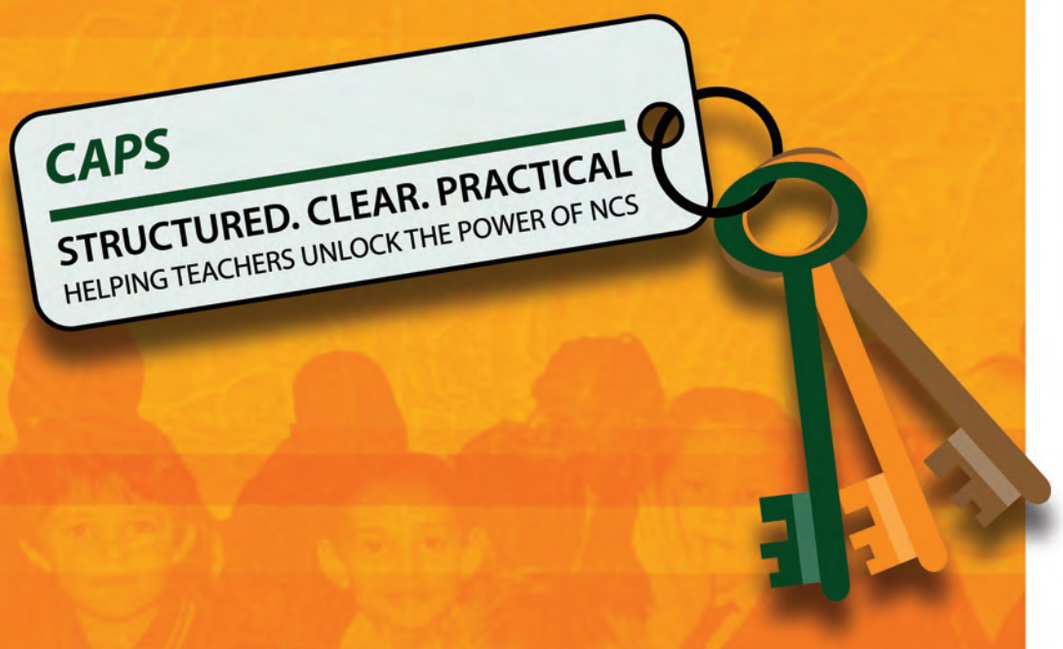
ENGLISH MATHEMATICS

National Curriculum Statement (NCS)

Curriculum and Assessment Policy Statement



Foundation Phase
Grades 1-3

basic education
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REPUBLIC OF SOUTH AFRICA

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CURRICULUM AND ASSESSMENT POLICY STATEMENT

GRADES 1-3

MATHEMATICS

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ISBN: 978-1-4315-0444-2

Design and Layout by: Ndabase Printing Solution

Printed by: Government Printing Works

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) to produce this document.

From 2012 the two 2002 curricula, 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* accordingly replaces the Subject Statements, Learning Programme Guidelines and Subject Assessment Guidelines with the

(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

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SECTION 1 INTRODUCTION AND BACKGROUND

1.1 BACKGROUND

The *National Curriculum Statement Grades R - 12 (NCS) stipulates policy on curriculum and assessment in the schooling sector.*

To improve implementation, the National Curriculum Statement was amended, with the amendments coming into effect in January 2012. A single comprehensive Curriculum and Assessment Policy document was developed for each subject to replace Subject Statements, Learning Programme Guidelines and Subject Assessment Guidelines in Grades R - 12.

1.2 OVERVIEW

(a) The *National Curriculum Statement Grades R - 12 (January 2012) represents* a policy statement for learning and teaching in South African schools and comprises the following:

(i) National Curriculum and Assessment Policy Statements for each approved school subject*;*

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

(iii) The policy document, *National Protocol for Assessment Grades R - 12 (January 2012).*

(b) The *National Curriculum Statement Grades R - 12 (January 2012)* replaces the two current national curricula statements, namely the

(i) Revised National Curriculum Statement Grades R - 9, Government Gazette No. 23406 of 31 May 2002*,* and

(ii) *National Curriculum Statement Grades 10 - 12 Government Gazettes, No. 25545 of 6 October 2003* and *No. 27594* of 17 May 2005.

(c) The national curriculum statements contemplated in subparagraphs (a) and (b) comprise the following policy documents which will be incrementally repealed by the *National Curriculum Statement Grades R - 12 (January 2012) during the period 2012-2014:*

(i) The Learning Area/Subject Statements, Learning Programme Guidelines and Subject Assessment Guidelines for Grades R - 9 and Grades 10 - 12;

(ii) The policy document, National Policy on assessment and qualifications for schools in the General Education and Training Band d, promulgated in Government Notice No. 124 in Government Gazette No. 29626 of 12 February 2007;

(iii) The policy document, the National Senior Certificate: A qualification at Level 4 on the National Qualifications Framework (NQF), promulgated in Government Gazette No.27819 of 20 July 2005;

(iv) The policy document, 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, published in Government Gazette, No.29466 of 11 December 2006, is incorporated in the policy document, National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R - 12; and

(v) The policy document, 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), promulgated in Government Notice No.1267 in Government Gazette No. 29467 of 11 December 2006.

(c) The policy document, National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R - 12, and the sections on the Curriculum and Assessment Policy as contemplated in Chapters 2, 3 and 4 of this document constitute the norms and standards of the National Curriculum Statement Grades R - 12. It will therefore, in terms of section 6A of the South African Schools Act, 1996 (Act No. 84 of 1996,) form the basis for the Minister of Basic Education to determine minimum outcomes and standards, as well as the processes and procedures for the assessment of learner achievement to be applicable to public and independent schools.

1.3 GENERAL AIMS OF THE SOUTH AFRICAN CURRICULUM

(a) The *National Curriculum Statement Grades R - 12* gives expression to the knowledge, skills and values worth learning in South African schools. This curriculum aims to ensure that children acquire and apply knowledge and skills in ways that are meaningful to their own lives. In this regard, the curriculum promotes knowledge in local contexts, while being sensitive to global imperatives.

(b) The National Curriculum Statement Grades R - 12 serves the purposes of:

- equipping learners, irrespective of their socio-economic background, race, gender, physical ability or intellectual ability, with the knowledge, skills and values necessary for self-fulfilment, and meaningful participation in society as citizens of a free country;
- providing access to higher education;
- facilitating the transition of learners from education institutions to the workplace; and
- providing employers with a sufficient profile of a learner's competences.

(c) The National Curriculum Statement Grades R - 12 is based on the following principles:

- Social transformation: ensuring that the educational imbalances of the past are redressed, and that equal educational opportunities are provided for all sections of the population;
- Active and critical learning: encouraging an active and critical approach to learning, rather than rote and uncritical learning of given truths;
- High knowledge and high skills: the minimum standards of knowledge and skills to be achieved at each grade are specified and set high, achievable standards in all subjects;
- Progression: content and context of each grade shows progression from simple to complex;
- Human rights, inclusivity, environmental and social justice: infusing the principles and practices of social and environmental justice and human rights as defined in the Constitution of the Republic of South Africa. The National Curriculum Statement Grades R - 12 is sensitive to issues of diversity such as poverty, inequality, race, gender, language, age, disability and other factors;

- Valuing indigenous knowledge systems: acknowledging the rich history and heritage of this country as important contributors to nurturing the values contained in the Constitution; and
- Credibility, quality and efficiency: providing an education that is comparable in quality, breadth and depth to those of other countries.

(d) The National Curriculum Statement Grades R - 12 aims to produce learners that are able to:

- identify and solve problems and make decisions using critical and creative thinking;
- work effectively as individuals and with others as members of a team;
- organise and manage themselves and their activities responsibly and effectively;
- collect, analyse, organise and critically evaluate information;
- communicate effectively using visual, symbolic and/or language skills in various modes;
- use science and technology effectively and critically showing responsibility towards the environment and the health of others; and
- demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation.

(e) Inclusivity should become a central part of the organisation, planning and teaching at each school. This can only happen if all teachers have a sound understanding of how to recognise and address barriers to learning, and how to plan for diversity.

The key to managing inclusivity is ensuring that barriers are identified and addressed by all the relevant support structures within the school community, including teachers, District-Based Support Teams, Institutional-Level Support Teams, parents and Special Schools as Resource Centres. To address barriers in the classroom, teachers should use various curriculum differentiation strategies such as those included in the Department of Basic Education's *Guidelines for Inclusive Teaching and Learning* (2010).

1.4 TIME ALLOCATION

1.4.1 Foundation Phase

(a) The instructional time in the Foundation Phase is as follows:

SUBJECT	GRADE R (HOURS)	GRADES 1-2 (HOURS)	GRADE 3 (HOURS)
Home Language	10	7/8	7/8
First Additional Language			
Mathematics			
Life Skills	**6**	**6**	**7**
• Beginning Knowledge	(1)	(1)	(2)
• Creative Arts	(2)	(2)	(2)
• Physical Education	(2)	(2)	(2)
• Personal and Social Well-being	(1)	(1)	(1)
TOTAL	**23**	**23**	**25**

(b) Instructional time for Grades R, 1 and 2 is 23 hours and for Grade 3 is 25 hours.

(c) Ten hours are allocated for languages in Grades R-2 and 11 hours in Grade 3. A maximum of 8 hours and a minimum of 7 hours are allocated for Home Language and a minimum of 2 hours and a maximum of 3 hours for Additional Language in Grades R - 2. In Grade 3 a maximum of 8 hours and a minimum of 7 hours are allocated for Home Language and a minimum of 3 hours and a maximum of 4 hours for First Additional Language.

(d) In Life Skills Beginning Knowledge is allocated 1 hour in Grades R - 2 and 2 hours as indicated by the hours in brackets for Grade 3.

1.4.2 Intermediate Phase

(a) The instructional time in the Intermediate Phase is as follows:

SUBJECT	HOURS
Home Language	6
First Additional Language	5
Mathematics	6
Natural Science and Technology	3,5
Social Sciences	3
Life Skills	**4**
• Creative Arts	(1,5)
• Physical Education	(1)
• Personal and Social Well-being	(1,5)
TOTAL	**27,5**

1.4.3 Senior Phase

(a) The instructional time in the Senior Phase is as follows:

SUBJECT	HOURS
Home Language	5
First Additional Language	4
Mathematics	4,5
Natural Science	3
Social Sciences	3
Technology	2
Economic Management Sciences	2
Life Orientation	2
Arts and Culture	2
TOTAL	**27,5**

1.4.4 Grades 10-12

(a) The instructional time in Grades 10-12 is as follows:

Subject	Time allocation per week (hours)
i. Home Language	**4.5**
ii. First Additional Language	**4.5**
iii. Mathematics	**4.5**
iv. Life Orientation	**2**
v. **Group B** of the policy document, *National policy pertaining to the programme and promotion requirements of the National Curriculum Statement Grades R - 12,*	**12 (3x4h)**

The allocated time per week may be utilised only for the minimum required NCS subjects as specified above, and may not be used for any additional subjects added to the list of minimum subjects. Should a learner wish to offer additional subjects, additional time must be allocated for the offering of these subjects.

SECTION 2: DEFINITION, AIMS, SKILLS & CONTENT

2.1. INTRODUCTION

In Section 2, the Foundation Phase Mathematics Curriculum and Assessment Policy Statement (CAPS) provides teachers with a definition of mathematics, specific aims, specific skills, focus of content areas, weighting of content areas, recommended resources for the Foundation Phase Mathematics lessons, suggested guidelines on supporting learners with barriers to learning Mathematics, mental mathematics and enhancing the teaching of early numeracy skills in Grade R.

2.2. WHAT IS MATHEMATICS?

Mathematics is a language that makes use of symbols and notations for describing numerical, geometric and graphical relationships. It is a human activity that involves observing, representing and investigating patterns and qualitative relationships in physical and social phenomena and between mathematical objects themselves. It helps to develop mental processes that enhance logical and critical thinking, accuracy and problem-solving that will contribute to decision-making.

2.3. SPECIFIC AIMS

The teaching and learning of Mathematics aims to develop the following in the learner:

- critical awareness of how mathematical relationships are used in social, environmental, cultural and economic relations;
- confidence and competence to deal with any mathematical situation without being hindered by a fear of Mathematics;
- a spirit of curiosity and a love of Mathematics;
- appreciation for the beauty and elegance of Mathematics;
- recognition that Mathematics is a creative part of human activity;
- deep conceptual understanding in order to make sense of Mathematics; and
- acquisition of specific knowledge and skills necessary for:
    - the application of Mathematics to physical, social and mathematical problems,;
    - the study of related subject matter (e.g. other subjects); and
    - further study in Mathematics.

2.4. SPECIFIC SKILLS

To develop essential mathematical skills the learner should:

- develop the correct use of the language of Mathematics;
- develop number vocabulary, number concept and calculation and application skills;
- learn to listen, communicate, think, reason logically and apply the mathematical knowledge gained;
- learn to investigate, analyse, represent and interpret information;

- learn to pose and solve problems; and
- build an awareness of the important role that Mathematics plays in real-life situations, including the personal development of the learner.

2.5. FOCUS OF CONTENT AREAS

Mathematics in the Foundation Phase covers five content areas. Each content area contributes to the acquisition of specific skills. The table below shows the general focus of the content areas as well as the specific focus of the content areas for the Foundation Phase.

Table 2.1 Foundation Phase Mathematics Content Focus

MATHEMATICS CONTENT KNOWLEDGE		
Content Area	**General Content Focus**	**Foundation Phase Specific Content Focus**
Numbers, Operations and Relatioships	Development of number sense that includes: • the meaning of different kinds of numbers; • the relationship between different kinds of numbers; • the relative size of different numbers; • representation of numbers in various ways; and • the effect of operating with numbers.	The number range developed by the end of Grade 3 includes whole numbers to at least 1 000 and common fractions. In this phase, the learners' number concept is developed through working with physical objects to count collections of objects, partition and combine quantities, skip count in various ways, solve contextual (word) problems, and build up and break down numbers. • Counting enables learners to develop number concept, mental mathematics, estimation, calculation skills and recognition of patterns. • Number concept development helps learners to learn about properties of numbers and to develop strategies that can make calculations easier. • Solving problems in context enables learners to communicate their own thinking orally and in writing through drawings and symbols. • Learners build an understanding of basic operations of addition, subtraction, multiplication and division. • Learners develop fraction concept through solving problems involving the sharing of physical quantities and by using drawings. Problems should include solutions that result in whole number remainders or fractions. Sharing should involve not only finding parts of wholes, but also finding parts of collections of objects. In this phase, learners are not expected to read or write fraction symbols.
Patterns, Functions and Algebra	Algebra is the language for investigating and communicating most of Mathematics and can be extended to the study of functions and other relationships between variables. A central part of this content area is for the learner to achieve efficient manipulative skills in the use of algebra. It also focuses on the: • description of patterns and relationships through the use of symbolic expressions, graphs and tables; and • identification and analysis of regularities and change in patterns, and relationships that enable learners to make predictions and solve problems.	In this phase, learners work with both • number patterns (e.g. skip counting); and • geometric patterns (e.g. pictures). Learners should use physical objects, drawings and symbolic forms to copy, extend, describe and create patterns. Copying the pattern helps learners to see the logic of how the pattern is made. Extending the pattern helps learners to check that they have properly understood the logic of the pattern. Describing the pattern helps learners to develop their language skills. Focussing on the logic of patterns lays the basis for developing algebraic thinking skills. Number patterns support number concept development and operational sense built in Numbers, Operations and Relationships. Geometric patterns include sequences of lines, shapes and objects but also patterns in the world. In geometric patterns learners apply their knowledge of space and shape.

Space and Shape (Geometry)	The study of Space and Shape improves understanding and appreciation of the pattern, precision, achievement and beauty in natural and cultural forms. It focuses on the • properties, relationships; • orientations, positions; and • transformations of two-dimensional shapes and three-dimensional objects.	In this phase learners focus on three-dimensional (3-D) objects, two-dimensional (2-D) shapes, position and directions. • Learners explore properties of 3-D objects and 2-D shapes by sorting, classifying, describing and naming them. • Learners draw shapes and build with objects. • Learners recognise and describe shapes and objects in their environment that resemble mathematical objects and shapes. • Learners describe the position of objects, themselves and others using the appropriate vocabulary. • Learners follow and give directions.
Measurement	Measurement focuses on the selection and use of appropriate units, instruments and formulae to quantify characteristics of events, shapes, objects and the environment. It relates directly to the learner's scientific, technological and economic worlds, enabling the learner to: • make sensible estimates; and • be alert to the reasonableness of measurements and results.	• In this phase the learners' concept of measurement is developed by working practically with different concrete objects and shapes, learning the properties of length, capacity, mass, area and time. • Learners measure the properties of shapes and objects using informal units where appropriate, such as hands, paces, containers, etc. • Learners compare different quantities by using comparative words such as taller/shorter, heavier/lighter etc. • Learners are introduced to standard units such as grams, kilograms; millilitres, litres; centimetres, metres. • Activities related to time should be structured with the awareness that learners' understanding of the passing of time should be developed before they read about time.

2.6. WEIGHTING OF CONTENT AREAS

The weighting of mathematics content areas serves two primary purposes: firstly the weighting gives guidance on the amount of time needed to address the content within each content area adequately; secondly the weighting gives guidance on the spread of content in assessment. The weighting of the content areas is not the same for each grade in the Foundation Phase.

Table 2.2 Weighting of Content Areas in Foundation Phase

WEIGHTING OF CONTENT AREAS			
Content Area	**Grade 1**	**Grade 2**	**Grade 3**
Numbers, Operations and Relationships*	65%	60%	58%
Patterns, Functions and Algebra	10%	10%	10%
Space and Shape (Geometry)	11%	13%	13%
Measurement	9%	12%	14%
Data Handling (Statistics)	5%	5%	5%
	100%	**100%**	**100%**

*In Grade R - 3, it is important that the area of Numbers, Operations and Relationships is the main focus of Mathematics. Learners need to exit the Foundation Phase with a secure number sense and operational fluency. The aim is for learners to be competent and confident with numbers and calculations. For this reason the notional time allocated to Numbers Operations and Relationships has been increased. Most of the work on patterns should focus on number patterns to consolidate learners' number ability further.

2.7. MATHEMATICS IN THE FOUNDATION PHASE

Foundation Phase Mathematics forges the link between the child's pre-school life and life outside school on the one hand, and the abstract Mathematics of the later grades on the other hand. In the early grades children should be exposed to mathematical experiences that give them many opportunities "to do, talk and record" their mathematical thinking.

The amount of time spent on Mathematics has a decisive impact on learners' development of mathematical concepts and skills. The activities learners engage in should, however, not be "keep busy" activities, but should be clearly focused on the mathematics as outlined in the curriculum.

2.7.1 Suggested guidelines for classroom management

All the time allocated to Mathematics on a single day should be considered as one period. During the Mathematics period the following should usually happen:

- **Whole class activity**
  - Mental mathematics
  - Consolidation of concepts
  - Classroom management (allocation of independent activities, etc.)
- **Small group teaching**
  - Counting
  - Number concept development (oral and practical activities)
  - Problem-solving (oral and practical activities)
  - Written recording
  - Developing calculating strategies (oral and practical activities)
  - Patterns
  - Space and shape
  - Measurement
  - Data Handling
- **Independent work**

Learners practise and consolidate concepts developed in whole class and small group teaching.

Whole class activity: where the focus will be mainly on mental mathematics, consolidation of concepts and allocation of independent activities for at least 20 minutes per day at the start of the Mathematics lesson. During this time the teacher will also work with the whole class to determine and record (where appropriate) the name of the day, the date, the number of learners present and absent, and the nature of the weather. Mental mathematics will include brisk mental starters such as "the number after/before 8 is; 2 more/less than 8 is; 4+2; 5+2, 6+2" etc. During this time the teacher can also consolidate concepts that are a little challenging. Also important is that the teacher should assign the class their general class activity as well as independent activities that they do on their own while she gets on with the small group focused sessions.

Small group focused lessons: are most effective when the teacher takes a small group of learners (8 to 12) who have the same ability with her on the floor or at their tables, while the rest of the class is engaged in independent activities. The teacher works **orally** and **practically** with the learners, engaging in such activities as counting, estimation, number concept development and problem-solving activities, as well as activities concerning pattern, space and shape, measurement and data handling, which should be carefully planned for.

In order to reinforce learning, written work (work book, work sheet examples, work cards etc.) should form part of the group session where possible. Learners should have writing materials (class work books, etc.) available for problem-

solving activities. The group sessions should be very interactive and learners should be encouraged to "**do, talk, demonstrate and record"** their mathematical thinking.

Teachers should take care not to underestimate the slower learners; they should also be stretched. It is easier to match the difficulty level of the work to the learners if the group the teacher is working with is of approximately equal ability. However, mixed ability groups can work well for construction, measurement and patterning or sorting activities, or for games.

Independent activities: While the teacher is busy with the small group focused lesson, the rest of the class must be purposefully engaged in a variety of mathematical activities that focus on reinforcing and consolidating concepts and skills that have already been taught during small group focused lessons. These independent activities should be differentiated to cater for different ability levels. Independent activities may include:

- work book activities;
- graded worksheets/work cards for counting, manipulating numbers, simple problems in context (word problems), etc.;
- mathematics games like Ludo, dominoes, jigsaw puzzles; and
- tasks that involve construction, sorting, patterning or measurement.

The Mathematics period should also provide for supporting learners experiencing barriers to learning, enrichment activities for high flyers, assessment activities, etc.

Both independent and small group focused lesson activities must be observed (practical, oral), marked and overseen (written recording) by the teacher as part of her informal and formal assessment activities.

Close tracking of learners' responses (verbal, oral, practical, written recording) in learning and teaching situations enables the teacher to do continuous assessment, monitor learners' progress and plan support accordingly for learners experiencing barriers to learning.

2.7.2 Learners with barriers to learning Mathematics

It is important for learners who experience barriers to learning Mathematics to be exposed to activity-based learning. Practical examples using concrete objects together with practical activities should be used for a longer time than with other learners, as moving to abstract work too soon may lead to frustration and regression. These learners may require and should be granted more time for:

- completing assessment activities and tasks; and
- acquiring thinking skills (own strategies

The number of activities to be completed should be adapted to the learner without compromising the concept and skills that are addressed.

2.7.3 Mental mathematics

Mental mathematics plays a very important role in the curriculum. The number bonds and multiplication table facts that learners are expected to know or recall fairly quickly are listed for each grade. In addition, mental mathematics is used extensively to explore the higher number ranges through skip counting and by doing activities such as "up and down the number ladder", e.g. the Grade teacher might ask the following "chained" questions: "Start with 796. Make

that 7 more. Yes, it is 803. Make that 5 less. Yes, it is 798. Make that 10 more … 2 more … 90 more … 5 less …" etc. These activities help learners to construct a mental number line.

Mental mathematics therefore features strongly in both the counting and the number concept development sections relating to the topics Number and Patterns, and may also occur during Measurement and Data Handling activities. When doing mental mathematics, the teacher should never force learners to do mental calculations that they cannot handle — writing materials and/or counters should always be available for those learners who may need them.

2.8 GRADE R

The approach to learning Mathematics should be based on the principles of integration and play-based learning. The teacher should be pro-active, a mediator rather than a facilitator. A mediator makes the most of incidental learning opportunities that arise spontaneously during a range of child-centred activities such as free play in the fantasy corner or block construction site, sand and water play activities as well as teacher-guided activities that focus on mathematical concepts such as counting, number concept development, space and shape, patterns, time and other emergent mathematics activities. Colour is not in itself a mathematical concept, but can be used to promote the acquisition of mathematical concepts in activities such as sorting, grouping and classifying.

All aspects of Grade R, including the classroom environment and teaching and learning practice, should promote the holistic development of the child. Development that is an integral part of emergent numeracy includes cognitive development (problem-solving, logical thought and reasoning), language development (the language of mathematics) and perceptual-motor as well as emotional and social development. All these aspects can be developed through stories, songs, rhymes, finger games and water play, educational toys including board games, construction and exploration activities (mass, time, capacity, measurement, etc.), imaginative play, outdoor play and "playground games". Many kinds of games and play could include aspects of numeracy, for example measuring during cooking or counting during shopping.

In other words, the acquisition of emergent mathematics and related mathematical concepts should, like all good teaching, adhere to the following learning principles where children move through three stages of learning, namely:

- the kinaesthetic stage (experience concepts with the body and senses);
- the concrete stage (3-D, using a variety of different objects such as blocks, bottle tops, twigs and other objects in the environment); and
- paper and pencil representation (semi-concrete representations using drawings, matching cards etc.)

In the Grade R year the timetable is called **the daily programme** (*see* Figure 1) and it comprises three main components, namely:

- teacher-guided activities;
- routines; and
- child-initiated activities or free play.

The emphasis throughout should be on using these aspects of the daily programme to promote the acquisition of emergent numeracy in a fun and spontaneous context. For example, teacher-guided numeracy learning opportunities are offered during ring time. Most rings can be given a mathematical focus. The early morning ring when children are greeted and a roll-call is taken provides an opportunity for playing with numbers and, for example, counting. Other rings, such as the Mathematics ring, perceptual-motor rings, movement, music and science rings can also provide a Mathematics focus.

Creative art activities could also have a mathematical emphasis, for example, using geometric shapes such as circles and squares to make a collage or designing a pattern to frame a picture. The weather chart, calendar and birthday rings also provide opportunities for exploring mathematical concepts. It is the teacher's knowledge and initiative that can maximise learning potential.

- *Routines*, where children participate actively, such as snack time, arrival, home time and toilet routines, can also be given a Mathematics focus. Children wearing red, for example, go to the toilet first (colour and ordinal number), each child gets a plate and a sandwich (one-to-one correspondence), Thandi would like a second sandwich, David doesn't want any more. What this amounts to is identifying and utilising a teachable moment, in other words, being a mediator of learning.
- During *free play* the teacher can promote **emergent mathematics** through the appropriate structuring of the free-play area. Outdoor free play such as climbing on a wooden climbing frame or riding on the cycle track might promote the acquisition of key mathematical vocabulary such as up/down, bottom/top, fast/slow, high/low, etc. Sand and water play will also enhance the understanding of concepts such as mass, volume and capacity. All these activities will also promote essential underpinning perceptual-motor skills, which become an inherent part of the successful acquisition in formal school of literacy and numeracy. Examples of these skills are:
  - developing an understanding of your position in space e.g. behind, in front, underneath or next to an object (this can, for example, be linked to place value in mathematics); and
  - directionality and laterality (this can be linked to number and letter formation and reading from left to right).

The practice outlined above is illustrative of a Grade R approach that promotes problem-solving, logical thinking and reasoning, as well as education for citizenship because of its focus on co-operative learning and negotiation. By utilising teachable moments, a teacher can encourage children to reflect on their decisions and predict possibilities, e.g. whether they think a container being used in water play will hold more than another container.

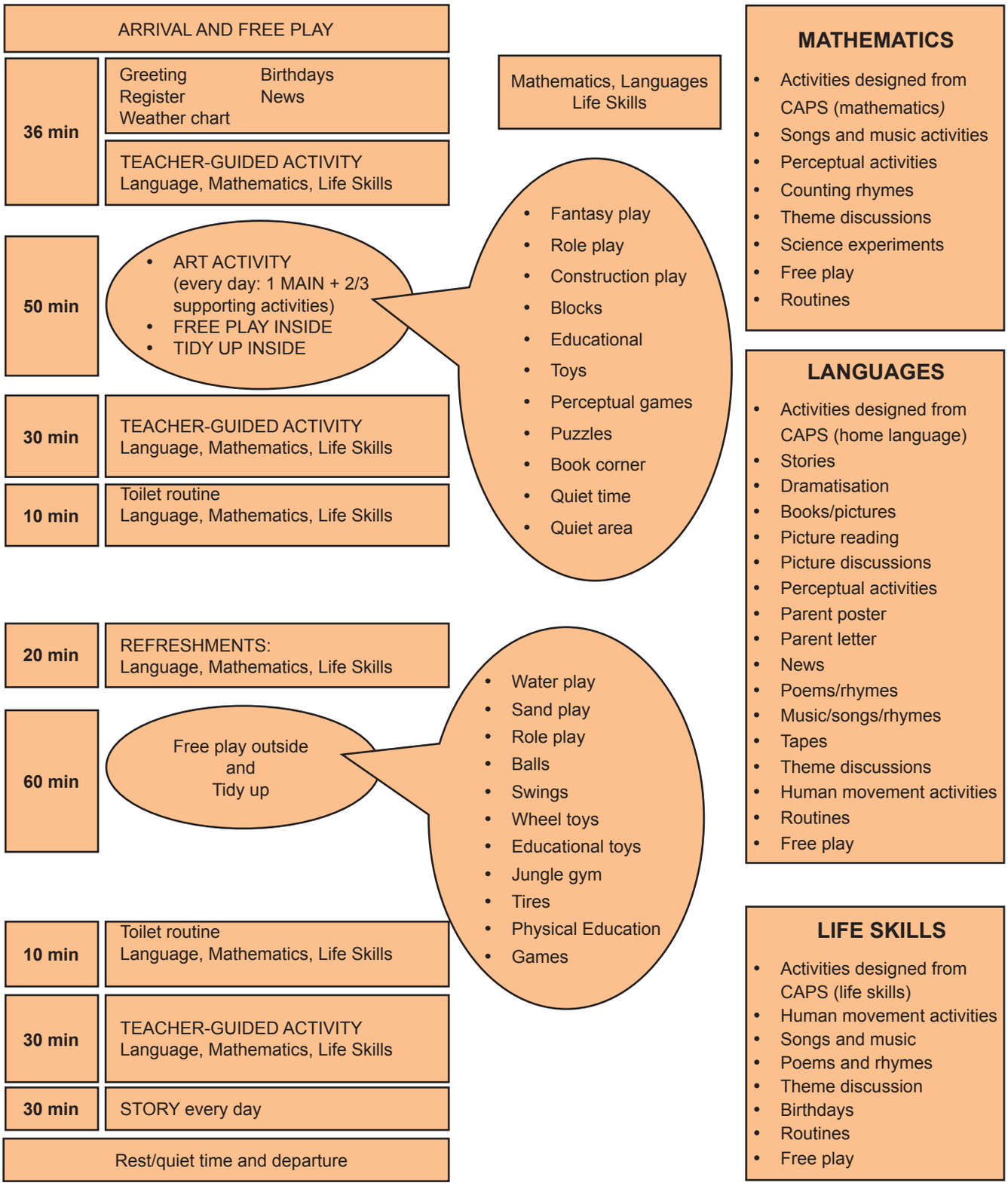
By making helpful suggestions and inviting a child to think about alternative positions and ways of problem-solving, a teacher can encourage children to think more deeply about an issue and find good reasons for the choices they make. In this way not only mathematical but also *holistic development* is addressed and critical premises underpinning CAPS are brought into play.

Assessment practices in Grade R should be informal and children should not be subjected to a 'test' situation. For this reason assessment activities have not been included in the Grade R CAPS. Each activity used for assessment should be carefully planned so that it integrates a variety of skills.

In Grade R most of the assessment takes place through observation, with the teacher recording the results of the assessment using a checklist. Thus, as the year progresses a full picture of each child, complete with challenges and strengths, is gradually built. This allows for challenges to be addressed and strengths to be maximised.

A traditional, formal classroom-based learning programme that is tightly structured and 'basics bound' should be avoided, as it does not optimise numeracy acquisition for the Grade R child. Grade R should not be a 'watered down' Grade 1 class. It has its own unique characteristics based on how children in this age group make sense of their world and acquire the knowledge, skills, values and attitudes that will allow them to maximise the opportunities afforded in the formal learning years.

Figure 1: Grade R daily programme
(From ± 7:30 - 13:00)



2.9 RECOMMENDED RESOURCES FOR THE FOUNDATION PHASE MATHEMATICS CLASSROOM

- Counters
- Large dice
- A big counting frame
- A height chart
- Big 1 - 100 and 101 - 200 number grid posters (100 - charts)
- Different number lines (vertical and horizontal)
- A set of Flard cards (expanding cards)
- Play money — coins and notes
- A calendar for the current year
- A large analogue wall clock
- A balance scale
- Building blocks
- Modelling clay
- A variety of boxes of different shapes and sizes brought from home
- A variety of plastic bottles and containers to describe and compare capacities
- Good examples of a sphere (ball), a rectangular prism (box), cube, cone, pyramid and cylinder. The teacher can make this herself.
- A number of plastic or cardboard squares, different rectangles, circles, different triangles all of different sizes
- Mathematical games, e.g. Ludo, Snakes and Ladders, Jigsaw Puzzles, Dominoes, Tangrams etc.
- Essential for Grades R and 1:
    - Areas for sand and water play
    - Apparatus for climbing, balancing, swinging and skipping
    - A play-shop with items to be bought with play-money
    - A variety of appropriate games such as ‘what’s in a square’?
    - Blocks

SECTION 3 CONTENT SPECIFICATION AND CLARIFICATION

3.1. INTRODUCTION

In the General Education and Training band there are five content areas in Mathematics:

- Numbers, Operations and Relationships
- Patterns, Functions and Algebra
- Space and Shape (Geometry)
- Measurement
- Data Handling

Each content area is broken down into mathematical topics, for example in Space and Shape in the Foundation Phase one topic is two-dimensional shapes. Concepts and skills are specified within each topic. Section 3 of the Foundation Phase Mathematics CAPS specifies and clarifies the Mathematics content required.

3.2 SPECIFICATION OF CONTENT TO SHOW PROGRESSION

The phase overview tables show the specification of concepts and skills and the progression from Grade R to 3. The grade overview tables show the progression of concepts and skills across the four terms of the year.

However, in certain topics the concepts and skills are similar in two or three successive grades. The clarification of content will give guidelines on how progression should be addressed in these cases. The specification of content should therefore be read in conjunction with the clarification of content.

The **Foundation Phase overview** shows progression of content areas: Numbers, Operations and Relationships, Patterns, Functions and Algebra, Space and Shape (Geometry), Measurement and Data Handling across Grades R to 3 as outlined in the following tables:

FOUNDATION PHASE OVERVIEW

1. NUMBERS, OPERATIONS AND RELATIONSHIPS

Progression in Numbers, Operations and Relationships

- The main progression in Numbers, Operations and Relationships happens in three ways:
  - The number range increases.
  - Different kinds of numbers are introduced.
  - The calculation strategies change.
- As the number range for doing calculations increases up to Grade 3, learners should develop more efficient strategies for calculations.
- Contextual problems should take account of the number range for the grade as well as the calculation competencies of learners. .

