,-100 kuye kulokungenani ku-1000		

LIBANGA 3 ITHEMU 4 3. SIKHALA NABUNJWA (IJOMETHRI)				
TIHLOKO	**LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO: LEKUGCILWA KUWO KUITHEMU 4**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo let-ingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangema-bhola (indilinga) • Bobunjwa labangema-bhokisi (emaphrizimu) • Emasilinda • Emaphiramidi • Emakhoni **Timphawu tetintfo** Chaza, hlunga ubuye uc-atsanise tintfo letingema-dayimenshini lamatsatfu (3-D) mayelana naloku: • Bobunjwa labange-madayimenshini lama-bili (2-D) labakha buso betintfo letingemadayi-menshini lamatsatfu (3-D) • Tindzawo letisicaba nobe letigobekile.	**Tinhlobo tetintfo** Bona ubuye unike emagama etintfo let-ingemadayimenshini lamatsatfu (3-D) eklasini nasetitfombeni. • Bobunjwa labangemabhola (indilinga) • Bobunjwa labangemabhokisi (emaphrizimu) • Emasilinda • Emaphiramidi • Emakhoni **Timphawu tetintfo** Chaza, hlunga ubuye uc-atsanise tintfo letingema-dayimenshini lamatsatfu (3-D) mayelana naloku: • Bobunjwa labange-madayimenshini lama-bili (2-D) labakha buso betintfo letingemadayi-menshini lamatsatfu (3-D) • Tindzawo letisicaba nobe letigobekile.	Buka emanotsi ethemu 2 Kulethemu ungatetayeta, ubuyekete ubuye uhlanganise umsebenti lophatselene nemadayimenshini lamatsatfu (3-D) ngemisebenti lebhalwako. Gcila ekuboneni nekusho emagama • bobunjwa labasabhola, (Tindilinga) • bobunjwa labasabhokisi (emaphrizimu); • Emasilinda; • Emaphiramidi;ne • makhoni Nawukhonjiswa sitfombe seJomethri nobe tintfo letisetjentiswaa malanga onkhe. Imibuto lekumele bafundzi bagcile kuyo • nobe ngabe buso bentfo kugobekile nobe kusicaba; • na • nobe ngabe buso betintfo letingubocalantsatfu, bocalandze, tikwele nobe tindilinga.	1 Sifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO KUITHEMU 4	EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
3.2 **Tintfo letinge-madayimenshini lamatsatfu (3-D)**	**Imisebenti lekugcilwa kuyo** • Buka ubuye wakhe tintfo letingemadayi-menshini lamatsatfu (3-D) ngekusebentisa tintfo letiphatsekako njengabobunjwa labangemadayimen-shini lamabili (2-D) labajutjiwe, lubumba, tintsi tekuvungula, tintsi tekunatsa nal-etinye tintfo teJomethri letingemadayimenshini lamatsatfu (3-D).			
3.4 **Kwehlukanisa emkhatsini kulingane ngalokufanako**	**Kwehlukanisa emkhatsini kulingane ngalokufanako** • Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimeshini lamabili (2-D) nabobunjwa labangasibo beJomethri • Tfola umugca lowehlukanisa emkhatsini kulingane ngalokufanako ngekugoca liphepha nekukhombisa.	**Kwehlukanisa emkhatsini kulingane ngalokufanako** • Bona ubuye udvwebe umugca lowehlukanisa emkhatsini kulingane ngalokufanako kubobunjwa beJomethri labangemadayimeshini lamabili (2-D) nabobunjwa labangasibo beJomethri	**Umsebenti wekusebentisa umkhatsi kulinganisa ngalokufanako nangalokulinganako ethemini ye-2 kumele kusite bafundzi kutsi batitfolele umugca lowehlukanisa emkhatsini emidvwebo yeJomethri netintfo letingasito teJomethri.** **Imisebenti lebhalwako kumele ifake ekhatsi tibonelo lapho:** • Umkhatsi lolinganisa ngalokufanako nangalokulinganako, ungasiwo umugca locondzile; • kunemigca lengetulu kwamunye lowehlukanisa emkhatsini ngalokulinganako, nangalokufanako kufananeleminyenti kubobunjwa nobe etintfweni.	1 sifundvo

LIBANGA 3 ITHEMU 4 4. SILINGANISO				
TIHLOKO	**LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO: LEKUGCILWA KUWO KUITHEMU 2**	**EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA**	**BUDZE BESIKHATSI** (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.1 **Sikhatsi**	**Kusho sikhatsi** • Fundza tinsuku ekhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni - Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi etinombolo lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa ikhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe emaviki nobe tinyanga kufaka ekhatsi • kuntjintja emkhatsini wemalanga nemaviki.	**Kusho sikhatsi** • Fundza tinsuku ekhalendeni • Faka emalanga ekutalwa, imigidvo yetenkholo, emaholide esive, tigameko temlandvo, tigameko tesikolo ekhalendeni • Shano sikhatsi sema-awa la -12: - ngema-awa - ihhafu yema-awa - ikota yema-awa - emaminithi emawashini etintsi nasemawashini edijithi nakulamanye emathulusi etinombolo lakhombisa sikhatsi sib. bomakhalekhikhini. **Bala budze nekwendlula kwesikhatsi** Sebentisa ikhalenda kubala nekuchaza budze besikhatsi ngemalanga nobe emaviki nobe tinyanga kufaka ekhatsi • kuntjintja emkhatsini wemalanga nemaviki.	Bafundzi bayachubeka nekutetayeta kukhuluma ngebudze besikhatsi nekulandzelanisa sikhatsi Ngesikhatsi sekufundzisa liklasi lonkhe nesikhatsi sekugcila emacenjini bafundzi batawuchubeka nekukhuluma ngelilanga leliviki, tinyanga temnyaka nelusuku langalelo lilanga kanye nemalanga lengcile nemalanga letako. Bafundzi bayachubeka nekukhombisa loku lokulandzelako ekhalendeni ngekuvela kwetigameko • emalanga ekutalwa; • imigidvo yetenkholo; • tigameko temlandvo; • tigameko tasesikolweni; • emaholide avelonkhe Chubeka ucele bafundzi kutsi basho sikhatsi ngetikhatsi letivamile malanga onkhe - Ngema-awa nangemaminithi ewashini lemadijithi - Ngema-awa, ngehhafu yema-awa nangekota yema- awa usebentisa emawashini etintsi. Sibonelo, bafundzi bangacelwa kutsi basho sikhatsi lebangena ngaso esikoleni, sikhatsi selikhefu nangesikhatsi sekuya ekhaya nobe ngalesikhatsi bantjintja sifundvo baya kulesinye. Khetsa sikhatsi lapho liwashi litawukhombisa li-awa enhloko nobe ihhafu yeli-awa nobe ikota yeli-awa. Kubalulekile kubaneliwashi lelikhulu lelisebentako lelibekiwe eklasini, kute bafundzi babuke kulo sikhatsi. Bafundzi bangenta imifanekiso yemawashi. Ungabacela bakhombise tikhatsi letehlukene ufake ekhatsi kubala sikhatsi, sib. Ngikhombe li -awa le -10 enhloko. Bekungusiphi sikhatsi ngekota yeli-awa ngembikwekutsi kushaye insimbi yelishumi? Buka emanotsi ethemu 1 Ngesikhatsi sekutisebentela bafundzi batawucubeka bente imisebenti lephatselene nesikhatsi - Ngema-awa, ngehhafu yema-awa nekota yema-awa ewashini letintsi - Ngema-awa nangemaminitsi ewashini ledijithi.	2 tifundvo

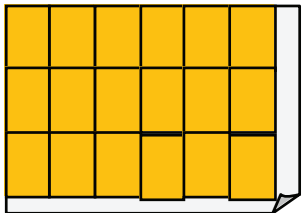
TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO KUITHEMU 2	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.1 Sikhatsi	• kuntjintja emkhatsini wemaviki neminyaka. Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nobe ikota yema-awa	• kuntjintja emkhatsini wemaviki neminyaka. Sebentisa emawashi kubala budze besikhatsi ngema-awa, ihhafu yema-awa nobe ikota yema-awa	Bafundzi bangabala ngemaviki nobe emalanga nangabe banikwe ikhalenda nobe incenye yekhalenda, sib. Kutfola tinsuku nekubala umehluko wesikhatsi emkhatsini wato. **Kufundza liwashi letintsi ngemaminithi** Sebentisa tifundvo le -2 ugcilise bafundzi kumakhono labatawadzinga nabafundza liwashi letintsi ngemaminithi. Buka emanotsi eThemu 3	
4.2 Budze	**Kukala lokungakahlelekí** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo sib. Budze besandla, tinyatselo, budze bepeniseli, tibali njll. • Chaza budze betintfo ngekubala ubuye usho budze ngemayunithi langakahleleki • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. Kudze kuna-, kufishane kuna-, kuphakeme kuna-, kubanti kuna-.		Tonkhe tinhlobo tetilinganiso tebudze letibalwe ekholamini leseceleni kungentiwa ngesikhatsi sekutisebentela kuyo yonkhe ithemu.Wonkhe umsebenti kumelwe urekhodwe.	2 tifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO KUITHEMU 2	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.2 Budze	**Kungenisa kukala lokuhlelekile** • Combela, kala, hlela ubuye urekhode budze usebentisa emamitha (indvuku leyimitha nobe intsambo leyimitha) njengeyunithi lebekelwe umgomo yebudze. • Combela, ukale ubuye urekhode budze ngemasentimitha usebentisa irula. (Asikho sidzingo sekugucula emamitha nemasentimitha)			

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO KUITHEMU 2	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.3 **Sisindvo**	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye ubuye urekhode budze usebentisa tilinganiso letingakabekelwa umgomo nesilinganiso sekulinganisa sib. emabhuloki, titini njll. • Sebentisa lulwimi kukhuluma ngekucatsanisa sib. kulula, kuyasindza, kulula kakhulu, kusindza kakhulu. **Kungenisa kukala lokuhlelekile** • Catsanisa, hlela ubuye urekhode sisindvo setintfo letipakelwe kutsengiswa letiveta sisindvo ngemakhilogremu sib. emakhilogremu la -2 erayisi, ikhilogremu yafulawa nobe ngemagremu sib. 500 emagremu asawoti. • Bakala sisindvo sabo ngemakhilogremu basebentisa sikali sasendlini yekugezela. (Asikho sidzingo sekugucula emamililitha nemalitha).	**Kungenisa kukala lokuhlelekile** Bafundzi benta imisebenti yekubhala kuhlanganisa lokulandzelako, lokufaka ekhatsi kufundvwa kwetitfombe te. • Imikhicito lebhalwe sisindvo. • Titfombe tesisindvo esikalweni sasendlini yekugezela lapho lutsi lukhombe umugca lonenombolo.	Kuhlanganisa umsebenti wesisindvo lowentiwe umnyaka wonkhe, bafundzi kumele babhale imisebenti leyenta kutsi • bafundze titfombe letibavumela kutsi bacatsanise sisindvo setintfo letikhonjiswe esikalini sekulinganisa; • bafundze titfombe letibavumela kutsi basho sisindvo setintfo esikalini sekulinganisa basebentisa emayunithi ekukala langakahleleki; • bacatsanise, bahlele bese barekhoda lebakutfolile kwe - Titfombe tegilosa letinesisindvo lesibhalwe ngemakhilogremu; - Titfombe tegilosa letinesisindvo lesibhalwe ngemagremu; • bafundze titfombe tetikali tasendlini yekugezela lapho sisindvo sikhonjiswe sabasedvete nelikhilogremu leligcwele. Buka emanotsi ethemu 2 **Kulinganisa sisindvo njengengcikitsi yekusombulula tinkinga nekubala.** Ngesikhatsi lesabelwe Ttinombolo, timphawu tekubala nebudlelwane, bafundzi bangasombulula tinkinga tetibalo letisebentisa simongcondvo se: • kukala sisindvo lokungakahleleki; • sisindvo ngemakhilogremu ne • sisindvo ngemagremu. Cikelela kuhleleka kwetinombolo letihleleke kahle talethemu, kanye neluhlobo lwetinkinga tetibalo tethemu.	1 sifundvo

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO KUITHEMU 2	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.4 Umtsamo	**Kukala lokungakahleleki** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo tekuphatsa (umtsamo longamumatfwa yintfo yekuphatsa uma igcwalisiwe) ngekusebentisa tilinganiso letingakabekelwa umgomo sib. tipunu netinkomishi. • Chaza umtsamo wentfo yekuphatsa ngekubala nekusho kutsi mangaki emayunithi langakabekelwa umgomo lowadzingako kugcwalisa intfo yekuphatsa sib. Libhodlela lelinemtsamo wetinkomishi le -4. **Kungenisa kukala lokuhlelekile** • Combela, kala, catsanisa, hlela ubuye urekhode umtsamo wetintfo ubuye ubhale umtsamo ngekukala ngemalitha, ihhafu yemalitha nekota yemalitha	Bafundzi benta imisebenti kuhlanganisa loku lokulandzelako lokufaka ekhatsi kufundza titfombe te. • Umkhicito lobhalwe umtsamo kute ulandzelanise ngekuhleleka. • netitfombe temajeke lapho bungako busondzela emgceni lomakiwe lonenombolo lengu -1 litha nobe -2 emalitha nobe ihhafu nobe ikota yelitha. Bachaza bungako njenge kucishe/ kusedvute/kusondzele e/kunyentana/kunyenti/ kuncane/kungulenombolo (yemalitha) lebayifundza ejekeni. Akukadzingeki kuntjinja emkhatsini wemalitha nemamililitha.	Ngalesikhatsi sekubentela bodvwa bafundzi kumele bachubeke ne. • Bacombele babuye bakale, bacatsanise, bahlele babuye barekhode umtsamo wetintfo tekuphatsa nobe bungako bemtsamo entfweni yekutsela basebentisa kukala lokungenasilinganiso. • Catsanisa ubuye uhlele umtsamo wemabhodlela netintfo tegilosa letinebungako lebubhalwe emaphaketheni. • Sebentisa nobe libhodlela leli -1 litha nobe lijeke leli -1 litha kucombela, kucatsanisa, kuhlela nekurekhoda umtsamo wetintfo tekuphatsa nobe bungako betintfo tekuphatsa letingemalitha. Buka emanothi ethemu 3. Bafundzi kufanele baniketwe imisebenti lebhalwako kute bahlanganise loku lokulandzelako kufaka ekhatsi kufundza titfombe te: • Umkhicito lobhalwe lonemtamo lobhaliwe kuwo kute batilandzelanise ngekuhleleka kwato; • netitfombe temajeke lapho bungako busondzela emgceni lomakiwe lonenombolo lengu -1 litha nobe -2 emalitha Lokulindzelekile kutsi bafundzi bakufundze tinombolo letikhonjisiwe letisemigceni lemakiwe.Bachaza bungako njenge kucishe/kusedvute/kusondzele e/kunyentana/ kunyenti/kuncane/kungulenombolo (yemalitha) lebayifundza ejekeni. Akukadzingeki kuntjinja emkhatsini wemalitha nemamililitha. **Kulinganisa umtsamo njengengcikitsi yekusombulula tinkinga nekubala.** Ngesikhatsi lesibekelwe Tinombolo, Timphawu neBudlelwane, bafundzi bangasombulula tinkinga letisebentisa: • kulinganisa umtsamo/bungako lokungakahleleki sibonelo: gogo usebentisa tinkomishi leti 2 telubisi kwenta iphudingi. Uma aphindza kabili iresiphi, utawudzinga lubisi lolungakanani? • emalitha • emamililitha Cikelela kuhleleka kwetinombolo kusifanele yini ithemu, nekutsi tinhlobo tetinkinga tisilungele yini kulethemu.	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO KUITHEMU 2	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.4 Umtsamo	• Catsanisa, hlela ubuye urekhode umtsamo wetintfo letipakelwe kutsengiswa letinemtsamo lokhonjiswe ngemalitha sib. emalitha elubisi la-2, ilitha yesinatfo lesibandzako, emalitha la-5 ependi nobe ngemamililitha sib. 500 emamililitha elubisi, 340 emamililitha esinatfo lesibandzako, 750 emamililitha e-oyila. • Yati kutsi inkomishi lelingene ingemamililitha la -250 • Yati kutsi ithisipunu ingemamililitha la -5 (Asikho sidzingo sekugucula emamililitha nemalitha).		Ngesikhatsi sekutisebentela bafundzi kumele bachubeke: bacombele, bakale, bacatsanise, bahlele babuye barekhode umtsamo wetintfo tekuphatsa nobe umtsamo losetintfweni tekuphatsa letisebentisa silinganiso lesingakahleleki. Kulandzela emaresiphi, kufaka ekhatsi kubhaka kusimongcondvo lesilusito lapho bafundzi batetayeta khona kukala. Khetsa iresiphi lapho titsako tiniketwe ngetinkomishi, emathisipunu nobe emayunithi langakahleleki • Catsanisa ubuye uhlele umtsamo wemabhodlela lehlukene netintfo tegilosa letinemtsamo lokhonjiswe ephakethini. • Sebentisa lokungenani emabhodlela layilitha -1 nobe emajeke layilitha -1 kute bacombele, bakale, bacatsanise, bahlele babuye barekhode umtsamo wetintfo tekuphatsa nobe bungako etintfweni tekuphatsa letingemalitha • Sebentisa tintfo tekuphatsa letimakwe ngemamililitha, sib, tinkomishi tekukala letikhomba 200 ml, 330 ml, 500 ml, 750 ml, nobe 250 ml nobe tipunu tekukala letikhomba 5ml nobe emajeke lanemigca lebhaliwe yemamililitha yekukala umtsamo nobe bungako betintfo tekuphatsa letingakalebulwa. Buka emanotsi eThemu 3 Bafundzi kumele baniketwe umsebenti wekubhala kute bahlanganise loku lokulandzeleko, lokufaka ekhatsi kufundza titfombe te: • tintfo letinemtsamo lobhalwe ngemalitha kute tilandzeleniswe kahle ngekuhleleka • titfombe temajeke lapho umtsamo usedvute nemugca lobhalwe ilitha yi-1 nobe emalitha la-2. Lokulindzelekile kutsi bafundzi bafundza kuphela inombolo lesedvute nemugca. Bachaza umtsamo ngalendlela, kusedvute ne-, kunyenti kuna-, kuncane kuna-, kulingana nenombolo yemalitha lebayifundze ejekeni. **Kukala umtsamo njengesimongcondvo sekusombulula tinkinga netibalo** Ngesikhatsi lesabelwe Tinombolo, Timphawu tekubala neBudlelwane bafundzi batawubala tibalo letisebentisa simongcondvo • sesilinganiso sebungako /semtsamo lesingakahleleki, sib.Gogo usebentise tinkomishi le-2 telubisi kwenta iphudingi. Nangabe aphindza iresiphi, utawudzinga lubisi lolunganani? • emalitha • emamililitha Caphela kuhleleka kwetinombolo lokufanele ithemu netinhlobo tetinkinga tetinombolo letifanele ithemu.	