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
NUMBER CONCEPT DEVELOPMENT: Count with whole numbers				
1.1 Count objects	**Count concrete objects** Estimate and count to at least 10 everyday objects reliably.	**Count concrete objects** Estimate and count to at least 50 everyday objects reliably. Counting by grouping is encouraged.	**Count concrete objects** Estimate and count to at least 200 everyday objects reliably. Counting by grouping is encouraged.	**Count concrete objects** Estimate and counts to at least 1000 everyday objects reliably. Counting by grouping is encouraged.
1.2 Count forwards and backwards	Count forwards and backwards in ones from 1 to 10 Use number rhymes and songs	Count forwards and backwards in ones from any number between 0 and 100. **Count forwards in:** • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100	Count forwards and backwards in: • 1s from any number between 0 and 200 • 10s from any multiple of 10 between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200	Counts forwards and backwards in: • 1s from any number between 0 and 1000 • 10s from any multiple of 10 between 0 and 1000 • 5s from any multiple of 5 between 0 and 1000 • 2s from any multiple of 2 between 0 and 1000 • 3s from any multiple of 3 between 0 and 1000 • 4s from any multiple of 4 between 0 and 1000 • in 20s, 25s, 50s, 100s to at least 1000

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
NUMBER CONCEPT DEVELOPMENT: Represent whole numbers				
	Say and use number names in familiar context.			
1.3 Number symbols and number names	**Recognise, identify and read number symbols** • Recognise, identify and read number symbols 1 to 10 • Recognise, identify and read number names 1 to 10	**Recognise, identify and read number symbols** • Recognise, identify and read number symbols 1 to 100 • Write number symbols 1 to 20 • Recognise, identify and read number names 1 to 10 • Write number names 1 to 10	**Recognise, identify and read number symbols** • Recognise, identify and read number symbols 0 to 200 • Write number symbols 0 to 200 • Recognise, identify and read number names 0 to 100 • Write number names 0 to 100	**Recognise, identify and read number symbols** • Recognise, identify and read number symbols 0 to 1 000 • Write number symbols 0 to 1 000 • Recognise, identify and read number names 0 to 1 000. • Write number names 0 to 1 000
NUMBER CONCEPT DEVELOPMENT: Describe, compare and order whole numbers				
1.4 Describe, compare and order numbers	**Describe, compare and order collection of objects up to 10.** • Describe whole numbers up to 10 • Compare which of two given collection of objects is big, small, smaller than, greater than, more than, less than, equal to, most, least, fewer up 10. • Order more than two given collections of objects from smallest to greatest up to 10	**Describe, compare and order objects up to 20** • Describe and compare collections of objects according to most, least, the same as • Describe and order collections of objects from most to least and least to most		

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
NUMBER CONCEPT DEVELOPMENT: Describe, compare and order whole numbers				
1.4 **Describe, compare and order numbers**	**Use ordinal numbers to show order, place or position** Develop an awareness of ordinal numbers e.g. first, second, third up to sixth and last	**Describe, compare and order numbers to 20** • Describe and compare whole numbers according to smaller than, greater than and more than, less than, is equal to • Describe and order numbers from smallest to greatest and greatest to smallest **Use ordinal numbers to show order, place or position** Position objects in a line from first to tenth or first to last e.g. first, second, third … tenth	**Describe, compare and order numbers to 99** • Describe and compare whole numbers up to 99 using smaller than, greater than, more than, less than and equal to • Describe and order whole numbers up to 99 from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** Position objects in a line from first to twentieth or first to last e.g. first, second, third … twentieth	**Describe, compare and order numbers to 999** • Describe and compare whole numbers up to 999 using smaller than, greater than, more than, less than and equal to • Describe and order whole numbers up to 999 from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** Use, read and write ordinal numbers, including abbreviated form (1^{st}, 2^{nd}, 3^{rd} up to 31^{st})
NUMBER CONCEPT DEVELOPMENT: Place value				
1.5 **Place value**		**Begin to recognise the place value of at least two-digit numbers to 20** • Decompose two-digit numbers into multiples of 10 and ones/units	**Recognise the place value of at least two-digit numbers to 99** • Decompose two-digit numbers up to 99 into multiples of 10 and ones/units • Identify and state the value of each digit	**Recognise the place value of three-digit numbers to 999** • Decompose three-digit numbers up to 999 into multiples of 100, multiples of 10 and ones/units • Identify and state the value of each digit
SOLVE PROBLEMS IN CONTEXT				
1.6 **Problem-solving techniques**	Use the following techniques up to 10: • concrete apparatus e.g. counters • physical number ladder	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus	Use the following techniques when solving problems and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
1.7 Addition and subtraction	Solve word problems (story sums) in context and explain own solution to problems involving addition and subtraction with answers up to 10.	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 20.	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 99.	Solve word problems in context and explain own solution to problems involving addition and subtraction leading answers up to 999.
1.8 Repeated addition leading to multiplication		Solve word problems in context and explain own solution to problems involving repeated addition with answers up to 20	Solve word problems in context and explain own solution to problems using repeated addition and multiplication with answers up to 50.	Solve word problems in context and explain own solution to problems using multiplication with answers up to 100
1.9 Grouping and sharing leading to division	Solve and explain solutions to word problems in context (story sums) that involve equal sharing, grouping with whole numbers up to 10 and answers that may include remainders.	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 20 and with answers that may include remainders.	Solves and explain solutions to practical problems that involve equal sharing and grouping up to 50 with answers that may include remainders.	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 100 with answers that may include remainders
SOLVE PROBLEMS IN CONTEXT				
1.10 Sharing leading to fractions			Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions.
1.11 Money	Develop an awareness of South African coins and bank notes	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5) and bank notes R10 and R20 • Solve money problems involving totals and change to R20 and in cents up to 20c	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5) and bank notes R10, R20, R50 • Solve money problems involving totals and change to R99 and in cents up to 90c	• Recognise and identify all the South African coins and bank notes • Solve money problems involving totals and change in rands or cents • Convert between rands and cents
CONTEXT-FREE CALCULATIONS				
1.12 Techniques (methods or strategies)		Use the following techniques when performing calculations: • drawings or concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus	Use the following techniques when performing calculations: • drawings or concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
1.13 Addition and subtraction	Solve verbally stated addition and subtraction problems with solutions up to 10	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	• Add to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 20	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 30
CONTEXT-FREE CALCULATIONS				
1.14 Repeated addition leading to multiplication		• Add the same number repeatedly to 20 • Use appropriate symbols (+, =, □)	• Multiply numbers 1 to 10 by 2, 5, 3, and 4 to a total of 50 • Use appropriate symbols (+, x, =, □)	• Multiply any number by 2, 3, 4, 5, 10 to a total of 100 • Use appropriate symbols (x, □)
1.15 Division				• Divide numbers up to 100 by 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, □)
1.16 Mental mathematics	**Number concept: Range 10** Each activity commences with mental maths: • Counting everyday objects • Counting forwards and backwards • Ordinal counting • Clap hands many/few times • Which claps are most/least/more/ fewer • Which number comes before/after/ between	**Number concept: Range 20** • Name the number before and after a given number. • Order a given set of selected numbers • Compare numbers up to and say which is 1 and 2 more or less	**Number concept: Range 99** • Order a given set of selected numbers • Compare numbers up to 99 and say which is 1, 2, 3, 4, 5 and 10 more or less	**Number concept: Range 1000** • Order a given set of selected numbers • Compare numbers up to 1000 and say which is 1, 2, 3, 4, 5 and 10 more or less

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
CONTEXT-FREE CALCULATIONS (cont.)				
1.16 Mental mathematics		**Rapidly recall:** • Addition and subtraction facts to 10 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down	**Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction.	**Rapidly recall:** • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 • Multiplication facts for the: - 2 times table with answers up to 20 - 10 times table with answers up to 100 • Division facts for numbers: - up to 20 divisible by 2 - up to 100 divisible by 10 **Calculation strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division.
1.17 Fractions			• Use and name unitary fractions including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half	• Use and name unitary and non-unitary fractions including halves, quarters, eighths, thirds, sixths, fifths. • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that one half and two quarters are equivalent • Write fractions as 1 half and 2 thirds.

FOUNDATION PHASE OVERVIEW

2. PATTERNS, FUNCTIONS AND ALGEBRA

Progression in Patterns, Functions and Algebra

- In Patterns, Functions and Algebra, learners get opportunities to:
  - complete and extend patterns represented in different forms ; and
  - identify and describe patterns.
- Describing patterns lays the basis for learners in the Intermediate Phase to describe rules for patterns. This in turn becomes more formalised in algebraic work in the Senior Phase.

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
2.1 **Geometric patterns**	**Copy and extend** Copy and extend simple patterns using physical objects and drawings (e.g. using colours and shapes).	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • complex patterns made with drawings of lines, shapes or objects **Create and describe own patterns** • with physical objects • by drawing lines, shapes or objects **Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • more complex patterns made with drawings of lines, shapes or objects **Create and describe own patterns** • with physical objects • by drawing lines, shapes or objects **Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage
2.2 **Number patterns**		**Copy, extend and describe** Copy, extend and describe simple number sequences to at least **Create and describe own patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least **Create and describe own patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least **Create and describe own patterns**

FOUNDATION PHASE OVERVIEW

3. SPACE AND SHAPE (GEOMETRY)

Progression in Space and Shape

The main progression in Space and Shape is achieved by:

- focussing on new properties and features of shapes and objects in each grade; and
- moving from learning the language of position and matching different views of the same objects to reading and following directions on informal maps.

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
3.1 **Position, orientation and views**	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and directions** Follow directions to move around the classroom	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and views** • Recognise and match different views of the same everyday object **Position and directions** • Follow directions to move around the classroom • Follow instructions to place one object in relation to another, e.g. put the pencil behind the box	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and views** • Recognise and match different views of the same everyday object. **Position and directions** Follow directions to move around the classroom	**Position and views** • Recognise and match different views of the same everyday object • Name an everyday object when shown an unusual view of it • Read, interpret and draw informal maps, or top views of a collection of objects • Find objects on maps **Position and directions** • Follow directions to move around the classroom and school • Give directions to move around the classroom and school • Follow directions from one place to another on an informal map

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom • ball shapes, • box shapes **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Focussed activities** • Use 3-D objects such as building blocks, recycling material etc, to construct composite objects e.g. towers, bridges etc	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Focussed activities** • Observe and build given 3-D objects using concrete materials such as building blocks, recycling material, construction kits	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** • Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling material, construction kits, other 3-D geometric objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focussed activities** • Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, clay, toothpicks, straws, other 3-D geometric objects

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
3.3 **2-D shapes**	**Recognise, identifies and names two-dimensional shapes in the classroom and in pictures, including:** • Learners Symbols • Class name	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • straight sides • round sides	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • shape • straight sides • round sides	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Draw shapes** • circles • triangles • squares • rectangles
3.4 **Symmetry**	**Symmetry** • Recognise symmetry in own body	**Symmetry** • Recognise symmetry in own body. • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes	**Symmetry** • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes	**Symmetry** • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes. • Determine line of symmetry through paper folding and reflection

FOUNDATION PHASE OVERVIEW

4. MEASUREMENT

Progression in Measurement

- The main progression in measurement across the grades is achieved by the introduction of:
  - new forms of measuring;
  - new measuring tools, starting with informal tools and moving to formal measuring instruments in Grades 2 and 3;
  - new measuring units, particularly in Grades 2 and 3.
- Calculations and problem-solving with measurement should take cognisance of the number work that has already been covered.

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
4.1 **Time**	**Passing of time** Talk about the passing of time • Talk about things that happen during the day and things that happen during the night • Learners sequence events that happen to them during the day • Order regular events from their own lives	**Passing of time** Talk about the passing of time • Order regular events from their own lives • Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow		

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
4.1 **Time**		**Telling the time** • Describe when something happens using language e.g. morning, afternoon, night, early, late • Name and sequence days of week and months of year • Place birthdays on a calendar	**Telling the time** • Name and sequence days of week and months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours, half hours and quarter hours **Calculate length of time and passing of time** • Use calendars to calculate and describe lengths of time in: - days, - weeks • Use clocks to calculate length of time in: - hours - half hours	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** • Use calendars to calculate and describe lengths of time in: - days - weeks - months • Converting between days and weeks • Converting between weeks and months • Use clocks to calculate length of time in: - hours - half hours - quarter hours

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
4.2 **Length**	**Informal measuring** • Compare and order the length, height or width of two or more objects by placing them next to each other. Use language to talk about the comparison e.g. longer, shorter, taller, wider	**Informal measuring** • Compare and order the length, height or width of two or more objects by placing them next to each other. Use language to talk about the comparison e.g. longer, shorter, taller, wider • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters • Describe the length of objects by counting and stating the length in informal units	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters • Describe the length of objects by counting and stating the length in informal units **Introducing formal measuring** Estimate, measure, compare order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length.	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters • Describe the length of objects by counting and stating how many informal units long they are. **Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length • Estimate and measure lengths in centimetres using a ruler (No conversions between metres and centimetres required)

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
4.3 **Mass**	**Informal measuring** • Compare and order the mass of two or more objects by feeling them or using a balancing scale • Use language to talk about comparison e.g. light, heavy, lighter, heavier	**Informal measuring** • Estimate, measure, compare, order and record mass using a balancing scale and non-standard measures e.g. blocks, bricks • Describe the mass of objects by counting and stating the mass in informal units • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	**Informal measuring** • Estimate, measure, compare, order and record mass using a balancing scale and non-standard measures e.g. blocks, bricks. • Describe the mass of objects by counting and stating the mass in informal units • Use language to talk about comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated only in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Measure own mass in kilograms using a bathroom scale	**Informal measuring** • Estimate, measure, compare, order and record mass using a balancing scale and non-standard measures e.g. blocks, bricks • Describe the mass of objects by counting and stating the mass in informal units • Use language to talk about comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in: - kilograms e.g. 2 kilograms of rice and 1 kilogram of flour - grams e.g. 500 grams of salt • Measure own mass in kilograms using a bathroom scale (No conversions between grams and kilograms are required)

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
4.4 **Capacity/ Volume**	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary • Compare and order the amount of liquid that two containers can hold if filled (capacity) • Use language to talk about comparison e.g. more than, less than, full, empty	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary • Compare and order the amount of liquid that two containers can hold if filled (capacity). • Use language to talk about comparison e.g. more than, less than, full, empty • Estimate, measure, compare, order and record the capacity of containers by using non-standard measures e.g. spoons and cups	**Informal measuring** • Estimate, measure, compare, order and record the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups	**Informal measuring** • Estimate, measure, compare, order and record the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
4.4 **Capacity/ Volume**		• Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups	Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint	Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or stated in millilitres e.g. 500 millilitres of milk, 340 millilitres of cool drink, 750 millilitres of oil. • Know that a standard cup is 250 millilitres • Know that a standard teaspoon is 5 millilitres (No conversions between millilitres and litres required)
4.5 **Perimeter and Area**				**Perimeter** Investigate the distance around 2-D shapes and 3-D objects using direct comparison or informal units. **Area** Investigate the area using tiling.

FOUNDATION PHASE OVERVIEW

5. DATA HANDLING

Progression in Data Handling

- The main progression in Data Handling across the grades is achieved by:
  - moving from working with objects to working with data; and
  - working with new forms of data representation.
- Learners should work through the full data cycle at least once a year - this involves collecting and organising data, representing data, analysing, interpreting and reporting data.
- Some of the above aspects of data handling can also be dealt with as discrete activities.

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
5.1 Collect and sort objects	**Collect and organise objects** Collect and sort everyday physical objects.	**Collect and organise objects** Collect and sort everyday physical objects.		
5.2 Represent sorted collection of objects	**Represent sorted collection of objects** Draw a picture of collected objects.	**Represent sorted collection of objects** Draw a picture of collected objects.		
5.3 Discuss and report on sorted collection of objects	**Discuss and report on sorted collection of objects** Answer questions about • how the collection was sorted • the drawing of the collection	**Discuss and report on sorted collection of objects** • Give reasons for how collection was sorted; • Answer questions about - how the sorting was done (process) - what the sorted collection looks like (product) • Describe the collection and/drawing • Explain how the collection was sorted		

TOPICS	GRADE R	GRADE 1	GRADE 2	GRADE 3
5.4 **Collect and organise data**		**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher • Organise data supplied by teacher or workbook/textbook • Organise data in - lists - tally marks - tables
5.5 **Represent data**		**Represent data** • Represent data in pictograph • Limited to pictographs with one-to-one correspondence	**Represent data** • Represent data in pictograph • Limited to pictographs with one-to-one correspondence	**Represent data** • Represent data in - pictograph (limited to pictographs with one-to-one correspondence) - bar graphs
5.6 **Analyse and Interpret data**		**Analyse and interpret data** Answer questions about data in pictograph • limited to pictographs with one-to-one correspondence	**Analyse and interpret data** Answer questions about data in pictograph • limited to pictographs with one-to-one correspondence	**Analyse and interpret data** Answer questions about data presented in • pictographs(limited to pictographs with one-to-one correspondence) • bar graphs

3.3 Clarification of content

In this content clarification section, teachers are provided with:

- the Grade R to 3 term overview;
- suggested sequencing of topics into terms: not all aspects of all topics are taught in each term; some aspects of some topics need to be taught before other aspects of those topics;
- suggested pacing of topics over the year. Just as some content areas require more time than others, so some topics require more time than others; and
- clarification notes and teaching guidelines with examples where appropriate.

Each content area has been broken down into topics. All content areas must be taught every term. The sequencing of topics into terms gives an idea of how topics can be spread and revised throughout the year. It is not necessary to teach all the topics in Space and Shape, Measurement and Data Handling every term. However, all topics must be taught during the year.

In Section 2 (paragraph 2.6) a weighting of content areas is provided. When this is combined with the hours available in the year one can calculate notional hours for each content area.

Teachers may choose to sequence (or order) and pace the content differently from the recommendations in this chapter. Teachers may also change the suggested amounts of time allocated to topics slightly. However, cognisance should be taken of the relative weighting and notional hours of the content areas for Foundation Phase Mathematics.

- **Grade R** Mathematics is in the form of emergent mathematics and is therefore not broken up into lesson times. The Grade R teacher should weave the mathematics into the learner' daily activities although time should be set aside during the day when the teacher focuses exclusively on a mathematical activity, otherwise the learners will not become aware of and develop the desired mathematical concepts and skills.
- Time for Grades 1 - 3 has been allocated in the following way:
  - **Seven hours are to be used for Mathematics per week** (10 weeks x 4 terms x 7 hours = 280 hours per year)
  - Every Mathematics lesson should be **1hour 24 minutes per day for Grades 1 to 3**.
  - This then means that there are four terms of 10 weeks with five daily (Monday to Friday) lessons per week.
  - Allow a week for orientation and consolidation at the start of each term, since young children tend to forget a lot of content during the holidays and they also get out of the rhythm of schooling. Allow a week at the end of each term for consolidation of concepts. This gives lessons.

3.4 Sequencing and pacing of content

The following tables are provided for each grade in Grade R - 3:

- Pacing of topics for the year (shows the spread of topics across terms and recommends the amount of time to spend on each topic of each Content Area)
- Sequencing of topics for the year (shows how topics have been allocated to the terms and the progression of content and skills across the terms)
- Clarification notes per topic - these tables provide content clarification and teaching guidelines for each topic as sequenced across terms.

Lesson Planning - Topic Allocation per Term

Number is the most important topic in Foundation Phase Mathematics. Most of the time each week, term and year is focused on Numbers, Operations and Relationships. On average three or more Mathematics lessons in each week should focus on Numbers, Operations and Relationships. The remaining time is split among the other content areas.

Space and Shape and Measurement require more time and attention than Data Handling and Patterns, Functions and Algebra. The tables below give an indication of how many lessons to allocate to each content area and topic for each grade in Patterns, Functions and Algebra, Space and Shape, Measurement and Data Handling:

- Grade R allocation of content areas and topics in lessons

As **Grade R** Mathematics is in the form of **emergent mathematics** and therefore the following suggested time allocation provides for both the focused mathematical episodes and the interwoven, informal activities. This is to ensure comprehensive coverage of all the content available. Emergent mathematics activities may be to count the number of plates and mugs to put out for their snack, counting games played outside, indoor games such as dominoes and jigsaw puzzles, etc. The teacher has to organise all the activities according to her learners' needs and the resources available in her classroom.

Shape and Space is an important part of the young learner's mathematical development, and should be spread out over the week, with some focused episodes under the guidance of the teacher, and many opportunities for construction, sand and water play by the learners.

Measurement should be incorporated in counting activities, e.g. estimation and counting when measuring distances with hands, feet and steps.

The attendance register and weather chart give ample opportunity for working with **Data Handling**.

Table 3.1: Time allocation per content area per week

Content Area	Topics	Suggested Time
Numbers, Operations and Relationships	Counting Number Recognition Identify and describe whole numbers Number sense Solving problems	**120 minutes**
Patterns, Functions and Algebra	Copy, extend and create own patterns	**80 minutes**
Space and Shape (Geometry)	Recognise, identify and name 2-D shapes/pictures Geometric shapes Build 3-D objects using concrete materials Spatial Relations Directionality	**80 minutes**
Measurement	Time Length Mass Capacity	**80 minutes**
Data Handling	Collect, sort, draw, read and represent data	**60 minutes**
TOTAL		**420 minutes** **(7 hours per week)**

- **Allocation of content areas and topics in lessons for Grades 1 to 3**

On average three lessons (i.e. between 4 and 4½ hours) a week are spent on Numbers, Operations and Relationships in Grades 1, 2 and 3. The remaining two lessons (i.e. between 2½ and 3 hours) are split among the topics of the other content areas in the manner recommended below.

Table 3.2: Recommended number of lessons per content area per term for Grade 1

CONTENT AREA	TOPIC	Number of Lessons				
		Term 1	Term 2	Term 3	Term 4	Total
Numbers, Operations and Relationships	All topics of Numbers, Operations and Relationships	22	30	28	25	**105**
Patterns, Functions and Algebra	Number patterns	3	3	3	3	**12**
	Geometric patterns	1	1	1	1	**4**
Space and Shape (Geometry)	2-D shapes		3		3	**6**
	3-D objects	3		2	1	**6**
	Position, orientation and views	2			1	**3**
	Symmetry			1	1	**2**
Measurement	Time	2				**2**
	Length	2		2		**4**
	Mass	2			2	**4**
	Capacity/Volume	1	2		1	**4**
Data Handling	Collecting, sorting, representing and analysing objects	2	1			**3**
	Whole data cycle			3		**3**
	Sections of data cycle				2	**2**
Total Lessons		**40**	**40**	**40**	**40**	**160**

Table 3.3: Recommended number of lessons per content area per term for Grade 2

Content area	Topic	Number of Lessons				
		Term 1	Term 2	Term 3	Term 4	Total
Numbers, Operations and Relationships	All topics of Numbers, Operations and Relationships	24	25	24	26	**99**
Patterns, Functions and Algebra	Number patterns	3	3	3	3	**12**
	Geometric patterns	1	1	1	1	**4**
Space and Shape (Geometry)	2-D shapes		3		3	**6**
	3-D shapes	3		2	1	**6**
	Position, orientation and views		2	1		**3**
	Symmetry		1		1	**2**
Measurement	Time	3	1	3	1	**8**
	Length	3			1	**4**
	Mass		3		1	**4**
	Capacity/Volume			3	1	**4**
Data Handling	Whole data cycle	3		3		**6**
	Sections of data cycle		1		1	**2**
Total Lessons		**40**	**40**	**40**	**40**	**160**

Table 3.4: Recommended number of lessons per content area per term for Grade 3

Content area	Topic	Number of Lessons				
		Term 1	Term 2	Term 3	Term 4	Total
Numbers, Operations and Relationships	All topics of Numbers, Operations and Relationships	26	22	19	27	**94**
Patterns, Functions and Algebra	Number patterns	3	3	3	3	**12**
	Geometric patterns	1	1	1	1	**4**
Space and Shape (Geometry)	2-D shapes	2		2		**4**
	3-D shapes		3	3	1	**7**
	Position, orientation and views		2	3		**5**
	Symmetry		2		1	**3**
Measurement	Time	3	2	3	2	**10**
	Length		2	2		**4**
	Mass		2		1	**3**
	Capacity/Volume	2			1	**3**
	Perimeter			1		**1**
	Area				2	**2**
Data Handling	Whole data cycle	3		3		**6**
	Sections of data cycle		1		1	**2**
Total Lessons		**40**	**40**	**40**	**40**	**160**

3.4.1 Grade 1 overview per term

GRADE 1 OVERVIEW 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
NUMBER CONCEPT DEVELOPMENT: Count with whole numbers				
1.1 **Count objects**	**Count out concrete objects to 10** **Give a reasonable estimate of a number of objects that can be checked by counting.**	**Count out objects reliably to 20** **Give a reasonable estimate of a number of objects that can be checked by counting.** **Counting by grouping is encouraged**	**Count out objects reliably to 40** **Give a reasonable estimate of a number of objects that can be checked by counting.** **Counting by grouping is encouraged**	**Count out objects reliably to 50** **Give a reasonable estimate of a number of objects that can be checked by counting** **Counting by grouping is encouraged.**
1.2 **Count forwards and backwards**	**Count forwards and backwards in:** • Ones from any number between 1 and 20	**Count forwards and backwards in** • Ones from any number between 0 and 50 **Count forwards in** • 10s from any multiple of 10 between 0 and 50 • 5s from any multiple of 5 between 0 and 50 • 2s from any multiple of 2 between 0 and 20	**Count forwards and backwards in** • Ones from any number between 0 and 80 **Count forwards in** • 10s from any multiple of 10 between 0 and 80 • 5s from any multiple of 5 between 0 and 80 • 2s from any multiple of 2 between 0 and 80	**Count forwards and backwards in** • Ones1s from any number between 0 and 100 **Count forwards in** • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100
NUMBER CONCEPT DEVELOPMENT: Represent whole numbers				
1.3 **Number symbols and number names**	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 1 to 20 • Write number symbols 1 to 5 • Recognise, identify and read number names 1 to 5 • Write number names 1 to 5	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 1 to 50 • Write number symbols 1 to10 • Recognise, identify and read number names 1 to 10 • Write number names 1 to 10	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 1 to 80 • Write number symbols 1 to 20 • Recognise, identify and read number names 1 to 10 • Write number names 1 to 10	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 1 to 100 • Write number symbols 1 to 20 • Recognise, identify and read number names 1 to 10 • Write number names 1 to 10

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
NUMBER CONCEPT DEVELOPMENT: Describe, compare and order whole numbers				
1.4 **Describe, compare and order numbers**	**Describe, compare and order up to 5 objects** • Compare collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different • Order collection of objects from most to least and least to most **Describe, compare and order numbers to 5** • Describe and compare whole numbers according to smaller than, greater than, more than, "less than, is equal to • Describe and order numbers: - from smallest to greatest and greatest to smallest - using the number line 1 - 5	**Describe, compare and order up to 10 objects** • Compare collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different • Order collection of objects from most to least and least to most **Describe, compare and order numbers to 10** • Describe and compare whole numbers according to smaller than, greater than, more than, "less than, is equal to • Describe and order numbers: - from smallest to greatest and greatest to smallest - before, after, in the middle/ between - using the number line 0 - 10	**Describe, compare and order up to 15 objects** • Compare collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different • Order collection of objects from most to least and least to most **Describe, compare and order numbers to 15** • Describe and compare whole numbers according to smaller than, greater than, more than, "less than, is equal to • Describe and order numbers: - from smallest to greatest and greatest to smallest - before, after, in the middle/ between - using the number line 0 - 15	**Describe, compare and order up to 20 objects** • Compare collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different • Order collection of objects from most to least and least to most **Describe, compare and order numbers to 20** • Describe and compare whole numbers according to smaller than, greater than, more than, "less than, is equal to • Describe and order numbers: - from smallest to greatest and greatest to smallest - before, after, in the middle/ between - using the number line 0 - 20 **Use ordinal numbers to show order, place or position** • Position objects in a line from first to tenth or first to last e.g. first, second, third … tenth, last • Ordinal numbers in the range first to tenth

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
NUMBER CONCEPT DEVELOPMENT: Place value				
1.5 Place value			Recognise the place value of numbers 11 to 15 • Decompose two-digit numbers into ten and ones e.g. 12 is 10 and 2	Recognise the place value of numbers 11 to 19. • Decompose two-digit numbers into ten and ones e.g. 18 is 10 and 8
SOLVE PROBLEMS IN CONTEXT				
1.6 Problem-solving techniques	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • number lines supported by concrete apparatus e.g. counting beads	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads
1.7 Addition and subtraction	Practically solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 5.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 10.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 15.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.
1.8 Repeated addition leading to multiplication		Solve word problems in context and explain own solution to problems involving repeated addition with answers up to 10.	Solve word problems in context and explain own solution to problems involving repeated addition with answers up to 15.	Solve word problems in context and explain own solution to problems involving repeated addition with answers up to 20.
1.9 Grouping and sharing leading to division	Practically solve word problems in context and explain own solutions to problems involving equal sharing and grouping with whole numbers up to 5 and with answers that may include remainders.	Solve word problems in context and explain own solutions to problems involving equal sharing and grouping with whole numbers up to 10 and with answers that may include remainders	Solve word problems in context and explain own solutions to problems involving equal sharing and grouping with whole numbers up to 15 and with answers that may include remainders	Solve word problems in context and explain own solutions to problems involving equal sharing and grouping with whole numbers up to 20 and with answers that may include remainders.

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
1.11 Money		• Recognise and identify the South African currency coins 5c, 10c, 20, 50c, R1, R2; R5 • Solve money problems involving totals and change to R10 and in cents up to 20c	• Recognise and identify the South African currency coins 5c, 10c, 20, 50c, R1, R2; R5 • Solve money problems involving totals and change to R20 and in cents up to 20c.	• Recognise and identify the South African currency - coins 5c, 10c, 20, 50c, R1, R2; R5 notes R10 and R20 • Solve money problems involving totals and change to R20 and in cents up to 20c
CONTEXT-FREE CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • concrete apparatus e.g. counters • draw pictures • number lines supported by concrete apparatus e.g. counting beads	Use the following techniques when performing calculations: • concrete apparatus e.g. counters • draw pictures • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads	Use the following techniques when performing calculations: • concrete apparatus e.g. counters • draw pictures • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads	Use the following techniques when performing calculations: • concrete apparatus e.g. counters • draw pictures • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads
1.13 Addition and subtraction	**Number range: 1 - 5** • Addition up to 5 • Subtract from 5 • Practise number bonds to 5	**Number range: 1 - 10** • Add up to 10 • Subtract from 10 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 7	**Number range: 1 - 15** • Add to 15 • Subtract from 15 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 9	**Number range: 1 - 20** • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • ·Practise number bonds to 10
1.14 Repeated addition leading to multiplication		• Repeated addition(i.e. the same number) to 10 • Use appropriate symbols (+, =, □)	• Repeated addition(i.e. the same number) to 15 • Use appropriate symbols (+, =, □)	• Repeated addition (i.e. the same number) to 20 • Use appropriate symbols (+, =, □)

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
1.16 **Mental mathematics**	**Number concept: Range 5** • Order a given set of selected numbers. • Compare numbers up to 5 and say which is and more or less	**Number concept: Range 10** • Order a given set of selected numbers. • Compare numbers up to 10 and say which is and more or less	**Number concept: Range 15** • Order a given set of selected numbers. • Compare numbers up to 15 and say which is and more or less **Rapidly recall:** • Number bonds to 5 • Recall addition and subtraction facts to 5 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down	**Number concept: range 20** • Order a given set of selected numbers. • Compare numbers up to 20 and say which is and more or less **Rapidly recall:** • Number bonds to 10 • Recall addition and subtraction facts to 10 **Calculation mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down

Problem Types for Grade 1

These are examples of important problem types that the teacher needs to present repeatedly to her class. When the teacher works with a small group, she should pose the problem orally. When the learners can read, she can give them a written version of the problem as well, but she must still pose the problem orally.

Problems in context can be included in worksheets, but should then be short, straightforward and familiar, and the teacher must make sure that all the learners understand them.

Grouping

Grouping, discarding the remainder

Stella sells apples in bags of three apples each. She has 14 apples. How many bags of three apples each can she make up?

Grouping, incorporating the remainder in the answer

Ben wants to take 15 eggs to his grandmother. How many egg boxes that can take six eggs each does he need to pack all the eggs?

Sharing

Sharing, discarding the remainder

Share 14 sweets among three friends so that they all get the same number of sweets.

Repeated addition

How many wheels do four bicycles have?

Addition and subtraction

There are at least three basic types of addition and subtraction problems and each type can be posed in different ways. The basic types are:

Change

Noluthando had five apples. Silo gave her eight apples. How many apples does she have now?

Noluthando had 13 apples. She gave five apples to Silo. How many apples does she have now?

Combine

Nosisi has five green and eight blue marbles. How many marbles does she have?

Nosisi has 13 marbles. Five are green and the rest are blue. How many blue marbles does Nosisi have?

Compare

Nosisi has 13 bananas. Themba has five bananas. How many more bananas does Nosisi have than Themba?

Posing each problem in different ways

Problems have to be posed in different ways. For example, both of these are change problems, but the “unknowns” are in different places in the problem.

Noluthando had some apples. Silo gave her eight more apples. Now she has 13 apples. How many apples did Noluthando have in the beginning?

Noluthando had five apples. Silo gave her some apples. She now has 13 apples. How many apples did Silo give her?

Problem situations with different functional relationships

Heila sells hotdogs at R4 each. Make a table to help her find the amount for large orders.

Number of hotdogs	1	2	3	4	5	6	7
Cost in R	4	8					

Use the table to find the cost of seven hotdogs

These problem types are given to guide the teacher. Learners should not be burdened with type names. Note that learners often use different ways of solving a problem that may not be what the teacher expects.

GRADE 1 OVERVIEW 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
2.1 **Geometric patterns**	**Copy and extend** Copy and extend simple patterns using • physical objects; • drawings (e.g. using colours and shapes) **Suggested sequencing of work** Start copying and extending patterns using physical objects and once learners are comfortable with using a crayon or pencil, start copying and extending patterns by drawing them	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made by drawings lines, shapes or objects **Create and describe own patterns** • Create own geometric patterns - with physical objects - by drawing lines, shapes or objects • Describe own patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made by drawings lines, shapes or objects **Create and describe own patterns** • Create own geometric patterns - with physical objects - by drawing lines, shapes or objects • Describe own patterns	**Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage **Create and describe own patterns** • Create own geometric patterns - with physical objects - by drawing lines, shapes or objects • Describe own patterns

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
2.2 **Number patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 20. Sequence should show counting forwards and backwards in: • ones from any number between 1 and 20	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 50. Sequences should show counting forwards and backwards in: • 1s from any number between 1 and 50 **Counting forwards in:** • 10s from any multiple of 10 between 0 and 50 • 5s from any multiple of 5 between 0 and 50 • 2s from any multiple of 2 between 0 and 50 **Create and describe own patterns** • Create and describe own number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 80. Sequences should show counting forwards and backwards in: • 1s from any number between 1 and 80 **Counting forwards in:** • 10s from any multiple of 10 between 0 and 80 • 5s from any multiple of 5 between 0 and 80 • 2s from any multiple of 2 between 0 and 80 **Create and describe own patterns** • Create and describe own number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 100. Sequences should show counting forwards and backwards in: • 1s from any number between 1 and 100 **Counting forwards in:** • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100 **Create and describe own patterns** • Create and describe own number patterns

GRADE 1 OVERVIEW 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
3.1 **Position, orientation and views**	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and directions** • Follow directions to move around the classroom • Follow instructions to place one object in relation to another e.g. put the pencil inside the box **Suggested focus sequencing of work for Term 1** • Language of position should be introduced through practical activities that involve learners in physical movement • This can be consolidated through written recording such as drawing, colouring or matching drawings with words • Apply the language of position learnt when following directions • Directions should be practised through practical activities in which learners move themselves or objects according to instructions			**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and directions** • Follow directions to move around the classroom • Follow instructions to place one object in relation to another e.g. put the pencil inside the box **Suggested focus and sequencing of work for Term 4** • Work on position and direction can be consolidated through written recording such as drawing, colouring or matching drawings with words • Any new language of position should be introduced through practical activities that involve learners in physical movement • Directions should be practised through practical activities in which learners move themselves or objects according to instructions **Position and views** • Match different views of the same everyday object

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour **Focused activities** Observe and build given 3-D objects using concrete materials such as building blocks, recycling material, construction kits **Suggested focus and sequencing of activities for Term 1** • Free play with various 3-D objects. Building things of own choice using building blocks, construction kits or recycling material. This can be done in independent time • Copy a model of something the teacher provides. This can be done in independent time • Compare the size of similar objects e.g. say which ball is larger • Talk about the colours of objects and then sort objects according to colour • Identify and describe geometric and everyday objects by saying whether are shaped like a ball or they are shaped like a box • Work is consolidated through written exercises		**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Suggested focus and sequencing of activities for Term 3** • Work with balls and objects shaped like balls, and various boxes and other objects shaped like rectangular prisms or cubes. Investigate which of the objects can roll, which slide, which can be stacked. • Identify and describe geometric and everyday objects by saying whether they are shaped like a ball or like a box • Work is consolidated through written exercises	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Suggested focus for Term 4:** • Work is consolidated through written exercises

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
3.3 **2-D shapes**		**Range of Shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • straight sides • round sides **Suggested focus and sequencing of activities for Term 2** • Start with free play with various shapes including making pictures with cut-out geometric shapes. This can be done in independent time. This can also be done during Life Skills lessons • Copy a picture made up of geometric shapes. This can be done in independent time • Compare the size of similar objects e.g. order squares from smallest to greatest and use the language of size to describe shapes • Talk about the colours of shapes and then sort shapes according to colour • Work with circles and squares of different sizes, and triangles with different shapes. Sort them according to whether they have straight or round sides • Sort and group shapes according to whether they are triangles, squares or circles • Work is consolidated through written exercises		**Range of Shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • straight sides • round sides **Suggested focus and sequencing of activities for Term 4** • Work with circles and squares of different sizes and different kinds of triangles. Sort the shapes according to whether they have straight or round sides • Sort and group shapes according to whether they are triangles, squares, rectangles or circles • Work is consolidated through written exercises

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
3.4 **Symmetry**			**Symmetry** • Recognise symmetry in own body. • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes. **Suggested focus of activities for Term 3** • Look for lines of symmetry in concrete objects and pictures. • Written exercises should not only be “draw in the other half” but also include examples where learners draw in the line of symmetry.	**Symmetry** • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes **Suggested focus of activities for Term 4** • Written exercises should include examples where the line of symmetry is not only a vertical line

GRADE 1 OVERVIEW 4. MEASUREMENT				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
4.1 **Time**	**Passing of time** Talk about passing of time • Order regular events from their own lives • Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow **Telling the time** • Describe when something happens using language e.g. morning, afternoon, night, early, late • Name and sequence days of week and months of year • Place birthdays on a calendar	Time is dealt with continuously during whole class teaching time.	Time is dealt with continuously during whole class teaching time.	Time is dealt with continuously during whole class teaching time.
4.2 **Length**	**Informal measuring** • Compare and order the length, height or width of two or more objects by placing them next to each other • Use language to talk about the comparison e.g. longer, shorter, taller, wider • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters, etc.		**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters, etc.	

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
4.3 **Mass**	**Informal measuring** • Estimate, measure, compare, order and record mass using a balancing scale and non-standard measures e.g. blocks, bricks, etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier			**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balancing scale e.g. blocks, bricks, etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier
4.4 **Capacity/ Volume**	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary	**Informal measuring** • Compare and order the amount of liquid that two containers can hold if filled (capacity) • Use language to talk about the comparison e.g. more than, less than, full, empty • Estimate, measure, compare, order and record the capacity of containers by using non-standard measures e.g. spoons and cups		**Informal measuring** • Estimate, measure, compare, order and record the capacity of containers by using non-standard measures e.g. spoons and cups

GRADE 1 OVERVIEW 5. DATA HANDLING				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
5.1 **Collect and sort objects** **5.2** **Represent sorted collection of objects** **5.3** **Discuss and report on sorted collection of objects**	Collect and sort everyday physical objects. Draw a picture of the sorted objects. • Give reasons for how the collection was sorted Answer questions about: - how the sorting was done (process) - what the sorted collection looks like (product) • Describe the sorted collection	Collect and sort everyday physical objects. Draw a picture of the sorted objects. • Give reasons for how the collection was sorted Answer questions about; - how the sorting was done (process) - what the sorted collection looks like (product) • Describe the sorted collection		
5.4 **Collect and organise data** **5.5** **Represent data** **5.6** **Analyse and Interpret data**			**Recommended:** Whole data cycle to make class pictograph • Collect and organise data - about the class or school - answers to questions posed by the teacher • Represent data in pictograph. • Answer questions about data in pictograph	Analyse data from representations provided. Recommended: At least two pictographs

3.4.2. Grade 2 overview per term

GRADE 2 OVERVIEW 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
NUMBER CONCEPT DEVELOPMENT: Count with whole numbers				
1.1 **Count objects**	• Count to at least 100 everyday objects reliably • Give a reasonable estimate of a number of objects that can be checked by counting • Strategy of grouping is encouraged	• Count to at least 150 everyday objects reliably • Give a reasonable estimate of a number of objects that can be checked by counting • Strategy of grouping is encouraged	• Count to at least 180 everyday objects reliably • Give a reasonable estimate of a number of objects that can be checked by counting • Strategy of grouping is encouraged	• Count to at least 200 everyday objects reliably • Give a reasonable estimate of a number of objects that can be checked by counting • Strategy of grouping is encouraged
1.2 **Count forwards and backwards**	**Count forwards** and **backwards in:** • 1s from any number between 0 and 100 • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100	**Count forwards** and **backwards in:** • 1s from any number between 0 and 150 • 10s from any multiple of 10 between 0 and 150 • 5s from any multiple of 5 between 0 and 150 • 2s from any multiple of 2 between 0 and 150 • 3s from any multiple of 3 between 0 and 99 • 4s from any multiple 4 between 0 and 100	**Count forwards** and **backwards in:** • 1s from any number between 0 and 180 • 10s from any multiple of 10 between 0 and 180 • 5s from any multiple of 5 between 0 and 180 • 2s from any multiple of 2 between 0 and 180 • 3s from any multiple of 3 and between 0 and 180 • 4s from any multiple of 4 between 0 and 180	**Count forwards** and **backwards** in: • 1s, from any number between 0 and 200 • 10s from any multiple between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
NUMBER CONCEPT DEVELOPMENT: Represent whole numbers				
1.3 Number symbols and number names	**Identify, recognise and read numbers** • Identify, recognise and read number symbols 0 to 100 • Write number symbols 0 to100 • Identify, recognise and read number names 0 to 25 • Write number names 0 to 25	**Identify, recognise and read numbers** • Identify, recognise and read number symbols 0 to 150 • Write number symbols 0 to150 • Identify, recognise and reads number names 0 to 50 • Write number names 0 to 50	**Identify, recognise and read numbers** • Identify, recognise and read number symbols 0 to 180 • Write number symbols 0 to 180 • Identify, recognise and read number names 0 to 75 • Write number names 0 to 75	**Identify, recognise and read numbers** • Identify, recognise and read number symbols 0 to 200 • Write number symbols 0 to 200 • Identify, recognise and reads number names 0 to 100 • Write number names 0 to 100
NUMBER CONCEPT DEVELOPMENT: Describe, compare and order whole numbers				
1.4 Describe, compare and order numbers	**Describe, compare and order numbers to 25** • Compare whole numbers using smaller than, greater than, more than, less than and is equal to • Order whole numbers from smallest to greatest, and greatest to smallest	**Describe, compare and order numbers to 50** • Compare whole numbers using smaller than, greater than, more than, less than and is equal to • Order whole numbers from smallest to greatest, and greatest to smallest	**Describe, compare and order numbers to 75** • Compare whole numbers using smaller than, greater than, more than, less than and is equal to • Order whole numbers from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** • Position objects in a line from first to twentieth or first to last e.g. first, second, third … tenth	**Describe, compare and order numbers to 99** • Compare whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to • Order whole numbers from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** • Position objects in a line from first to twentieth or first to last e.g. first, second, third to twentieth
NUMBER CONCEPT DEVELOPMENT: Place value				
1.5 Place value	**Recognise place value of numbers 11 to 25** • Decompose two-digit numbers into multiples of tens and units/ones • Identify and state the value of each digit	**Recognise place value of numbers11 to 50** • Decompose two-digit numbers into multiple of tens and ones/units • Identify and state the value of each digit	**Recognise place value of numbers 11 to 75** • Decompose two-digit numbers into multiple of tens and ones/units • Identify and state the value of each digit	**Recognise place value of numbers 11 to 99** • Decompose two-digit numbers into multiple of tens and ones/units • Identify and state the value of each digit

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
SOLVE PROBLEMS IN CONTEXT				
1.6 Problem-solving techniques	Use the following techniques when solving problems and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines supported by concrete apparatus	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines supported by concrete apparatus	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines
1.7 Addition and subtraction	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 20.	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 50.	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 75.	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 99.
1.8 Repeated addition leading to multiplication	Solve word problems in context and explain own solution to problems involving repeated addition leading to multiplication with answers up to 20.	Solve word problems in context and explain own solution to problems involving repeated addition and to multiplication with answers up to 30.	Solve word problems in context and explain own solution to problems involving repeated addition and to multiplication with answers up to 40.	Solve word problems in context and explains own solution to problems involving repeated addition and to multiplication with answers up to 50.
1.9 Grouping and sharing leading to division	Solve word problems in context and explain own solutions to problems that involve equal sharing and grouping up to 20 with answers that may include remainders.	Solve word problems in context and explain own solutions to problems that involve equal sharing and grouping up to 30 with answers that may include remainders.	Solve word problems in context and explain own solutions to problems that involve equal sharing and grouping up to 40 with answers that may include remainders.	Solve word problems in context and explain own solutions to problems that involve equal sharing and grouping up to 50 with answers that can include remainders.
1.10 Sharing leading to fractions		Solve word problems in context and explain own solutions to problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}, \frac{1}{4}, \frac{1}{3}, \frac{1}{5}$ etc.	Solve word problems in context and explain own solutions to problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}, \frac{1}{4}, \frac{1}{3}, \frac{1}{5}$ etc.	Solve word problems in context and explain own solutions to problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}, \frac{1}{4}, \frac{1}{3}, \frac{1}{5}$ etc.
1.11 Money	• Recognise and identify the South African coins 5c, 10c, 20c, 50c, R1, R2, R5, and bank notes R10, R20, R50 • Solve money problems involving totals and change in cents up to 50c and rands to R20	• Recognise and identify the South African coins 5c, 10c, 20c, 50c, R1, R2, R5, and bank notes R10, R20, R50 • Solve money problems involving totals and change in cents up to 50c and rands to R50	• Recognise and identify the South African coins 5c, 10c, 20c, 50c, R1, R2, R5, and bank notes R10, R20, R50 • Solve money problems involving totals and change in cents up to 75c and rands to R75	• Recognise and identify the South African coins 5c, 10c, 20c, 50c, R1, R2, R5, and bank notes R10, R20, R50 • Solve money problems involving totals and change in cents up to 90c and rands to R99

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
CONTEXT-FREE CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. counters • Building up and breaking down numbers • Doubling and halving • Number lines supported by concrete apparatus	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. counters • Building up and breaking down numbers • Doubling and halving • Number lines supported by concrete apparatus	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. counters • Building up and breaking down numbers • Doubling and halving • Number lines	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. counters • Building up and breaking down numbers • Doubling and halving • Number lines
1.13 Addition and subtraction	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 10	• Add to 50 • Subtract from 50 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 15	• Add to 75 • Subtract from 75 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 20	• Add to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 20
1.14 Repeated addition leading to multiplication	• Add the same number repeatedly to 20 • Multiply numbers 1 to 10 by 2 • Use appropriate symbols (+, –, =, ☐)	• Multiply numbers 1 to 10 by 2 and 5 • Use appropriate symbols (+, –, =, ☐)	• Multiply numbers 1 to 10 by 2, 5 and 4 • Use appropriate symbols (+, –, =, ☐)	• Multiply numbers 1 to 10 by 2, 5, 3 and 4 • Use appropriate symbols (+, –, =, ☐)

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
1.16 **Mental mathematics**	**Number Concept: Range 25** • Order a given set of selected numbers. • Compare numbers to 25 and say which is: - 1 more or 1 less - 2 more or 2 less - 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to 10 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Mental number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number Concept: Range 50** • Order a given set of selected numbers. • Compare numbers to 50 and say which is: - 1 more or 1 less - 2 more or 2 less - 3 more or 3 less - 4 more or 4 less - 5 more or 5 less - 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to 10 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number Concept: Range 75** • Order a given set of selected numbers. • Compare numbers to 75 and say which is: - 1 more or 1 less - 2 more or 2 less - 3 more or 3 less - 4 more or 4 less - 5 more or 5 less - 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to 15 • Add or subtract multiples of 10 from 0 to 50 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number Concept: Range 99** • Order a given set of selected numbers. • Compare numbers to 99 and say which is: - 1 more or 1 less - 2 more or 2 less - 3 more or 3 less - 4 more or 4 less - 5 more or 5 less - 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Use the relationship between addition and subtraction • Number line • Doubling and halving • Building up and breaking down
1.17 **Fractions**		• Use and name fractions including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	• Use and name fractions including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	• Use and name fractions including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds

Problem Types for Grade 2

These are examples of important problem types that the teacher needs to present repeatedly to her class. When the teacher works with a small group, she should pose the problem orally. When the learners can read, she can give them a written version of the problem as well, but she must still pose the problem orally.

Problems in context can be included in worksheets, but should then be short, straightforward and familiar, and the teacher must make sure that all the learners understand them.

Grouping

Grouping, discarding the remainder

Stella sells apples in bags of 10 apples each. She has 80 apples. How many bags of 10 apples each can she make up?

Grouping, incorporating the remainder in the answer

A farmer has 47 eggs. How many egg boxes that can take six eggs each does he need to pack all the eggs?

Sharing

Sharing, discarding the remainder

Share 54 sweets among seven friends so that they all get the same number of sweets.

Sharing, leading to fractions

Share 11 chocolate bars among four friends so that they all get the same amount of chocolate bar and there is nothing left over.

Fraction of a collection

Grandmother gives Kiki 12 oranges. Kiki makes juice with 1/3 of the oranges. How many oranges did she use?

This problem type must only be posed after learners have solved four or five problems of the sharing, leading to fractions type and know the names of fractional pieces.

Putting fractions together

The netball coach gives half an orange to each player. There are 14 players. How many oranges does she need?

This problem type must only be posed after learners have solved four or five problems of the sharing, leading to fractions type and know the names of fractional pieces.

Repeated addition

How many wheels do 20 bicycles have?

Rate

Thami walks six blocks a day. How many blocks does he walk in a week?

Grids

Mr Khumalo plants seven rows of cabbages. There are eight cabbages in a row. How many cabbages are there altogether?

Addition and subtraction

There are at least three basic types of addition and subtraction problems and each type can be posed in different ways. The basic types are:

Change

Noluthando had 25 sweets. Silo gave her 18 sweets. How many sweets does she have now?

Noluthando had 53 sweets. She gave 32 sweets to Silo. How many sweets does she have now?

Combine

The Grade 2 class has 37 green triangles and 19 blue triangles. How many triangles do they have?

They have 63 circles; 27 are green and the rest are blue. How many blue circles do they have?

Compare

Nosisi has 13 bananas. Themba has five bananas. How many more bananas does Nosisi have than Themba?

Posing each problem in different ways

Problems have to be posed in different ways. For example, both of these are change problems, but the "unknowns" are in different places in the problem.

Noluthando had some sweets. Silo gave her 18 more sweets. Now she has 43 sweets. How many sweets did Noluthando have in the beginning?

Noluthando had 25 apples. Silo gave her some apples. She now has 43 apples. How many apples did Silo give her?

Problem situations with different functional relationships

Heila sells hotdogs at R4 each. Make a table to help her find the amount for large orders.

Number of hotdogs	1	2	3	4	5	6	7	8	9	10
Cost in R	4	8								

Use the table to find the cost of seven hotdogs and 15 hotdogs.

Sedick babysits. He charges R20 for travel costs, and then R5 per hour for babysitting. Complete this table for him.

Number of hours	1	2	3	4	5	10
Cost in R	25	30				

Note that Heila's problem and Sedick's problem work differently.

The above problem types are given to guide the teacher. Learners should not be burdened with type names. Note that learners often use different ways of solving a problem that may not be what the teacher expects. For example, a division problem may be solved by repeated subtraction, addition or multiplication. Learners' methods will change in the course of the year as their understanding of and familiarity with the problem types grow, and as their number concept develops.

GRADE 2 OVERVIEW 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
2.1 **Geometric patterns**	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns**: Simple patterns in which shapes, or groups of shapes are repeated in exactly the same way **Create and describe own patterns** • Create own geometric patterns - with physical objects - by drawing lines, shapes or objects • Describe own patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns**: Simple patterns in which shapes, or groups of shapes are repeated in exactly the same way Patterns in which the number or size of shapes in each stage changes in a predictable way i.e. regularly increasing patterns **Create and describe own patterns** • Create own geometric patterns - with physical objects - by drawing lines, shapes or objects • Describe own patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns**: Patterns in which the number or size of shapes in each stage changes in a predictable way i.e. regularly increasing patterns **Create and describe own patterns** • Create own geometric patterns - with physical objects - by drawing lines, shapes or objects • Describe own patterns	**Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
2.2 **Number patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 100. Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 100 • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 150. Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 150 • 10s from any multiple of 10 between 0 and 150 • 5s from any multiple of 5 between 0 and 150 • 2s from any multiple of 2 between 0 and 150 • 3s from any multiple of 3 between 0 and 150 • 4s from any multiple of 4 between 0 and 150	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 180. Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 180 • 10s from any multiple of 10 between 0 and 180 • 5s from any multiple of 5 between 0 and 180 • 2s from any multiple of 2 between 0 and 180 • 3s from any multiple of 3 between 0 and 180 • 4s from any multiple of 4 between 0 and 180 **Create own number patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 200. Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 200 • 10s from any multiple between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200 **Create own number patterns**

GRADE 2 OVERVIEW 3. SPACE AND SHAPE (GEOMETRY)				
TOPCS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
3.1 **Position, orientation and views**		**Language of position** • Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to **Position and directions** • Follow directions to move around the classroom	**Position and views** • Match different views of the same everyday object **Position and directions** Follow directions to move around the classroom	

TOPCS	TERM 1	TERM 2	TERM 3	TERM 4
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focused activities** • Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling, construction kits, other 3-D geometric objects **Suggested focus and sequencing of activities for Term 1** • Copy a model of something the teacher provides. Models or constructions can be made using building blocks, recycling, construction kits, other 3-D geometric objects, cut-out 2-D shapes. This can be done in independent time • Compare and describe the size of similar objects e.g. stack boxes from greatest to smallest Work with • balls and objects shaped like balls • various boxes and other objects shaped like rectangular prisms or cubes Investigate which of the objects can roll, which slide, which can be stacked. Identify and describe geometric and everyday objects by saying whether are shaped like a ball, shaped like a box, shaped like a cylinder. Work is consolidated through written exercises.		**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Suggested focus and sequencing of activities for Term 3** Work with • balls and objects shaped like balls • cylinders and objects shaped like cylinders • various boxes and other objects shaped like rectangular prisms or cubes Investigate which of the objects can roll, which slide and which can be stacked. Identify and describe geometric and everyday objects by saying whether are shaped like a ball, shaped like a box, shaped like a cylinder. Work is consolidated through written exercises	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Suggested focus or Term 4** Work is consolidated through written exercises.

TOPCS	TERM 1	TERM 2	TERM 3	TERM 4
3.3 **2-D shapes**		**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides **Suggested focus and sequencing of activities for Term 1** • Free play with various shapes including making pictures with cut-out geometric shapes. This can be done in independent time • Copy picture made up of geometric shapes. This can be done in independent time • Compare the size of similar shapes e.g. order rectangles from smallest to greatest and use the language of size to describe shapes • Talk about the colours of shapes and then sort shapes according to colour • Sort shapes according to whether they have straight or round sides. Work with circles and squares of different sizes, and triangles and rectangles shaped differently • Sort and group shapes according to whether they are triangles, squares, rectangles or circles • Work is consolidated through written exercises		**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides **Suggested focus and sequencing of activities for Term 4** • Sort shapes according to whether they have straight or round sides. Work with circles and squares of different sizes, and triangles and rectangles shaped differently. • Learners sort and group shapes according to whether they are triangles, squares, rectangles or circles. • Work is consolidated through written exercises

TOPCS	TERM 1	TERM 2	TERM 3	TERM 4
3.4 **Symmetry**		**Symmetry** Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes. **Suggested focus of activities for Term 2** • Lines of symmetry in concrete objects and pictures • Written exercises should include examples where the line of symmetry is **NOT** always a vertical line		**Symmetry** Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes **Suggested focus of activities for Term 4** Lines of symmetry in concrete objects and pictures. Written exercises should include examples where the line of symmetry is **NOT** a vertical line.

GRADE 2 OVERVIEW 4. MEASUREMENT				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
4.1 **Time**	**Telling the time** • Name and sequence days of week • Name and sequence months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours and half hours on analogue clocks **Calculate length of time and passing of time** • Use clocks to calculate length of time in hours or half hours	**Telling the time** • Tell 12-hour time in hours and half hours on analogue clocks **Calculate length of time and passing of time** • Use clocks to calculate lengths of time in hours or half hours	**Telling the time** • Name and sequence days of week • Name and sequence months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours, half hours and quarter hours on analogue clocks **Calculate length of time and passing of time** • Use calendars to calculate and describe length of time in days or weeks • Use clocks to calculate length of time in hours or half hours	**Telling the time** • Tell 12-hour time in hours, half hours and quarter hours on analogue clocks **Calculate length of time and passing of time** • Use clocks to calculate length of time in hours or half hours
4.2 **Length**	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc. • Describe the length of objects by counting and stating the length in informal units • Use language to talk about the comparison e.g. longer, shorter, taller, wider **Introducing formal measuring** • Estimate, measure, order and record length using metres (either metre sticks or metre long lengths of string) as the standard unit of length			**Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre-long lengths of string) as the standard unit of length

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
4.3 **Mass**		**Informal measuring** • Estimate, measure, compare, order and record mass using a balancing scale and non-standard measures e.g. blocks, bricks • Describe the mass of objects by counting and stating in informal units • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Where bathroom scales are available, learners can measure their own mass in kilograms using a bathroom scale. The expectation is that learners only read to the nearest numbered gradation line. They describe their mass as almost/ nearly/close to/a bit more than/more or less or exactly the number (of kilograms) they read off the scale		**Introducing formal measuring** Learners do written tasks to consolidate the following, including reading pictures of • products with mass written on them • bathroom scales where the needle points to a numbered gradation line

4.4 **Capacity/ Volume**			**Informal measuring** • Estimate, measure, compare, order and record the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres using - bottles with a capacity of 1 litre - a measuring jug which has numbered calibration lines in litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint	**Introducing formal measuring** Written tasks to consolidate the following, including reading pictures of • products with their capacity written on them in order to sequence in order • pictures of jugs where the volume is near to a 1-litre or 2-litre gradation line • read to the nearest numbered gradation line, describe their volume as almost/nearly/close to/a bit more than/more or less or exactly the number (of litres)

GRADE 2 OVERVIEW 5. DATA HANDLING				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
5.4 **Collect and organise data** **5.5** **Represent data** **5.6** **Analyse and interpret data**	**Recommended:** Whole data cycle to make class pictograph with one-to-one correspondence • Collect data about the class or school to answer questions posed by the teacher. • Represent data in pictograph with one-to-one correspondence. • Answer questions about data in pictograph with one-to-one correspondence.	Analyse data from representations provided. **Recommended:** At least one pictograph with one-to-one correspondence	**Recommended:** Make individual pictograph with one-to-one correspondence from data provided in either picture form or table. • Collect data about the class or school to answer questions posed by the teacher. • Represent data in pictograph with 1-1 correspondence. Answer questions about data in pictograph with one-to-one correspondence.	Analyse data from representations provided. **Recommended:** At least one pictograph with one-to-one correspondence

3.4.3 Grade 3 overview per term

GRADE 3 OVERVIEW 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
NUMBER CONCEPT DEVELOPMENT: Count with whole numbers				
1.1 **Count objects**	Group to at least 200 objects to estimate and count reliably. Give a reasonable estimate of a number of objects that can be checked by counting. The strategy of grouping is encouraged.	Group to at least 500 objects to estimate and count reliably. Give a reasonable estimate of a number of objects that can be checked by counting. The strategy of grouping is encouraged	Group to at least 700 objects to estimate and count reliably. Give a reasonable estimate of a number of objects that can be checked by counting. The strategy of grouping is encouraged.	Group to at least 1 000 objects to estimate and count reliably. Give a reasonable estimate of a number of objects that can be checked by counting. The strategy of grouping is encouraged.
1.2 **Count forwards and backwards**	Count forwards and backwards in: • 1s, from any number between 0 and 200 • 10s from any multiple of 10 between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200 • 100s to at least 500	Count forwards and backwards in: • 1s, from any number between 0 and 500 • 10s from any multiple of 10 between 0 and 500 • 5s from any multiple of 5 between 0 and 500 • 2s from any multiple of 2 between 0 and 500 • 3s from any multiple of 3 between 0 and 500 • 4s from any multiple of 4 between 0 and 500 • 50s,100s to at least 1 000	**Count forwards** and **backwards** in: • 1s, from any number between 0 and 700 • 10s from any multiple of 10 between 0 and 700 • 5s from any multiple of 5 between 0 and 700 • 2s from any multiple of 2 between 0 and 700 • 3s from any multiple of 3 between 0 and 700 • 4s from any multiple of 4 between 0 and 700 • 20s, 25s, 50s,100s to at least 1 000	**Count forwards** and **backwards** in: • 1s, from any number between 0 and 1 000 • 10s from any multiple of 10 between 0 and 1 000 • 5s from any multiple of 5 between 0 and 1 000 • 2s from any multiple of 2 between 0 and 1 000 • 3s from any multiple of 3 between 0 and 1 000 • 4s from any multiple of 4 between 0 and 1 000 • 20s,25s, 50s,100s to at least 1 000

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
NUMBER CONCEPT DEVELOPMENT: Represent whole numbers				
1.3 **Number symbols and number names**	**Identify, recognise and read numbers** • Identify, recognise and read number symbols 0 to 500 • Write number symbols 0 to 500 • Identify, recognise and read number names 0 to 250 • Write number names 0 to100	**Identify, recognise and read numbers** • Identify, recognise and read number symbols 0 to 1 000 • Write number symbols 0 to1000 • Identify, recognise and read number names 0 to 250 • Write number names 0 to 250	**Identify, recognise and read numbers** • Identify, recognise and read number symbols 0 to 1 000 • Write number symbols 0 to1000 • Identify, recognise and read number names 0 to 500 • Write number names 0 to 500	**Identify, recognise and read numbers** • Identify, recognise and read number symbols 0 to 1 000 • Write number symbols 0 to1000 • Identify, recognise and read number names 0 to1 000 • Write number names 0 to1000
NUMBER CONCEPT DEVELOPMENT: Describe, compare and order whole numbers				
1.4 **Describe, compare and order numbers**	Describe, compare and order numbers to 99. • Compare whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to • Order whole numbers up to 99 from smallest to greatest, and greatest to smallest	Describe, compare and order numbers to 500. • Compare whole numbers up to 500 using smaller than, greater than, more than, less than and is equal to • Order whole numbers up to 500 from smallest to greatest, and greatest to smallest	Describe, compare and order numbers to 700. • Compare whole numbers up to 700 using smaller than, greater than, more than, less than and is equal to • Order whole numbers up to 700 from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** • Use, read and write ordinal numbers, including abbreviated form up to 31st	Describe, compare and order numbers to 999. • Compare whole numbers up to 999 using smaller than, greater than, more than, less than and is equal to • Order whole numbers up to 999 from smallest to greatest, and greatest to smallest
NUMBER CONCEPT DEVELOPMENT: place value				
1.5 **Place value**	**Recognise the place value of numbers to 99** • Know what each digit represents • Decompose two-digit numbers up to 99 into multiples of tens and ones/ units • Identify and state the value of each digit	**Recognise the place value of numbers to 500** • Know what each digit represents • Decompose three-digit numbers up to 500 into multiples of hundreds, tens and ones/units • Identify and state the value of each digit	**Recognise the place value of numbers to 700** • Know what each digit represents • Decompose three-digit numbers up to 700 into multiple of hundreds, tens and ones/units • Identify and state the value of each digit	**Recognise the place value of numbers to 999** • Know what each digit represents • Decompose three-digit numbers up to 999 into multiple of hundreds, tens and ones/units • Identify and state the value of each digit

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
SOLVE PROBLEMS IN CONTEXT				
1.6 Problem-solving techniques	Use the following techniques when solving problems: • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when solving problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when solving problems and explain solutions to problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens
1.7 Addition and subtraction	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 99.	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 400.	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 800.	Solve word problems in context and explain own solution to problems involving addition and subtraction with answers up to 999.
1.8 Repeated addition leading to multiplication	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 50.	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75.	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75.	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 100
1.9 Grouping and sharing leading to division	Solve number problems in context and explain own solutions to problems that involve equal sharing and grouping up to 50 with answers that may include remainders.	Solve number problems in context and explain own solutions to problems that involve equal sharing and grouping up to 75 with answers that may include remainders.	Solve number problems in context and explain own solutions to problems that involve equal sharing and grouping up to 75 with answers that may include remainders.	Solve number problems in context and explain own solutions to problems that involve equal sharing and grouping up to 100 with answers that may include remainders.
1.10 Sharing leading to fractions	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}, \frac{1}{4}, \frac{2}{3}$ etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}, \frac{2}{5}$ etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}, \frac{2}{5}$ etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}, \frac{2}{5}$ etc.
1.11 Money	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rands or cents	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rands or cents	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rands or cents • Convert between rands and cents	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rands or cents • Convert between rands and cents

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
CONTEXT-FREE CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens
1.13 Addition and subtraction	• Add up to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 20	• Add up to 400 • Subtract from 400 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 30	• Add up to 800 • Subtract from 800 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 30	• Add up to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 30
1.14 Repeated addition leading to multiplication	• Multiply numbers 1 to 10 by 2, 5, 3, 4 • Use appropriate symbols (x, =, □)	• Multiply 2, 4, 5, 10, 3 to a total of 50 • Use appropriate symbols (x, =, □)	• Multiply 2, 3, 4, 5, 10 to a total of 100 • Use appropriate symbols (x, =, □)	• Multiply 2, 3, 4, 5, 10 to a total of 100 • Use appropriate symbols (x, =, □)
1.15 Division	• Divide numbers to 50 by 2, 5, 10 • Use appropriate symbols (÷, =, □)	• Divide numbers to 50 by 2, 4, 5, 10, 4 • Use appropriate symbols (÷, =, □)	• Divide numbers to 99 by 2, 4, 5, 10, 3, • Use appropriate symbols (÷, =, □)	• Divide numbers to 99 by 2, 3, 4, 5,10 • Use appropriate symbols (÷, =, □)

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
1.16 **Mental mathematics**	**Number concept: Range 200** • Order a given set of selected numbers. Range 200 • Compare numbers to 200 and say which is: - 1 more or 1 less - 2 more or 2 less - 3 more or 3 less - 4 more or 4 less - 5 more or 5 less - 10 more or 10 less **Rapid recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number concept: Range 500** • Order a given set of selected numbers. Range 500 • Compare numbers to 500 and say which is: - 1 more or 1 less - 2 more or 2 less - 3 more or 3 less - 4 more or 4 less - 5 more or 5 less - 10 more or 10 less **Rapid recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use the following calculation strategies • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number concept: Range 750** • Order a given set of selected numbers • Compare numbers to 200 and say which is: - 1 more or 1 less - 2 more or 2 less - 3 more or 3 less - 4 more or 4 less - 5 more or 5 less - 10 more or 10 less **Rapid recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division	**Number concept: Range 999** • Order a given set of selected numbers • Compare numbers to 1000 and say which is: - 1 more or 1 less - 2 more or 2 less - 3 more or 3 less - 4 more or 4 less - 5 more or 5 less - 10 more or 10 less **Rapid recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 • Multiplication and division facts for the: - two times table up to 2 x 10 - ten times table up to 10 x 10 **Mental strategies** Use the following calculation strategies • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
1.17 Fractions	• Use and name unitary fractions including halves, quarters thirds, fifths • Recognise fractions in diagrammatic form • Write fractions as 1half, 1third	• Use and name unitary fractions including halves, quarters eighths, thirds, sixths, fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 1third	• Use and name unitary and non-unitary fractions including halves, quarters, eighths, thirds, sixths, fifths • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that 1 half and 2 quarters are equivalent • Write fractions as 1 half, 2 third	• Use and name unitary and non-unitary fractions including halves, quarters, eighths, thirds, sixths, fifths • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that 1 half and 2 quarters are equivalent • Write fractions as 1 half, 2 third

Problem Types for Grade 3

These are examples of important problem types that the teacher needs to present repeatedly to her class. When the teacher works with a small group, she should pose the problem orally. When the learners can read, she can give them a written version of the problem as well, but she must still pose the problem orally.

Problems in context can be included in worksheets, but should then be short, straightforward and familiar, and the teacher must make sure that all the learners understand them.

Grouping

Grouping, discarding the remainder

A bakery sells bread rolls in bags of 12. They have 118 rolls. How many bags of 12 rolls each can they make up?

Grouping, incorporating the remainder in the answer

A farmer has 227 eggs. How many egg boxes that can take six eggs each does he need to pack all the eggs?

Sharing

Sharing, discarding the remainder

Five friends share a box of 84 sweets so that they all get the same number of sweets.

Sharing, leading to fractions

Share 15 chocolate bars among six friends so that they all get the same amount of chocolate bar and there is nothing left over.

Fraction of a collection

Grandmother gives Kiki R12. Kiki wants to save a third of the money. How much money must she save?

This problem type must only be posed after learners have solved four or five problems of the Sharing, leading to fractions type and know the names of fractional pieces.

Putting fractions together

The netball coach gives half an orange to each player. There are 14 players. How many oranges does she need?

This problem type must only be posed after learners have solved four or five problems of the Sharing, leading to fractions type and know the names of fractional pieces.

Proportional sharing

Peter is smaller than Rhulani. When Peter eats one slice of bread, Rhulani needs two slices of bread. When Peter eats two slices, Rhulani needs four slices. After a few days, they have eaten 12 slices of bread. How many slices did Peter eat and how many slices did Rhulani eat?

Sue and Greg do a piece of work together. Sue works for three hours and Greg works for one hour. They are paid R60. How must they share the money?

Repeated addition

How many wheels do 36 cars have?

Rate

Thami saves 35c every week. How much money does he save in 8 weeks?

Grids

Mr Khumalo plants 20 rows of orange trees. There are 12 trees in a row. How many trees are there altogether?

Addition and subtraction

There are at least three basic types of addition and subtraction problems and each type can be posed in different ways. The basic types are:

Change

Noluthando collected 234 stickers. Silo gave her 80 more stickers. How many stickers does she have now?

There were 500 passengers on a train and 176 passengers got off. How many passengers were left on the train?

Combine

Nosisi collects items for the school's recycling projects. She collected 124 plastic bottles and 268 tin cans. How many items did she collect? The shop has 368 packets of chips; 82 are chippos and the rest are Ziksnacks. How many packets or Zicksnacks are there?

Compare

Grade 2 collected R446. Grade 3 collected R729. How much more money did the Grade 3s collect?

Posing each problem in different ways

Problems have to be posed in different ways. For example, both of these are change problems, but the "unknowns" are in different places in the problem.

The shop had packets of mealie meal and ordered 55 more . Now there are 170 packets of mealie meal. How many packets were there in the beginning?

The shop had 500 packets of sugar. After selling some packets, they had 324 packets of sugar left. How many packets did they sell?

Problem situations with different functional relationships

Heila sells hotdogs at R4 each. Make a table to help her find the amount for large orders.

Number of hotdogs	1	2	3	4	5	10	20
Cost in R	4	8					

Use the table to find the cost of seven hotdogs and 23 hotdogs.

Sedick babysits. He charges R20 for travel costs, and then R5 per hour for babysitting. Complete this table for him.

Number of hours	1	2	3	4	5	10
Cost in R	25	30				

Note that Heila's problem and Sedick's problem work differently.

The above problem types are given to guide the teacher. Learners should not be burdened with type names. Note that learners often use different ways of solving a problem that may not be what the teacher expects. For example, a division problem may be solved by repeated subtraction, addition or multiplication. Learners' methods will change in the course of the year as their understanding of and familiarity with the problem types grow, and as their number concept develops.

GRADE 3 OVERVIEW 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
2.1 **Geometric patterns**	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns**: • Simple patterns in which shapes or groups of shapes are repeated in exactly the same way. **Create and describe own patterns** • Create own geometric patterns - with physical objects - by drawing lines, shapes or objects. • Describe own patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns**: • Simple patterns in which shapes, or groups of shapes are repeated in exactly the same way • Patterns in which the number or size of shapes in each stage changes in a predictable way i.e. regularly increasing patterns **Create and describe own patterns** • Create own geometric patterns - with physical objects - by drawing lines, shapes or objects. • Describe own patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns**: • Patterns in which the number of shapes in each stage changes in a predictable way i.e. regularly increasing patterns **Create and describe own patterns** • Create own geometric patterns - with physical objects - by drawing lines, shapes or objects. • Describe own patterns	**Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage
2.2 **Number patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 200. Sequences should show counting forwards and backwards in: • the intervals specified in Grade 2 with increased number ranges • 100s to at least 500	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 500. Sequences should show counting forwards and backwards in: • the intervals specified in Grade 2 with increased number ranges • 50s,100s to at least 1 000	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 750. Sequences should show counting forwards and backwards in: • the intervals specified in Grade 2 with increased number ranges • 20s,25s, 50s,100s to at least 1 000 **Create and describe own number patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 1 000 . Sequences should show counting forwards and backwards in: • the intervals specified in Grade 2 with increased number ranges • 20s,25s, 50s,100s to at least 1 000 **Create and describe own number patterns**

GRADE 3 OVERVIEW 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
3.1 **Position, orientation and views**		**Position and views** • Match different views of the same everyday object • Name an everyday object when shown an unusual view of it **Position and directions** • Follow directions to move around the classroom and school • Give directions to move around the classroom and school	**Position and views** • Read, interpret and draw informal maps, or top views of a collection of objects. • Find objects on maps **Position and directions** • Follow directions from one place to another on an informal map	

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
3.2 **3-D objects**		**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focused activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, clay, toothpicks, straws, other 3-D geometric objects **Suggested focus and sequencing of activities for Term 2** Work with spheres, prisms and cylinders as they did in Grade 2; name them and group them. Focus on the kind of surfaces on each type of object. Distinguish surfaces according to whether they are curved or flat. Use cut-out cardboard squares to make a box. Talk about the flat surfaces on prisms and cylinders and describe them according to whether they are circular, square or rectangular. Work is consolidated through written exercises.	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focused activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, clay, toothpicks, straws, other 3-D geometric objects **Suggested focus and sequencing of activities for Term 3** Work with spheres, prisms, cylinders, pyramids and cones. Focus on the kind of surfaces on each type of object. Distinguish surfaces according to whether they are curved or flat. Talk about the flat surfaces on prisms and cylinders and describe them according to whether they are circular, square, rectangular or triangular Name and group the geometric objects above. Use toothpicks, straws, or rolled paper to make a pyramid. Work is consolidated through written exercises.	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Suggested focus and sequencing of activities for Term 4** Work is consolidated through written exercises.

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
3.3 **2-D shapes**	**Range of shapes** • Circles • Triangles • Squares • Rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Suggested focus of activities for Term 1** Name and group shapes. Focus on the kind of sides that each shape has. Distinguish shapes by talking about whether their sides are round or straight. Draw circles, squares, rectangles and triangles. Work is consolidated through written exercises.		**Range of shapes** • Circles • Triangles • Squares • Rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Suggested focus of activities for Term 3** Name them and group shapes. Focus on the kind of sides that each shape has. Distinguish shapes by talking about whether their sides are round or straight. Draw circles, squares, rectangles and triangles. Work is consolidated through written exercises.	
3.4 **Symmetry**		**Symmetry** Determine line of symmetry through paper folding and reflection **Suggested focus of Term 2** Paper folding activities that develop an understanding of symmetry include: • activities in which wet paint is placed on the page before folding • activities in which paper is cut or torn from the fold line		**Symmetry** Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes **Suggested focus of Term 4** Written exercises should include examples where • the line of symmetry is not always a vertical line • there is more than one line of symmetry in the shape or object

GRADE 3 OVERVIEW 4. MEASUREMENT				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
4.1 **Time**	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months • Use clocks to calculate length of time in hours or half hours	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months Use clocks to calculate length of time in hours, half hours and quarter hours	**Telling the time** • · Read dates on calendars • · Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months • Use clocks to calculate length of time in hours, half hours and quarter hours

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
4.2 **Length**		**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters, etc. • Describe the length of objects by counting and stating the length in informal units • Use language to talk about the comparison e.g. longer, shorter, taller, wider **Introducing formal measuring** • Estimate, measure, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length • Estimate and measure lengths in centimetres using a ruler (No conversions between metres and centimetres required)	**Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length • Estimate, measure and record lengths in centimetres using a ruler	

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
4.3 **Mass**		**Informal measuring** • Estimate, measure, compare, order and record mass using a balancing scale and non-standard measures e.g. blocks, bricks, etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour or in grams, e.g. 500 grams of salt • Where bathroom scales are available, learners can measure their own mass in kilograms using a bathroom scale. The expectation is that learners only read to the nearest numbered gradation line. They describe their mass as almost/ nearly/close to/a bit more than/more or less/or exactly the number (of kilograms) they read off the scale • Where balancing scales with mass pieces calibrated in grams are available, learners can measure mass or different objects (No conversions between grams and kilograms required)		**Introducing formal measuring** Learners do written tasks to consolidate the following, including reading pictures of • products with mass written on them • bathroom scales where the needle points to numbered gradation lines

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
4.4 Capacity/ Volume	**Informal measuring** • Estimate, measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres - using bottles with a capacity of 1 litre, or containers whose capacity is stated in millilitres e.g. cool drink cans - measuring jugs in which numbered calibration lines show litres, half litres and quarter litres - measuring jugs which have numbered calibration lines for millilitres - measuring cups and teaspoons which indicate their capacity • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint, or in millilitres e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres (No conversions between millilitres and litres required)			**Introducing formal measuring** Written tasks to consolidate the following, including reading pictures of • products with their capacity written on them in order to sequence in order • jugs where the volume is near to a numbered 1 litre or 2 litre gradation line or half litre or quarter litre • jugs where the volume is near to a numbered millilitres gradation line. The expectation is that learners only read to the nearest numbered gradation line. They describe their volume as almost/nearly/ close to/ a bit more than/ more or less/ or exactly the number (of litres) they read off the jug (No conversions between millilitres and litres required)

TOPICS	TERM 1	TERM 2	TERM 3	TERM 4
4.5 **Perimeter**			**Perimeter** Investigate the distance around 2-D shapes and 3-D objects using direct comparison or informal units.	
4.6 **Area**				**Area** Investigate the area using tiling.