TIHLOKO	LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA	LWATI NEMAKHONO: LEKUGCILWA KUWO KUITHEMU 2	EMANOTSI LACACISAKO NETICONDZISO TEKUFUNDZISA	BUDZE BESIKHATSI (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
4.5 **Ipherimitha nebungako bendzawo**	**Ipherimitha** • Cwaninga libanga lemjikeleto wabobunjwa labangemadayimenshini lamabili (2-D) netintfo letingemadayimenshini lamatsatfu (3-D) usebentisa intsambo **Bungako bendzawo** • Cwaninga bungako bendzawo ngekufaka emathayilisi	**Bungako bendzawo** • Cwaninga bungako bendzawo ngekufaka emathayilisi	Bafundzi bangeniswa ekulinganiseni kwebungako bendzawo kwekucala eBangeni 3. Ebangeni 3 nakusosonkhe Sigaba leliseMkhatsini bungako bendzawo bukalwa ngalokungakahleleki. Bafundzi batfola kutsi bangaki bobunjwa nobe tintfo letibekwa tivale indzawo. Babeka bobunjwa nobe tintfo ngaphandle kwekushiya tikhala emkhatsini wabobunjwa nobe tintfo. Babese bayabala kutsi bangaki bobunjwa labavale indzawo. Sibonelo.Bafundzi bangabeka tikwele nobe bocalandze ekhasini; babale bobunjwa labavale likhasi. Bafundzi kumele basho bungako belikhasi ngabobunjwa sibonelo. likhasi lami linebungako lobubocalandze la-16. Kuvamile kakhulu kutsi bobunjwa bangalivali lonkhe likhasi, njengobe kukhonjisiwe ngentasi.  Bafundzi sekumele basho isayizi yelikhasi ngekucikelela loku Sibonelo. Likhasi linebungako lobubocalandze labengca e-18 kodvwa bambalwa kunabocalandze laba -28. Vumela bafundzi bafake emathayilisi kuleyo ndzawo ngabobunjwa labenetimo letehlukene nabobunjwa labafananako kodvwa bangemasayizi lehlukene. Loku kutawenta bafundzi babone kutsi • buncane babunjwa busho kutsi kutawubekwa bobunjwa labanyenti kuvala indzawo; • bunjwa lokhetsiwe utawuntjintja imphendvulo letinombolo lebayitfolako. Bafundzi abakalidzeleki kutsi babale bungako bendzawo ngekubala tikwele esikweleni segridi; loku bangakwenta eSigabeni lesiseMkhatsini.	2 tifundvo

LIBANGA 3 ITHEMU 4 5. KUSEBENTA NGEDATHA				
TIHLOKO	**LWATI NEMAKHONO: TIDZINGO TEKUPHELA KWEMNYAKA**	**LWATI NEMAKHONO: LEKUGCILWA KUWO ETHEMINI 2**	**EMANOTSI LACACISAKO NOBE TINKHOMBANDLELA TEKUFUNDZISA**	**BUDZE BESIKHATSI** (ngetifundvo letitsatsa 1 li-awa 24 emaminithi)
5.4 **Gcoca ubuye uhlele idatha**	**Gcoca ubuye uhlele idatha** • Gcogca idatha yeliklasi nobe yesikolo kute uphendvule imibuto yathishela. • Hlela idatha leniketwe nguthishela nobe libhuku. • Hlela idatha: - ngetinhla - ngemathali - ngemathebula			
5.5 **Veta idatha**	**Veta idatha** Veta idatha ku: • grafutitfombe • mabhagrafu			
5.6 **Hlatiya ubuye uhumushe idatha**	**Hlatiya ubuye uhumushe idatha** Phendvula imibuto lemayelana nedatha levetwe ku: • magrafutitfombe • mabhagrafu	Hlatiya idatha yalokuvetiwe lokuniketiwe	Kulesigaba lesi semnyaka, bafundzi kumele babe sebangenisiwe kuto tonkhe tinhlobo tedatha letidzingekako eBangeni 3 (tinhla, emathali, emathebula, emagrafutitfombe nemabhagrafu). Kuphakanyisiwe kutsi ethemini -4 bafundzi bagcile ekuhlatiyeni idatha. Nika bafundzi idatha lekufanele bayihlatiye, lokungenani • ibhagrafu yinye; ne • lithebula. Bafundzi kufanele baphendvule imibuto lobabuta yona ngegrafu nangelithebula, buka ethemini -1 kute utfole tinhlobo temibuto lefanele.	1 sifundvo

SIGABA 4: LUHLOLO

4.1 SINGENISO

Kuhlola kuyinchubo lechubekako nalehleliwe yekubona, kubutsela ndzawonye nekuhumusha lwati ngemphumelelo yebafundzi, ngekusebentisa tinhlobo letehlukene tekuhlola. Kufaka ekhatsi tinyatselo letine:

- kwenta ubuye ugcogce bufakazi bemphumelelo;
- kuhlola lobufakazi;
- kurekhoda lokutfolakele;
- kusebentisa lolwati kuvisisa nekusita kutfutfuka kwemfundzi kute kwentiwe ncono inchubo yekufundza nekufundzisa.

Kuhlola kufanele kube ngulokuhlelekile (Kuhlola kwekufundza) kubuye kube ngulokungahleleki (Kuhlola kwalokufundziwe). Kuto totimbili letindlela tekuhlola bafundzi kufanele banikwe umbiko ngaso sonkhe sikhatsi kute bakhuphule lwati lwabo lwekufundza.

Esigabeni Sabokhewane, emasu lasemcoka eluhlolo **loluhlelekile** na**lolungakahleleki** kubuka kwathishela, kucoca, kukhombisa ngekwenta nekubhala. Luhlolo lwebanga R kumele lugcile kakhulukati kutemlomo nekwenta.

4.2 LUHLOLO LOLUNGAKAHLELEKI NOBE LUHLOLO LWAMALANGA ONKHE

Kuhlola kwekufundza kunenhloso yekuchubeka kugcogce lwati ngemphumelelo yebafundzi lengasetjentiswa kwenta ncono kufundza kwabo. Loku kungabuye kubitwe ngekutsi luhlolo lolungakahleleki. Kukuhlola inchubekelphambili yebafundzi malanga onkhe. Loku kwenteka ngekubuka kwathishela, kucoca, kukhombisa ngekwenta, kusebentisana eklasini ngalokungakahleleki njll. Kufanela kungabukwa njengalokwehlukile kunemisebenti yekufundza leyenteka eklasini. Kuhlola lokungakahleleki kusita thishela kutsi ahlole inchubekelphambili yebafundzi bese utsatsa tincumo tekufundzisa temalanga onkhe. Luhlolo lolungakahleleki lusetjentiswa ku:

- nika timphendvulo kubafundzi
- nika lwati nakuhlelelwa kufundzisa.

Ngaletinye tikhatsi thishela angagcina tinhla tekutikhumbuta nobe luhlelo lwekubuka njengendlela yekurekhoda inchubekelphambili yebafundzi. Ngaletinye tikhatsi umfundzi nobe thishela angamaka umsebenti. Nanobe kunjalo, luhlolo lolungakahleleki alubi yincenye yemarekhodi emfundzi lahlelekile. Imiphumela yemisebentiluhlolo lengakahleleki yemalanga onkhe ayibalwa nangabe umfundzi endluliselwa ebangeni lelilandzelako nobe aniketwa sitifiketi.

4.3 LUHLOLO LOKUHLELEKILE

Yonkhe imisebenti yekuhlola leyakha luhlelo lwekuhlola loluhlelekile lwemnyaka itsatfwa njengeLuhlolo Loluhlelekile. Imisebenti yekuhlola lehlelekile iyamakwa ibuye irekhodwe ngalokuhlelekile nguthishela ngetinhloso tekundlulisela umfundzi ebangeni lelilandzelako nekunika sitifiketi. Kuhlola lokuhlelekile kunika bothishela indlela lemisiwe yekuhlola kutsi bafundzi bachubeka kahle yini ebangeni nobe esifundvweni lesitsite.

Thishela angabuka lokungenani bafundzi labalishumi ngesikhatsi ngaloko– ke imisebentiluhlolo lehlelekile ingenteka ngalesikhatsi kugcilwe emacenjini lamancane futsi kutawutsatsa emalanga lambalwa kuhlola liklasi lonkhe. Tonkhe tintfo netinsita letivame kusetjentiswa bafundzi kufanele tibe khona njengalokwetayelekile (tintfo tekubala, emashadi etinombolo njll)

Letinhlobo tekuhlola letisetjentiswako kufanele tihambelane nemnyaka kanye nelizinga lekutfutfuka lelifanele umfundzi. Luhlolo loluhlelekile kufanele lufake emazinga lehlukene ekucabanga kwengcondvo netintfo lebakhona kutenta bafundzi. Luhlakasimo lwalemisebenti lufanele luhlanganise lokucuketfwe kwaleso sifundvo ngetindlela letehlukene.

Tinhlobo letinyenti teluhlolo (kubuka, temlomo, kwenta nekubhala) kufanele tisetjentiswe kunika umfundzi ngamunye litfuba lekukhombisa langakwenta nalangeke akhone kukwenta.

Loku kwenteka ngobe labanye bafundzi bayakhona kukhombisa kalula lebakwatiko kuletinye tinhlobo tekuhlola. Sibonelo:

- Labanye bafundzi labahlangabetana nebulukhuni ekufundzeni bafike bakhombise kuhlakanipha etibalweni.
- Labanye bafundzi ababi sezingeni lemphumelelo lelilindzelekile elulwimini lwekufundza nekufundzisa.

Imisebentiluhlolo yeTibalo kufanele ifake imisebenti lengakagcili elulwimini nome ekufundzeni kute ivete kahle loko lebangakhona kukwenta bafundzi.

Nanobe kunjalo, kufanele kube nekucaphelisisa kutsi yini lehlolwako. Lolunye lwati nemakhono ahlolwa kahle ngetindlela letitsite tekuhlola. Tinhlobo letehlukene teluhlolo tilungele emakhono nelwati loludzingekako kutihloko temacembu laneminyaka leyehlukene. Kulusito kusebentisa luhla lwekusita nawubuka kuhlola bafundzi uma bakala emabangeni lasekucaleni. Emarubhrikhi angasetjentiswa kuhlola emakhono ekusombulula tinkinga.

4.4 LUHLELO LWEKUHLOLA LOKUHLELEKILE

Tidzingo teluhlolo loluhlelekile lweTibalo temabanga 1 – 3 tibhalwe kulelithebula lelingentasi:

LIBANGA	ITHEMU 1	ITHEMU 2	ITHEMU 3	ITHEMU 4	SAMBA
1	1	2	2	2	7
2	1	2	2	3	8
3	1	3	3	3	10

KuITHEMU 1 kunemsebentiluhlolo munye (1) lowakhiwe imisebenti leminyenti lephatselene netihloko letehlukene teTibalo temabanga 1 – 3. Kwengeta kuloku, luhlolo lwavelonkhe lwemnyaka (ANA) loluluhlolonchanti lutawusetjentiswa ekucaleni kweITHEMU emabangeni 2 na 3. Kulibanga 1 tikolo tiyagcugcutelwa kutsi tente luhlolonchanti kuITHEMU sekucala. Imiphumela yeluhlolonchanti ayingasetjentiselwa kubita bafundzi ngalabakhona kukwenta nalabangakhoni kukwenta kodvwa ayisetjentiselwe kuncuma kutsi imisebenti yekucala itawuba kuliphi lizinga nekuhlola kutsi ngutiphi tincenye letidzinga kunakwa kakhulu. Bafundzi batfutfuka ngemazinga lehlukene. Labanye bacala kancane kodvwa ngekuhamba kwesikhatsi bangachubekela phambili ngekusheshisa kuTibalo

Imisebentiluhlolo lehlelekile yeTibalo ifaka ekhatsi tihloko teTibalo letengca kusinye sihloko. Imisebentiluhlolo yemnyaka wonkhe kufanele ibe nayo yonkhe imikhakha yalokucuketfwe netihloko kodvwa akusiko konkhe lokucuketfwe kukharikhulamu lekufanele kuhlolwe ngalokuhlelekile nobe kubikwe ngako. Tinombolo, timphawu tekubala nebudlelwane takha 60% weTibalo emabangeni 1- 3. Loku kusho kutsi 60% wemsebentiluhlolo lohlelekile

kusigaba ngasinye kufanele ugcile kuTinombolo, timphawu tekubala nebudlelwane. Umsebentiluhlolo ngamunye awukafaneli kubonwa njengesehlakalo lesenteka kanye nome sivivinyo. Leminye imigomo ingahlolwa ngesikhatsi sinye kodvwa leminye imigomo ingahlolwa ngetikhatsi letehlukene. Sib. Uma kuhlolwa likhono lebafundzi leBala bece, likhono labo lekwenta loku lokulandzelako lingahlolwa nalo kusehlakalo sinye nobe kumsenenti munye:

- kucedzela Bala lokulandzelanako
- kufundza nekubhala tinombolo
- Bala

Nanobe kunjalo, uma umsebentiluhlolo ucuketse kokubili: kusombulula tinkinga tekugcogcela ndzawonye nekwabelana nekuhlola likhono lebafundzi kukala umtsamo; kuvamile kutsi letincenye teTibalo tingahlolwa ngetikhatsi letehlukene nangetindlela letehlukene.

4.5 KUREKHODA NEKUBIKA

Kurekhoda inchubo lapho thishela arekhoda khona lizinga lekuphumelela kwemfundzi emsebentini lotsite. Ikhombisa kutfutfuka kwelwati lwemfundzi ngemphumelelo njengobe kuvetwe kuSitatimende saVelonkhe neNchubomgomo yekuhlola. Kurekhoda imphumelelo yemfundzi, kumele kunike bufakazi bekutsi umfundzi angakhona kutfutfuka aye ebangeni lelilandzelako. Emarekhodi emphumelelo yemfundzi angabuye asetjentiswe kucinisekisa inchubekelphambili leyenteka kuthishela nemfundzi ngalesikhatsi kufundzisa nekufundza kuchubeka.