GRADE 3 OVERVIEW 5. DATA HANDLING				
TOPICS	**TERM 1**	**TERM 2**	**TERM 3**	**TERM 4**
5.4 **Collect and organise data** **5.5** **Represent data** **5.6** **Analyse and Interpret data**	**Recommended:** Whole data cycle to make bar graph. Collect data about the class or school to answer questions posed by the teacher. Use tallies to record data in categories provided. Represent data in • Tables • Bar graphs Talk about and **answer** questions about data in tables and bar graphs.	Analyse data from representations provided. **Recommended** • At least one pictograph with one-to-one correspondence • At least one bar graph	**Recommended:** Re-organise data provided in a list or tally or table in a bar graph. Represent data on bar graph. Answer questions about data on bar graph	Analyse data from representations provided. **Recommended** • At least one pictograph with one-to-one correspondence • At least one bar graph

3.5 Clarification notes with teaching guidelines

The tables below provide the teacher with:

- content areas and topics per grade per term;
- concepts and skills suggested focus per term;
- clarification notes with teaching guidelines; and
- the duration of time allocated per topic in lessons given in 1 hour and 24 minutes.

3.5.1 Clarification of Grade 1 content

GRADE 1 TERM 1

1. NUMBERS, OPERATIONS AND RELATIONSHIPS

During the first term time is spent on developing pre-number concepts. Early skills developed in respect of patterns, shape and space, measurement and data form the basis of schooling skills in general and number skills in particular.

Matching

Matching leads to understanding the concept of one-to-one correspondence, which in turn is the basis of comparing the number of objects in a group.

When a learner is able to identify "the same", it becomes possible to match two sets. Sameness is a prerequisite for conservation. Conservation is an important skill in measurement, number and space and shape.

Sorting

When sorting, learners look for similarities and differences. Learners also develop the ability to describe and indentify. Describing means that learners can recognise and name things around them. Identifying means that learners can pick out an object when given a description. Learners identify according to certain attributes. Learners sort objects according to size, colour, shape, length, mass, capacity and volume. Sorting is done with

- everyday objects in data handling;
- geometric shapes and objects in shape and space; and
- the attributes of objects in measurement.

Comparing

When learners compare objects they focus on the difference between objects. Learners can focus on

- big or small;
- heavy or light;
- tall or short;
- hot or cold;
- empty or full;
- many or few; and
- first, last or middle.

Learning to compare is a focus area of

- early measurement activities;
- initial activities in shape and space (including work on position); and
- early activities in patterning.

In number activities, learners match objects in different groups. They learn to identify groups with the same number of objects in them, and to distinguish groups that may have more or fewer objects than other groups.

Ordering

Ordering is fundamental to the number system. Placing and counting objects in order help young learners to make sure that they only count each object once. Placing objects in order when counting lays the basis for understanding how to order numbers.

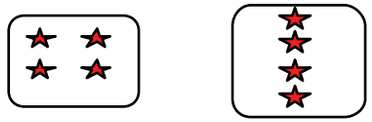
Early work with patterns involving shapes or objects helps to focus learners' attention on ordering. Later learners use this skill when working with number patterns.

Subitising

Subitising is the instant recognition of the number of objects in a collection without counting them.

Subitising helps learners to see small collections as one unit. This provides learners with an early perceptual basis for working with numbers.

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.1 Count objects	Count out objects reliably to 50. Give a reasonable estimate of a number of objects that can be checked by counting.	Count out objects reliably to 10. Give a reasonable estimate of a number of objects that can be checked by counting.	Counting helps learners to develop an awareness of the size of numbers and lays the basis for calculating with whole numbers. During the first term learners develop the following skills: • Counting all • Counting on • The cardinality principle • Working with written texts Counting in Term 1 is focussed on developing learner's counting skills. The development of counting skills allows them to: • count grouped and ungrouped objects; • count forward and backwards; • count actions; • count in sequence on a number line; • develop an awareness of the size of numbers by ordering and comparing them; and • estimate and predict. Counting objects Before learners count objects they need opportunities to practise counting orally. Learners need to have an oral list of number names in order: one, two, and three until 20. Encourage learners to say number rhymes and play games that reinforce the oral counting. This ability to count orally or rote count is important to develop the knowledge of number names and also a sense of the rhythm/pattern within numbers. Learners then count each object and match number names to sets of objects. This involves touching and moving the object and saying the number name. It is important that learners understand that the last number named represents the last object counted in the group. They must know and understand that the last number named indicates the amount in the set or the cardinality of the set. Not all learners who can count orally and say the number names in sequence will attach meaning to their counts. They might skip numbers and say that there are four counters when there are actually five counters.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.1 Count objects	Count out objects reliably to 50. Give a reasonable estimate of a number of objects that can be checked by counting.	Count out objects reliably to 10. Give a reasonable estimate of a number of objects that can be checked by counting.	It is important that learners count the same number of different objects. Example: • Count six counters • Bring me six pencils • Count six buttons Conservation Learners will begin to realise when counting the number of objects, that the number is not affected by their size or position. One could ask: how many stars on each card?  The position or arrangement of the stars is different but the number of stars on each card is exactly the same. It is important that when counting concrete objects, learners recognise a small number of objects without counting. Example, recognising • five, as the number of fingers on one hand • three counters, arranged in any way • one to six, from the arrangement of dots on a die This is also known as subitising. Therefore: Fundamental number concepts are developed by counting real objects. Learners learn: • to associate number words with a collection of objects; • to build a mental picture of what a number means i.e. how big it is; and • that the number name of the last object counted represents the total number of objects in the group.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.1 Count objects	Count out objects reliably to 50. Give a reasonable estimate of a number of objects that can be checked by counting.	Count out objects reliably to 10. Give a reasonable estimate of a number of objects that can be checked by counting.	Instructions and questions to support the counting of objects • Count 10 counting sticks. Arrange them in a line. • Rearrange the sticks and count again. Is the number still the same? • Count these bottle tops without touching them. • Is there the same number of each? • How many crayons do you think there are? • Are there more or fewer than you thought? • How do you know that you have that number? • How do you know that you counted every crayon? • How could you check your answer? Moving to written texts Learners need to be given opportunities to count illustrations of objects. Example: How many? **Counting on** Once learners can confidently count all the objects starting from one, they should count on from a collection they already have. Example: Ask learners to count out seven objects and then, starting from the seven objects, count out three more until they have 10 objects. Counting-on is a far more efficient counting strategy than counting all and learners will use counting on when they calculate. **Resources:** It is useful to build up a collection of different kinds of objects that learners can use as counters. **Example:** • Matchsticks • Ice cream sticks • Peach pips • Beans • Bottle tops	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.2 Count forwards and backwards	**Count forwards and backwards in** ones from any number between 0 and 100 **Count forwards in** • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100	**Count forwards and backwards in** Ones from any number between 1 and 20	**Counting forwards in ones** Counting orally or doing verbal counting (rote counting) is an important step in reciting the number names in order. If learners are able to do this, it does not mean that they have an understanding of the size of the numbers they are saying. There is no relationship between the number and the quantity or size of the numbers. In Term 1 it is expected that learners only count forwards and backwards in ones till 20. Counting forwards and backwards can be done with the whole class. Make sure that learners are not just chanting meaninglessly. In the focus groups and the independent work the following activities can be done to add meaning to the counting: • Start at two and count to eight • Count from four to 10 • Count from two to eight. How many numbers did you count? **Counting to ten** Initially learners will start counting to ten and practising the number names in sequence. Learners can get bored with verbal counting and they need to do it in different ways, otherwise they are simply chanting. Rote counting needs to be supported by reading number symbols and counting objects. Learners need to be presented with visual images of numbers in sequence. The following visual images can be used: • Counting beads • An abacus • A number line Initially a number line with all the numbers represented, and then a number line with some numbers not represented, can be used. This means that learners will have to know the numbers in sequence to fill in the gaps. Counting backwards Counting backwards is a difficult skill for learners and frequent practice is necessary. Start counting backwards from a number when learners are familiar with, 2, and build this up as you focus on each higher number. **Counting to 20** Counting beyond ten might require the learners to say the counting sequence after the teacher. It is also important to encourage learners to start counting at any number. Starting at 8 is far more demanding than starting at 1. Learners will use this skill when they count on in addition.	

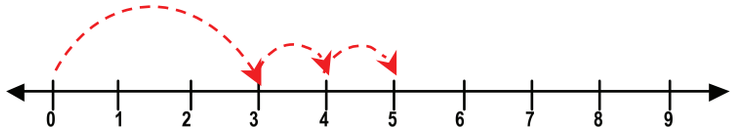
<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 1</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr><td>1.2
Count forwards and backwards</td><td>Count forwards and backwards in ones from any number between 0 and 100
Count forwards in
• 10s from any multiple of 10 between 0 and 100
• 5s from any multiple of 5 between 0 and 100
• 2s from any multiple of 2 between 0 and 100</td><td>Count forwards and backwards in Ones from any number between 1 and 20</td><td>Resources
• Counting beads to 20
• Abacus
• Number grids help to develop learners’ ability to read information in a table. Because learners are counting to ten, the grid should only show the following information:
<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>• A number line showing numbers to 20</td><td></td></tr>
</table>

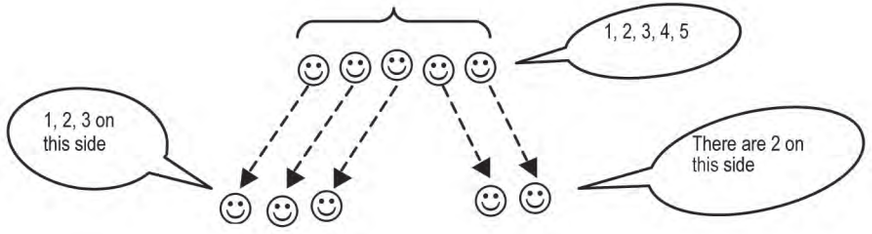
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.3 Number symbols and number names	Identify, recognise and read numbers • Identify, recognise and read number symbols 1 to 100 • Write number symbols 1 to 20 • Identify, recognise and read number names 1 to 10 • Write number names 1 to 10	Identify, recognise and read numbers • Identify, recognise and read number symbols 1 to 20 • Write number symbols 1 to 5 • Identify, recognise and read number names 1 to 5 • Write number names 1 to 5	Reading and writing number symbols and names Learners need to learn how to: • Write number symbols and names • Read number symbols • Say the numbers The reading and writing of number symbols and names should be linked with counting activities. Learners should be given opportunities to match the number symbols and number names to collections of objects that they count out. In this way learners link the number symbol, the number name, the representation of the number and the meaning of the number. Further activities Practising writing Learners can practise the writing of number symbols in different ways: • By tracing over numerals • Doing 'joining the dots' activities with outlines of number symbols • By writing in sand • By writing on chalk boards or on cement • By painting • Sewing numbers using wool. This activity is particularly useful in emphasising the starting point when writing numbers. • By tracing large numerals cut out of sandpaper or fabri Reading numbers This can be done by: • Pointing to numbers on the number line or on a number grid • Reading number cards Matching number symbols to a collection of objects This can be done by: • Matching the number of objects with numerals • Counting out a group of objects and selecting the appropriate number card for the number of objects • Counting objects in pictures and writing the number symbol.	

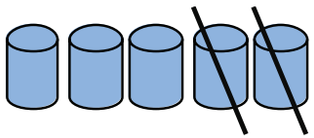
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.4 Describe, compare and order numbers	Describe, compare and order up to 20 objects • Describe and compare collection of objects according to most, least, the same as • Describe and order collection of objects from most to least and least to most. • Describe, compare and order numbers to 20. • Describe and compare whole numbers according to smaller than, greater than and more than, less than, is equal to • Describe and order numbers from smallest to greatest and greatest to smallest	Describe, compare and order objects up to **5**. • Describe and compare collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different • Describe and order collection of objects from most to least and least to most • Range up to five objects • Describe, compare and order numbers to 5. • Describe and compare whole numbers to 5 using language e.g. • according to, smaller than, greater than, more than, less than • Describe and order: - numbers from smallest to greatest and greatest to smallest - using language e.g. before, after, in the middle/ between	Comparing and ordering of numbers help learners to refine their sense of the relative size of numbers. It will help them develop an idea of how much greater or smaller a number is than other numbers. If learners have a good sense of the relative size of numbers, they will find basic operations much easier. In the Foundation Phase this is called numerosity. Counting skills are important for comparing and ordering numbers. The ordering of numbers includes: • Learning about cardinal numbers which tell the value of a number • Using, reading and writing number names and symbols • the language to compare numbers Comparing number of objects This is often done by using one-to-one correspondence. Learners count a collection of objects and match number names one-to-one with objects. Comparing a collection of objects depends on learners' counting experience. It is important to focus on the concepts of 'more and less' when comparing amounts. When comparing objects the language of comparing is developed. Example: As many as, the same number as, equal to, more than, less than, fewer than Ordering groups of objects From counting and comparing two sets of objects, learners discover and learn two important relationships: • Two collections are equal when they share the same number name although the collections might be arranged differently. • Counting numbers represents a sequence of consecutive numbers that increases by one every time, e.g. five comes after four, hence a collection of five objects is one more than a collection of four objects or a collection of four objects is one less than a collection of five objects Ordering and comparing numbers When learners order numbers, they might use the distance between numbers to know which number is bigger. For example, they will say that 5 is bigger than 2 because 5 comes after 2. Learners need to link the counting of objects and compare a group of nine objects to a group of two objects. By Grade 2 and 3 learners will be ordering and comparing numbers by explaining the value of the digits. Learners need to order numbers using a variety of images. Learners could also order numbers using the number line.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.4 Describe, compare and order numbers	Describe, compare and order up to 20 objects • Describe and compare collection of objects according to most, least, the same as • Describe and order collection of objects from most to least and least to most. • Describe, compare and order numbers to 20. • Describe and compare whole numbers according to smaller than, greater than and more than, less than, is equal to • Describe and order numbers from smallest to greatest and greatest to smallest	Describe, compare and order objects up to **5**. • Describe and compare collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different • Describe and order collection of objects from most to least and least to most • Range up to five objects • Describe, compare and order numbers to 5. • Describe and compare whole numbers to 5 using language e.g. • according to, smaller than, greater than, more than, less than • Describe and order: - numbers from smallest to greatest and greatest to smallest - using language e.g. before, after, in the middle/ between	**Example:** • Take the number 3 and place it on the number line • Choose the number after 4 and place it in its correct position on the number line • Choose the number between 3 and 5 and place it in its correct position on the number line • Choose the number before 2 and place it in its correct position on the number line • Choose the number before 3 and place it in its correct position on the number line Number cards **Example:** Learners could pack out cards in sequence. Moving to written texts Learners can consolidate their knowledge by completing activities in workbooks. This can be done during independent time. **Cardinality and ordinality** Cardinality refers to the total number in a set or collection. Ordinality refers to the position of an object within a set of things. The links between cardinal and ordinal numbers need to be made. Learners will realise this when they count a group of objects and know that when they have touched the fifth object they have counted five things so far. Ordinal numbers are only dealt with in Term 4.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
SOLVING PROBLEMS IN CONTEXT				
1.6 Problem-solving techniques	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • number lines supported by concrete apparatus e.g. counting beads	During this term learners will begin to solve word problems using the following techniques to solve these problems: • concrete apparatus • drawings • number lines **Drawings and concrete apparatus** Learners will draw pictures and use concrete apparatus to solve problems. By the end of the term learners can draw pictures which contain numbers to describe the operation and solution. It is important that the pictures or drawings contain numbers to describe the operation and the solution with: • unitary marks • numbers **Number lines** Using number lines in order to help them calculate will give learners a way to record their thinking and to keep track of it. It also allows learners to have a recording image that they can use to explain how they solved the problem. During this term learners will be introduced to number lines and will begin to use these as a calculating strategy. Initially when working with number lines a string of beads can be positioned above or below the number line to help learners count. Before learners can use the number line as a calculating strategy they need to use it for: • Counting forwards and backwards • Reading number symbols • Writing number symbols • Positioning numbers on the number line • Ordering and comparing numbers When using the number line as a calculating image, the concept of the 'jumps' can be learnt by using fingers or by constructing a line outdoors and physically jumping from one number to the next. These kinds of activities help learners to see where numbers are in relation to one another. They need to be able to say: "To get from 3 to 5 will take 2 jumps". Learners should be given opportunities to predict the number of jumps, say from 2 to 5.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.6 **Problem-solving techniques**	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • number lines supported by concrete apparatus e.g. counting beads	**Example** of how learners can use the number line during the term: There are three boys and two girls doing extra art lessons at a school. How many learners are there in the art class? Learners can use a number line in the following way to arrive at an answer.  See notes below under 'methods or strategies' for introducing the number line. Note that learners often solve a problem in a way that may not be what the teacher expects. For **example**, to solve the above problem, learners could choose to start counting with the number of girls, 2, and then add on 3. Learners' methods will change in the course of the year as their understanding of and familiarity with the problem types grow, and as their number concept develops.	

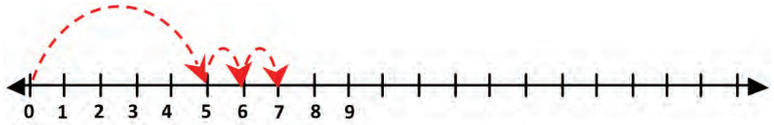
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.7 Addition and subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.	Practically solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to five.	Word sums are often used as the entry into operations. Learners start off with solving the problem by using concrete apparatus; which then develops into: • drawing pictures; • drawing pictures and writing numbers to describe the operation; and • only using numbers. **Example:** There are five children on the see-saw. Three of them are on one side. How many are on the other side? During the first term learners can record this word problem in the following way. **Calculating strategies** Using counting all to solve the see-saw problem  Here learners count each group and the whole collection, so they are counting at least three times. Using counting on to solve the see-saw problem Learners count on from three until they get to five. This is a far more efficient strategy to use. “I know that there are three children and then one child makes four, and another one child makes five children. There are two children on the other side”. *Doing addition and subtraction using apparatus* Learners use concrete apparatus in particular ways to arrive at an answer. Learners use the apparatus to construct a meaning of addition and subtraction using objects that they can touch, hold and move around. How learners use the apparatus is often determined by the structure of the word sum.	

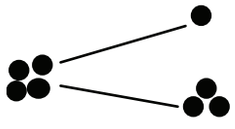
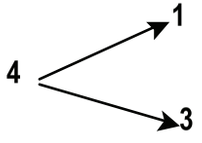
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.7 Addition and subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.	Practically solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to five.	**Recording images of addition and subtraction** • **Recording using concrete apparatus** Learners can use concrete apparatus to count all and count on. However learners can also use these strategies when drawing pictures to show their thinking, their calculation strategy and the solution. • **Recording in pictures only** **Example:**  **Recording in pictures and numbers** In order for learners to use numbers and pictures to describe their thinking they need to: • Be able to recognise numbers 1-5 • Count five objects and know that 5 represents the total number of objects counted. • Write numbers • Order and compare numbers **Addition and subtraction problem types** There are at least three basic types of addition and subtraction problems and each type can be posed in different ways. The basic types are: *Change* Noluthando had two apples. Silo gave her three apples. How many apples does she have now? Noluthando had five apples. She gave four apples to Silo. How many apples does she have now? *Combine* Nosisi has two green and two blue marbles. How many marbles does she have? Nosisi has four marbles. Three are green and the rest are blue. How many blue marbles does Nosisi have? *Compare* Nosisi has five bananas. Themba has one banana. How many more bananas does Nosisi have than Themba?	

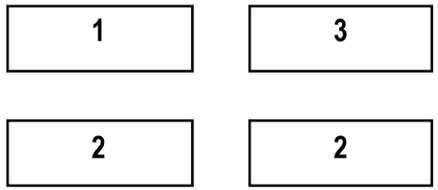
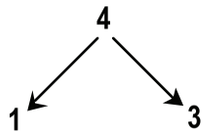
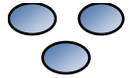
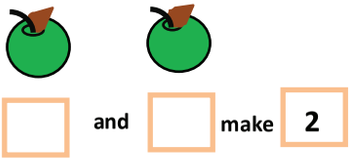
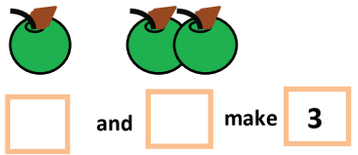
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.7 Addition and subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.	Practically solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to five.	**Resources:** Learners can use loose counters, to help them to see what happens when one puts amounts together or take them apart. Loose counters help learners to see what happens when they count all. **Examples** of loose counters are: • Counters • Counting sticks • Bottle tops • Peach pips • Stones • Unifix cubes • Working within the number range 1 to 5, learners can use their fingers to act as loose counters.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.9 Grouping and sharing leading to division	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 20 and with answers that may include remainders.	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 5 and with answers that can include remainders.	In Grade 1 the concept of division is introduced through presenting learners with practical problems that involve sharing and grouping. It is only in Grade 3 that the division sign is introduced. Below are examples of types of word problems that can be done. **Grouping** *Grouping, discarding the remainder* Stella sells squash in bags of two squash each. She has five squash left. How many bags of two squash each can she make up? *Grouping, incorporating the remainder in the answer* There are four apples. How many bags of two apples can be filled? ***Sharing*** *Sharing, discarding the remainder* Share five sweets among three friends so that they all get the same number of sweets. **Recording image for grouping and sharing** When illustrating sharing word problems, learners will “share out” one item or object at a time. Grade 1 learners are likely to share out one item at a time and this will be reflected in their recordings. As the year progresses learners will be able to record using pictures and numbers to show the number shared.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
CONTEXT-FREE CALCULATIONS There are many ways of thinking about organising the teaching and learning of calculations. One way is to think about number ranges. The number range within which learners work will determine the kind of apparatus they use and how they record their solutions. So one way of thinking about the calculations in the Foundation Phase is the representation of calculations. This is done by: • using concrete apparatus; • drawing pictures; • using pictures and symbols; • using numbers and arrows; or • using number sentences. Learners move from using concrete apparatus to working abstractly with number symbols and number sentences. Calculations fall within the context of problem-solving situations. Learners develop problem-solving skills in order to operate with numbers. Learners need to do context-free calculations.				

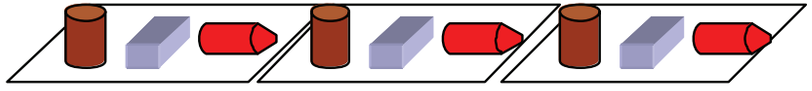
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • concrete apparatus e.g. counters • draw pictures • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • number lines supported by concrete apparatus e.g. counting beads	In the first term learners will solve number problems using concrete apparatus. It is important that learners use a variety of apparatus that has been selected carefully to support the development of the concept being taught. As learners grow confident in using the apparatus, to show their thinking they can record their calculations by drawing. Expect that their drawings will reflect the concrete apparatus. There might be some learners who will immediately represent their calculations by drawing and not using any concrete apparatus. **Number lines supported by concrete apparatus** When using number lines as a technique in order to calculate learners first need to have used: • other 'line apparatus' e.g. counting beads, number tracks; • the number line to count forwards and backwards; and • the number line in order to position and order numbers. A structured number line must be used (and is best suited for) when learners are doing addition and subtraction. The structured number line must show all the numbers on it. • Introduce addition using a number line a) Teacher puts a number line from 0 to 10 on the board. She shows learners how to solve the problem 3 + 2 using a number line. She puts a picture of a rabbit at. **Example:** Rabbit jumps from 0 to 5 and then jumps another two jumps. How many jumps did it give altogether?  b) Learners use their fingers to jump on their own desk number lines, as the teacher gives number sentences with answers up to 10. Example: 1 + 2 = 3.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	Number range: 1-20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	Number range: 1 5 • Addition up to 5 • Subtraction from 5 • Practise number bonds to 5	In Term 1 learners **understand addition as combining groups and as counting on**. They use their understanding that addition can be done in any order to choose how to calculate. They use a string of beads, draw pictures or a number line to work out calculations such as 3 + 2 or 1 + 4 by counting on. They also break up numbers in order to add. In Term 1 learners interpret subtraction as 'taking away'. They represent 'taking away' by using objects and drawing pictures and with number sentences. They recognise that the number of objects remaining is the answer in a calculation. They also record addition and subtraction using: • concrete apparatus; • pictures or drawings; or • pictures and numbers. **Working in the number range 1 - 5** When learners work or calculate within this number range they can build their understanding of addition and subtraction in the following way: • use concrete apparatus to represent the number and do calculations • record their calculations using pictures or models • record their calculations using a combination of pictures and numbers **Building up and breaking down of numbers** Adding and subtracting in Grade 1 focuses on getting learners to think about numbers as composed of other numbers. Most of the time learners are engaged in **part-part-whole activities.** These activities focus on a single number. For example, when working with the number 4 learners will: • break up 4 into different ways; • say or read the parts aloud; or • draw or write them down.  	

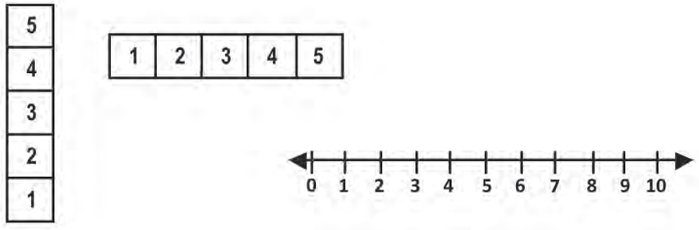
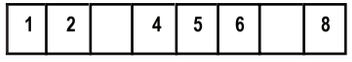
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	Number range: 1-20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	Number range: 1 5 • Addition up to 5 • Subtraction from 5 • Practise number bonds to 5	Learners can also use number cards to show the parts of numbers. So to show 4, some of the following cards can be used  These concepts can be supported by recording in class work books during independent time.  When doing subtraction learners are often engaged in story sums that develop the understanding of subtraction as ‘ take away’ or ‘count out’. Learners need to do **missing-part activities** as well. These activities support the understanding of subtraction and require a part to be hidden or to be unknown. **Example:** I have  I wish I had 5 The sign **is not** introduced during this term. Learners should be exposed to many ways of writing sentences that will help when the sign is introduced in Term 2. **Example 1**  **Example 2** 	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	Number range: 1-20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	Number range: 1 5 • Addition up to 5 • Subtraction from 5 • Practise number bonds to 5	**Number bonds** During this term learners practise number bonds to 5. This can be presented in pictures and number sentences using a variety of images. **Addition** **Example:** *Making 5 or finding friends of 5 using pictures and numbers* Colour in squares to make 5 **Example:** _____ and _____ make 5 _____ and _____ make 5 _____ and _____ make 5 _____ and _____ make 5 **Language of addition and subtraction** Learners should also practise the language of addition and subtraction. **Addition:** Add, plus, and, increase by, combine, altogether, makes, sum **Subtraction:** Subtract, take away, minus, difference, between, less, reduced by In Term 2 learners will “translate” the language of addition and subtraction into symbols. Learners should be able to respond to the following type of instructions: • Make 3 more • Add 1 more • Take away 3 • Make 1 less • 3 and 2 more • 4 take away 2 • 3 add 1	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number concept: range 20** • Order a given set of selected numbers • Compare numbers to 100 and say which is more or less • Know which number is 1 more or 1 less than a given number • Know which number is 2 more or 2 less than a given number • Know which number is 10 more or 10 less than a given number **Rapidly recall:** • Number bonds to 10 • Recall addition and subtraction facts to 10 **Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down	**Number concept: Range 5** • Order a given set of selected numbers • Compare numbers to 10 and say which is more or less • Know which number is 1 more or 1 less • Know which number is 2 more or 2 less	The mental mathematics sessions develop learners': • number sense; • language of Mathematics; • reasoning skills; and • listening skills. During the mental mathematics sessions learners should be given an opportunity to explain their methods. The mental mathematics sessions build an awareness of numbers (to have a 'feel' for numbers) and begin to teach learners how to work flexibly with numbers. The number 5 is no longer just a number. For example, for the number 4, learners must know that: • it comes after 5; • it comes before 6; • it can be associated with 5 objects; • they can write the symbol; and • they can write the number name. **Number concept** Examples of questions and activities that can be asked and done: • Learn line up and ask: Who is first, second, third or last? • Which is less, 3 or 5? • Which is more, 2 or 4? • Give me a number between 1 and 3, • Give me a number between 2 and 5. Is there only one number? • Put these number cards in order from the smallest to the biggest number. Questions on counting can also be asked: • Start with 3 and count forwards in ones to 10.	

GRADE 1 TERM 1 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS** **REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS** **FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 **Geometric patterns**	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with concrete objects • simple patterns made with drawing of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy and extend** Copy and extend simple patterns using • physical objects • drawings (e.g. using colours and shapes)	**Copying** the pattern helps learners to see the logic of how the pattern is made. **Extending** the pattern helps learners to check that they have properly understood the logic of the pattern. Learners can copy and extend patterns made with concrete objects even before they are comfortable with using a crayon or pencil to start copying and extending patterns by drawing. Patterns can be made with everyday objects that are commonly found in the classroom, such as counters, matches, matchboxes, geometric shapes, beads, cotton reels, boxes, balls, crayons, pencils etc. Learners can also make objects from clay or play dough and these can be used to make patterns. In Grade 1 learners can focus on patterns in which the shapes or objects (or groups of shapes or objects) are repeated in exactly the same way. **Example 1:** In some patterns the size of objects in a group alternates, but groups are repeated in exactly the same way **Example 2:** Patterns can be made by using one object but having the colours of the object change in a regular way **Example 3:** In some patterns different objects are used to make up a group, but the groups of objects are repeated in exactly the same way 	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.1 **Geometric patterns**	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with concrete objects • simple patterns made with drawing of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy and extend** Copy and extend simple patterns using • physical objects • drawings (e.g. using colours and shapes)	To help Grade 1 learners to see what grouping is being repeated, it is useful in to place each group on a different piece of paper, or showing it within a block on the page. **Example 4:** Patterns can be made by repeating groups of objects. Groups can be made up of several identical objects which are positioned in different ways. Patterning in an important part of all early learning, and so it occurs in Language, Life Skills and Mathematics. For example, patterning is part of songs and other music, rhymes, dancing as well as many forms of visual arts. There are opportunities for learners to practise the visual patterning skills they use in Mathematics when they do Life Skills - especially threading beads or drawing patterns.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour and 24 minutes)
2.2 Number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 100 **Create own patterns** Create own number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 20. Sequence should show counting forwards and backwards in: • ones from any number between 1 and 20	In the Foundation Phase, number patterns build learners' number concept development. Number patterns are linked with numbers operations and relationships. Number sequences can be linked with counting. Number sequences consolidate and develop learners' counting skills. As learners' counting skills change and develop, so will the number sequences. When learners do verbal counting they can be shown number sequences written down in different ways e.g.  Learners can then fill in missing numbers given in any of the forms of sequence above. Remember, however, that learners are writing numbers to 5. Learners can verbally "fill in" missing numbers and use number cards to complete a sequence. See notes on describing, comparing and ordering. **Example 1**: number track/number grid  **Example 2:** number sequence By the end of the term, the number range goes up to 20. Learners can work with the whole sequence 1 - 20 or parts of the sequence. **Example 3**: number line 	3 lessons

GRADE 1 TERM 1 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS: FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.1 **Position, orientation and views**	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and views** Match different views of the same everyday object. **Position and directions** • Follow directions to move around the classroom • Follow instructions to place one object in relation to another e.g. put the pencil inside the box	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and directions** • Apply the language of position learnt when following directions • Follow directions to move around the classroom • Follow instructions to place one object in relation to another e.g. put the pencil inside the box	**Language of position** Language of position should be introduced through practical activities that involve learners in physical movement including songs and rhymes with movement and games with movement words. This can be done during whole class teaching time or focus group teaching time. It is suggested that you spend two lessons on position activities during Term 1, but then continue to introduce and practice position words for short parts of whole class, focus group and independent work time. The language of position can also be practised during Language and Life Skills lessons. It is useful to introduce pairs of position words at the same time e.g. up and down; inside and outside. Useful position words include: • left, right; • front/back; • behind, in front of; • on top /under; • in/out; • under/ over; • under /above; • near/far; • between The language of position can be consolidated through written recording like drawing, colouring or matching drawings with words. **Position and directions** Learners can first learn some language of position and then use this knowledge to follow: • instructions to move or place objects in relation to each other e.g. “put the crayons next to the counters”; “put the number cards on top of the cupboard”. • directions to move themselves in the classroom e.g. “come to the front of the class”; “stand next to your chair”; “jump over the dirt bin” etc Teaching learners to follow directions should be done through practical activities in which learners move themselves or objects according to instructions.	2 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2. 3-D objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as building blocks, recycling material, construction kits.	**Range of Objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour **Focussed activities** Observe and build given 3-D objects using concrete materials such as building blocks, recycling, construction kits.	Most of the work on three dimensional objects in grade 1 should be done with concrete/ physical objects. We experience the world in three dimensions, so starting with physical objects helps learners to build on the experience that they bring to school. Many young learners struggle to interpret three dimensional geometric objects from pictures. Working with the physical objects helps learners to interpret pictures of the geometric objects later. When you have a physical object you can turn it around and look at it from all sides. You can see what it looks like from behind and underneath. When you only have a picture, you have to imagine the parts that are not visible in the drawing. This is not always easy for young learners. If learners are only given a definition of an object without seeing it or holding it, it is very difficult to understand the features of the object completely. **Building with 3-D objects** Learners start with free play with various 3-D objects and building things of their own choice using building blocks or construction kits or recycling. This can be done in independent time. You can then use recycling (such as match boxes) or building blocks or other construction kits to make a model or construction e.g. a tower, a robot, train, taxi, castle etc. Learners can make a copy of the model. This can be done in independent time, but it is important to also discuss with learners why certain kinds of objects are used in the models. This helps to focus learners on the geometric features of the objects. For example, if a tower is built of boxes or blocks, you can ask learners “can you build a tower with only balls?” They should explain their answer. **Recognising and Naming balls (spheres) and boxes (prisms)** Learners identify and describe ball shapes (spheres) and box shapes (prisms) Learners should describe everyday objects by saying whether they are shaped like a ball or are shaped like a box, e.g. this brick is shaped like a box or this orange is shaped like a ball. It is important for learners to see and work with more than one example of objects shaped like balls and objects shaped like boxes. Learners should be **given** a range of spherical objects to work with e.g. balls of different sizes, marbles, oranges etc. Learners should also be **given** a range of objects shaped like prisms to work with e.g. blocks, bricks, and boxes of different sizes. Learners can **find** and **sort** objects shaped like a ball (sphere), or shaped like a box (prisms) when given a collection of objects. Learners can find, show and name objects shaped like boxes (prisms) in the classroom. Learners can be instructed to make ball shapes or box shapes from clay or play dough.	3 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2. **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as building blocks, recycling material, construction kits.	**Range of Objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour **Focussed activities** Observe and build given 3-D objects using concrete materials such as building blocks, recycling, construction kits.	**Comparing and describing 3-D objects: size** Learners compare the size of similar objects **Example:** • order balls according to size • use the language of size to compare objects "the box is bigger than the ball, because I can put the ball inside the box. **Describing 3-D objects: colour** Learners talk about the colours of objects and then sort objects according to colour. Identifying and naming objects and their colours, as well as comparing sizes of objects can be practised during work with patterns. **Written exercises** Although most of the work with 3-D objects is done practically, work must be consolidated through written exercises. **Language** It is important to develop learners ability to talk about 3-D objects • Language of size: big, bigger, biggest, small, smaller, smallest • Colours • Language of objects themselves: Boxes, balls **(learners are not expected to know the terms sphere and prisms)** • Language of position to describe construction **Example:** • on top of, under • behind, in front • next to, alongside • under, over • near, between • inside, outside The language of size and colour can be developed in the language or life skills lesson time and applied or practised in the maths lesson time. The language of position can be developed in the language or life skills lesson time and when during the time that learners focus specifically on position. It can be applied or practised when learners work with 3-D objects.	3 lessons