Kubika kuyinchubo yekwatisa umfundzi, umtali, sikolo nebantfu labanenshisekelo kutemfundvo ngemphumelelo yemfundzi. Imphumelelo yemfundzi ingabikwa ngetindlela letehlukene. Loku kufaka ekhatsi emakhadimbiko, imihlangano yebatali, tinsuku tekuvakashela esikolweni, kucocisana kwemtali nathishela, kushaya lucingo, tincwadzi, umbhalo wekwatisa weklasi newesikolo njll. Bothishela kuwo onkhe emabanga babika ngemaphesenti lahambisana nesifundvo. Emazinga lahlukene emphumelelo nephesenti awo akhonjiswa kuleLithebula lelingentasi

EMAKHODI NEMAPHESENTI EKUREKHODA NEKUBIKA

EMAZINGA	TINCHAZELO TEMAKHONO	EMAMAKI NGEMAPHESENTI
7	Imphumelelo ngemalengiso	80 – 100
6	Imphumelelo ngelicophelo lelisetulu	70 – 79
5	Imphumelelo ngalokuncomekako	60 – 69
4	Imphumelelo ngalokwenetisako	50 – 59
3	Imphumelelo ngalokulingene	40 – 49
2	Imphumelelo ngalokuyincenye	30 – 39
1	Akunamphumelelo	0 – 29

Thishela utawurekhoda emamaki lekunguwonawona ahambisane nemsebenti lowentiwe, asebentise liphepha lekurekhoda (kucopha), abuye abike ngemaphesenti ahambisane nesifundvo ekhadinimbiko lemfundzi.

4.6 LUHLOLOKULINGANISA LWEKUHLOLA

Luhlolokulinganisa lucondziswe enchubeni lecinisekisa kutsi imisebentiluhlolo iyenetisa, iyetsembeka futsi iyemukeleka. Luhlolokulinganisa lufanele lwenteke kulamazinga lalandzelako: esikolweni, esigodzini (district), esifundzeni nakuvelonkhe. Kufanele kube netindlela teluhlolokulinganisa letifanele naletifaka tonkhe tintfo kute kube

nesiciniseko sekutsi tonkhe tifundvo tisezingeni lelifanele.

4.7 LOKUNYE JIKELELE

Lomculu ufanele ufundvwe ngekuhlanganisa ne:

4.7.1 *National policy pertaining to the progrmme and promotion requirements of national Curriculam statement Grades R-12; and*

4.7.2 The policy document, *National Protocol for Assessment Grades R-12*

4.8 LUHLELO LWELUHLA LWEKUHLOLA LOLUHLELEKILE LOLUPHAKANYISIWE

Sibonelo seluhla lwekuhlola siniketelwe Libanga 1 ngentasi. Sizatfu saso kusita bothishela kutsi atilungiselele abuye ahlole luhlolo lolulungiselelwe ngendlela lechubekako.

Sibonelo semathulusi/tinsita tekuhlola

Kusebentisa luhla lekuhlola kuhlola silinganiso

LIBANGA 1				
Luhla lekubuka umtsamo/bungako				
Umkhakha walokucuketfwe	Tihloko	Umgomo	✓ nobe ×	imibono
Silinganiso	Umtsamo /bungako	Catsanisa bese uhlela bungako balokumanti (bunga-ko) etintfweni letingamumatsa emanti tibe timbili bese tibekwa ngendlela yekutsi yinye ibe eceleni nalenye.		
		Kucatsanisa bungako betintfo letimbili nobe letinyenti letingabukeki ngalokufanako ngekutsela entfweni yesitsatfu lengamumatsa lokutsite.		
		Rekhoda umtsamo wetintfo letimumetse ngekuseben-tisa silinganiso lesinganasikali lesingiso lesibekiwe, sib. Sipunu, tinkomishi.		
		Phendvula imibuto lemayelana nekutsi nguyiphi intfo lemumatsa kakhulu/lokunyenti.		
		Sebentisa lulwimi kukhuluma ngalokucatsanisa, sib. Kunyenti kuna, kuncane kuna, kugcwele, akunalutfo.		

LIBANGA 1				
Luhla lwekubuka sisindvo				
Lokucuketfwe	Tihloko	Umgomo	✓ nobe ×	imibono
Silinganiso	Umtsamo	Hlela bese ucatsanisa umtsamo wetintfo letimbili nobe letingetulu ngekubeka tintfo ngatimbili esikalweni tize tonkhe tikhone kulandzelana/kusimama.		
		Yisho le-yunithi uma unika umtsamo, sib. Libhuku linemt-samo lolingana newetimabuli letinge 34.		
		Sebentisa lulwimi kukhuluma ngalokucatsanisa, sib. kulula, kuyasindza,		
		Likhono lekurekhoda silinganiso lesikaliwe/lesentiwe		

Kusebentisa ema-rubriki kuhlola kusombulula tinkinga

Kusombulula tinkinga kungahlolwa ngekusebentisa irubriki.

Yini lokutsatfwa njengendlela lefanele yekusombulula tinkinga,

- tingucuko njengobe bafundzi batfutfuka nekukhula kwekuvisisa kwelwati lwabo lwetinombolo nemakhono eBala, ne
- gcila kuko kokubili kuhleleka kwetinombolo kulenkinga kanye neluhlobo lwalenkinga.

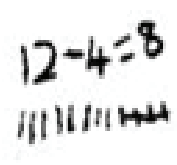
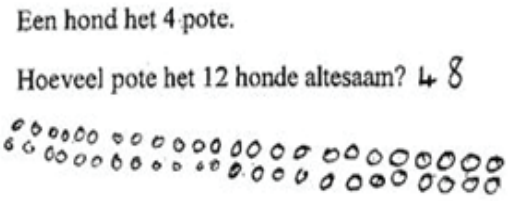
LIBANGA 1	
iRubrikhi yekusombulula inkinga	
Akati kutsi kumele acale kuphi nobe wenta lokungakafaneli	1
Uyayivisisa inkinga abuye acale kodvwa akakhoni kucedza kahle	2
Uvisisa inkinga abuye asombulule ngekusebentisa imidvwebo nobe tibali. Angachaza. Angenta emaphutsa lamancane.	3
Uyicedzela kahle inking. Angachaza kucabanga kwakhe nekwalabanye kahle	4

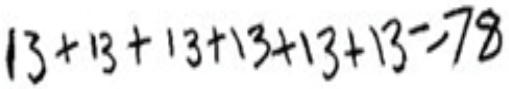
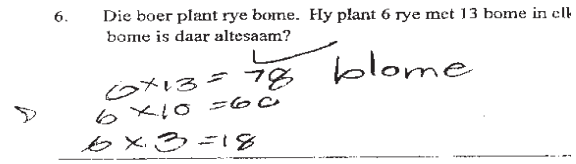
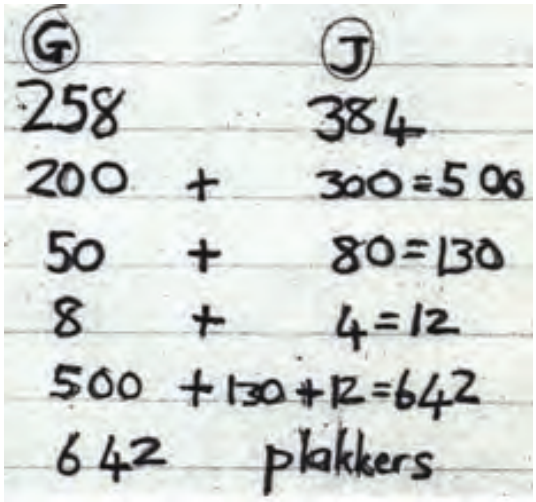
LIBANGA 2	
iRubrikhi yekusombulula inkinga	
Akati kutsi kumele acale kuphi nobe wenta lokungakafaneli	1
Uyayivisisa inking abuye acale kodvwa akakhoni kucedza kahle nobe Uvisisa inkinga abuye asombulule ngekusebentisa imidvwebo nobe tibali kuphela. *	2
Uvisisa inkinga abuye ayisombulule ngekusebentisa tinombolo, kodvwa wenta emaphutsa lamancane. Angachaza.	3
Ucedzela kahle inkinga asebentisa lwati ngetinombolo nesu ekuhlahlela nekwakha tinombolo, kuphindza kabili, kuhhafula, umugcatinombolo, njll. Angachaza ngalokuphelele kucabanga kwakhe nekucabanga kwalabanye.	4

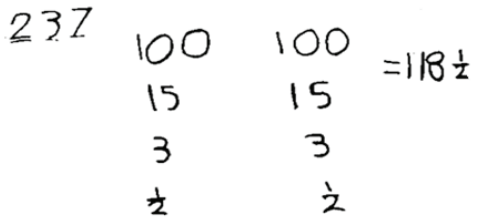
* Luhlelo lwetinombolo labasebenta ngato bafundzi beLibanga 2 lweta kungabi yimpumelelo Bala ngekudvweba titfombe bese bayatibala lwati lwebafundzi ngetinombolo kumele lutfutfukiswe ngalokwadlulele kute basebentise tinombolo ekusombululeni tinkinga nasekubaleni.

LIBANGA 3	
iRubrikhi yekusombulula inkinga	
Akati kutsi kumele acale kuphi nobe wenta lokungakafaneli	1
Uyayivisisa inking abuye acale kodvwa akakhoni kucedza kahle, nobe usebentisa imidvwebo nobe tibali.	2
Uvisisa inkinga abuye ayisombulule ngekusebentisa tinombolo, Angachaza.	3
Ucedzela kahle inkinga asebentisa lwati ngetinombolo nesu ekuhlahlela nekwakha tinombolo, kuphindza kabili, kusondzeta eshumini lelidvute necompensating, umugcatinombolo, njll. ngendlela lefanele. Angachaza kucabanga kwakhe nekwalabanye kahle	4

Sibonelo sekutsi ungayisebentisa kanjani le rubric etinkingeni letisombululwe bafundzi beMabanga 1 – 3

<table>
<tr><td colspan="2">Inja inetidladla le 4. Tinja letili 12 tinetidladla letingaki?</td></tr>
<tr><td>
</td><td>Libanga 1: Lizinga: 1.
Umfundzi akayivisisi lenkinga usebentisa emasu nobe indlela yekwenta lengakafaneli</td></tr>
<tr><td>
</td><td>Libanga 1: Lizinga 4
Umfundzi uyivisisile lenkinga, wayisombulula ngenglela lefanele yeLibanga 1 futsi angayichaza lenkinga.

Libanga 2: Lizinga 2
Umfundzi uyivisisile wabuye wayisombulula lenkinga. Nanobe umfundzi webanga 2 kufanele basebentise kusebenta kwetinombolo kuphindza kuhlanganisa (nobe uphindzaphindze, kuye ngesikhatsi semnyaka).</td></tr>
<tr><td colspan="2">Umlimi uhlanyela emalayini la 6 etihlahla lanetihlahla letili 13 lilayini ngalinye?</td></tr>
<tr><td>
</td><td>Umfundzi webanga 2, Lizinga 4
Umfundzi uyivisisile wabuye wayisombulula lenkinga, asebentisa tinombolo letifanele nekusebenta kwetinombolo kwebanga 2.
Umfundzi webanga 3: Lizinga 3
Umfundzi uyivisisile wabuye wayisombulula lenkinga ngendlela lengiyo. Nanobe bangalitfoli lizinga lelisetulu njengobe abakawaveti emasu nekusebenta kwetinombolo lokutfolakala kubafundzi beLibanga le 3 lokungu. Kuphindzaphindza usebentisa kuhlahlela nekuphindza uhlanganisa tinombolo.</td></tr>
<tr><td>
</td><td>Bafundzi beLibanga le 3: Lizinga 4
Ucedzela kahle inkinga asebentisa tinombolo letifanele nekusebenta kwetinombolo kanye nesu langiwo lafana nekuhlahlela, nekuhlanganisa tinombolo. Angachaza kucabanga kwakhe nekwalabanye ngalokuphelele.</td></tr>
<tr><td colspan="2">Gino unetitikha letingema 258 na Josie unetitikha letingema 384. Unatingaki titikha uma setiphelele?</td></tr>
<tr><td>
</td><td>Libanga 3: Lizinga: 4
Ucedzela kahle inkinga asebentisa lwati lwetinombolo nesu lafana nekuhlahlela nekuphidza uhlanganise tinombolo, kuphindza kabili, kusondzeta eshumini, imigcatinombolo njll. ngalolufanele. Angachaza kucabanga kwakhe nekwalabanye ngalokuphelele.</td></tr>
</table>

Ngubani ihhafu yema 237?	
	**Libaga 3. Lizinga: 4** Ucedzela kahle inkinga asebentisa lwati lwetinombolo nesu lafana nekuhlahlela nekuphidza uhlanganise tinombolo, kuphindza kabili, kusondzeta eshumini ne compensating, imigcatinombolo njll. ngalolufanele. Angachaza kucabanga kwakhe nekwalabanye ngalokuphelele.

Libanga 1 lthemu 1: Sibonelo semsebenti weluhlolonchanti

Tinhlobo temsebenti	Umgomo	✓ nobe ×	Kuphawula
Temlomo	Ngabe umfundzi uyakhona • Bala tintfo tifike ku -10? • Kusho kutsi ngutiphi tintfo letikolekiwe letincane kunaletinye/ letinkhulu kunaletinye? • Kufundza timphawu tetinombolo afike ku- 5?		
lokwentiwako	Ngabe umfundzi uyakhona • Kulandzelanisa tintfo? • Kutsatsela emaphethini? • Kubeka tintfo embikwakhe? • Kubeka tintfo ngemuva kwakhe? • Kuhlunga tintfo ngekuhambelana kwato? • Kutibandzakanya nenkinga kute kutfolakale tisombululo?		

Libanga1: Ithemu 1: Sibonelo seluhlolo

Umkhakha walokucuketfwe	Sihloko	Umgomo
Tinombolo, timphawu tekubala nebudlelwane	Lwati lwetinombolo	Bala tintfo leti-10 ngekutetsemba, kusho emagama ngekulandzelana kwawo
		Kubhala nekufundza timphawu tetinombolo kusukela ku 1 kuya ku 5
		Kulandzelanisa tinombolo 1 – 5 kusukela kulencane kuya kulenkhulu
		Kusebentisa lulwimi kuchaza isayizi yetinombolo: ngembikwe, ngemuva, emkhatsini
	Kusombulula tinkinga	Kusombulula tinkinga temagama kusimongcondvo lokufaka ekhatsi kuhlanganisa, kususa netimphendvulo letifika ku -5 Kusebentisa tinsita nobe umdvwebo Kanye nekuchaza tisombululo takhe tetinkinga
		Kusombulula tinkinga letibambekako lokufaka ekhatsi kwabelana lokulinganako kanye nekugcogcela ndzawonye tinombolo letiphelele letifika ku 5 kanye netimphendvulo letifaka ekhatsi tinsalela. Kusebentisa tinsita nobe umdvwebo Kuchaza tisombululo
	Bala	Kuhlanganisa kufike ku 5 Kusebentisa tinsita nobe umdvwebo
		Kususa kusukela kunobe nguyiphi inombolo ku 5 nobe kulencane ube usebentisa tinsita nobe imidvwebo.
Emaphethini, emafangishini ne a-ljebra	Emaphethini etinombolo	Kucedzela tinombolo letilandzelanako tekubala ngakunye kuye ema 10, sib. 1, 2, 3, 4, __, __, __, __, 9, 10
Sikhala nabunjwa	Indzawo	Kulandzela ticondziso kute kubekwe intfo lengahambelana nalenye, sib. Faka ipeniseli ebhokisini; beka ipeniseli ngasesandleni sekudla selibhokisi.
	3-D	Kubona nekubita emagama • Abobunjwa labayibhola (lokuyindilinga) • Bobunjwa labangemabhokisi (iphrizimu)
Silinganiso	Sikhatsi	Kuchaza nangabe kwenteka lokutsite usebentisa lulwimi, sib. ekuseni, tsambama, ebusuku, ngesikhatsi, emva kwesikhatsi
	Budze	Kukala budze, bubanti nobe kuphakama usebentisa kukala lokungakahleleki. Kusho silinganiso semayunithi langakahleleki.
	Sisindvo	Kukala nobe kucatsanisa sisindvo setintfo letintsatfu nobe letingetulu usebentisa sikali sekulinganisa nesilinganiso lesingakahleleki. Kulandzelanisa tintfo ngekwesisindvo sato. Kuchaza nekulandzelanisa abe asebentisa lokulula, lokusindzako, lokusindza kudlula lokunye.
Kusebenta ngedatha	Kuhlunga ligcogco letintfo	Kubutsa nekuhlatiya tintfo letiphatsekako malanga onkhe ngekwemgomo loniketwe nguthishela. Kudvweba sitfombe setintfo letihlungiwe nobe kuchaza ligcogco letintfo