GRADE 1 TERM 1 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Passing of time** Talk about passing of time • Order regular events from their own lives • Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow **Telling the time** • Describe when something happens using language e.g. morning, afternoon, night, early, late • Name and sequence days of week • Name and sequence months of year • Place birthdays on a calendar	**Passing of time** Talk about passing of time • Order regular events from their own lives • Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow **Telling the time** • Describe when something happens using language e.g. morning, afternoon, night, early, late • Identify and sequence days of week • Name and sequence months of year • Place birthdays on a calendar	Learners should learn how to talk about: • the sequences of events' and • duration of time. Most of this work happens on a daily basis during whole class teaching time or focus group teaching time. Learners talk about and answer questions about when things happen, using language such as morning, afternoon, night, early and late. **Passing of time** Learners sequence events using language such as yesterday, today, tomorrow. Learners compare time lengths using language such as longer or shorter and faster or slower. Learner talk about the ordering of events from their own lives. They also order sequences of pictures such as • the steps to make a sandwich or a cup of tea,; • photographs showing a baby grown into an elderly person; • the life cycle of animals e.g. egg to chicken, or egg to frog or egg to a butterfly; and • regular events in the day (waking up, being at school, playing, eating supper, sleeping). **Telling the time** • Learners learn the days of the week through songs and rhymes. This is practised daily. • Birthdays are placed on the calendar on the relevant day. • Learners learn the months of the year through songs and rhymes.	2 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Compare and order the length, height or width of two or more objects. by placing them next to each other • Use language to talk about comparison e.g. longer, shorter, taller, wider • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating the length in informal units	**Informal measuring** • Compare and order the length, height or width of two or more objects by placing them next to each other • Use language to talk about comparison e.g. longer, shorter, taller, wider	All measurement in Grade 1 is informal. No formal measurement of length with standard units is done. It is recommended that mathematics lessons focus on length in at least two terms of the year (Term 1 and Term 3). The focus in Term 1 can be on direct comparisons and in Term 3 learners can work with informal units of measurement. Learners can also practise and consolidate these concepts during independent work time throughout the year. **Direct comparisons of the length of physical objects** Developing an understanding of length and the language to talk about it Learners begin to think and talk about length by comparing two objects (or drawings of two objects) with very noticeable differences in length. **Example**: • a long piece of string and a short piece of string • a tall tree and a short tree, • a wide river and a narrow river Learners can make or draw examples such as • use clay or play dough to make a long snake and a short snake • use blocks to make a tall tower and a short tower • draw a tall teacher and a short teacher Once learners can talk about lengths in terms of opposites, one can introduce them to the new language of comparison, for example, “I made a long train but Sihle made a longer train.” Comparing lengths by placing objects next to each other Once learners can talk about the extremes of length (tall, short etc), and compare the lengths of objects that are obviously different at first glance, they can move on to examples which are less obvious at first glance and need to be place next to each other to compare. For example, • find out which of two children are taller by standing back to back • placing two crayons alongside each other and aligning the bottom of the crayons to find which is shorter Learners should be given the opportunity to compare two examples of a wide variety of objects such as sticks, pencils, straws, lengths of string, ribbon, strips of paper etc. Drawings of two objects can also be compared if they are placed next to each other and aligned at the top or bottom.	2 lessons

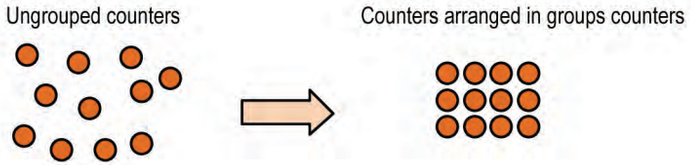
TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Compare and order the length, height or width of two or more objects. by placing them next to each other • Use language to talk about comparison e.g. longer, shorter, taller, wider • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating the length in informal units	**Informal measuring** • Compare and order the length, height or width of two or more objects by placing them next to each other • Use language to talk about comparison e.g. longer, shorter, taller, wider	Learners can then move on to comparing and ordering three or more objects. This is known as seriation. Examples include • groups of learners standing back to back pair by pair so that they can position themselves in a line from shortest to tallest; and • lining up groups of three or more objects from tallest/longest to shortest or widest to narrowest. Suitable objects include pencils, crayons, bottles, sticks, lengths of string or ribbon; strips of paper or material, shoes etc. Learners develop a sense of length at the same time as they develop the language to describe length. Since this does not require any numbers, it can be done early in Term 1 before learners consolidate their number and operation sense to 5. Although measuring is a practical skill, learners should also do written exercises, which can include drawing and colouring, both so that they practise using crayons or pencils and so that they practise recording when measuring.	2 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 **Mass**	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier • Describe the mass of objects by counting and stating the mass in informal units	**Informal measuring** • Estimate, measure, compare, order and record mass using a balance and non-standard measures and e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	All measurement in Grade 1 is informal. No formal measurement of mass with standard units or instruments is done. It is recommended that Mathematics lessons focus on mass in at least two terms of the year (Term 1 and Term 4). The focus in Term 1 can be on direct comparisons and in Term 4 learners can work with informal units of measurement. Learners can also practise and consolidate these concepts during independent work time throughout the year. **Direct comparisons of the mass of physical objects** • Developing an understanding of mass and the language to talk about it Learners begin to think and talk about mass by comparing heavy and light objects. They pick up a very light object and then try to pick up a very heavy object. This can be consolidated by showing drawings in which very heavy and very light objects are compared. Once learners can talk about mass in terms of opposites, heavy and light, learners can compare two objects and say which is heavier and which is lighter. This can be by done holding an object in each hand and comparing which is heavier and which lighter. Learners should record all work either through drawing or matching exercises. • Comparing mass using a balancing scale Commercial mass balances can be used. If you don't have a commercial balance, you can make one by attaching a pair of one of the following to a coat hanger: a yoghurt cup, the cut-off base of a 2 litre bottle or the cut-off bottom of a 1 litre milk or cold drink box (identical containers are attached to either side of the coat hanger).	2 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 **Mass**	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier • Describe the mass of objects by counting and stating the mass in informal units	**Informal measuring** • Estimate, measure, compare, order and record mass using a balance and non-standard measures and e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	• Learners can start by placing identical objects on either side of the balance, to see that the "bar" or base of the coat hanger it is horizontal when the two objects have the same mass. • Learners compare objects by placing one in each side of the balance, to see which is heavier or lighter. • Learners can then compare objects by placing more than one object on one or both sides of the balance to see how many of one object have the same mass as another e.g. 5 crayons has the same mass as 1 pair of scissors. • This can be extended to seriation, where learners test the relative mass of pairs of objects until they can sequence three or more objects from lightest to heaviest or heaviest to lightest. Items should be selected to include large light items and small heavy items, e.g. a 250 g packet of salt compared with a 400 g box of cornflakes. This helps learners to understand from the onset that mass is only related to size if the same substance is weighed. Learners develop a sense of mass at the same time as they develop the language to describe mass. Since this does not require any numbers, it can be done early in Term 1 before learners consolidate their number and operation sense to 5. **Recording** Although measuring is a practical skill, learners should also do written exercises, which can include drawing and colouring, both so that they practise using crayons or pencils and so that they practise recording when measuring.	2 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary • Compare and order the amount of liquid that two containers can hold if filled (capacity) • Use language to talk about the comparison e.g. more than, less than, full, empty • Estimate, measure, compare, order and record the capacity of containers by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary • Use language to talk about the comparison e.g. more than, less than, full, empty	What is capacity? What is volume? Capacity is the amount that an object can hold (all the amount of space inside an object). Volume is the amount of space that something takes up. A bottle can have a capacity of four full cups, but at a particular time it may have only one cup of liquid in it. Learners in grade 1 are not expected to know the difference between capacity and volume. All measurement in Grade 1 is informal. No formal measurement of capacity/volume with standard units is done. It is recommended that Mathematics lessons focus on capacity/volume in three terms of the year (Term 1, Term 2 and Term 4). The focus in Term 1 can be on developing language to talk about extremes and comparisons in volume, Term 2 can be on direct comparisons and in Term 3 learners can work with informal units of measurement. Learners can also practise and consolidate these concepts during independent work time throughout the year. **Direct comparisons of the volumes in containers** Developing an understanding of volume and the language to talk about it Learners begin to think and talk about volume by comparing how much is in identical two containers (or drawings of two identical containers) focus • full and empty • more than/less than • the same as Learners can fill and empty containers using either water or sand etc. Since this does not require any numbers, it can be done early in Term 1 before learners consolidate their number and operation sense to 5. **Recording** Although measuring is a practical skill, learners should also do written exercises, which can include drawing and colouring, so that they practise: • using crayons or pencils; and • recording when measuring.	1 lesson

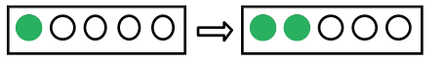
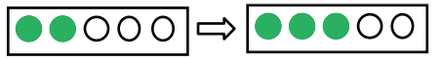
GRADE 1 TERM 1 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
Working with collections of objects				
5.1 Collect and sort objects	**Collect and organise objects** Collect and sort everyday physical objects.	**Collect and organise objects** Collect and sort everyday physical objects.	Sorting, representing and describing the sorted collection are useful skills for learners to develop early on in schooling (see notes on pre-number skills at the start of clarification notes). The process also develops the skills learners will use when doing the data handling cycle. Learners can be given collections of objects and asked to sort them. For example, give groups of the same kinds of counters and ask learner to sort them into colours, give collections of different kinds of counters such as bread tags, peach pips, matches, bottles tops and ask learners to sort them into groups. Learners then draw a picture of the groups that they have made. In this way learners record what they have done. They answers questions about the groups **Example** "How did you group your counters?" " I made groups of colours." "The biggest group of counters was which colour?" "My biggest group was red." "How many different colours of counters did you have?" "I had five different colours." Learners could also find their own collections. For example, learners can collect leaves from the school grounds, or bring empty food containers from home.	2 lessons
5.2 Represent sorted collection of objects	**Represent sorted collection of objects** Draw a picture of collected objects	**Represent sorted collection of objects** Draw a picture of collected objects. **Discuss and report on sorted collection of objects** • Give reasons for how collection was sorted • Answer questions about - how the sorting was done (process) - what the sorted collection looks like (product) • Describe the collection and drawing. • Explain how the collection was sorted		
5.3 Discuss and report on sorted collection of objects	**Discuss and report on sorted collection of objects** • Give reasons for how collection was sorted. • Answer questions about - how the sorting was done (process) - what the sorted collection looks like (product) • Describe the collection and drawing • Explain how the collection was sorted			

GRADE 1 TERM 2 1. NUMBER, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (In lessons of 1 hour 24 minutes)
NUMBER CONCEPT DEVELOPMENT: Count with whole numbers				
1.1 Count objects	Count out objects reliably to 50. • Give a reasonable estimate of a number of objects that can be checked by counting.	Count out objects reliably to 20 • Give a reasonable estimate of a number of objects that can be checked by counting • Counting by grouping is encouraged	**What is different from Term 1?** In Term 2, the counting number range is extended. There is still a focus on understanding that the last number named indicates the number of objects in a set. Learners are counting more objects and in Term 2 they should learn how to position the objects when counting so that when they check their count the arrangement helps them to count more easily. **Example:**  During this term learners continue extending their counting skills and practising: • counting all; • counting on;. • the cardinality principle of numbers; and • working with written texts. During the second term learners begin to: • Count objects they cannot touch or hold. **Example:** We ask learners: How many sections are there in the window pane? • **Count actions**	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.1 Count objects	Count out objects reliably to 50. • Give a reasonable estimate of a number of objects that can be checked by counting.	Count out objects reliably to 20 • Give a reasonable estimate of a number of objects that can be checked by counting • Counting by grouping is encouraged	**Example:** Clap 15 times. Hold up 8 fingers. **Estimation** Estimating the number of objects in a group develops important skills of prediction. It helps learners to see whether they are realistic in their prediction. This is important when they are doing operations: they can check themselves to ensure that their answers are realistic. It is useful for learners to count illustrations of objects that are grouped and that are ungrouped. Try to contrast grouped and ungrouped objects by asking learners to estimate which has more objects. They can estimate the number of objects in each picture. They can write down this number. Then they can count. They should compare their estimation with their counts. Ask learners to talk about how they counted. Try to find out if some learners counted in groups. **Subitising** Learners increase their skill of recognising a small collection of objects. **Counting in groups** In order to help learners count in intervals of 2, 5 and 10 they need to group objects in 2s, 5s and 10s. Number cards should be displayed at each collection to show the number of objects counted. The counting in groups will prepare learners for understanding multiples in the intermediate phase. **Resources:** Careful consideration needs to be given to the kind of apparatus used. • Structured apparatus, such as a string of counting beads • The abacus to practice counting in groups of ten • Making bundles of 2, bundles of 5 and ten and then counting all	

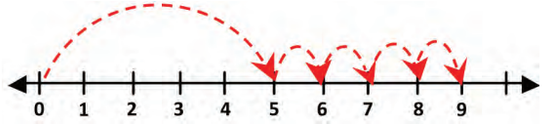
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.2 Count forwards and backwards	**Count forwards and backwards in** • ones from any number between **Count forwards in** • 10s from any multiple of 10 between 1 and 100 • 5s from any multiple of 5 between 1 and 100 • 2s from any multiple of 2 between 1 and 100	**Count forwards and backwards in** • Ones from any number between **Count forwards in** • 10s from any multiple of 10 between 1 and 50 • 5s from any multiple of 5 between 1 and 50 • 2s from any multiple of 2 between 1 and 20	**What is different from Term 1?** In Term, learners now count to in ones. They also count in intervals of and **Verbal skip counting** Skip counting is another name for counting in groups. It helps to develop an awareness of number patterns. Skip counting encourages learners to count and think in groups, which makes them more efficient. This also helps them develop their estimation skills. Counting in groups makes them aware of the relationships between non-consecutive numbers. It lays the basis for number patterning and for multiplication. **Further activities** Here are some suggestions for different ways of doing skip counting: • Start by counting consecutive numbers but emphasising every second one. For example learners can clap, and say every second number more loudly. Then ask the learners to count but to say every second number only in their heads. This can be extended to learners only saying the third, fourth or fifth number. • You can divide the class into groups, and each group can take turns to say the next number. If, for example, you divide the class into five groups, each group must count every fifth number. • Ask learners to make a physical pattern such as touching their heads on the first count, crossing over their arms and touching their shoulders on the second, and slapping their thighs as they shout out every third number. • Beating or clapping time to music can be used in combination with skip counting. **Counting objects can develop verbal counting skills.** In class, counting activities often develop several different skills. Skip counting is best introduced while practically grouping objects. **Further activities** **Number Grids** Ask learners to highlight the numbers they identify as they count in . Ask what they notice about the numbers. Vary the numbers that learners start from.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.2 Count forwards and backwards	**Count forwards and backwards in** • ones from any number between **Count forwards in** • 10s from any multiple of 10 between 1 and 100 • 5s from any multiple of 5 between1 and 100 • 2s from any multiple of 2 between1 and 100	**Count forwards and backwards in** • Ones from any number between **Count forwards in** • 10s from any multiple of 10 between 1 and 50 • 5s from any multiple of 5 between 1 and 50 • 2s from any multiple of 2 between 1 and 20	**Moving to written texts** • Number lines - Learners can show their skip counting using the number line. • Number sequences - Towards the end of the term learner can be completing simple number sequences (see notes on number patterns) **Example:** 2, 4, 6, 8, – 5, 10, 15, 20, – 10, 20, 30, 40, –	
1.3 Number symbols and number names	Recognise, identify and read **numbers** • Recognise, identify and read number symbols 1 to 100. • Write number symbols 1 to 20. • Recognise, identify and read number names 1 to 10. • Write number names 1 to 10.	Recognise, identify and read **numbers** • Recognise, identify and read number symbols 1 to 50 • Write number symbols 1to10 • Recognise, identify and read number names 1 to 10 • Write number names 1 to10	**What is different from Term 1?** In Term 2, the number range for knowing, reading and writing number symbols and names increases. Counting on number lines and number grids give learners practice in identifying, recognising, saying and reading number symbols. Provide learners with further practice by focusing their attention on number symbols in the environment and in print. **Example:** • looking at page numbers, and books • Identifying birthdays on a calendar **Further activities** • Teacher gives the following instruction to find a number, and learners use the flard cards to show the answers. - Find the number just before 12 - Find the number just after 12 - The number that is 3 more than 11 - The number that is 1 less than 14	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.4 **Describe, compare and order numbers**	**Describe, compare and order up to 20 objects** • **Describe and compare** a collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different • **Describe and order** a collection of objects from most to least and least to most **Describe, compare and order numbers to 20** • **Describe and compare** whole numbers according to smaller than, greater than, more than, less than, is equal to • **Describe and order** numbers: - from smallest to greatest and greatest to smallest - before, after, in the middle/between - using the number line 0 - 20 • **Describe and order** using language e.g. before, after, in the middle/between	**Describe, compare and order up to 10 objects** • **Describe and compare** collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different **Describe and order** collection of objects from most to least and least to most **Describe, compare and order numbers to 10** • **Describe and compare** whole numbers according to smaller than, greater than/more than, "less than, is equal to • **Describe and order** numbers: - from smallest to greatest and greatest to smallest - before, after, in the middle/between - using the number line 0 - 10 • **Describe and order** using language e.g. before, after, in the middle/between	**What is different from Term 1?** In Term 2, learners continue to: • order and compare objects; • order and compare numbers; and • use the language of ordering and comparing. During this term learners continue to order and compare objects. During this term learners can begin to form relationships between the numbers by focussing on one and two more, one and two less. • When comparing sets they should be able to describe these by saying, "I have two more counters than him" or, "She has one less than me". • When comparing numbers they should be able to say "one more than four is five' or seven is two more than five" **Building the awareness of " one more than " concept** The more than and less than concept is the beginning of informal addition and subtraction. It allows learners to understand the size of a number as well as the order of numbers. • Instruct learners to place 1 counter on the first empty space of their "5 frame" card. Tell the learners to place one more counter next to the first counter.  Ask: How many do you have now? How much is one more than one? • Instruct learners to place 1 more counter on their "5 frame" card.  Ask: How many do you have now? How much is one more than two?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.4 Describe, compare and order numbers	**Describe, compare and order up to 20 objects** • **Describe and compare** a collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different • **Describe and order** a collection of objects from most to least and least to most **Describe, compare and order numbers to 20** • **Describe and compare** whole numbers according to smaller than, greater than, more than, less than, is equal to • **Describe and order** numbers: - from smallest to greatest and greatest to smallest - before, after, in the middle/between - using the number line 0 - 20 • **Describe and order** using language e.g. before, after, in the middle/between	**Describe, compare and order up to 10 objects** • **Describe and compare** collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different **Describe and order** collection of objects from most to least and least to most **Describe, compare and order numbers to 10** • **Describe and compare** whole numbers according to smaller than, greater than/more than, "less than, is equal to • **Describe and order** numbers: - from smallest to greatest and greatest to smallest - before, after, in the middle/between - using the number line 0 - 10 • **Describe and order** using language e.g. before, after, in the middle/between	• Instruct learners to place 1 more counter on their "5 frame" card. Ask questions: How many do you have now? How much is one more than three? How many counters do you need to make five? Ask, " What can you tell me about number 4?(It's one less than 5.) What can you tell me about number 2? (It's 3 less than 5.) **Ordering numbers** Learners need to order numbers using a variety of images. • Grouping images Learners compare a group of 9 objects to a group of 2 objects. • Line images When learners order numbers they might use the distance between numbers to know which number is bigger. For example, they will say that 9 is bigger than 2 because 9 comes after 2. The ordering of numbers can often be done during independent time. **Further activities** *Ordering numbers* Learners order number cards 1 to 13 from smallest to greatest. Learners turn their number cards up-side down. They choose any 4 cards, order these from smallest to greatest and ask a friend to check whether it is correct. If they mastered 4 cards they may choose 5 cards. They place them in the correct order and copy the numbers from smallest to greatest. **Written tasks** Learners need to consolidate their understanding by completing written tasks. **Examples:** By the end of the term they should be able to complete similar type sentences: 1 more than 3 is_____ 1 more than 4 is _____ 1 less than 2 is _____ ____ is 1 more than 4 ____ is 1 less than 3	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.6 Problem-solving techniques	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads	**What is different from Term 1?** During this term learners are introduced to doubling and halving for the first time. See the notes under the calculation section. By the end of this term learners are beginning to solve the word problems using the following techniques: • drawings or concrete apparatus • building up or breaking down numbers • doubling and halving • number lines **Drawings or concrete apparatus** Learners will continue to draw pictures and use concrete apparatus to solve problems. It is important that the pictures or drawings contain numbers as well as number sentences. **Building up and breaking down** This is one of the most important techniques in the Foundation Phase. Using this technique allows learners to split (decompose) and recombine numbers to help make calculations easier. **Example** 6 + 4 → 5 + 1 + 4→ 5 + 5 → 10 This technique is also used frequently in the intermediate phase. **Doubling and halving** This technique is quite sophisticated and requires a strong number sense. Learners who are able to choose this as a technique are quite flexible in the strategies they use. During this term learners start doubling numbers because they are calculating to 10. Before doubling and halving can be used as a calculation strategy the concept needs to be taught. In Grade 2 learners are presented with a number sentence and asked: " How can we use near doubling to work out the answer to 5 + 6 = □?" Learners realise that 5 and 6 are close to each other. Concrete apparatus is used to show that: "I am going to make double 5 which is two groups of five. I add the two fives and get 10 and then I have one left which I must still add. The answer is 11. Using their own language or drawings, learners can still use the technique. By Grade 3 learners will be able to apply the technique when calculating with three-digit numbers. During this term learners will use doubling and halving in the following way:	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.6 Problem-solving techniques	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads	**Doubling:** • Two tricycles, how many wheels? • Jasmine and Noah have 4 marbles each. How many marbles altogether? Learners can draw pictures and use concrete apparatus to show the number is being doubled. **Halving:** • In Term 2 learners practise halving so that they can use it as a technique in Term 3. • Doubling and halving should be practised in context-free situations. **Number lines** Using number lines to help calculate will allow learners to: • record their thinking; • keep track of their thoughts; and. • have a recording image that they can use to explain how they solved the problem. Learners have been using number lines since Term 1 As learners progress through the Foundation Phase they should be encouraged to use number lines in increasingly sophisticated ways. In Term 1, learners counted on in ones. This is shown on the number line by hops in ones. **Example 1:** There are 5 boys and 4 girls doing extra art lessons at a school. How many learners are there in the art class?  In Term 2 learners can still do counting on in ones, but can also be encouraged to use the number line to show counting on in groups. **Example 2:** Learners can also break 4 into groups of 2. The number line will then show jumps of 2s from 5. 	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.7 **Addition and subtraction**	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 10.	**What is different from Term 1**? During this term learners practise doing word problems and work on becoming confident in using some of the techniques when solving problems. The focus during this term should be on recording. Learners should be writing down number sentences as a written record for problems up to 5. Learners will continue to use concrete apparatus and drawings to represent their calculations from 5 to 10. See Term 1 notes for the kind of problems that can be done during this term. Increase the number range to 10.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.8 Repeated addition leading to multiplication	Solve word problems in context and explain own solution to problems involving repeated addition with answers up to	Solve word problems in context and explains own solution to problems involving repeated addition with answers up to	The calculating number range during this term allows for learners to begin repeated addition. Calculating to 10 allows for recording. **Example:** • 1 + 1 + 1 • 2 + 2 + 2 + 2 • 3 + 3 + 3 Term 1 built the concept and the understanding of addition and learners should be able to add equal groups. During this term learners will work with word problems that allow for an image of repeated addition. Repeated addition is often introduced to learners as groups of equivalent numbers. Initially learners can be introduced to everyday equivalent groupings. Problems involving repeated addition are all of the form: • Groups of: hands, feet, socks, gloves, shoes, yes, ears, bicycle wheels • Groups of: tricycle wheels, edges to triangles • Groups of: car wheels, legs of chairs • Groups of: fingers, toes, The language of repeated addition is important. Learners must be given the opportunity to describe orally what they see. **Recording images for repeated addition** • Using concrete apparatus • Learners will show their calculation using apparatus that has been grouped. • In pictures only • Learners will draw pictures to show how they have grouped to add. • Recording in pictures and numbers • Pictures will show drawings supported by numbers. • Moving to written texts	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.11 Money	• Recognise and identify the South African currency - coins 5c, 10c, 20c, 50c, R1, R2 - notes. R10 and R20 • Solve money problems involving totals and change in cents up to 20c or rands up to R20.	• Recognise and identify the South African currency coins • Solve money problems involving totals and change to and in cents up to	Teaching learners about money, explaining the following concepts: • what money is • why money is important • how money is used in everyday life • how learners count money Learners learn about money before they come to school. Some learners might have a concept of the value of money and be able to recognise and name the coins and notes. During this term learners should learn the basic concept of using money through practical situations. This is done through practical situations such as playing shop. • Bring South African coins and the R20 and R10 bank notes to school. Learners feel the rims of the coins and discuss how they differ. They discuss the symbols that are on each coin and bank note. • Learners put coins under a thin piece of paper and use a soft writing medium to rub over them e.g. colouring pencils or pastels. They cut the copies out, paste them in their exercise books and name the coins. • They print and cut out more images of 5c, 10c and 20c coins. They paste all the combinations of coins that will make up 20c and 10c e.g. 20c = 10c and 5c and 5c 20c = 5c and 5c and 5c and 5c • Totals up to 20c - only coins - Learners already know how to count in 5s and 10s and will use this knowledge to find totals. - Teacher gives each learner paper copies of 5c, 10c and 20c coins. o She tells them which coins to take out, e.g. three 5c coins. o They count in 5s or do repeated addition, 5c+5c+5c. - Teacher asks learners to take out 20c using different coins. They should see that they each take out two 5c coins and one 10c coin. - Learners complete worksheets where they show which coins they need to make a total of 20 cents. **Example:** 20c = 10c + 10c or 5c + 5c + 5c + 5c = 20c or 5c + 5c + 10c = 20c	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.11 Money	• Recognise and identify the South African currency - coins: 5c, 10c, 20c, 50c, R1, R2 - notes: R10 and R20 • Solve money problems involving totals and change in cents up to 20c or rands up to R20.	• Recognise and identify the South African currency coins • Solve money problems involving totals and change to and in cents up to	• Give change using only coins - Teacher does subtraction of coins practically with learners e.g. they take out 5c coins to make up 20c. - Teacher asks: "If you pay a cashier 15c, how much money is left?" Learners who find it difficult to work with only coins use counters to support them. - Learners complete worksheets where they work out the change for items that they bought for 20c or less. **Example:** - 10c - 5c = 5c - 20c - 10c = 10c - whole tens - 20 - 5c - 5c - 5c = 5c: repeated subtraction	
CONTEXT-FREE CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • concrete apparatus e.g. counters • draw pictures • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when performing calculations: • concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads	**What is different from Term 1?** In Term 2, learners begin to calculate to 10. Working within this number range means that calculating techniques can be developed and practised. These strategies are also practised in the number problem section. **Building up and breaking down numbers** Building up and breaking down activities further develop learners' awareness of the relative size of numbers. These activities lay the basis for basic operations. Splitting up (decomposing) and recombining numbers can help to make calculations easier. Regular practice in this kind of activity encourages learners to use it as a mathematical strategy. **Doubling and halving** Before doubling and halving is used as a calculating strategy it needs to be understood and practised first. • Using concrete apparatus This can be done through direct instruction. Tell and show learners that there are five counting sticks and that you will be able to 'double' the amount by laying out five more counting sticks. • **Moving to written texts** using pictures. • **Learners** could be given images of doubling and they could then represent the image in pictures.	

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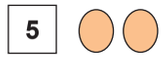
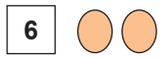
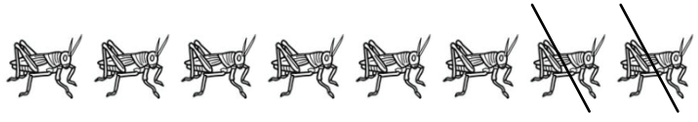
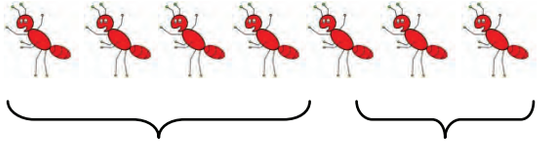
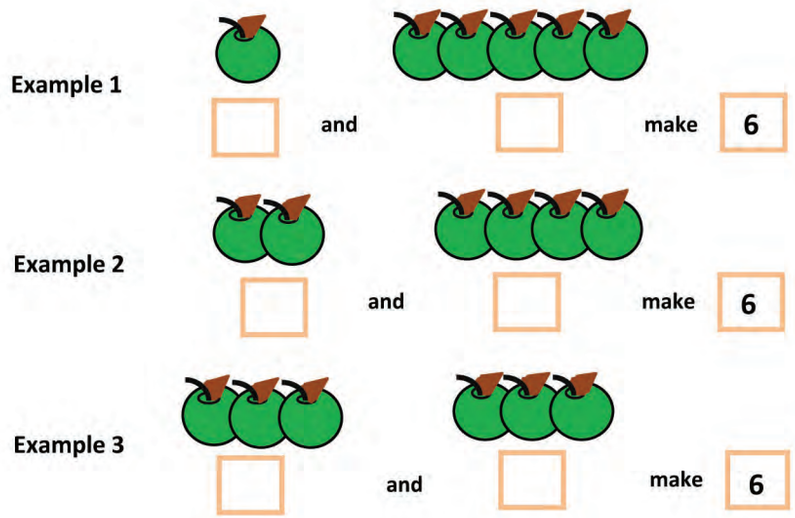
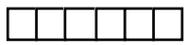
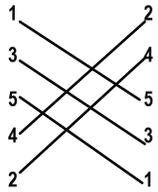
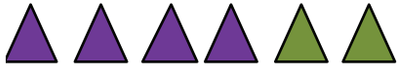
CONTEXT-FREE CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • concrete apparatus e.g. counters • draw pictures • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when performing calculations: • concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads	• **Using numbers** Learners could start by completing sentences such as: Double 1 is... Double 2 is... Double 3 is... Double 4 is... **Number lines supported by concrete apparatus** When using number lines as a technique in order to calculate, learners first need to have used: • other 'line apparatus' e.g. counting beads, number tracks; • the number line to count forwards and backwards; and • the number line in order to position and order numbers. A structured number line must be used (and is best suited for) when learners are doing addition and subtraction. The structured number line must show all the numbers on it.	

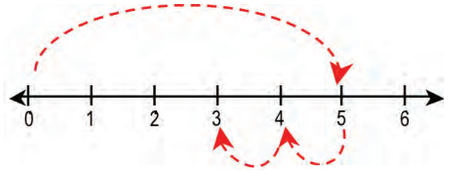
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	Number range: 1-20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	Number range: 1-10 • Add up to 10 • Subtract from 10 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 7	**What is different from Term 1?** In Term 2, the number range has increased from 5 to 10. During this term learners will begin to understand: • The commutative property of addition; and • the relationship between addition and subtraction Before learners are introduced to the symbols of addition and subtraction learners should have had sufficient experience in: • counting all; • counting on from the larger number; • using and understanding the language of addition and subtraction; and • ordering and comparing numbers. In this term, learners continue to build their understanding of addition and subtraction. Addition and subtraction are still strongly related to counting. The concept of 1 more or 2 less is still used because it is associated with the next number in the counting sequence. During this term learners will use symbols for writing number sentences more frequently and confidently. The progression towards using the symbols should be dealt with carefully. It is important that learners understand different meanings associated with the symbols. Learners should be able to understand and use words such as add, plus, altogether, together make, minus, difference between and subtract before the symbols are introduced. Learners should first be able to answer questions such as 3 and 2; 5 take away 3, before the sign is used.	

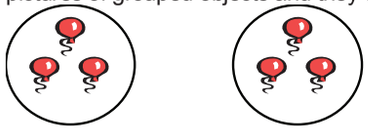
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	Number range: 1-20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	Number range: 1-10 • Add up to 10 • Subtract from 10 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 7	**Recording images** Calculating to 10 means that learners will still record their calculations using: • drawings or concrete apparatus; • pictures and numbers; or • numbers only. Towards the end of the term, within the number range 1 to 5, learners should be confident in using numbers only and not drawing pictures to represent their calculations. **Calculating strategies when doing addition and subtraction** *Doing addition by counting all.* Learners will start at 1 and count to 5 and then continue counting to 7. *Doing addition by counting on.* Learners will count on from 5 to 7  This technique is far more efficient than counting on in ones. Learners will use this technique far more as the calculating number range increases. *Count on from the greater number*  Learners count on from the bigger number, which is 6, and count on to 8 *Doing subtraction by taking away* 7 - 3 = 7 - 3 = 4 When recording subtraction learners might cross out the images to show taking away.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	Number range: 1-20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	Number range: 1-10 • Add up to 10 • Subtract from 10 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 7	*Subtraction by counting on* 6 – 2 = □ Learners can count on from 2 to 6. They need to note how many numbers they counted from to *Subtraction by counting backward* 8 – 2 = □  Learners can also start from the bigger number, which is 8, and count back 2 steps to 6 **Building up and breaking down numbers** This may be done in a variety of ways.  7 = 4 + 3 7 = 4 + 3 **Number bonds** During this term learners practise number bonds to 7. This can be presented in pictures and number sentences using a variety of images.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	Number range: 1-20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	Number range: 1-10 • Add up to 10 • Subtract from 10 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 7	**Addition** **Examples:** *Making 6 or finding friends of 6 using pictures and numbers*  *Making 6 using pictures and numbers* Colour in to show 6 in different ways.  _____ and _____ make 6 *Using numbers only* Match pairs of numbers to make 6:  	

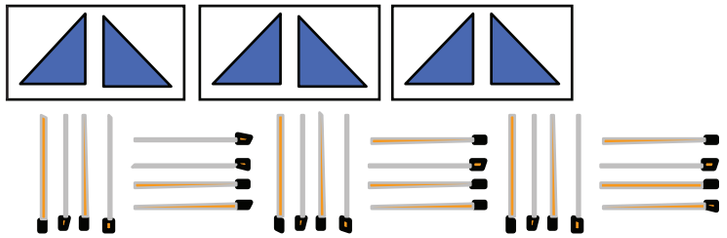
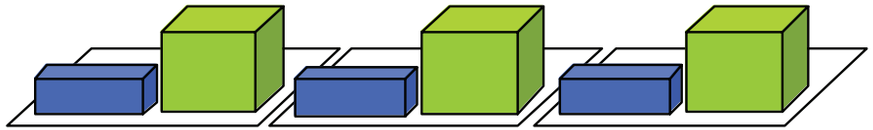
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	Number range: 1-20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	Number range: 1-10 • Add up to 10 • Subtract from 10 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 7	**Commutativity** During this term learners begin to recognise the commutative property of addition without having to know the term. **Example:** Count the triangles **6 + 2 = □** **2 + 6 = □** Writing related to addition and subtraction number sentences – *understanding the relationship between addition and subtraction* During this term learners learn that they can write a subtraction number sentence for an addition number sentence. **Example:**  4 + 2 = 6 and 6 – 2 = 4 2 + 4 = 6 and 6 – 4 = 2 **The equal sign** The equal sign does not have to be introduced quickly. It might be useful to use the symbols in a more flexible way and give learners the opportunity to use arrows instead of the equal sign. **Example:** Together make **4 and 2 →** 6	

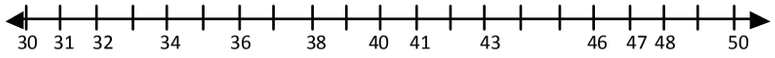
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	Number range: 1-20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 10	Number range: 1-10 • Add up to 10 • Subtract from 10 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 7	**Using number lines** Introduce subtraction up to 10 on a number line. Teacher uses the number line to subtract numbers up to 10 e.g. 5 – 2 = **Example:** The rabbit jumps to 5, then jumps 2 numbers back and stop at 3. So 5 – 2 = 3  **Written tasks** Learners should be presented with a wide variety of images to support the understanding of addition and subtraction. They also need written tasks that ask explicitly to: • count on; • add by counting on from the bigger number; or • subtract by crossing out the pictures to show taking away. **Concept of doubling** The number range learners are working with allows them to start doubling. This can be introduced in many ways and can also be done when learners are counting objects. **Example:** Learners can make groups of 2 counters, 4 counters, 6 counters, 8 counters and 10 counters. Number sentences should accompany the images. **Double 1 is…….** **Double 2 is…….** **Double 3 is…….** **Double 4 is…….** **Double 5 is…….**	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.14 Repeated addition leading to multiplication	• Repeated addition(i.e. the same number) to 20 • Use appropriate symbols (+, =, □)	• Repeated addition(i.e. the same number) to 10 • Use appropriate symbols (+, =, □)	**What is different from Term 1?** In Term 2, learners start doing repeated addition to 10. Once learners have a really good concept of the numbers 1 to 5, repeated addition will make sense to them. Repeated addition should be introduced to learners as groups of equivalent numbers. Working with grouped objects is important for the understanding of multiplication. Learners should be able • to make equivalent groups of objects; • describe the arrangement; and • count the total number of objects. Initially learners will count in ones but as they become fluent in skip counting they need to count the objects arranged in twos, fives or tens. Learners should be exposed to many different images that will support the understanding of repeated addition It might be useful to introduce learners to pictures of everyday equivalent groupings, for example: Groups of 2 - hands, feet, socks, gloves, shoes, ears, bicycle wheels Groups of 3 - tricycle wheels, edges of triangles **Example:** How many wheels altogether? How many fingers. Complete the number sentence below. □ + □ + □ = 15 **Recording images of repeated addition** The focus here is on the development of language to support the understanding of multiplication. Learners will record their understanding using pictures. Learners should be given pictures of grouped objects and they draw circles around these to show groups of objects.  The language that can be used is 2 lots of 3 or 2 groups of 3. When learners are confident in describing pictorial representations using language they can describe these in a number sentence. The number sentence: 3 + 3 = 6	

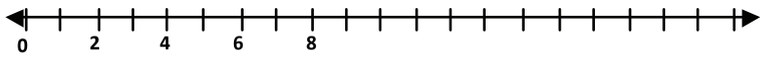
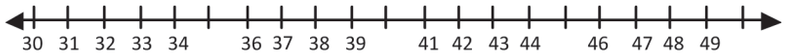
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (In lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number concept: range 20** • Order a given set of selected numbers • Compare numbers up to 20 and say which is and 10 more or less **Rapidly recall:** • Number bonds to 10 • Recall addition and subtraction facts to 10 **Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down	**Number Concept: Range 10** • Order a given set of selected numbers • Compare numbers up to 10 and say which is and more or less	**What is different from Term 1?** In Term 2, the number range increases from 5 to 10. Examples of questions and activities that can be asked and done: • Start with 3 and count forwards in ones to 10. • Which is less 8 or 5? • Which is more 8 or 4? • What is 2 less than 9? • What is 2 more than 3? • Give me a number between 1 and 3. • Give me a number between 6 and 10. Is there only one number? • Put these number cards in order from the smallest to the biggest number.	