Libanga1 Ithemu 2: Kuhlola 1

Umkhakha walokucuketfwe	Sihloko	Umgomo
Tinombolo, timphawu tekubala nebudlelwane	Lwati lwetinombolo	Bala tintfo letili -20 ngekutetsemba, usho emagama ngekulandzelana kwato.
		Kusho kutsi ngutiphi tintfo letimbili letigcogciwe letinyenti nobe letincane, lapho letintfo letimbili tili 10 nobe titincane.
		Kufundza timphawu tetinombolo ufike ku 30
		Kubhala timphawu tetibalo ufike ku 10
	Kusombulula tinkinga	Kusombulula tinkinga temagama kugcikitsi lokufaka ekhatsi kuhlanganisa, kususa kanye netimphendvulo letifika ku 10. Kusebentisa lokunye kwaloku • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • umugcatinombolo • kuphindza kabili nekuhhafula kanye nekuchaza tisombululo takhe tetinkinga
	Bala	Kuhlanganisa ufike ku -10 Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • umugcatinombolo • kuphindza kabili nekuhhafula Kubhala umushotinombolo usebentisa loluphawu +
		• Kususa kusukela kunobe nguyiphi inombolo ku-10 nobe kulencane ube usebentisa tinsita nobe imidvwebo • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • umugcatinombolo • kuphindza kabili nekuhhafula Kubhala umushotinombolo usebentisa loluphawu -
Emaphethini, emafang-ishini ne a-ljebra	Emaphethini etinombolo	Kucedzela tinombolo letilandzelanako tekubala ufike ku 30, sib. • ngakunye sib. 20, 21, 22, 23, __, __, __, __, 28; __; 30. • Ngakuhlanu, sib.5, 10, 15, __, __, 30,
	Emaphethini eJomethri	Kutsatsela nekuchubekisela phambili emaphethini • Lentiwe ngentfo yinye kodvwa lombala walentfo untjintje ngendlela letayelekile • Lentiwe ngentfo lefanako lenesayizi lahlukene
Sikhala nabunjwa	2-D	Kubona nekubita emagama indilinga sikwele bocalantsatfu

Libanga1 ITHEMU 2: Luhlolo 2

Umkhakha walokucuketfwe	Sihloko	Umgomo
Tinombolo, timphawu tekubala nebudlelwane	Lwati lwetinombolo	Bala uye phambili nasemuva ngaku 1 emkhatsini wa 1 ne -50
		Bala uye phambili ngaku 5, 2 uye e- 50
		Kusebentisa lulwimi kuchaza isayizi yetinombolo: ngphambili, ngemuva, emkhatsini
		Kucatsanisa isayizi yetinombolo ufike ku 10 usebentisa lulwimi, sib. lokunyenti kuna, lokuncane kuna.
		Kusebentisa lulwimi kuchaza isayizi yetinombolo: ngphambili, ngemuva, emkhatsini
		Kulandzelanisa tinombolo 1 – 10 kusukela kulencane kuya kulenkhulu
		Kufundza timphawu tetinombolo ufike ema 50
	Kusombulula tinkinga	Kusombulula tinkinga letifaka ekhatsi kwabelana ngalokulinganako kanye nekugcogcela ndzawonye tinombolo letiphele letifika ku -10 kanye netimphendvula letinetinsalela Usebentise loku lokulandzelako • tinsita • imidvwebo • umugcatinombolo Kuchaza tisombululo
	Kusombulula tinkinga	Kusombulula tinkinga temagama laphatselene nekuhlanganisa lokuphindzaphindziwe lokunetimphendvulo letifika ku 10 Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • umugcatinombolo • kuphindza kabili nekuhhafula Kuchaza tisombululo takho tetinkinga
	Imali	Kubona imali lebuhhehlu yaseNingizimu Africa 5c, 10c, 20, 50c, R1, R2; R5
		Kusombulula tinkinga temali letiphatselene nesamba nentjintji lefika ku-R10 kanye nesenti lafika ku -20c
	Bala	Kuhlanganisa lokuphindziwe lokufika ku 10 Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • umugcatinombolo • kuphindza kabili nekuhhafula Kubhala umushotinombolo usebentisa loluphawu +
Emaphethini, emafangishini ne a-ljebra	Emaphethini etinombolo	• Kucedzela tinombolo letilandzelanako tekubala ufike • Ngakunye uye emuva kusukela ku -50 sib. 50, 49, 48, __, __, 45, __, __, 42; __; 40. • Ngelishumi uye ku-50 sib.10, 20, 30, __, __,
Silinganiso	Umtsamo	Kucombela, kukala, kucatsanisa, kulandzelisa kanye nekurekhoda umtsamo wetintfo tekuphatsa ngekusebentisa tintfo tekukala letingakahleleki, sib. tipuni netinkomishi
Kusebenta ngedatha	Kuhlunga tintfo letigcogcelwe ndzawonye	Kugcogca nekuhlunga tintfo letiphatsekako ngekwemgomo loniketwe nguthishela Kudvweba titfombe tetintfo letihlungiwe nobe kuchaza tintfo letihlungiwe

Libanga1 ITHEMU 3: Luhlolo 1

Umkhakha walokucuketfwe	Sihloko	Umgomo
Tinombolo, timphawu tekubala nebudlelwane	Lwati lwetinombolo	Bala tintfo letingema -50 ngekutetsemba, basho emagama ngekulandzelana kwawo
		Kusho kutsi ngutiphi tinombolo letimbili letigcogciwe letinyenti nobe letincane lapho totimbili ligcogco letintfo tingu -15 nobe letincane
		Kufundza timphawu tetinombolo ufike ku 70
		Kubhala timphawu tetinombolo ufike ku 20
	Kusombulula tinkinga	Kusombulula tinkinga temagama letiphatselene nekuhlanganisa,kususa kanye netimphendvulo letifika ku-15 Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • umugcatinombolo • kuphindza kabili nekuhhafula Kuchaza tisombululo takho tetinkinga
	Bala	Kuhlanganisa ufike ku 15 Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • umugcatinombolo • kuphindza kabili nekuhhafula Kubhala umushotinombolo usebentisa loluphawu +, =
		Kususa nobe nguyiphi inombolo ufike ku 15 nobe ngaphasi Usebentise loku lokulandzelako ▪ tinsita ▪ imidvwebo ▪ kwakha nekuhlahlela tinombolo ▪ umugcatinombolo ▪ kuphindza kabili nekuhhafula Kubhala umushotinombolo usebentisa loluphawu -, =
Emaphethini, emafangishini ne a-ljebra	Emaphethini etinombolo	Kucedzela tinombolo letilandzelanako tekuhlanganisa ▪ Ngakunye uye emuva kusukela ku 60 sib 60, 59, 58, __, __, __, 54, __, __, 51. ▪ Ngakubili sib.44, 46, 48, __, __, __,56; __, 60
	Emaphethini eJomethri	Kutsatsela, kuchubekisela phambili kanye nekuchaza emaphethini lapho tinhlobo letehlukene tabobunjwa tisentjentiswa ekugcogceni tintfo, kodvwa leligcogco letintfo tiyaphindvwaphindvwa ngalokufanako
Sikhala nabunjwa	3-D	Kubona nekunika emagama ▪ Bobunjwa labangemabhola (lokuyindilinga) ▪ Bobunjwa labangemabhokisi (iphrizimu)
		Kuhlunga tintfo kube nguleto letigicikako kanye naleto letishelelako

Libanga 1 ITHEMU 3: Luhlolo 2

Umkhakha walokucuketfwe	Sihloko	Umgomo
Tinombolo, timphawu tekubala nebudlelwane	Lwati lwetinombolo	Bala uye phambili nge -10, 5, 2 ufike ku -180
		Kusebentisa lulwimi kuchaza isayizi yetinombolo: ngphambili, ngemuva, emkhatsini
		Kucatsanisa isayizi yetinombolo ufike ku -15 usebentisa lulwimi, sib. lokunyenti kuna, lokuncane kuna
		Kuhlukanisa tinombolo 11 – 15 tibe li 10 + 1 sib. 12 = 10 + 2
	Kusombulula tinkinga	Kusombulula tinkinga temagama kugcikitsi lokufaka ekhatsi kuhlanganisa, kususa kanye netimphendvulo letifika ku 15 Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • umugcatinombolo • kuphindza kabili nekuhhafula Kuchaza tisombululo takho tetinkinga
		Kusombulula tinkinga letibambekako letifaka ekhatsi kwabelana ngalokulinganako kanye nekugcogcela ndzawonye tinombolo letiphele letifika ku 15 kanye netimphendvula letinetinsalela Usebentise loku lokulandzelako • tinsita • imidvwebo • umugcatinombolo Kuchaza tisombululo
	Imali	Kubona imali lebuhhehlu yaseNingizimu Africa 5c, 10c, 20, 50c, R1, R2; R5
		Kusombulula tinkinga temali letiphatselene nesamba nentjintji lefika ku-R20 kanye nesenti lafika ku 20c
	Bala	Kuhlalanganisa ngalokuphindzaphindziwe ufike ku 15 Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • Umugcatinombolo • kuphindza kabili nekuhhafula Kubhala tinombolomusho usebentisa letimphawu +, =
Emaphethini, emafangishini ne a-ljebra	Emaphethini etinombolo	Kucedzela tinombolo letilandzelanako tekubala • ngakunyemuva kusukela ku-80 sib. 80, 79, 78, __, __, __, __, 73, ___; __; 70. • ngelishumi ufike ku -80 sib.10, 20, 30, __, __,__, __, __, • ngakuhlanu sib..5, 10, 15, __, __, 30, __, __.45, __, __, 60, __, __, __, 80
Sikhala nabunjwa	Umugca lowehlukanisa ekhatsini kufanane kubuye kulingane	Kubona nekudvweba umugca lowehlukanisa ekhatsi ku-2-D yeJomethri nabombujwa labangatfolakali kujomethri
Silinganiso	Budze	Kucombela, kukala, kucatsanisa, kulandzelisa kanye nekurekhoda budze usebentisa tintfo tekukala letingakahleleki, sib. sandla, tinyatselo, budze bepeniseli, tibali, njll
Kusebenta ngedatha	Idatha	Kuphendvula imibuto lephatselene nedatha lekugrafu yetitfombe

Libanga 1 Ithemu 4: Luhlolo 1

Umkhakha walokucuketfwe	Sihloko	Umgomo
Tinombolo, timphawu tekubala nebudlelwane	Lwati lwetinombo	Bala tintfo letingema -50 ngekutetsemba, basho emagama ngekulandzelana kwawo
		Kusho kutsi ngutiphi tinombolo letimbili letigcogciwe letinyenti nobe letincane lapho totimbili ligcogco letintfo tinge-20 nobe letincane
		Kufundza timphawu tetinombolo ufike ku -80
	Kusombulula tinkinga	Kusombulula tinkinga temagama kugcikitsi lokufaka ekhatsi kuhlanganisa, kususa kanye netimphendvulo letifika ku -20 Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • Umugcatinombolo • kuphindza kabili nekuhhafula Kuchaza tisombululo takho tetinkinga
	Bala	Kuhlanganisa ufike ku -20 Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • Umugcatinombolo • kuphindza kabili nekuhhafula Kubhala tinombolomusho usebentisa letimphawu +, =
		Kususa nobe nguyiphi inombolo ufike ku -20 nobe ngaphasi Usebentise loku lokulandzelako • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • Umugcatinombolo • kuphindza kabili nekuhhafula Kubhala tinombolomusho usebentisa letimphawu -, =
Emaphethini, emafangishini ne a-ljebra	Emaphethini etinombolo	Kucedzela tinombolo letilandzelanako tekubala • ngakunye sib. emuva kusukela ku- 80: 80, 79, 78, __, __, __, 74, __, __, 71. • Ngakubili sib.kusukela ku-64, 66, 68, __, __, __,76; __, 80
Sikhala nabunjwa	2-D	Kubona nekunika emagama • tindilinga • bocalantsatfu • Tikwele Kuhlunga ngekwendilinga nobe ngekwemacele lacondzile
Silinganiso	Sisindvo	• Kucombela, kukala, kucatsanisa, kulandzelisa kanye nekurekhoda sisindvo usebentisa tintfo tekukala letingakahleleki neikali sekubhalansa sib. emabhuloki, titini, njll • Kusebentisa lulwimi kukhuluma ngekucatsanisa, sib. kulula,kuyasindza, kulula kancane, kuyasindza kancane.

Libanga 1 Ithemu 4: Luhlolo 2

Lokucuketfwe	Sihloko	Imigomo
Tinombolo, timphawu tekubala nebudlelwane	Lwati Lwetinombolo	Bala uye phambili ngema 10, 5, 2 kuye e 100
		Usebentisa lulwimi kuchaza isayizi yetinombolo lengiyo: ngembikwe, ngemuva kwe, emkhatsini
		Catsanisa isayizi yetinombolo usebentise lulwimi ufike e 20 sib. Kunyenti kuna, kuncane kuna njll.
		Hlela tinombolo 1 – 20 ucale kulokukhulu kakhulu kuye kulokuncane
		Ungahlunga tinombolo 11 – 20 tibe ngu 10 + emayuniyhi sib. 14 = 10 + 4
		Ufundza tinombolo ufike e 100
		Ubhala tinombolo afike e 20
	Sombulula Tinkinga	Usombulula tinkinga letikusimongcondvo letifaka ekhatsi kuphindza kuhlanganisa lokunetimphendvulo ufike e 20 Usebentise kunye kwaloku • Tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • Umugcatinombolo • kuphindza kabili nekuhhafula Kuchaza tisombululo takho tetinkinga
		Usombulula tinkinga letentekako letifaka ekhatsi kwaba ngalokulinganako nekugcogcela ndzawonye tinombolo letiphelele kufike e 20 bese kuba netimphendvulo letingashiya insalela Usebentise loku lokulandzelako • tinsita • imidvwebo • Umugcatinombolo Kuchaza tisombululo
	Imali	Ubona imali lebuhhehlu yase Ningizimu Afrika 5c, 10c, 20, 50c, R1, R2; R5
		Sombulula tinkinga letimayelana neli letifaka ekhatsi samba nentjintji lefika e R20 nangemasenti kufike ema 50c
	Bala	usebenta ngekuphindza kuhlanganisa afike e 20 Usebentise loku lokulandzelako • Tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • Umugcatinombolo • kuphindza kabili nekuhhafula • usebentisa umusho tinombolo asebentisa +, =
Emaphethini emafangishini ne-aljebhra	Emaphethini Etinombolo	Cedzela tinombolo letilandzelanako tekubala • ngakunye uye emuva sib. 99, 98, __, 96, __, __, __, 92, ___; __; 89. • Ngemashumi kufike e 100 sib.10, 20, 30, __, __, __, __, __, 90, __. ngetihlanu sib.20, 25, 30, __, __.45, __, __, 60, __, 70__, __,__, 90
Sikhala nabunjwa	Indzawo	Usebentisa lulwimi lwedzawo kulandzela tinkhombandlela kuhambahamba eklasini
		Umatanisa kubukeka lokwehlukile kwentfo yinye/lefanako
Silinganiso	Sikhatsi	uyawati emalanga eliviki uyatati tinyanga temnyaka
Kusebenta ngedatha	Idatha	Uphendvula imibuto lemayelana nedata lekugrafu yetitfombe

Libanga 2 Ithemu 1: Luhlolo 1

Lokucuketfwe	Sihloko	Imigomo
Tinombolo, timphawu tekubala nebudlelwane	Lwati Lweti-nombolo	Ugcogcela ndzawonye abuye abale afike etintfweni le 100
		Ucatsanisa abuye ahlele tinombolo afike ema 25
		Hlahlela tinombolo letinedijithi lamabili ufike ema 25 ibe mashumi ne-yunithi sib. 23 = 20 + 3
		Ufundza abuye abhale tinombolo leticala e 0tifike e 100
	Sombulula Tinkinga	Sombulula tinkinga tetibalo temagama letiskusimongcondvo letifaka ekhatsi kuhlanganisa, kususa lokunetimphendvulo letifika ema -20 usebentisa kunye kwaloku • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • Umugcatinombolo • kuphindza kabili nekuhhafula • nekuchaza tisombululo tetinkinga
	Imali	Ubona imali lebuhhehlu yase Ningizimu Afrika 5c, 10c, 20, 50c, R1, R2; R5 and notes R10, R20, R50
		Sombulula tinkinga letimayelana neli letifaka ekhatsi samba nentjintji lefika e R20 nangemasenti kufike ema 50c
		Bala
		Usebenta ngekususa afike ema 20 Asebentisa kunye kwaloku • tinsita • imidvwebo • kwakha nekuhlahlela tinombolo • Umugcatinombolo • kuphindza kabili nekuhhafula • usebentisa umusho tinombolo asebentisa +, =
Emaphethini emafangishini ne-aljebhra	Emaphethini Etinombolo	Ucedzela kulandzelana kwetinombolo tekubala uye phambili nasemuva ngemashumi ne-yunithi kusukela e 0 – 100 sib. 10, 20, 30, __, __, __, 70__, __, 100 ▪ ngakubili 0 – 100 sib 80, 82, 84, __, __, 90, _, __, __, ___, 100
Sikhala nabunjwa	3-D	• Ubona abuye asho/anikete • bobunjwa bebhola • bombujwa bemabhokisi
	Bobunjwa labangema-dayimenshini lamabili (2-D)	Ubona abuye asho/anikete Tindilinga, bocalantsatfu, tikwele nabocalange
Silinganiso	Sikhatsi	Usho sikhatsi lesisewashini letintsi ngema-awa
	Budze	Combela, linganisa, catsanisa, hlela, bese urekhoda budze, bubanti ngemamitha.