GRADE 1 TERM 2 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects	**Copying** the pattern helps learners to see the logic of how the pattern is made. **Extending** the pattern helps learners to check that they have properly understood the logic of the pattern. **Describing** the pattern helps learners to develop their language and speaking skills. It also helps you to see how learners have interpreted the pattern. In Grade 1 learners can focus on patterns in which objects or groups of objects are repeated in exactly the same way. By Term 2 most learners are comfortable with using a crayon or pencil to draw. Learners can progress to copying and extending patterns made with pictures instead of objects. They should also focus on describing patterns. It is not always easy for learners to describe a pattern. You can help them learn what they are expected to talk about by asking questions such as: "What shapes do you see in this pattern?" "Are they all the same colour?" "Do you see one or more shapes in the pattern?" "Do the objects all face the same way?" "Are there the same number of objects in each group?" "How many objects in each group?" "Are all the shapes the same size?" etc. In Term 2 some of the focus can be on using 2-D geometric shapes and 3-D geometric objects that learners have learned about in Term 1. Learners can make 2-D shapes by cutting out paper or card, or they can draw them. They can make patterns from box shapes and ball shapes that they have made from clay or play dough. Patterns can be made by using one shape but having the colours of the object change in a regular way e.g. It is useful in Grade 1 to help learners to see what grouping is being repeated, by placing each group on a different piece of paper, or showing it within a block on the page	1 lesson

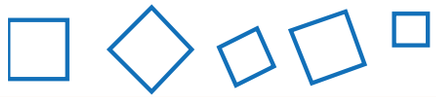
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.1 **Geometric patterns**	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects	Patterns can be made from identical repeating groups, where each group has only one kind of object but the position of the objects in a group changes. Identical groups are repeated e.g.  In some patterns different objects are used to make up a group, but the groups of objects are repeated in exactly the same way e.g. In some patterns the size of objects in a group alternates, but groups are repeated in exactly the same way  Learners can make patterns by threading beads. Patterning can also be done in the Life Skills lesson.	1 lesson

<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS FOCUS FOR TERM 2</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION (in lessons of 1 hour 24 minutes)</th></tr>
<tr>
<td>2.2
Number patterns</td>
<td>Copy, extend and describe
Copy, extend and describe simple number sequences to at least 100
Create own patterns
Create own number patterns.</td>
<td>Sequences should show counting forwards and backwards in:
• 1s from any number between 1 and 50
Forwards in
• 10s from any multiple of 10 between 0 and 50
• 5s from any multiple of 5 between 0 and 50
• 2s from any multiple of 2 between 0 and 20
Create own patterns
• Create own number patterns</td>
<td>Number sequences can be linked with counting. As learners' counting skills change and develop, the kinds of number sequences learners work with can develop.
Sequences should show counting forwards and backwards in:
• ones from any number between 1 and 50;
• tens from any multiple of 10 between 0 and 50;
• fives from any multiple of 5 between 0 and 50; and
• twos from any multiple of 2 between 0 and 20.
When learners do verbal counting they can be shown number sequences written down in different ways. They can point to the number being counted
Example:
<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>
Learners can then fill in missing numbers given in any of the forms of sequences above.
Remember learners are only writing numbers in symbols to 10. Learners can fill in the missing numbers in a sequence beyond 10 if:
• it is done verbally;
• numbers cards are provided to be inserted in the blank spaces; or
• a list of number symbols are provided. Learners can then draw a line from the correctly chosen number to the position it should occupy.
Some examples are given below:
A number line with some numbers omitted
 

Sequences showing counting forwards or backwards in ones with some numbers left off.
Learners match numbers from a list provided. They draw a line to show where the chosen number should be inserted.
40, 41, 42, __, 44; __, __, 47, ___, 49, 50.
50, 49, 48, __, __, 45, 44, ___, ____, 41, 40
Written in a sequence forwards in multiples stated above with some numbers left out</td>
<td>3 lessons</td>
</tr>
</table>

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 Number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 100 **Create own patterns** Create own number patterns.	Sequences should show counting forwards and backwards in: • 1s from any number between 1 and 50 **Forwards in** • 10s from any multiple of 10 between 0 and 50 • 5s from any multiple of 5 between 0 and 50 • 2s from any multiple of 2 between 0 and 20 **Create own patterns** • Create own number patterns	A number line that shows the initial intervals, and learners fill in the others  A number grid with the counting sequence covered or omitted 1 _ 3 _ 5 _ 7 _ 9 _ 11 _ 13 _ 15 _ 17 _ 19 _  Learners can also colour or cover numbers as they skip count. By the end of the term, the number range goes up to 50. Learners can work with the whole sequence 1 - 50 or parts of the sequence.	3 lessons

GRADE 1 TERM 2 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.1. Position, orientation and views	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and views** Match different views of the same everyday object. **Position and directions** Follow directions to move around the classroom. Follow instructions to place one object in relation to another e.g. put the pencil inside the box.		The language of position developed during Term 1 should be practised regularly during Whole class teaching time and focus group teaching time throughout the term;: spend short amounts of time practising the language regularly. Work on the language of position can be consolidated through written recording such as drawing, colouring or matching drawings with words. This can be done during independent time. Some of the language of position can also be practised when learners work with 2-D shapes.	
3.2 3-D objects	Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as building blocks, recycling material, construction kits.		Learners can continue to build objects with recycling material or building blocks/ matchboxes or construction kits during independent time.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour and 24 minutes)
3.3 **2-D shapes**	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	Most work with shapes in Grade 1 is done practically with concrete objects. All work should be consolidated through written exercises. Learners start with free play with various shapes, including making pictures with cut-out geometric shapes. This can be done in independent time. This can also be done during Life Skills lessons. Learners copy pictures made up of geometric shapes. These pictures can be provided by the textbook or the teacher. This enables learners to identify circles and squares of different sizes, squares and triangles in different positions and triangles with different shapes. This can be done in independent time. This can also be done during the Life Skills lessons. **Comparing and describing 2-D shapes: size** Learners compare the size of similar shapes e.g. • order circles from smallest to greatest; and • put all squares or the same size together. Use the language of size to compare different shapes e.g. “I drew a triangle inside the square, so the triangle is smaller than the square.” **Describing 2-D shapes: colour** Learners talk about the colours of shapes and then sort shapes according to colour. Identifying and naming objects and their colours, as well as comparing sizes of objects can be practised during work with patterns. **Recognising and naming circles, triangles and squares** Learners should work with circles and squares of different sizes, and triangles that are shaped differently. It is important that learners do not only see one example of each shape. Most commercial sets of shapes give only one example of triangles. Learners need to be able to recognise • Triangles that are shaped differently and place in different positions. These are some triangles: • Squares of different sizes that are placed in different positions. These are some squares: 	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour and 24 minutes)
3.3 **2-D shapes**	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	Circles of different sizes. These are some circles: It is useful for learners to work with cut-out cardboard models of shapes. This allows learners to see different triangles and squares placed in different positions. Learners sort shapes according to whether they have straight or round sides. Learners sort and groups shapes according to whether they are triangles, squares, or circles. Work is consolidated through written exercises. These exercises can include colouring, matching names to shapes etc.	3 lessons

GRADE 1 TERM 2 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Passing of time** Talk about passing of time • Order regular events from their own lives • Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow **Telling the time** • Describe when something happens using language, e.g. morning, afternoon, night, early, late • Knows days of week • Knows months of year • Place birthdays on a calendar		Learners should learn how to talk about • the sequences of events • duration of time Learners continue to consolidate ways of talking about time on a daily basis during whole class teaching time or focus group teaching time. Learners talk about and answer questions about when things happen, using language such as morning, afternoon, night, early and late. Learners sequence events using language such as yesterday, today, tomorrow; the days of the week and the months of the year. Learners compare time lengths using language such as longer or shorter and faster or slower. Learners talk about the ordering of events from their own lives. They also order sequences of pictures such as • the steps to make a sandwich or a cup of tea; • photographs showing a baby grown into an elderly person; • life cycle of animals e.g. egg to chicken, or egg to frog or egg to a butterfly; and • regular events in the day (waking up, being at school, playing, eating supper, sleeping). Continue to place birthdays on the calendar throughout the year.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour and 24 minutes)
4.2 Length	**Informal measuring** • Compare and order the length, height or width of two or more objects by placing them next to each other • Use language to talk about the comparison e.g. longer, shorter, taller, wider • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc		All measurement in Grade 1 is informal. No formal measurement of length with standard units is done. In Term 1 it was recommended that learners focus on • direct comparison of the length of objects by placing them next to each other; • ordering and comparing the lengths or heights or widths of three or more objects, by placing pairs of objects next to each other, until all objects can be sequenced; and • developing the language to talk about differences in length, height, width etc. During independent work time throughout the term, learners can practise and consolidate ordering and comparing the lengths or heights or widths of three or more objects, by placing pairs of objects next to each other, until all objects can be sequenced. All work should be recorded.	
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier		All measurement in Grade 1 is informal. No formal measurement of mass with standard units is done. In Term 1 it was recommended that learners focus on • directly comparing the mass of objects; and • ordering and comparing the masses of three or more objects, by placing pairs of objects on a balance, until all objects can be sequenced; and • developing the language to talk about differences in mass. During independent work time throughout the term, learners can practise and consolidate ordering and comparing the masses of three or more objects, by placing pairs of objects on a balance, until all objects can be sequenced All work should be recorded.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour and 24 minutes)
4.4 **Capacity/ Volume**	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary • Compare and order the amount of liquid that two containers can hold if filled (capacity) • Use language to talk about the comparison e.g. more than, less than, full, empty • Estimate and measure, compare and order the capacity of containers by using non-standard measures e.g. spoons and cups	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary • Compare and order the amount of liquid that two containers can hold if filled (capacity) • Use language to talk about the comparison e.g. more than, less than, full, empty • Estimate, measure, compare, order and record the capacity of containers by using non-standard measures e.g. spoons and cups	All measurement in Grade 1 is informal. No formal measurement of length with standard units is done. The recommended focus in Term 1 was on developing language to talk about extremes and comparisons in volume. The focus in Term 2 can be on direct comparisons. The focus in Term 4 can be learners working with informal units of measurement. Learners can also practise and consolidate these concepts during independent work time throughout the year. **Direct comparisons of the volumes in containers** • Developing an understanding of volume and the language to talk about it Learners begin to think and talk about volume by comparing how much is in identical two containers (or drawings of two identical containers). The focus is on - full and empty; - more than/less than; and - the same as. Learners fill and empty containers • Compare volumes of two or more, different-looking containers by pouring into a third container. Once learners can talk about the extremes of volume (empty and full etc.) and compare the volumes (that are obviously different at first glance) in two identical containers, they can move on to comparing the volumes in two different-looking containers. Focus especially on wide and narrow containers e.g. • fill to the same level a 2 litre bottle and 500 ml bottle; and • ask learners which bottle containers more. Learners can check by pouring the liquid into a third container and marking off the height. Young learners often do not consider how wide a container is when commenting on the volume; they tend only to look at how far up the container is filled. Learners should be given lots of experience in comparing the volumes in containers with different widths. **Recording** Learners should record all the work.	2 lessons

GRADE 1 TERM 2 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
Working with collections of objects				
5.1 Collect and sort objects	**Collect and organise objects** Collect and sort everyday physical objects.	**Collect and organise objects** Collect and sort everyday physical objects.	See notes for Term 1. in term 2 learners continue to work with collections in the same way, but less guidance can be given. once learners have been guided through the process of sorting and representing collections during the focus group time, they can practise it during independent work time. Once learners have practised answering questions about their collections, you can begin to ask them to describe their collection, without guiding them with specific questions.	1 lesson
5.2 Represent sorted collection of objects	**Represent sorted collection of objects** Draw a picture of collected objects.	**Represent sorted collection of objects** Draw a picture of collected objects.		
5.3 Discuss and report on sorted collection of objects	**Discuss and report on sorted collection of objects** • Give reasons for how collection was sorted • Answer questions about - how the sorting was done (process) - what the sorted collection looks like (product) • Describe the collection and drawing • Explain how the collection was sorted	**Discuss and report on sorted collection of objects** • Give reasons for how collection was sorted. • Answer questions about - how the sorting was done (process) - what the sorted collection looks like (product) • Describe the collection and drawing • Explain how the collection was sorted		
It is recommended that working the data handling cycle is the focus of Terms 3 and 4.				

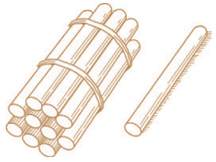
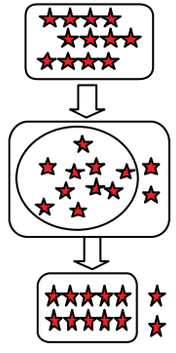
GRADE 1 TERM 3 1. NUMBER, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
NUMBER CONCEPT DEVELOPMENT: Count with whole numbers				
1.1 Count objects	Count out objects reliably to 50. Give a reasonable estimate of a number of objects that can be checked by counting.	Count out objects reliably to 40 Give a reasonable estimate of a number of objects that can be checked by counting.	**What is different from Term 2?** In Term 3, learners extend the counting range. There is still a focus on understanding the cardinality principle. During this term learners should learn how to position the objects systematically when counting so that when they check their count, the arrangement helps them to count more easily. For example, counters could be placed in rows. During this term learners continue extending their counting skills and practising: • counting all; • counting on.; • the cardinality principle of numbers; and • working with written texts. **Subitising** Learners continue practising recognising a small collection of objects. **Counting in groups** In order to help learners count in intervals of two, five and 10, they need to group objects in twos, fives and tens in order to count a collection of objects. Number cards should be displayed at each collection to show the number of objects counted. The counting in groups will prepare learners for understanding multiples. **Resources:** Careful consideration needs to be given to the kind of apparatus used. • Structured apparatus, such as a string of counting beads, can be used. • The abacus can be used to practice counting in groups of ten. • They can make bundles of 2, bundles of 5 and ten with matchsticks or counting sticks and then count all.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.2 **Count forwards and backwards**	**Count forwards and backwards in** • 1s from any number between 0-100 **Count forwards in** • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100	**Count forwards and backwards in** • 1s from any number between 0 - 80 **Count forwards in** • 10s from any multiple of 10 between 0 and 80 • 5s from any multiple of 5 between 0 and 80 • 2s from any multiple of 2 between 0 and 80	**What is different from Term 1?** In Term 3, learners now count to 80 They continue to count in multiples of 2, 5 and 10. **Further activities:** **Whole class activities** Count forwards and backwards up to 80 • Learners count forwards and backwards. • Teacher points to the numbers on the number grid as learners count to 70. • Learners count in fives from 25 to 60. • Learners count in tens forwards from 0 to 80. Skip-count using 5s and 10s up to number 80 • Learners count in 10s up to 50 as teacher points to the number chart. • Teacher points to a multiple of 5 on a 100 chart and learners count. • Learners count forwards and backwards in 10s. Using the 100 chart, they should respond to similar type instructions: • Count on in tens from 20. • Count back in ones from 56. • 80, 70, 60: say the next three numbers using your 100 chart. **Independent work** The skip counting skills need to be applied to written activities. Example: Learner scan: • Complete simple number sequences; and • ill in missing numbers on a number track and number line Write the next two numbers 66, 65, 64,__, __,	

<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS FOCUS FOR TERM 2</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION (in lessons of 1 hour 24 minutes)</th></tr>
<tr>
<td>1.3
Number symbols and number names</td>
<td>Recognise, identify and read numbers
• Recognise, identify and read number symbols 0 - 100
• Write number symbols 0 - 100.
• Recognise, identify and read number names 1 - 10
• Write number names 1 - 10</td>
<td>Recognise, identify and read numbers
• Recognise, identify and read number symbols 0 - 80
• Write number symbols 0 - 80
• Recognise, identify and read number names 1 - 10
• Write number names 1 - 10</td>
<td>What is different from Term 2?
In Term 3, the number range has increased to 80. It is now expected that learners write number symbols to 20. They need to be able to do this because they are calculating to 20 and therefore writing number sentences. Learners continue to practice reading and writing their number names. They should be able to match the symbol to the number name. Workbook activities and writing in the class-work book can be done during independent time.
Example of written work:
Match the words to the objects
<table>
<tr><td>One</td><td> </td></tr>
<tr><td>Two</td><td> </td></tr>
<tr><td>Three</td><td> </td></tr>
<tr><td>Four</td><td> </td></tr>
<tr><td>Five</td><td> </td></tr>
<tr><td>Six</td><td> </td></tr>
<tr><td>Seven</td><td> </td></tr>
<tr><td>Eight</td><td> </td></tr>
<tr><td>Ten</td><td> </td></tr>
</table>
What is expected from learners?
• That they can read number symbols to 50
• That they can write number symbols to 20
• That they can read number names to 10
• That they can write number names to 10</td>
<td></td>
</tr>
</table>

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.4 **Describe, compare, order numbers**	**Order and compare objects.** • Compare collection of objects according to many, few, most, least; more than, less than; the same as, just as many as, different • Order collection of objects from most to least and least to most • Range up to 100 objects **Order and compare numbers** • **Order** numbers - from smallest to greatest and greatest to smallest - before, after, in the middle/ between - using the number line 0 - 100 • Compare whole numbers according to smaller than, greater than, more than, less than, is equal to. • One-to-one correspondence • Number range up to 100 **Use ordinal numbers to show order, place or position** • Position objects in a line from first to tenth or first to last e.g. first, second, third … tenth, last. (ordinal numbers) Ordinal aspect of numbers in the range first to tenth	**Order and compare 15 objects.** • Compare collection of objects according to many, few; most, least; more than, less than; the same as, just as many as, different • Order collection of objects from most to least and least to most • Range up to 15 objects **Order and compare numbers to 15** • **Order** numbers: - from smallest to greatest and greatest to smallest - before, after, in the middle/ between - using the number line 0 - 80 • Compare whole numbers according to smaller than, greater than, more than, "less than, is equal to • One-to-one correspondence • Number range up to 15 **Use ordinal numbers to show order, place or position** • Position objects in a line from first to tenth or first to last e.g. first, second, third … tenth., last (ordinal numbers)	**What is different from Term 2?** In Term 3, learners continue to: • order and compare collection objects; • order and compare numbers; and • use the language of ordering and comparing. **Further activities:** Teacher says a number e.g. 12. Teacher asks questions: Where is the number on the number line? Which number comes before the number 12? Which number comes after the number 12? 12 is 1 more than _____ 12 is 1 less than _____	

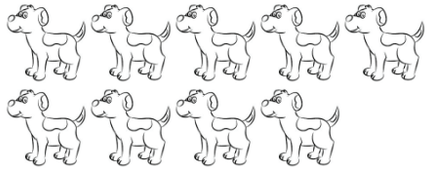
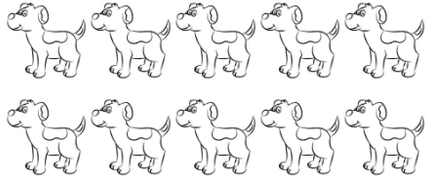
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 Place value	**Recognise the place value of at least two-digit numbers to 20** • Partition two-digits numbers into tens and ones to 20 e.g. 12 is 10 and 2	**Recognise the place value of at least 2-digit numbers to 15** • Partition two-digits numbers into tens and ones to 15 e.g. 12 is 10 and 2	**What is different from Term 2?** During this term learners begin to break up numbers into tens and ones/units using: • grouping of objects to tens; and • the written form 14 = 10 and 4. A complete understanding of place value develops across the Foundation and Intermediate Phase. During Grade 1 learners begin to think about groups of ten things or objects as a unit. They begin to make a transition from seeing ten as ten loose ones to now seeing 10 as a single unit or as 1 ten. To begin to understand place value in this term, learners need to: • know their number names and count in sequence confidently to at least 20; • write and read number symbols; • do simple addition and subtraction; • count physical objects by grouping; and • be able to represent the groups. **Breaking down numbers into tens and ones/units** The focus in Grade 1 is on making groups of tens and loose ones. Before breaking down numbers into tens and ones, learners should have had sufficient practice in breaking down numbers in different ways in Terms 1 and 2. This should have been done practically and in written form. **Using concrete apparatus** Concrete models are useful in building learners' number sense, representing numbers and the principle of place value. When counting in tens and grouping in tens, learners will begin to understand that multiples of 10 provide bridges when counting e.g. 26, 27, 28, 29, **30,** 31. They should begin to be aware that the word and symbol 10 represents a single unit. Working with concrete apparatus by grouping objects to form ten ones and understanding that 10 is one group of ten loose ones. Simply showing learners a group of ten and telling them that 14 is 1 ten and 4 loose ones will not construct the idea that 14 is 1 ten and 4 loose ones. Grouping loose objects to make a group of ten is more meaningful. Using an abacus, learners should be able to show: one ten; one ten and 2 ones; one ten and 3 ones; and one ten and 4 ones. 	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour and 24 minutes)
1.5 Place value	**Recognise the place value of at least two-digit numbers to 20** • Partition two-digits numbers into tens and ones to 20 e.g. 12 is 10 and 2	**Recognise the place value of at least 2-digit numbers to 15** • Partition two-digits numbers into tens and ones to 15 e.g. 12 is 10 and 2	Expect learners to count in ones to make the groups of tens. For many it will be the only way to name the number or say how many there are. Learners can make bundles of ten and loose ones to show that 11 can be broken up into one bundle of ten and one loose one.  Interlocking cubes can be stacked to form towers or columns of 10. Place value cards can be used to show tens and ones. **Moving to written texts** **Pictorial representation of grouping into tens and ones** Learners can be presented with images that allow for grouping of tens and ones left over. **Example:** By the end of the term learners should be able to write: 13 = 1 ten and 3 loose ones 13 = 10 and 3 **Recommended resources** Objects that can be grouped: • Counting sticks • Counters that can be threaded • Matchsticks • Ice cream sticks • Interlocking cubes • Counting beads • An abacus 	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.6 Problem-solving techniques	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus	**What is different from Term 2?** The calculating techniques continue to be practised. Doubling and halving can be used as a calculating technique this term. However, learners should continue to practise doubling and halving in word problems and context-free situations. By the end of this term learners are beginning to solve the word problems using the following techniques: • Drawings or concrete apparatus • Building up or breaking down numbers • Doubling and halving • Number lines See notes for Term 2.	
1.7 Addition, subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 15.	**What is different from Term 2?** See notes for Term 2 but work with numbers up to 15.	
1.8 Repeated addition leading to multiplication	Solve word problems in context and explain own solution to problems involving repeated addition with answers up to 20.	Solve word problems in context and explain own solution to problems involving repeated addition with answers up to 15.	See Term 2 for examples of problems but work with numbers up to 15.	
1.9 Grouping and sharing leading to division	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 20 and with answers that may include remainders.	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 15 and with answers that can include remainders.	See term 1 for examples of problems but work with numbers up to 15.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour and 24 minutes)
1.11 Money	• Recognise and identify the South African currency - coins 5c, 10c, 20, 50c, R1, R2; R5 - notes. R10 and R20 • Solve money problems involving totals and change in cents up to 20c or rand to R20	• Recognise and identify the South African currency - coins 5c, 10c, 20c, 50c, R1, R2; R5 • Solve money problems involving totals and change to R20 and in cents up to 20c	**Totals - only rands** Learners work with R1, R2, R5, R10 and R20 banknotes. They add amounts up to R20 practically by using play money. Examples: R5 + R10 = R15 R10 + R10 + R10 = R30 - repeated addition R5 +R2 + R8 = R15 - filling up 10 **Change - only rand** Learners work with R1, R2, R5, R10 and R20 notes. They do subtraction practically by using paper notes. Learners complete worksheets where they work out the change for items they buy for R20 or less **Examples:** R10 - R8 = R2 R15 - R5 = R10	
CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • concrete apparatus • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when performing calculations: • concrete apparatus • building up and breaking down numbers • doubling and halving • number lines supported by concrete apparatus e.g. counting beads.	Learners are expected to solve context-free calculations using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines See notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and subtraction**	Number range: 0 - 20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, -, =, □) • Practise number bonds to 10	Number range: 0 - 15 • Add to 15 • Subtract from 15 • Use appropriate symbols (+, -, =, □) • Practise number bonds to 9	**What is different from Term 3?** In Term 2, the calculating number range has increased from 10 to 15 In order to work with the symbols of addition and subtraction learners should have had sufficient experience to: • Use and understand the language of addition and subtraction • Count all • Count on from the larger number. • Order and compare numbers **Calculating strategies when doing addition and subtraction** During this term learners will continue to use the following strategies: • Doing addition by counting all. • Doing addition by counting on • Count on from the greater number • Doing subtraction by taking away • Subtraction by counting backwards During this term learners will: **Change a number to ten and then subtract or add ones.** This strategy can be taught with quite low number ranges and applied to higher numbers. Example: 9 + 6 = □ The learners can say to themselves: “I will take one away from the 6 and add it to the 9 to make 10.” Then 9 + 6 can be written as 10 + 5 = 15 Example: The learners can say to themselves: “I will take 2 away from the 5 and add it to the 8 to make 10.” Then 8 + 5 can be written as 10 + 3 = 13	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and subtraction**	Number range: 0 - 20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, -, =, □) • Practise number bonds to 10	Number range: 0 - 15 • Add to 15 • Subtract from 15 • Use appropriate symbols (+, -, =, □) • Practise number bonds to 9	When learning this strategy, learners will use concrete apparatus to understand the strategy. **Example:** Group the dogs to make  **9 + 4**  **10 + 3** $9 + 4 = 10 + 3 = 13$ **Break down a number into smaller parts to make calculation easier** Learners will break up a number into different parts. They will break up a number into parts that are manageable for them. • Using arrows and numbers to show thinking 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	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and subtraction**	Number range: 0 - 20 • Add to 20 • Subtract from 20 • Use appropriate symbols (+, -, =, □) • Practise number bonds to 10	Number range: 0 - 15 • Add to 15 • Subtract from 15 • Use appropriate symbols (+, -, =, □) • Practise number bonds to 9	**Using and applying previous knowledge as techniques** The techniques shown below allow learners to formalise their counting and number sense. Practising the techniques below will encourage learners to reflect upon the relationships between numbers and teach learners that they can actually use and apply their knowledge in order to calculate. **Put the greater number first in order to count on or back** 4 + 12 = □ Rearrange 4 + 12 as 12 + 2 and count on 4 from 12. **Identify near doubles** 7 + 6 The learner can explain that the sum can be written as 6 + 6 – 1 (double plus 1) or 7 + 7 – 1 (double 7 minus 1). Learners might record their strategies using arrows 6 + 6 → 12 + 1 = 13 **Use knowledge of the inverse relationship between addition and subtraction** 15 – 9 = □ The learner knows that the sum can be rewritten as an addition sum: "I know that 9 + □ = 15." The learner might use counting on in order to do the calculation. **Number bonds** In order to practise the number bonds learners must be given a variety of activities to do. This is ideally done during independent time. The number line can also be used to practise the bonds to 9. **Concept of doubling** Learners should be writing number sentences in this term. 1 + 1 = □ 2 – 1 = □ 2 + 2 = □ 4 – 2 = □ 3 + 3 = □ 6 – 3 = □ 4 + 4 = □ 8 – 4 = □ Learners should also be able to respond to the following questions: • Double 3. • What is two 3s? • I roll double six. What is my score? • How many socks are there in 5 pairs?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour and 24 minutes)
1.14 Repeated addition leading to multiplication	• Repeated addition (i.e. the same number) to • Use appropriate symbols (+, =, □)	• Repeated addition(i.e. the same number) to • Use appropriate symbols (+, =, □)	**What is different from Term 2?** In Term 3, learners continue to develop the language of repeated addition. Example: • lots of • groups of Learners also continue to write number sentences for pictorial representations. The skip counting should continue to help learners count the objects grouped in pictures. If pictures or objects are grouped in twos then learners should be counting in twos and no longer in ones to find the total number of objects.	
1.16 Mental mathematics	**Number concept: range 20** • Order a given set of selected numbers • Compare numbers to 20 and say which is more or less. • Know which number is 1 more or 1 less • Know which number is 2 more or 2 less. • Know which number is 10 more or 10 less. • Rapidly recall: • Number bonds to 10 • Recall addition and subtraction facts to 10 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down	**Number Concept: Range 15** • Order a given set of selected numbers. • Compare numbers to and say which is more or less • Know which number is 1 more or 1 less • Know which number is 2 more or 2 less **Rapidly recall:** • Number bonds to 5 • Recall addition and subtraction facts to 5 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down	**What is different from Term 2?** In Term 2, the number range increases from 10 to 15. Examples of questions and activities that can be asked and done: • Start with 3 and count forwards in ones to 10. • Learners line up and ask: Who is first, second, third or last? • Which is less 14 or 8? • Which is more 8 or 4? • What is 2 less than 13? • What is 2 more than 8? • Give me a number between 1 and 3. • Give me a number between 10 and 14. Is there only one number? • Put these number cards in order from the smallest to the biggest number. **Rapidly recall** Show me the number to add to make 5 (writing down or using the place value or Flard cards) • 1 • 2 • 3 • 4 Show me the number left when …. Is taken away from 5 (writing down or using the place value or Flard cards) • 1 • 2 • 3 • 4 1 + 2 = 3 What is 2 + 1? Is the answer the same? 3 + 1 = 4 what is 1 + 3? Is the answer the same?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour and 24 minutes)
1.16 Mental mathematics	**Number concept: range 20** • Order a given set of selected numbers • Compare numbers to 20 and say which is more or less. • Know which number is 1 more or 1 less • Know which number is 2 more or 2 less. • Know which number is 10 more or 10 less. • Rapidly recall: • Number bonds to 10 • Recall addition and subtraction facts to 10 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down	**Number Concept: Range 15** • Order a given set of selected numbers. • Compare numbers to and say which is more or less • Know which number is 1 more or 1 less • Know which number is 2 more or 2 less **Rapidly recall:** • Number bonds to 5 • Recall addition and subtraction facts to 5 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down	**Calculation strategies:** Use calculation strategies to add and subtract efficiently. Add the following by putting the larger number first and count on: Double 1. What are 2 twos? What is half of 4? Using the number line How many jumps from 3 to 5? How many jumps back from 5 to 2?	

GRADE 1 TERM 3 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawings lines, shapes or objects **Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects	In Grade 1 learners can focus on patterns in which the elements are repeated in a regular way. See notes Term 2.	1 lesson

<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 3</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr>
<td>2.2
Number patterns</td>
<td>Copy, extend and describe
Copy, extend and describe simple number sequences to at least 100.
Create own patterns
Create own number patterns.</td>
<td>Copy, extend and describe
Copy, extend and describe simple number sequences to at least 80.
Sequences should show
counting forwards and backwards in:
• 1s from any number between 1 and 80
counting forwards in:
• 10s from any multiple of 10 between 0 and 80
• 5s from any multiple of 5 between 0 and 80
• 2s from any multiple of 2 between 0 and 80
Create own patterns
Create own number patterns</td>
<td>Number sequences can be linked with counting. As learners counting skills change and develop so the kinds of number sequences learners work with can develop.
Sequences should show counting forwards and backwards in:
• 1s from any number between 1 and 80
• 10s from any multiple of 10 between 0 and 80
• 5s from any multiple of 5 between 0 and 80
• 2s from any multiple of 2 between 0 and 80
When learners do verbal counting they can be shown number sequences written down in different ways. They can point to the number being counted.
Example 1: Using a number chart
<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>
Example 2: Using a number line to identify a pattern
Counting in 10s from 50 to 80
Learners are reading numbers to 80, but only writing numbers 1 to 15. Number pattern with numbers beyond 15 can be done by:
• colouring in numbers in the pattern, on a number grid;
• circling numbers in the pattern, on a number grid or number line;
• using number cards to pack out the number sequence;
• using number cards to show the missing numbers in a written sequence provided; or
• using a list of number symbols that is provided to draw a line from the correctly chosen number to the position it should occupy.
Learners can also be given a written sequence of numbers with numbers missing. They should then be provided with a list of possible numbers, from which they can choose the correct answer.
Learners can then fill in missing numbers given in any of the forms of sequences above, as well as filling in missing numbers in a written number sequences e.g. .</td>
<td>3 lessons</td>
</tr>
</table>

GRADE 1 TERM 3 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS** **REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS** **FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.1 **Position, orientation and views**	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and views** Match different views of the same everyday object. **Position and directions** Follow directions to move around the classroom. Follow instructions to place one object in relation to another e.g. put the pencil inside the box.		The language of position developed during Term 1 should be practised regularly during whole class teaching time and focus group teaching time throughout the term: spend short amounts of time practising the language regularly. Some of the language of position can also be practised when learners work with 3-D objects. Work on position and direction can be consolidated through written recording such as drawing, colouring or matching drawings with words. This can be done during independent time.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as building blocks, recycling material, construction kits	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide	**Focussing on features of 3-D objects** Learners work with balls and objects shaped like balls, and various boxes and other objects shaped like rectangular prisms or cubes. Learners can make a slide or incline by placing a box under one end of a large book. Learners investigate which of the objects can roll, which slide. Learners can also investigate whether they can make stacks or towers using either only balls or only boxes. During independent time learners can continue to • sort objects according to size; • sort objects according to colour; • build with objects; and • make balls or boxes from clay or play dough. **Recognising and Naming balls (spheres) and boxes (prisms)** Learners continue to identify and describe geometric and everyday objects by saying whether they are shaped like a ball or like a box e.g. this brick is shaped like a box or this orange is shaped like a ball. **Written exercises** Practical work on 3-D objects must be consolidated through written exercises.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	No specific focus on 2-D shapes is recommended in Term 3. However, learners can continue to make pictures with cut-out 2-D shapes or do written exercises during independent work time either in Mathematics or Life Skills.		
3.4 **Symmetry**	**Symmetry** • Recognise symmetry in own body • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes	**Symmetry** • Recognise symmetry in own body • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes	Learners should look for lines of symmetry in concrete objects and pictures. Written exercises should not only be “draw in the other half”, but include examples where learners draw in the line of symmetry on both geometric shapes, e.g. triangles, and non-geometric shapes, e.g. a drawing of a person.	1 lesson

GRADE 1 TERM 3 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES or TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Passing of time** Talk about passing of time • Order regular events from their own lives • Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow **Telling the time** • Describe when something happens using language e.g. morning, afternoon, night, early, late • Know days of week • Know months of year • Place birthdays on a calendar		Learners should learn how to talk about • the sequences of events; and • duration of time. Learners continue to consolidate ways of talking about time on a daily basis during whole class teaching time or focus group teaching time. Learners talk about and answer questions about when things happen, using language such as morning, afternoon, night, early and late. Learners sequence events using language such as yesterday, today, tomorrow; the days of the week and the months of the year. Learners compare time lengths using language such as longer or shorter and faster or slower. Learners talk about the ordering of events from their own lives. They also order sequences of pictures such as • the steps to make a sandwich or a cup of tea; • photographs showing a baby grown into an elderly person; • life cycle of animals e.g. egg to chicken, or egg to frog or egg to a butterfly; and • regular events in the day (waking up, being at school, playing, eating supper, sleeping) Continue to place birthdays on the calendar throughout the year.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Compare and order the length, height or width of two or more objects. by placing them next to each other • Use language to talk about the comparison e.g. longer, shorter, taller, wider • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc.	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc.	**What is different in Term 3?** All measurement in Grade 1 is informal. No formal measurement of length with standard units is done. In Term 1 it was recommended that learners focus on • direct comparison of the length of objects by placing them next to each other; • ordering and comparing the lengths or heights or widths of three or more objects, by placing pairs of objects next to each other, until all objects can be sequenced; and • develop the language to talk about differences in length, height, width etc. During independent work time throughout the term, learners can practise and consolidate ordering and comparing the lengths or heights or widths of three or more objects, by placing pairs of objects next to each other, until all objects can be sequenced. All work should be recorded. In Term 3 learners can focus on doing informal measurement with non-standard units of length. **Informal measurement of length using non-standard units of length** Learners can learn all the principles and practices of measurement using non-standard units. Measuring with non-standard units should not be considered to be inferior to measuring with standard units. Measuring length with non-standard units involves counting how many of the chosen unit are the same length as the object being measured. For example the length of the desk is 8 hand spans. Learners should measure a variety of objects using a range of objects as informal units. There are three ways to use informal units • Pack out in a row across the object being measured a number of objects of the same length, such as matchboxes, identically shaped bottle tops or counters, new pencils etc. For example, to measure the width of a desk, new pencils can be packed out end to end across the desk. Here it is important that • All the objects are the same length. You cannot state that your book is as wide as 12 bottle tops if the bottle tops are of different sizes e.g. 2 litre milk bottle tops, plastic cool drink bottle tops, metal bottle tops etc.; and • No gaps are left between the objects: they need to be packed out so that they touch one another. • Use two identical objects as the non-standard units. Place the one next to the other, and then move the first to the other side of the second. This is done when measuring with hand spans, foot lengths or paces. • Using only one object as the non-standard measure and either flipping it over or marking its end point before sliding it along.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Compare and order the length, height or width of two or more objects. by placing them next to each other • Use language to talk about the comparison e.g. longer, shorter, taller, wider • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc.	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc.	Learners should be taught always to state the unit, e.g. the book is 12 bottle tops wide, the classroom is 38 paces long. Once learners have measured with any unit a couple of times, they should estimate about how many of that unit long the object to be measured is. Estimation before measuring is important, but can only be done once learners have done some measuring with that unit. Learners need to be taught that in order to compare lengths, heights or widths the same unit needs to be used. For example, if the width of the doorway measured is 20 hand spans and the width of the desk is 8 pencil lengths, you cannot say whether the doorway is wider than the desk. Learners need to measure with a range of informal units, so that they can • begin to understand that the smaller the unit, the larger the number of times it will be used, e.g. the width of the classroom could be 20 paces but 48 foot lengths; and • begin to use units which are appropriate to what they are measuring, e.g. measuring the width of the classroom with bottle tops is a waste of time. **Recording measurements** Although measuring is a practical skill, learners should record their measurements at all times. **Measuring length as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of informal measurement of length, e.g. The washing powder box has a height of 8 matches. The cereal box has a height of 13 matches. How much higher is the cereal box than the washing powder box? Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier		All measurement in Grade 1 is informal. No formal measurement of mass with standard units is done. In Term 1 it was recommended that learners focus on • directly comparing the mass of objects; • ordering and comparing the masses of three or more objects, by placing pairs of objects on a balance, until all objects can be sequenced; and • develop the language to talk about differences in mass. During Independent Work Time throughout the term, learners can practise and consolidate ordering and comparing the masses of 3 or more objects, by placing pairs of objects on a balance, until all objects can be sequenced All work should be recorded.	
4.4 Capacity/ Volume	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary • Compare and order the amount of liquid that two containers can hold if filled (capacity) • Use language to talk about the comparison e.g. more than, less than, full, empty • Estimate and measure, compare and order the capacity of containers by using non-standard measures e.g. spoons and cups		All measurement in Grade 1 is informal. No formal measurement of length with standard units is done. So far during the year the focus in capacity/volume has been on • developing language to talk capacity/volume; • comparing volumes in two identical containers; and • comparing volumes in containers with different widths, by pouring into a third container. See notes for Term 2. Learners can also practise and consolidate these concepts during independent work time.	

GRADE 1 TERM 3 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
Working with collections of objects				
5.1 Collect and sort objects	**Collect and organise objects** Collect and sort everyday physical object	Sorting collections of objects is no longer a specific focus in the second half of the year. However, it can be given as an occasional activity during independent work time. The recommended focus in Term 3 is the data handling cycle: see below.		
5.2 Represent sorted collection of objects	**Represent sorted collection of objects** Draw a picture of the collected objects			
5.3 Discuss and report on sorted collection of objects	**Discuss and report on sorted collection of objects** • Give reasons for how the collection was sorted • Answer questions about - how the sorting was done (process) - what the sorted collection looks like (product) • Describe the collection and drawing. • Explain how the collection was sorted			

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
Working with data				
5.4 Collect and organise data	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher	**Collect and organise data** Collect data about the class or school to answer questions posed by the teacher. **Represent data** • Represent data in pictograph **Analyse and interpret data** • Answer questions about data in pictograph	**Recommended focus: The complete data handling cycle** In the data handling cycle • Learners collect information to answer a question. In the Foundation and Intermediate Phase this question is normally provided by the teacher or textbook; • Learners sort and represent the information in ways which make it easier to analyse. The form of representation that learners in Grade 1 practise is a pictograph; and • Learners analyse the information in the pictograph by answering questions posed by the teacher. A class pictograph In Grade 1 it is useful to start data handling by making a class picture graph. Working together as a class helps learners to be involved in all the stages of the process without getting lost in the detail of any stage. Making a allows the teacher to focus the learners on the key aspects of data handling and also on what they need to know about the important features of a pictograph • where and how to label the graph (graph title) • where and how to label the categories • the pictograph needs to have a key which explains what each picture means • the pictures or the spaces for pictures need to be the same size • how to place the pictures evenly in rows • how to read the graph Working through the whole data cycle can take several lessons. **Collect, organise and represent data** Teachers in the phase should ensure that different topics are chosen for data collection and analysis in each of the grades. Suitable examples include re-arranging the previous month's daily weather chart to form a pictograph or making a pictograph of learners' birthdays. **Analyse data** Learners answer questions such as: "What kind of weather was most common this month?" What kind of weather was least common this month?" "How many more sunny days than cloudy days did we have?" Working through the whole data cycle can take several lessons.	3 lessons
5.5 Represent data	**Represent data** Represent data in pictograph			
5.6 Analyse and interpret data	**Analyse and interpret data** • Answer questions about data in pictograph			

GRADE 1 TERM 4 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
NUMBER CONCEPT DEVELOPMENT: Count with whole numbers				
1.1 Count objects	Count out objects reliably to 50 Give a reasonable estimate of a number of objects that can be checked by counting.	Count out objects reliably to 50 Give a reasonable estimate of a number of objects that can be checked by counting.	**What is different from Term 3?** In Term 4, learners extend the counting range. There is still focus on understanding the cardinality principle. During this term learners should learn how to position the objects systematically when counting so that when they check their count, the arrangement helps them to count more easily. **Example:** Counters could be placed in rows. During this term learners continue extending their counting skills and practising: • counting all; • counting on; • the cardinality principle of numbers; and • working with written texts. Learners need to make the link between ordinal and cardinal counting. This is achieved when they realise that stopping the count on reaching the 50th object means that they have counted 50 objects. At the same time they now know that the order in which one counts the objects does not affect the count. **Counting in groups** In order to help learners count in intervals of two, five and 10 they need to group objects in 2s, 5s and 10s. Number cards should be displayed at each collection to show the number of objects counted. Counting in groups will prepare learners for understanding multiples and calculating. By the end of the term learners should be able to recognise a collection by splitting up the number. Example: “I know that is 10 because I put 4 on one side and 6 on the other side”. **Resources:** Careful consideration needs to be given to the kind of apparatus used. • Structured apparatus, such as a string of counting beads, can be used. • The abacus can be used to practise counting in groups of ten. • Learners can make bundles of 2, bundles of 5 and ten and then count all.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.2 Count forwards and backwards	**Count forwards and backwards in** • 1s from any number between 0 and 100 • Count forwards in • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100	**Count forwards and backwards in** • 1s from any number between 0 and 100 • Count forwards in • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of between 0 and 100 • 2s from any multiple of 2 between 0 and 100	**What is different from Term 1?** In Term 4, learners now count in intervals of and to . The counting in intervals become an important skill that learners will use in Grade 2 and 3 and will help learners when doing their calculations. By the end of the term learners should be able to: Count verbally and respond to questions such as: • Start at 52 count on in ones to 72 • Start at 88 and count back in ones to 70 • Start at 38 and count in twos to 50 • Start at 45 and count in fives to 100 • Start at 10 and count in tens to 100 Learners should be able to apply their counting skills to written activities. Example: • Copy and extend simple number sequences to at least 100. See section on number patterns	

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(in lessons of 1 hour 24 minutes)</th></tr>
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<td>1.3
Number symbols and number names</td>
<td>Recognise, identify and read numbers
• Recognise, identify and read number symbols 0 to 100
• Write number symbols 0 to 20
• Recognise, identify and read number names 1 to10
• Write number name 1 to10</td>
<td>Recognise, identify and read numbers
• Recognise, identify and read number symbols 0 to 100
• Write number symbols 0 to 20
• Recognise, identify and read number names 1 to 10
• Write number name 1 to10</td>
<td>What is different from Term 3?
In Term 4, the number range has increased to 100. Writing number symbols and number names are consolidated during this term. No new knowledge is being learnt. It is important to be aware that subitising and counting rely heavily on careful application and use of number names. Learners need to be using, saying and writing number names in as many different contexts as possible.
By the end of the term they should be able to do the following type of activities:
Matching number names, number symbols, or pictures of objects
This card says 6 What does this card say?
6 11
Match the words to the objects
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<tr><td>Two</td><td>✱ ✱ ✱ ✱</td></tr>
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TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.4 **Describe, compare, order numbers**	**Order and compare up to 20 objects.** • **Compare** collection of objects according to many, few, most, least; more than, less than; the same as, just as many as, different • **Order** collection of objects from most to least and least to most. • **Range** up to 20 objects **Order and compare numbers** • **Order** numbers - from smallest to greatest and greatest to smallest - before, after, in the middle/ between - using the number line 0 to 20 • **Compare** whole numbers according to smaller than, greater than, more than, less than, is equal to • One-to-one correspondence • **Number range** up to 20 **Use ordinal numbers to show order, place or position** • **Position** objects in a line from first to tenth or first to last e.g. first, second, third … tenth, last. (ordinal numbers) **Ordinal aspect** of numbers in the range first to tenth		Through ordering and comparing objects and numbers learners have learnt that: • The cardinal aspect of a number is used to describe the number in a set. **What is different from Term 3?** Learners are introduced to ordinal numbers. By the end of the term and year learners must be able to use the language of ordering and comparing in the following kinds of ways: • First, second, third, fourth, fifth, sixth…….. • How many…… • As many as, the same number as… • Equal to, more than, less than, fewer than, greater than, smaller than, larger than…… • Order, first, last, before, after, next, between numbers • First, second, third, fourth, fifth, sixth…….. • How many…… • As many as, the same number as… • Equal to, more than, less than, fewer than, greater than, smaller than, larger than…… • Order, first, last, before, after, next, between • Colour the fifth circle yellow. • Colour the first circle red. • Colour the eighth circle blue. Learners should respond to questions such as • Who is the first in the row? • Who is second in the queue? • Mthunzi has 5 pencil crayons. Cally has 8 pencil crayons. • Who has fewer pencil crayons? • Give me a number between 15 and 17? • Write down the numbers between 4 and 10 • 1, 2, 3, 4, _, _, _, _, _, 10 • Fill in the missing numbers	

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<tr><td>1.4
Describe, compare, order numbers</td><td></td><td></td><td>
<table>
<tr><th>Before</th><th>Numbers</th><th>After</th></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>
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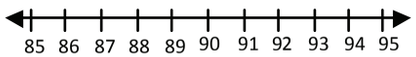
</table>
Write these numbers in order from the biggest to the smallest.
Write these numbers from the smallest to the biggest.
Copy and complete using the words ‘less’ and ‘more’:
• 35 is _____ than 38
• 79 is _____ 65

Knowing that the number before is one less and that the number after is one more
Learners should respond to questions such as:
• What number comes before 17?
• What number comes after 82?
• Fill in the missing numbers on the number line



Put the following number cards in order:
• Which numbers lie between 25 and 30?
• Give me the number that is 1 more than 76?
• Give me the number that is 2 more than 76?
• What number is 1 less than 45?
• What number is 2 less than 39?
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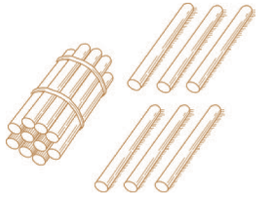
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 **Place value**	**Recognise the place value of at least two-digit numbers to 20** • Partition two-digit numbers into tens and ones e.g. 12 is 10 and 2		**What is different from Term 3?** During this term learners continue to build and develop place value concepts. In Term 4, learners work with a higher number range and continue to: • count and group to make a group of tens and loose ones; • write18 = 1 ten and 8 loose ones; and • then record 14 = 10 and 4. Learners should continue to manipulate concrete apparatus by grouping to form ten and ones to develop the understanding that 10 is one group of ten loose ones.  Using an abacus, learners should be able to show: • one ten; • one ten and 5 ones; • one ten and 6 ones, etc. Expect learners to still count in ones to make the groups of tens. For many it will be the only way to state the number or say how many there are. **Place value cards/Flard cards** Place value cards should be used during this term to show how the numbers are constructed. The place value cards can be shown alongside the bundles or groups of objects. 	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 **Place value**	**Recognise the place value of at least two-digit numbers to 20** • Partition two-digit numbers into tens and ones e.g. 12 is 10 and 2		**Resources** Objects that can be grouped: • Counting sticks • Counters that can be threaded • Matchsticks • Ice cream sticks • Interlocking cubes • Place value cards • Play money It is useful to have ready-made groups of tens that learners have grouped and stored in containers.	
1.6 **Problem-solving techniques**	Use the following techniques when solving problems and explain solutions to problems: • concrete apparatus e.g. counters • pictures to draw the story sum • building up and breaking down numbers • doubling and halving • number lines		**What is different from Term 3?** By the end of this term learners are beginning to solve word problems using the following techniques: • Drawings or concrete apparatus • Building up or breaking down numbers • Doubling and halving Number lines See notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.7 Addition, subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.		By the end of the term learners should be able to do problems like the ones stated below. **Change** Noluthando had 5 apples. Silo gave her 8 apples. How many apples does she have now? Noluthando had 13 apples. She gave 5 apples to Silo. How many apples does she have now? **Combine** Nosisi has 5 green and 8 blue marbles. How many marbles does she have? Nosisi has 13 marbles. 5 are green and the rest are blue. How many blue marbles does Nosisi have? **Compare** Nosisi has 13 bananas. Themba has 5 bananas. How many more bananas does Nosisi have than Themba?	
1.8 Repeated addition leading to multiplication	Solve word problems in context and explain own solution to problems involving repeated addition with answers up to 20.		By the end of the term learners should able to do problems like the ones stated below. **Repeated addition** How many wheels do 4 bicycles have? **Rate** Thami drinks 2 cups of milk every day. How many cups of milk does he drink in a week? **Grids** Mr Khumalo plants 3 rows of cabbage plants. There are 5 plants in a row. How many cabbage plants are there altogether?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.9 Grouping and sharing leading to division	Solve and explain solutions to practical problems involving equal sharing and grouping with whole numbers up to 20 and with answers that may include remainders.		By the end of the term learners should be able to do problems like the ones stated below. **Grouping** Grouping, discarding the remainder • Stella sells apples in bags of 3 apples each. She has 14 apples. How many bags of 3 apples each can she make up? Grouping, incorporating the remainder in the answer • Ben wants to take 15 eggs to his grandmother. How many egg boxes that can take 6 eggs each does he need to pack all the eggs? **Sharing** Sharing, discarding the remainder • Share 14 sweets among 3 friends so that they all get the same number of sweets. Sharing, leading to fractions • Share 4 chocolate bars among 3 friends so that they all get the same amount of chocolate bar and there is nothing left over. (Learners are not required to name the fraction part as one third. They can describe the fractional part as simply “a bit” i.e. fraction of a collection).	
1.11 Money	• Recognise and identify the South African coins: 5c, 10c, 20c, 50c, R1, R2, R5, and bank notes, R10 and R20. • Solve money problems involving totals and change to R20 and in cents up to 20c cents		By the end of the term learners should be able to do problems like the ones stated below. John bought bread for R8. He paid for it with a R10 note. How much change did he get? Rosy’s mum bought a scarf for R17.She paid with 2 ten rand notes. How much change did she get? Judy’s birthday was on Sunday. She received R5 from her sister, R2 from her brother and R10 from her cousin. How much money did she get altogether?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • drawings or concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines		**What is different from Term 3?** Learners are expected to solve context-free calculations using the following techniques: • drawings or concrete apparatus - learners' drawings should start looking quite systematic and they should be able to describe their calculations based on their drawings • building up or breaking down numbers • doubling and halving • number lines See notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and Subtraction**	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, –, =, ☐) • Practice number bonds to 10		Doing addition and subtraction within the number range 0 - 20 means that learners will: • begin to develop place value concepts of tens and ones; • continue to count in groups; and • start realising that counting on in ones is not an efficient strategy. Learners will continue to: • count objects; • recognise, read and write numbers; and • compare and order numbers. In order to work with the symbols of addition and subtraction, learners should have had sufficient experience to: • count all; • count on from the larger number; • use and understand the language of addition and subtraction; and • order and compare numbers. Learners continue to build their understanding of addition and subtraction. By the end of the year learners should be able to: • use the vocabulary related to addition and subtraction and symbols to describe and record addition and subtraction number sentences; • use practical and informal written methods to do addition and subtraction; • solve addition and subtraction calculations and can record their answers in number sentence ands; • understand that subtraction is the inverse of addition and vice versa and use this to derive and record calculations.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and Subtraction**	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, – =, ☐) • Practice number bonds to 10		To understand addition and subtraction learners should be able to: • know and use the fact that the order of addition does not matter; • use the +, - and = signs; • know that ☐ stands for an unknown number; • understand subtraction as 'taking away' and 'finding the difference between'; and • say and write corresponding number facts to a given addition fact and vice versa **Example:** 8 + 6 = 14 implies that 14 – 6 = 8. Recording images of addition and subtraction: While some learners may still want to record and count in 1s, they need to be assisted to start recording and counting in groups. They should be able to: Draw pictures and use numbers, especially showing groups. **Breaking down a number into smaller parts to make calculation easier** Learners will break up a number into different parts. They will break up a number into parts that are manageable for them. Learners will initially break up the seven into ones. However, once the number facts to 10 are intuitive and learners can work with the numbers at an abstract level, they should break up seven into different parts. Using arrows and numbers to show thinking 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	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and Subtraction	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, – =, ☐) • Practice number bonds to 10		**Number bonds** In order to practise the number bonds, learners must be given a variety of activities to do. This is ideally done during independent time. The number line can also be used to practise the bonds to 10. **Using and applying previous knowledge as techniques** The techniques shown below allow learners to formalise their counting and number sense. Practising the techniques below will encourage learners to reflect upon the relationships between numbers and teach learners that they can actually use and apply their knowledge to help calculate. **Put the greater number first in order to count on or back.** 4 + 12 = ☐ Rearrange 4 + 12 as 12 + 4 and count on from 12 **Count on from the bigger number** Learners should be able to count on from the bigger number. This is a far more efficient strategy than counting in ones to 14 and then count in five more. 14 + 5 = ☐ Learners count from 14, then 15, 16, 17, 18, 19 **Identify near doubles** 8 + 7 The learner can explain that the sum can be written as 8 + 8 – 1 (double 8 minus 1) or 7 + 7 + 1 (double 7 plus 1). Learners might record their strategies using arrows: 8 + 8 → 16 - 1 = 15 **Change a number to ten and then subtract or add ones** This strategy can be taught with quite low number ranges and applied to higher numbers. 9 + 6 = ☐ The learners can say to themselves: “I will take one away from the 6 and add it to the 9 to make 10.” There 9 + 6 can be written as 10 + 5 = 15 8 + 5 = ☐ The learners can say to themselves: “I will take two away from the 5 and add it to the 8 to make 10.” There 8 + 5 can be written as 10 + 3 = 13	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and Subtraction	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, – =, ☐) • Practice number bonds to 10		**Use knowledge of the inverse relationship between addition and subtraction** 15 - 9 = ☐ The learner knows that the sum can be rewritten as an addition sum: “I know that .” The learner might use counting on in order to do the calculation. **Number lines** They should be able to use number lines to support their own calculations. **Example:** 13 + 6 = ☐	
1.14 Repeated addition leading to multiplication	• Add the same number repeatedly to 20 • Use appropriate symbols (+, =, ☐)		**What is different from Term 3?** In Term 4, learners continue to develop the language of repeated addition. **Example:** • 2 lots of 3 • 4 groups of 2 Learners also continue to write number sentences for pictorial representations. Skip counting should continue to help learners count the objects grouped in pictures. If pictures or objects are grouped in twos then learners should be counting in twos and no longer in ones to find the total number of objects. By the end of the term learners should be able to: • understand repeated addition as making equal groups; • represent repeated addition using practical objects and drawings; • record matching number sentences to the practical work or drawings; and • use number lines to arrive at an answer.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number concept: Range 20** • Name the number before and after a given number. Order a given set of selected numbers. • Compare numbers to 20 and say which is more or less • Know which number is 1 more or 1 less than numbers. • Know which number is 2 more or 2 less than numbers. **Rapidly recall:** • Addition and subtraction facts to 10 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down		**What is different from Term 3?** In Term 4, the number range increases from 15 to 20. **Examples** of questions and activities that can be asked and done: • Start with 3 and count forwards in ones to 10. • Learners line up and ask: Who is first, second, third or last? • Which is smaller: 14 or 8? • Which is greater: 8 or 4?: • What is 2 less than 13? • What is 2 more than 8? • Give a number between 1 and 3. • Give a number between 10 and 14. Is there only one number? • Put these number cards in order from the smallest to the greatest number. **Rapidly recall** Show me the number to add to make 10 (writing down or using the place value or flard cards) • 1 • 2 • 3 • 4 Show me the number left when …. is taken away from 10 (writing down or using the place value or Flard cards) • 1 • 2 • 3 • 4 • 6 + 4 = 10 What is 4 + 6? Is the answer the same? • 5 + 2 = 7, what is 2 + 5? Is the answer the same? **Calculation strategies:** Use calculation strategies to add and subtract efficiently. • Add the following by putting the larger number first and count on: 1 + 9 2 + 6 1 + 4 • Double 1 What are 2 twos? What is half of 4? • Using the number line How many jumps from 3 to 5? How many jumps back from 5 to 2?	

GRADE 1 TERM 4 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPIC	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawings lines, shapes or objects **Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage **Create own patterns** Create own geometric patterns with physical objects by drawing lines, shapes or objects	Learners will work with patterns from nature, modern everyday life and our cultural heritage from Grade 1 to Grade 6. This means that you do not need to spend a lot of time on this topic. You also need to choose activities and patterns that are appropriate to each grade. In Grade 1 learners can make rubbings of patterns. Usefully examples are patterns on leaves, bark on trees, the patterns on the soles of shoes, patterns on tyres, drain covers, paving etc. One kind of pattern learners can look for is symmetry, e.g. most leaves are symmetrical. Learners can also look at patterns on fences (wire, wooden or vibracrete); brickwork and floor tiles; clothes and material; plates, cups and saucers; soccer balls; animals such as cows, moths and butterflies, zebra, giraffe, leopards, birds, insects; flowers and leaves; traditional or modern beadwork; and traditional clay pots or woven baskets. There are different ways to describe the patterns we see around us. Most patterns around us are made up of lines, shapes or objects. The shapes or objects do not need to be linked to the geometrical 2-D shapes and 3-D objects worked with in Grade 1. Learners can look for and describe • what is repeated e.g. dots, lines, any kind of shape; and • how it is repeated e.g. do the lines cross each other (as in a dishcloth), are all the dots the same size, are they evenly spread, are all the shapes the same size, same colour, do they all face the same way, e.g. if you cut across an orange all the segments are narrower in the middle and wider at the outer edge.	1 lesson

TOPIC	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 Number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 100. **Create own patterns** Create own number patterns.	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 100. Sequences should show • counting forwards and backwards in 1s from any number between 1 and 100 • counting forwards in: - 10s from any multiple of 10 between 0 and 100 - 5s from any multiple of 5 between 0 and 100 - 2s from any multiple of 2 between 0 and 100 **Create own patterns** Create own number patterns.	Number sequences can be linked with counting. As learners' counting skills change and develop, the kinds of number sequences learners work with can develop. Sequences should show counting forwards and backwards in: • 1s from any number between 1 and 100 • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100 Learners can point to numbers on a number line, a number grid, or written sequences as they count. Learners can cover (with counters) or colour or circle numbers on a number line, a number grid, or written sequences as they count Learners can fill in missing numbers in a written sequence, on a number line or on a number grid to practise counting. Remember learners are only writing to 20. See notes for Term 3 for how learners can work with number sequences beyond 20.	3 lessons

GRADE 1 TERM 4 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.1 **Position, orientation and views**	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to **Position and directions** • Follow directions to move around the classroom • Follow instructions to place one object in relation to another e.g. put the pencil inside the box **Position and views** Match different views of the same everyday object	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and directions** • Follow directions to move around the classroom • Follow instructions to place one object in relation to another e.g. put the pencil inside the box. **Position and views** Match different views of the same everyday object	**Position and directions** See notes for Term 1. Any new language of position should be introduced through practical activities that involve learners in physical movement. This can be done during whole class teaching time or focus group time. Directions should be learnt through practical activities in which learners move themselves or objects according to instructions. This can be done during whole class teaching time or focus group time. Work on position and direction can be consolidated through written recording such as drawing, colouring or matching drawings with words. This can be done during independent time. **Position and views** Learners in the Foundation Phase need to understand that objects look different when one looks at them from different positions. Learners may take for granted that objects such as cars look small when they are far away. As learners work more with books and illustrations in books, they need to understand why something in the foreground is shown larger than something in the background. In focus group time learners can experiment with placing their hand in front of them, to block their view of larger objects that are further away. In Grade 1 learners should be given exercises in which they can match different views (views from the top, views from the side, views from the front) of different everyday objects. This will eventually help learners to interpret drawings of geometric objects done from different perspectives.	1 lesson

TOPIC	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as building blocks, recycling material, construction kits	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • colour • objects that roll • objects that slide	Work on 3-D can be consolidated through written exercises.	1 lesson

TOPIC	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • straight sides • round sides	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • straight sides • round sides	See notes for Term 2 Learners work with circles and squares of different sizes and triangles with different shapes. They sort them according to whether they have straight or round sides. Learners sort and groups shapes according to whether they are triangles, squares or circles. Work is consolidated through written exercises.	3 lessons
3.4 **Symmetry**	**Symmetry** • Recognise symmetry in own body • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes	**Symmetry** • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes	Learners should look for lines of symmetry in concrete objects and pictures. Written exercises • should not only be “draw in the other half”; but • should include examples where learners draw in the line of symmetry. The line of symmetry should not always be a vertical line	1 lesson

GRADE 1 TERM 4 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Passing of time** Talk about passing of time • Order regular events from their own lives • Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow **Telling the time** • Describe when something happens using language e.g. morning, afternoon, night, early, late • Know days of week • Know months of year • Place birthdays on a calendar	**Passing of time** Talk about passing of time • Order regular events from their own lives • Compare lengths of time using language e.g. longer, shorter, faster, slower • Sequence events using language such as yesterday, today, tomorrow **Telling the time** • Describe when something happens using language e.g. morning, afternoon, night, early, late • Know days of week • Know months of year • Place birthdays on a calendar	Learners should learn how to talk about • the sequences of events; and • duration of time. Learners continue to consolidate ways of talking about time on a daily basis during whole class teaching time or focus group teaching time. Learners talk about and answer questions about when things happen, using language such as morning, afternoon, night, early and late. Learners sequence events using language such as yesterday, today, tomorrow; the days of the week and the months of the year. Learners compare time lengths using language such as longer or shorter and faster or slower Learners talk about the ordering of events from their own lives. They also order sequences of pictures such as • the steps to make a sandwich or a cup of tea; • photographs showing a baby grown into an elderly person; • life cycle of animals e.g. egg to chicken, or egg to frog or egg to a butterfly; and • regular events in the day (waking up, being at school, playing, eating supper, sleeping). Continue to place birthdays on the calendar throughout the year.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Compare and order the length, height or width of two or more objects. by placing them next to each other • Use language to talk about the comparison e.g. longer, shorter, taller, wider • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc.	All measurement in Grade 1 is informal. No formal measurement of length with standard units is done. During independent work time throughout the term, learners can practise and consolidate measuring lengths, widths and heights with informal units. All work should be recorded. See notes for Term 3		
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	All measurement in Grade 1 is informal. No formal measurement of mass with standard units is done. **What is different in Term 4?** In Term 1 it was recommended that learners focus on • directly comparing the mass of objects; • ordering and comparing the masses of three or more objects, by placing pairs of objects on a balance, until all objects can be sequenced; and • developing the language to talk about differences in mass. In Term 4 learners can focus on doing informal measurement with non-standard units of mass.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 **Mass**	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier	**Informal measurement of mass using non-standard units** Learners can learn all the principles and practises of measurement using non-standard units. Measuring with non-standard units should not be considered to be inferior to measuring with standard units. Measuring mass with non-standard units involves counting how many of the chosen unit have the same mass as the object being measured. For example a ruler has the same mass as 9 blocks. Learners should measure a variety of objects using a range of objects as informal units. Learners should be taught always to state the unit when giving the mass e.g. the book is has the same mass as 34 marbles. Once learners have measured with any unit a couple of times, they should estimate about how many of that unit will have the same mass as the object being measured. Estimation before measuring is important, but can only be done once learners have done some measuring with that unit. Learners need to be taught that in order to compare the mass of different objects, the same unit needs to be used. For example if a ruler has a mass of 20 blocks and a pair of scissors has the mass of 20 marbles, one cannot say whether they have the same mass or not, or which one is heavier. **Recording measurements** Although measuring is a practical skill. learners should record their measurements at all times. **Measuring mass as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of informal measurement of mass. For example, the duster has a mass of 11 marbles. The box of crayons has a mass of 8 marbles. Together they will have a mass of how many marbles? Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary • Compare and order the amount of liquid that two containers can hold if filled (capacity) • Use language to talk about the comparison e.g. more than, less than, full, empty • Estimate and measure, compare and order the capacity of containers by using non-standard measures e.g. spoons and cups	**Informal measuring** • Estimate and measure, compare, order and record the capacity of containers by using non-standard measures e.g. spoons and cups	All measurement in Grade 1 is informal. No formal measurement of capacity/volume with standard units is done. **What is different in Term 4?** In Term 1 it was recommended that learners focus on • developing the language to talk about differences in volume; • comparing the volumes in two identical containers; and • comparing the volumes in two different-looking containers, especially wider and narrower containers. In Term 4 learners can focus on doing informal measurement with non-standard units of volume. **What is capacity? What is volume?** A bottle can have a capacity of four cups, but it may not be filled to its full capacity, it could for example, only may only contain a volume of one cup of water at a particular time. Capacity is the total amount that an object can hold (or the amount of space inside the object). Volume is the amount of space that something takes up. Sometimes learners will be measuring how much liquid (or sand or other substances) are in a container. This is measuring the volume of the substance in the container. At other times learners will be measuring how much a container can hold if it is filled to its maximum capacity. **Informal measurement of length using non-standard units of length** Learners can learn all the principles and practices of measurement using non-standard units. Measuring with non-standard units should not be considered to be inferior to measuring with standard units. Learners should get the opportunity to measure volume/capacity using a range of objects as informal units e.g. cups (but not necessarily measuring cups), spoons (but not necessarily measuring teaspoons), bottle tops such as 2 litre milk bottle tops, small cans, small bottles etc. Measuring volume/capacity with non-standard units involves counting how many times one fills and pours from the chosen unit until one reaches the required capacity or volume. Learners should be taught always to state the unit, e.g. there are 48 spoonfuls of water in the bottle or there just less than a cup of water in the bottle.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Compare and order the amount of liquid (volume) in two containers placed next to each other. Learners check by pouring into a third container if necessary • Compare and order the amount of liquid that two containers can hold if filled (capacity) • Use language to talk about the comparison e.g. more than, less than, full, empty • Estimate and measure, compare and order the capacity of containers by using non-standard measures e.g. spoons and cups	**Informal measuring** • Estimate and measure, compare, order and record the capacity of containers by using non-standard measures e.g. spoons and cups	Once learners have measured with any unit a couple of times, they should estimate the capacity/volume using that unit. Estimation before measuring is important, but can only be done once learners have done some measuring with that unit. Learners need to be taught that in order to compare volumes or capacity the same unit needs to be used. For example if a glass holds 20 teaspoons of water and cup holds 10 tablespoons of water, one cannot say that the glass holds more water. Learners need to measure with a range of informal units, so that they can • begin to understand that the smaller the unit the more time one will need to use/fill it, e.g. the volume in a bottle could be 20 tablespoonfuls but also 1 cup; and • begin to use units which are appropriate to what they are measuring, e.g. measuring a full 2 litre bottle with teaspoons is a waste of time. **Recording measurements** Although measuring is a practical skill, learners should record their measurements at all times. **Measuring capacity as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of informal measurement of capacity/volume. For example, Gogo uses 2 cups of milk to make a pudding. If she doubles the recipe, how much milk will she need? Take account of the number range appropriate for the term, as well as the range of problems types.	1 lesson

GRADE 1 TERM 4 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
Working with collections of objects				
5.1 Collect and sort objects	**Collect and organise objects** Collect and sort everyday physical objects		Sorting collections of objects is no longer a specific focus in the second half of the year. However, it can be given as an occasional activity during independent work time. The recommended focus in Term 4 is on reading and analysing pictographs: see below.	
5.2 Represent sorted collection of objects	**Represent sorted collection of objects** Draw a picture of collected objects			
5.3 Discuss and report on sorted collection of objects	**Discuss and report on sorted collection of objects** • Give reasons for how the collection was sorted • Answer questions about - how the sorting was done (process) - what the sorted collection looks like (product) • Describe the collection and drawing • Explain how the collection was sorted			

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
Working with data				
5.4 Collect and organise data	**Collect and organise data** Collect data about the class or school to answer questions posed by the teacher			
5.5 Represent data	**Represent data** Represent data in pictograph			
5.6 Analyse and Interpret data	**Analyse and interpret data** Answer questions about data in pictograph	Analyse data from representations provided.	Once learners have experienced the whole data cycle (recommended in Term 3), they can focus on analysing representations that are given to them. It is recommended that in Term 4 learners analyse (answer questions) on at least 2 pictographs.	2 lessons

3.5.2. Clarification of Grade 2 content

GRADE 2 TERM 1 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
NUMBER CONCEPT DEVELOPMENT: Count with whole numbers				
1.1 Count objects	**Counting concrete objects** Estimate and count reliably to at least 200 everyday objects. The strategy of grouping is encouraged.	Count reliably to at least 100 everyday objects. Give a reasonable estimate of a number of objects that can be checked by counting.	**See notes for Grade 1, Terms 3 and 4** Term 1 in Grade 2 is a consolidation of work done in term 4 of Grade 1. **Counting in groups** The focus in this term is on counting on and counting in groups**.** Help learners to count large numbers of objects, by encouraging them to group objects in twos, fives and tens. Number cards should be displayed at each collection to show the number of objects counted. The counting in groups will prepare learners for understanding multiples. Learners should be given the opportunity to see that a group of 100 can be composed in different ways, for example: • 10 groups of ten; • 100 loose ones; or • 2 groups of 50. **Counting on** Learners still need the experience of being given a collection of objects and then count on from there. **Resources:** Careful consideration needs to be given to the kind of apparatus used to encourage learners to count in groups. Suitable types of apparatus include: • Structured apparatus, such as a string of counting beads • The abacus to practice counting in groups of ten • Making bundles of 2, bundles of 5 and ten and then counting all with counting sticks or matches • Play money	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.1 Count objects	**Counting concrete objects** Estimate and count reliably to at least 200 everyday objects. The strategy of grouping is encouraged.	Count reliably to at least 100 everyday objects. Give a reasonable estimate of a number of objects that can be checked by counting.	Once learners have seen pre-structured or pre-grouped counting apparatus, encourage them to group objects when counting. Learners need to make the link between ordinal and cardinal counting. This is achieved when they realise that stopping the count on reaching the 50th object means that they have counted 50 objects. By the end of the term learners should be able to: • count objects they can touch or hold; • count the counters in groups of fives and tens and • re-arrange them and count again. Learners should be able to answer the question: "Do you still have the same number of counters?" **Further activities:** Learners should be able to respond to the following kind of instructions and questions: • Here are 100 counters. Count them by grouping them in tens. Now check by counting in ones. Before you start, do you think that the total will be the same? • To count all 100 counters, would you prefer to count them in groups of 20 or 25? Why? • Decide what would be the best way to count a collection of pencils. • Here are 80 counters. If we count in twos or tens, will the total number of counters still be the same? • Count 46 counters by grouping them in twos.	

<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 1</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr><td>1.2
Count forwards and backwards</td><td>Count forwards and backwards in:
• 1s, from any number between 0 and 200
• 10s from any multiple between 0 and 200
• 5s from any multiple of 5 between 0 and 200
• 2s from any multiple of 2 between 0 and 200
• 3s from any multiple of 3 between 0 and 200
• 4s from any multiple of 4 between 0 and 200</td><td>Counts forwards and backwards in:
• 1s from any number between 0 and 100
• 10s from any multiple of 10 between 0 and 100
• 5s from any multiple of 5 between 0 and 100
• 2s from any multiple of 2 between 0 and 100</td><td>Term 1 in Grade 2 is a consolidation of work done in term in 4 Grade 1.
A skip counting remains an important skill that will help learners when calculating. Reciting number sequences remains an important skill needed for counting. Counting should continue to form part of learners' everyday lives and so rhymes, songs and stories should form part of the counting experience.
In Grade 1 learners have developed the following concepts related to counting:
· The concept of conservation
· The cardinality principle - naming a collection
· Subitising
· Matching in a one-to-one correspondence
Skip counting
Skip counting is another name for counting in groups. It helps to develop an awareness of number patterns. Skip counting encourages learners to count and think in groups, which makes them more efficient. This also helps them develop their estimation skills.
Counting in groups makes them aware of the relationships between non-consecutive numbers. It lays the basis for number patterning and for multiplication.
Learners should continue to be supported by images to help the skip counting.
Example:
<table><tr><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td></tr><tr><td>12</td><td>14</td><td>16</td><td>18</td><td>20</td></tr><tr><td>22</td><td>24</td><td>26</td><td>8</td><td>30</td></tr><tr><td>32</td><td>34</td><td>36</td><td>38</td><td>40</td></tr><tr><td>42</td><td>44</td><td>46</td><td>48</td><td>50</td></tr><tr><td>52</td><td>54</td><td>56</td><td>58</td><td>60</td></tr><tr><td>62</td><td>64</td><td>66</td><td>68</td><td>70</td></tr><tr><td>72</td><td>74</td><td>76</td><td>78</td><td>80</td></tr><tr><td>82</td><td>84</td><td>86</td><td>88</td><td>90</td></tr><tr><td>92</td><td>94</td><td>96</td><td>98</td><td>100</td></tr></table>Further activities:
Counting forwards and backwards to 100 using the large 100 chart: (5 - 7 min per day) Start counting with the WHOLE CLASS together, stop at a certain number e.g. 24. The learners take turns counting on from that number in groups/pairs/individuals as indicated by the teacher, writing the number at each stop.
Ask questions such as what pattern do you see? Where does the first pattern stop? (Example: Pattern for counting in 2s: 2; 4; 6; 8; 10)</td><td></td></tr>
</table>

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.2 Count forwards and backwards	Count forwards and backwards in: • 1s, from any number between 0 and 200 • 10s from any multiple between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200	**Counts forwards** and **backwards in:** • 1s from any number between 0 and 100 • 10s from any multiple of 10 between 0 and 100 • 5s from any multiple of 5 between 0 and 100 • 2s from any multiple of 2 between 0 and 100	By the end of the term learners should be able to: Count verbally and respond to questions such as: • Start at 52, count on in ones to 72. • Start at 88 and count back in ones to 70. • Start at 38 and count in twos to 50. • Start at 45 and count in fives to 100. • Start at 10 and count in tens to 100. Learners should be able to apply their counting skills to written activities. For example, in independent work they can complete number sequences: Learners copy and extend different number sequences, **Example:** 76; 75; 74; __; 72; __; __; __; 68 (backwards in ones) 27; 28; 29; __; __; 32; __ (in ones forwards) 8; 10; __; 14,__ (in twos or even numbers) 5; 10,15,20; 25;___ (in fives) 90; __; 70 60; __ (counting backwards in tens) 10,20,30,40,___,60,70,___ (counting forward in tens).	

<table>
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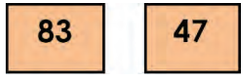
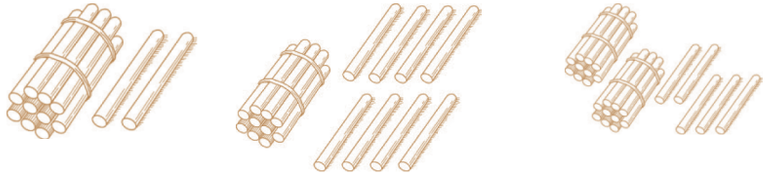
FOCUS FOR TERM 1</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr>
<td>1.3
Number symbols and number names</td>
<td>Recognise, identify and read numbers
• Recognise, identify and read number symbols 0 - 200
• Write number symbols 0 - 200
• Recognise, identify and read number names 0 - 100
• Write number names 0 - 100</td>
<td>Recognise, identify and read numbers
• Recognise, identify and read number symbols 0 - 100
• Write number symbols 0 - 100
• Recognise, identify and reads number names 0 - 25
• Write number names 0 - 25</td>
<td>During this term learners continue to
• read and write number symbols to 100; and
• read and write number names to 25.
By the end of the term learners should be able to:
Write the number symbol for the number name presented:
• seventeen
• twenty-three
Match the symbols to the number names
<table>
<tr><td>66</td><td>Ninety-one</td></tr>
<tr><td>8</td><td>Fifty-three</td></tr>
<tr><td>172</td><td>Forty</td></tr>
<tr><td>109</td><td>Thirty-eight</td></tr>
<tr><td>91</td><td>One hundred and seventy-two</td></tr>
<tr><td>40</td><td>Sixty-six</td></tr>
<tr><td>53</td><td>eight</td></tr>
<tr><td>38</td><td>One hundred and nine</td></tr>
</table>
Read aloud the numbers on each card:


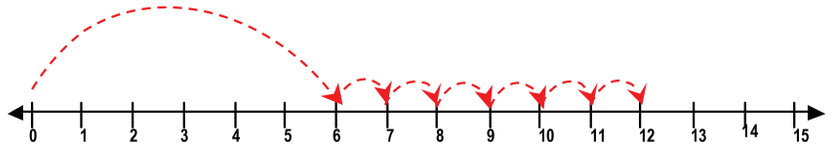
</td>
<td></td>
</tr>
</table>

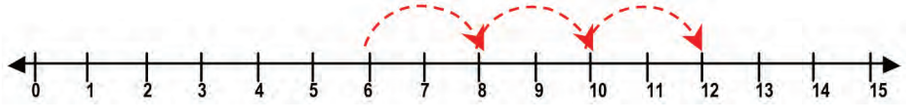
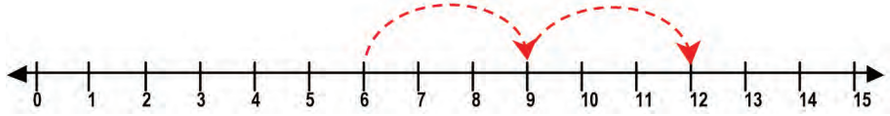
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.4 Describe, compare, order numbers	**Order and compare numbers to 99** • Order whole numbers up to 99 from smallest to greatest, and greatest to smallest . • Compare whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to. **Use ordinal numbers to show order, place or position** Position objects in a line from first to tenth or first to last e.g. first, second, third … twentieth.	**Order and compare numbers to 25** • Order whole numbers from smallest to greatest, and greatest to smallest . • Compare whole numbers using smaller than, greater than, more than, less than and is equal to. **Use ordinal numbers to show order, place or position** Position objects in a line from first to tenth or first to last e.g. first, second, third … tenth.	The number range for ordering and comparing matches the calculation number range. This means that in order to calculate to 99, learners' number sense should be well developed to arrive at solutions. If learners can order and compare confidently beyond the requirement then it will only increase their number and operational sense. Learners should continue to use the language of ordering and comparing: • First, second, third, fourth, fifth, sixth..... • How many… • As many as, the same number as… • Equal to, more than, less than, fewer than, greater than, smaller than, larger than... • First, last, before, after, next, between ... Through ordering and comparing objects and numbers learners have learnt that: • the cardinal aspect of a number is used to describe the number in a set; • the ordinal aspect of a number refers to a number in relation to its position in the set. Example: Colour the third circle yellow. **Further activities** • Ordinal Numbers: Discuss the difference between the words 'one' and 'first'; 'two' and 'second' etc. Ask questions such as: When would you use the word 'three' and when 'third'? Can we write first, second, third in a shorter way? • Divide the class into three to four equal groups. Each learner gets a card on which to write his/her name. The group put their names cards in alphabetical order. Teacher and learners can then ask questions, e.g. who is fourth in your group?	
1.5 Place value	**Recognise the place value of at least two-digit numbers to 99** • Know what each digit represents • Decompose two-digit numbers up to 99 into multiples of tens and ones/units • Identify and state the value of each digit	**Recognise the place value of at least two-digit numbers to 25** • Know what each digit represents • Decompose two-digit numbers into multiples of tens and units/ones • Identify and state the value of each digit	**What is different from Grade 1?** In Term 1, learners work with a higher number range and continue to: • count and group to make a group of tens and loose ones; and • write18 = 1 ten and 8 loose ones 13 = 10 and 3. During this term learners have to continue to engage in many experiences to establish ten as a benchmark and a unit. Ten is 1 ten that contains 10 ones. Regular 'ten and one' words (24 is 2 groups of 10 and 4 ones or 2 tens and 4 ones) need to be used regularly to establish a language that symbolises decomposing and composing.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 Place value	**Recognise the place value of at least two-digit numbers to 99** • Know what each digit represents • Decompose two-digit numbers up to 99 into multiples of tens and ones/units • Identify and state the value of each digit	**Recognise the place value of at least two-digit numbers to 25** • Know what each digit represents • Decompose two-digit numbers into multiples of tens and units/ones • Identify and state the value of each digit	**Working with concrete apparatus** • **Counting sticks/matches** Counting sticks or matches can be grouped to show bundles of tens and loose ones. **Example:** **To show 12** **To show 18** **To show 25**  • **The abacus** Learners should continue to manipulate concrete apparatus by grouping to form ten ones and understanding that 10 is one group of ten loose ones. Using an abacus, learners should be able to show: - one ten; - one ten and 5 ones; - one ten and 6 ones; - one ten and 7 ones; - one ten and 8 ones; and - one ten and 9 ones. • **Dienes blocks** During this term the resources to teach place value can be widened. Base ten blocks (part of the Dienes blocks) can be introduced to develop the idea of a ten as a single entity and that: - 10 ones make 1 ten; - 20 ones make 2 tens; and - 16 ones make 1 ten and 6 loose ones. Although learners still need to count and group in tens, they can also show 18 by placing one base ten block and eight loose blocks to show the number. Learners should also group to show 20.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 Place value	**Recognise the place value of at least two-digit numbers to 99** • Know what each digit represents • Decompose two-digit numbers up to 99 into multiples of tens and ones/units • Identify and state the value of each digit	**Recognise the place value of at least two-digit numbers to 25** • Know what each digit represents • Decompose two-digit numbers into multiples of tens and units/ones • Identify and state the value of each digit	**Equivalent representations** During this term the focus is showing equivalent representations for the same number. Twenty should be described as 2 tens (using the bundles or groups of objects) or 2 groups of tens. It is important to show learners that 20 can look different. So show 20 loose objects, one group of ten and 10 loose ones and 2 groups of ten. Learners should be given the opportunity to describe the arrangements, say what is different and what is the same. • **Place value cards/Flard cards** Place value cards can be introduced and used during this term to show how the numbers are constructed. The place value cards can be shown alongside the bundles or groups of objects. • **The value of the digits** Learners should start saying what each digit represents. Ask learners: - What number does the 7 represent in 27? - What number does the 2 represent in 29? Learners should use the place value cards to prove their statements. • **Moving to written texts** During independent time learners should be engaged in written activities that build and consolidate: - the concept of groups of ten and loose ones/units; and - the value of a digit. **Example:** Colour 12 beads Colour 16 beads Fill in the missing number (this can be done or explained using concrete apparatus) 18 = 1 ten and ____ ones 23 = __ tens and 3 ones	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
			Recommended resources Objects that can be grouped: • Counting sticks • Counters that can be threaded • Matchsticks • Ice cream sticks • Interlocking cubes	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.6 Problem-solving techniques	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Learners are expected to solve the word problems using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines **Drawings or concrete apparatus** Learners will continue to draw pictures and use concrete apparatus to solve problems. It is important that the pictures or drawings contain numbers as well as number sentences. **Building up and breaking down** This is one of the most important techniques in the Foundation Phase. Using this technique allows learners to split (decompose) and recombine numbers to help make calculations easier. They will largely be using this technique in the Intermediate Phase as well. **Doubling and halving** This technique is quite sophisticated and requires a strong number sense. Learners who are able to choose this a technique are quite flexible in the strategies they use. For example: Word problem: On one day at the clinic 17 children were given flu vaccinations. The next day 16 children were vaccinated. How many children were vaccinated altogether? The problem could be solved by using doubling. A learner might say double 16 plus 1 or double 17 minus 1. **Number lines** Using number lines in order to help calculate will allow learners a way to record their thinking and to keep track of it. It also allows learners to have a recording image that they can use to explain how they solved the problem. Learners have been using number lines since Grade 1. By now they should be able to construct blank number lines on which they put the starting number and then determine how to get from one to the other. During the term there will be progression in the structuring of the number lines. **Example** of how learners can use the number line to record calculating techniques: Zonke has 6 fluffy toys. Zia has 6 more than Zonke. How many fluffy toys does Zia have? Learners will construct the following number lines to help them arrive at an answer.  Learners can also break 6 into groups of 2. The number line will then show jumps of 2s from 6.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.6 Problem-solving techniques	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Use the following techniques when solving problems and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	**Example:** Once learners are confident in counting on from a given number, the number line should start at 6. The way this number line is structured matches the concept of counting on. It is important that learners see number lines starting at different numbers when using it for counting or ordering of numbers. One can break up 6 into groups of 2 and add on from 6 **Example:**  6 can be halved and 2 jumps of 3 are recorded. **Example:**  Learners should be given lots of opportunity to say how a number can be reached using the number line. One can ask: What are the different jumps we can do to reach 15? In order to jump towards numbers, learners need to know the bonds to 15 or be able to use the number line to arrive at an answer. It is important that learners talk about how 'big' the jump is. Practising this kind of activity prepares learners for working with empty lines. When working with number lines, some learners may need to hold a string of beads above or below the number line to help them count. Allow learners to choose the technique most comfortable for them. However, if learners are using techniques that are not efficient, they need to be guided to use more efficient ones. Learners are practising these strategies. They do not have to be fluent in their use. Note that learners often use different ways of solving a problem that may not be what the teacher expects. For example, a division problem may be solved by repeated subtraction, addition, or multiplication. Learners' methods will change in the course of the year as their understanding of and familiarity with the problem types grow, and as their number concept develops.	

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<tr>
<td>1.7
Addition and subtraction</td>
<td>Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 99.</td>
<td>Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.</td>
<td>
What is different from Grade 1

During this term learners practise doing word problems and work on becoming confident in using the following the techniques when solving problems:
• Drawings or concrete apparatus
• Building up and breaking down
• Doubling and halving
• Number lines

In this term, give learners plenty of support in their attempts to record and represent their calculations. Learners should be writing down number sentences as a written record for the problem solved. It is important to watch which learners struggle to write a number sentence to identify particular problems.

<table>
<tr><th colspan="3">Problem type 1: Change</th></tr>
<tr><th></th><th>Join</th><th>Separate</th></tr>
<tr><td>Result unknown</td><td>Moeketsi has 6 sweets. Mahlodi gives him 9 more. How many sweets does Moeketsi have altogether?</td><td>There are 15 sweets. Moeketsie eats 6. How many are left for Mahlodi?</td></tr>
<tr><td>Change unknown</td><td>Moeketsi has 6 sweets. How many more does he need to have 15?</td><td>Moeketsi has 15 sweets. Mahlodi eats some. There are 9 left. How many did Mahlodi eat?</td></tr>
<tr><td>Start unknown</td><td>Moeketsi had some sweets. Mahlodi gives him 9 more. Now he has 15. How many did Moeketsi start with?</td><td>Moeketsi eats some sweets. He gave 6 to Mahlodi. Now he has 8 sweets left. How many did he start with?</td></tr>
</table>

<table>
<tr><th colspan="3">Problem type 2: Compare</th></tr>
<tr><th></th><th>Join</th><th>Separate</th></tr>
<tr><td>Result unknown</td><td>Moeketsi has 6 sweets.</td><td>Mahlodi has 15 sweets.</td></tr>
<tr><td>Change unknown</td><td>Mahlodi has 9. How many more sweets does Mahlodi have than Moeketsi?</td><td>Mahlodi has 6 sweets. He has 9 fewer sweets than Moeketsi. How many sweets does Mahlodi have?</td></tr>
<tr><td>Start unknown</td><td>Mahlodi has 15 sweets. She has 9 more sweets than Moeketsi. How many sweets does Moeketsi have?</td><td>Mahlodi has 16 sweets. Moeketsi has 9 fewer sweets than Mahlodi. How many sweets does Mahlodi have?</td></tr>
</table>
</td>
<td></td>
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<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
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<tr><td>1.7
Addition and subtraction</td><td>Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 99.</td><td>Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 20.</td><td>
<table>
<tr><th colspan="3">Problem type 3: Equalise</th></tr>
<tr><th></th><th>Join</th><th>Separate</th></tr>
<tr><td>Result unknown</td><td>Mahlodi has 15 sweets. Moeketsi has 6. How many more sweets must Moeketsi get to have as many as Mahlodi?</td><td>Mahlodi has 16 sweets. Moeketsi has 6 sweets. How many more sweets should Mahlodi eat to have the same number as Moeketsi?</td></tr>
<tr><td>Change unknown</td><td>Moeketsi has 6 sweets. If he buys 9 sweets he will have as many as Mahlodi. How many does Mahlodi have?</td><td>Moeketsi has 6 sweets. If Mahlodi eats 9 sweets she will have the same number of sweets as Moeketsi. How many sweets does Moeketsi have?</td></tr>
<tr><td>Start unknown</td><td>Mahlodi has 15 sweets. If Moeketsi buys 9 more sweets he will have the same number of sweets as Mahlodi. How many sweets does Moeketsi have?</td><td>Mahlodi has 16 sweets. If she eats 9 sweets she will have the same number of sweets as Moeketsi. How many sweets does Moeketsi have?</td></tr>
</table>
</td><td></td></tr>
<tr><td>1.8
Repeated addition leading to multiplication</td><td>Solve word problems in context and explain own solution to problems using repeated addition or multiplication with answers up to 50.</td><td>Solve word problems in context and explains own solution to problems involving repeated addition leading to multiplication with answers up to 20.</td><td>Multiplication

The basic understanding of multiplication in this grade is grouping. Making groups can help the learner in representing multiplication situations.

There are three main categories of problem situations that involve the multiplication of whole numbers:
• Equivalent groups (e.g. three tables, each with four children): which are represented as repeated sets
• Multiplicative comparison (e.g. three times as many boys as girls): which is represented as many to one correspondence
• Rectangular arrays (e.g. three rows of four children): which are represented as rows and columns

Each of these situations can be associated with particular ways of asking a question (see Problem-solving types in Grade 2 of Section 2).

Problem situations for multiplication involve the following three numbers in a mathematical relationship:
• The number of objects in each set
• The number of sets
• The total number</td><td></td></tr>
</table>

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.8 Repeated addition leading to multiplication	Solve word problems in context and explain own solution to problems using repeated addition or multiplication with answers up to 50.	Solve word problems in context and explains own solution to problems involving repeated addition leading to multiplication with answers up to 20.	**Examples of problems that can be done this term** It is expected that while solving the problems below, learners will use pictures, drawings or concrete apparatus to aid calculation. If learners are drawing pictures to help them calculate, the drawings should reflect a grouping situation. Learners should be encouraged to write number sentences for all the word problems. Expect learners to use repeated addition number sentences to show the solution. **Examples of problems that can be done**: **Repeated addition** • How many wheels do 4 bicycles have? • How many eyes do 7 children have? Learners might solve the problem in the following way: Pictures or drawings should show grouping. Learners should be encouraged to count in 2s to get to the answer. They should also be encouraged to represent their counting in a number sentence. **2 + 2 + 2 + 2 + 2 + 2 + 2 = 14** **Rate** Thami drinks 3 cups of milk every day. How many cups of milk does he drink in a week? **Grids or arrays** Mr Khumalo plants 3 rows of cabbage plants. There are 5 plants in a row. How many cabbage plants are there altogether? • A vegetable garden has 5 rows of plants. Every row has the same number of plants. If there is a total of 15 plants, how many plants are in each row? • A vegetable garden has 18 plants that are planted in rows. There are 6 plants in each row. How many rows are there?	.

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.9 Grouping and sharing leading to division	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 99 with answers that may include remainders.	Solves and explain solutions to practical problems that involve equal sharing and grouping up to 20 with answers that may include remainders.	As with multiplication, the basic understanding of division in this grade, is equal sharing and grouping • grouping (e.g. twelve children at tables of four, how many tables) • sharing (e.g. twelve children at four tables, how many at each) Some learners arrive at school capable of modelling both grouping and sharing division problems with concrete apparatus. Problem situations for multiplication and division involve the following three numbers in a mathematical relationship: • The number of objects in each set • The number of sets • the total number **Examples of problems that can be done this term** **Sharing** • I have 12 pencils to share equally among the three of you; how many will you each get? • There are 18 toy cars; can you share them equally between the two of you? • There are 16 plums and 8 children share them out equally. How many plums does each child have? • Naomi has 20 flowers. She puts them into 2 vases. How many flowers in each vase? • Tom bakes 8 cakes. He has 40 smarties. How many smarties can he put on each cake? **Grouping** • How many cars can you make if you have 8 wheels? How many motorbikes? • There are 18 apples in a box. How many bags of 3 apples can be filled? • A baker bakes 30 buns. She puts 6 buns in every box. How many boxes can she fill? • There are 16 children here today. How many teams of 4children can we make? **Array** Mongezi packs out 20 counters into 10 rows. How many counters in a row?	.

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.11 Money	• Recognise and identify the South African coins, c, 10c, 20c, 50c, R1, R2, R5, and bank notes R10, R20, R50 • Solve money problems involving totals and change to R99 and in cents up to 90c	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5, and bank notes. R10, R20, R50 • Solve money problems involving totals and change in cents up to 50c or rands to R20	**What is different from Grade 1** During this term learners practise recognising money and breaking money into smaller parts. **Examples of problems that can be done this term** • Could you share 50c equally among four children? Explain how. • Bubble gum sweets cost 10c each. Busi spent 50c. How many bubble gum sweets did she buy? • Thenje pays R5 to travel by taxi to school in the morning. She pays with a R20 note. How much change does she receive? How much money will she have left when she travels back home by taxi? • A fizzpop costs R2,50. Palesa wants to buy 4 fizzpops. She has R8,00. Does she have enough money? If not, how much more money does she need?	.

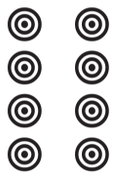
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • drawings or concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. Counters • Building up and breaking down numbers • Doubling and halving • Number lines	**What is different from Grade 1** Learners are expected to solve context free-calculations using the following techniques: • Drawings or concrete apparatus • Building up or breaking down numbers • Doubling and halving • Number lines **Drawings or concrete apparatus** Learners will continue to draw pictures and use concrete apparatus to solve problems. It is important that the pictures or drawings contain numbers as well as number sentences. **Building up and breaking down** This is one of the most important techniques in the Foundation Phase (learners will also use decomposing frequently in the Intermediate Phase). Using this technique allows learners to split (decompose) and recombine numbers to help make calculations easier. During this term learners will: • break up numbers using place value; • break up numbers using multiples of 10; and • break up into number pairs e.g. pairs that make 20. **Doubling and halving** Learners continue using doubling and halving as a calculating strategy. **Number lines** See the notes for further examples of doing number lines in the problem-solving section. • Addition and subtraction Learners should be constructing their own number lines and breaking up the numbers in manageable parts. **Example:** 8 + 12 The number line should start at 8 and learners can create: - 2 jumps of 6 - 4 jumps of 3 - 3 jumps of 4 - One jump of 10 and then a jump of 2	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • drawings or concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. Counters • Building up and breaking down numbers • Doubling and halving • Number lines	• Multiplication Number lines should continue to be used to support repeated addition. Equal jumps are recorded on the number line and supporting sentences can be recorded as well. **Example:** 5 + 5 + 5 + 5 + 5 = 25 5 hops of 5 make 25 5 groups of 5 = 25 5 x 5 = 25 For a given multiplication, learners should be able to explain how jumps can be made on the number line. Allow learners to choose the technique most comfortable for them. However, if learners are using techniques that are not efficient they need to be guided to use more efficient ones. Note that learners may often solve a problem in ways that a teacher may not expect. For example, a division problem may be solved by repeated subtraction, addition, or multiplication. Learners' methods will change in the course of the year as their understanding of and familiarity with the problem types grow, and as their number concept develops.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 99 • Subtract from 99 • Use appropriate symbols (+, -, =, ☐) • Practise number bonds to 10	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, -, =, ☐) • Practise number bonds to 10	**What is different from Grade 1?** There is a greater focus on developing calculation strategies or techniques during this term. Breaking down numbers in order to calculate becomes an important technique that learners will practise. **This term focuses on:** Using building-up and breaking-down number activities that will help develop an understanding of addition and subtraction Learners practise addition and subtraction to 20. It is within this number range that learners will begin to develop place value concepts of tens and units/ones. Counting in groups remains important and learners should begin to realise that counting on in ones is simply not an efficient strategy. It is within this number range that learners should really think hard about the strategies that they will use. Choosing an appropriate calculating strategy helps learners to become proficient in calculating. In order to calculate within the number range 0 - 20 learners' experience should include: • counting objects; • recognising, reading and writing numbers; • comparing and ordering numbers; • building up and breaking down numbers; • practise doing addition and subtraction up to 20; • doubling and halving; and • memorising some number facts.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 99 • Subtract from 99 • Use appropriate symbols (+, -, =, ☐) • Practise number bonds to 10	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, -, =, ☐) • Practise number bonds to 10	**Possible calculating techniques for addition and subtraction** The techniques shown below allow learners to formalise their counting and number sense. Practising the techniques below will encourage learners to reflect upon the relationships between numbers and teach learners that they can actually use and apply their knowledge in order to calculate. **Put the greater number first in order to count on or back** 4 + 12 = ☐ Rearrange 4 + 12 as 12 + 2 and count on from 12 **Identify near doubles** 8 + 7 The learner can explain that the sum can be written as 8 + 8 - 1 (double 8 minus 1) or 7 + 7 + 1 (double 7 plus 1). Learners might record their strategies using arrows 8 + 8→16 + 1 = 15 **Change a number to ten and then subtract or add ones** This strategy can be taught with quite low number ranges and applied to higher numbers. 9 + 6 = ☐ Learners can say to themselves: “I will take one away from the 6 and add it to the 9 to make 10.” Therefore 9 + 6 can be written as 10 + 5 = 15. 8 + 5 = ☐ The learners can say to themselves: “I will take two away from the 5 and add it to the 8 to make 10.” Therefore 8 + 5 can be written as 10 + 3 = 13	

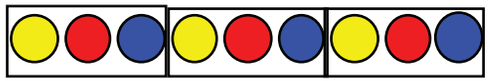
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 99 • Subtract from 99 • Use appropriate symbols (+, -, =, ☐) • Practise number bonds to 10	• Add to 20 • Subtract from 20 • Use appropriate symbols (+, -, =, ☐) • Practise number bonds to 10	**Breaking down a number into smaller parts to make calculation easier** Learners will break up a number into different parts that are manageable for them. Counting on by breaking up one number 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 12 + 7 = □ 10 + 2 + 7 7 + 2 → 9 + 10 = 19 **Use knowledge of the inverse relationship between addition and subtraction** 15 - 9 = □ The learner knows that the sum can be rewritten as an addition sum: "I know that 9 + □ = 15." The learner might use counting on in order to do the calculation. **Number bonds** In order to practise the number bonds, a variety of activities must be given to learners. This is ideally done during independent time. The number line can also be used to practise the bonds to 10.	

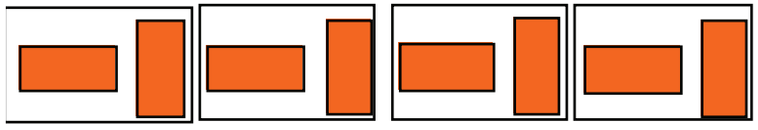
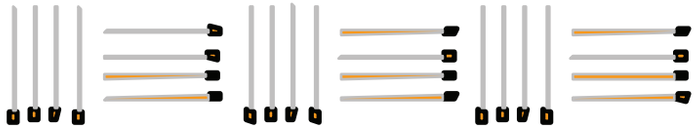
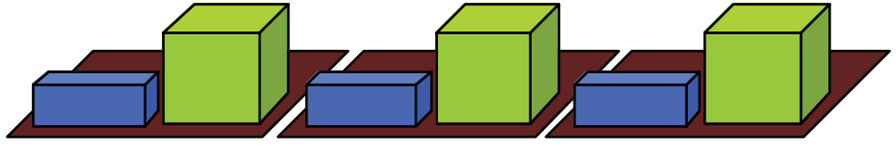
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.14 **Repeated addition leading to multiplication**	• Add the same number repeatedly to 50 • Multiply numbers 1 to 10 by 1, 2, 5, 3 and 4 • Use appropriate symbols (+, x, =, ☐)	• Add the same number repeatedly to 20 • Multiply numbers 1 to 10 by, 2, • Use appropriate symbols (+, x, =, ☐)	**What is different from Grade 1** Learners will make the transition from repeated addition to multiplication. They will begin to understand the concept of multiplication. They will be engaged in activities that allow them to see the relationship between numbers: • The number of objects in a set/group • The number of sets or groups • The total number Learners arrive in Grade 2 understanding repeated addition. By the end of the term they should be able to: • relate skip counting and repeated addition to the understanding of multiplication; • use, read and write the multiplication sign; • write multiplication number sentences; and • multiply numbers 1 to 10 by 2. When doing solving word problems learners will most likely use repeated addition, except for those word problems that contain the array image. It is in the context of free situations that other images for multiplication can be used. **Arrays** As learners gain experience with a variety of multiplication word sums, organising groups into arrays can provide a structure for showing the commutative nature of multiplication e.g. 2 x 4 is the same as 4 x 2.  4 + 4 = 8 2 + 2 + 2 + 2 = 8	

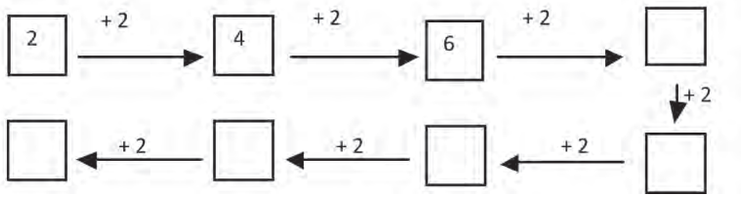
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.14 **Repeated addition leading to multiplication**	• Add the same number repeatedly to 50 • Multiply numbers 1 to 10 by 1, 2, 5, 3 and 4 • Use appropriate symbols (+, x, =, ☐)	• Add the same number repeatedly to 20 • Multiply numbers 1 to 10 by, 2, • Use appropriate symbols (+, x, =, ☐)	Using arrays allows for: • the building up and breaking down of numbers; • linking multiplication to and repeated addition; • thinking of multiplication as an array; and • laying the basis for the commutative law. Focus learner's attention on the number of rows and the number of counters in the rows. 4 + 4 = 8 There are 4 rows of 2, which is 8 altogether. Learners should also record in the following way: 2 + 2 + 2 + 2 = 8 There are 2 rows of 4, which is 8 altogether. The word "times" can then be introduced: 4 times 2 is 8. Once learners have had sufficient experience, the multiplication sign can be introduced together with the following language that has been developed: • 4 groups of 2 • 4 twos • 2 + 2 + 2 + 2 = 8 • 4 groups of two or 4 times 2 is 8 Even though the sign is introduced, words, pictures and multiple images to support the understanding of the operation remain important. Images for understanding multiplication: • Unifix cubes can be used and you could pack out 4 columns of cubes and in each column there could be 2 cubes. This allows the learner to say: there are four stacks and there are 2 in each stack. It allows them to record 2 +2 + 2 + 2 and 4 groups of 2 is 4 x 2. • The number line can be used to show the repeated addition or groups of numbers. This is strongly linked to skip counting. Learners should be able to record the following: 1 group of 2 is 2 or 1 times 2 is 2 or 1 x 2 = 2 2 groups of 2 are 4 or 2 times 2 is 4 or 2 x 2 = 4 3 groups of 2 are 6 or 3 times 2 is 6 or 3 x 2 = 6	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number concept: Range 99** • Order a given set of selected numbers. • Compare numbers to 99 and say which is more or less • Know which number is 1 more or 1 less • Know which number is 2 more or 2 less • Know which number is 3 more or 3 less • Know which number is 4 more or 4 less • Know which number is 5 more or 5 less. • Know which number is 10 more or less. **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100	**Number concept: Range 25** · Order a given set of selected numbers · Compare numbers to 99 and say which is more or less · Know which number is 1 more or 1 less · Know which number is 2 more or 2 less · Know which number is 10 more or 10 less **Rapidly recall:** · Recall addition and subtraction facts to 10 **Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Mental number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**What is different from Grade 1?** **This term focuses on:** The mental mathematics programme should be developed systematically over the year. Learners should not be asked to do random calculations each day. As learners cover topics and develop calculating strategies in the main part of the lesson, aspects of these can be incorporated into the mental mathematics programme: concepts and skills are developed through the main lesson, and then practised, sometimes with smaller number ranges, in the mental mathematics programme. You can keep the number range lower in Term 1 and increase it during the year. At the start of the year, number ranges and calculation strategies can be based on those developed in Grade 1. **Number concept:** **Examples of questions that can be asked:** **Number names and symbols** Hold up a card or write down a number name. Choose a learner to write the matching numeral. **More or less** What is • 1 less than 15 • 1 more than 9 • 10 more than 15 • 10 less than 16 What is the 5th letter of the alphabet? What is the 9th month of the year? **Ordering and comparing** Which is more: 12 or 21? Give a number between 17 and 19.	·

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction		**Addition and subtraction facts:** • Know by heart all addition and subtraction number bonds to 10 □ + △ = 10 □ + △ = 8 Add and subtract fact for all numbers up to and including 10 1 + 9 = 10 9 + 1 = 10 2 + 8 = 10 8 + 2 = 10 8 – 4 = 4 8 – 4 = 4 8 – 5 = 3 8 – 3 = 5 Quickly recall addition doubles to 10. This should include corresponding subtraction facts. • 1 + 1 = 2 • 2 + 2 = 4 • 3 + 3 = 6 • 4 + 4 = 8 • 5 + 5 = 10 Show me the number to add to ..... to make 10 (writing down or using the place value or Flard cards) • 8 • 2 • 9 • 5 • 3 Show me the number left when …. Is taken away from 10(writing down or using the place value or Flard cards) • 5 • 3 • 6 • 1 • 7 Some mental mathematics can be done without apparatus, but it is often useful to do mental mathematics with apparatus and to record what is done. **Recommended apparatus** • a number line (structured and empty) • a number grid • place value cards (Flard cards) • counting beads	

GRADE 2 TERM 1 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects. **Create and describe own patterns** Create own geometric patterns • with physical objects • by drawings lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** • Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create and describe own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects	Copying the pattern helps learners to see the logic of how the pattern is made. Extending the pattern helps learners to check that they have properly understood the logic of the pattern. Describing the pattern helps learners to develop their language and speaking skills. It also helps you to see how learners have interpreted the pattern. It is usually easier for learners to talk about the pattern after they have made it. Learners need to be trained in what to look for and how to describe the pattern. You can model this for them by asking questions like. “What shapes do you see in this pattern?” “ “Are they all the same colour?” “Do you see one or more shapes in the pattern?” “Do the objects all face the same way?” “Are there the same number of objects in each group?” “How many objects are in each group?” “Are all the shapes the same size?”etc. Include the 2-D geometric shapes and 3-D geometric objects that learners have learned about. Learners can make 2-D shapes by cutting out paper or card, or they can draw them. They can make patterns from box shapes, ball shapes and cylinders that they have made from clay or play dough. Patterns can be made by using one object but having the colours of the object change in a regular way. **Example:**  Patterns can be made from identical repeating groups, where each group has only one kind of object but the position of the objects in a group change. Identical groups are repeated	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.1 **Geometric patterns**	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects. **Create and describe own patterns** Create own geometric patterns • with physical objects • by drawings lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** • Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create and describe own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects	**Example:**   In some patterns different objects are used to make up a group, but the groups of objects are repeated in exactly the same way. **Example:** Patterns can be made in which the size of objects alternates in exactly the same way.  Learners can make patterns by threading beads. Patterning can also be done in the Life Skills lesson.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 Number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 200 **Create and describe own patterns** Create own number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 100 Sequences should show counting forwards and backwards in: • 1s from any number between 1 and 100 • 10s from any multiple of 10 between 1 and 100 • 5s from any multiple of 5 between 1 and 100 • 2s from any multiple of 2 between 1 and 100	Number sequences can be linked with and support counting. As learners counting skills change and develop, the kinds of number sequences learners work with can develop. Sequences should show counting forwards and backwards in: • 1s from any number between 1 and 100 • 10s from any multiple of 10 between 1 and 100 • 5s from any multiple of 5 between 1 and 100 • 2s from any multiple of 2 between 1 and 100 In Grade 2 learners count backwards in multiples of 10, 5, and 2 for the first time. Learners can point to numbers as they count. It is useful to give learners number sequences in different representations e.g. • A written sequence of numbers 100; 99; 98; 97; 96, …… • Number lines • Number grids • Number chains Learners can cover, colour, or circle numbers as they count on number lines and number grids. Learners can fill in missing numbers on number lines, number grids, in written number sequences and number chains e.g.  By the end of the term learners count work with sequences to and from 100.	3 lessons

GRADE 2 TERM 1 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS: FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling material, construction kits, other 3-D geometric objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) **Features of Objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling material, construction kits, other 3-D geometric objects	**What is different from Grade 1?** • Cylinders are new to Grade 2 but can be introduced in Term 3. In Term 1, learners can revise and consolidate what they did in Grade 1. Learners can focus on cylinders in Term 3. Most of the work on 3-D objects in Grade 2 should be done with concrete/physical objects. We experience the world in three dimensions, so starting with physical objects helps learners to build on the experience that they bring to school. Many young learners struggle to interpret 3-D geometric objects from pictures. Working with the physical objects helps learners to interpret pictures of the geometric objects later. When you hold a physical object you can turn it around and look at it from all sides. You can see what it looks like from behind and underneath. When you only have a picture, you have to imagine the parts that are not visible in the drawing. This is not always easy for young learners. If learners are only given a definition of an object without seeing it or holding it, it is very difficult to understand the features of an object completely. **Building with 3-D objects** Learners copy a model of something that you as the teacher provides e.g. a tower, a robot, train, taxi, castle etc. Models or constructions can be made using building blocks, recycling material, construction kits, other 3-D geometric objects, cut-out 2-D shapes. This can be done in independent time. It is important for learners to talk about the models they have made. For example, if a tower is built of boxes or blocks, you can ask learners, “Can you build a tower with only balls?” They should explain their answer. **Comparing and describing 3-D objects: size** Learners compare the size of similar objects e.g. • order balls according to size ; and • use the language of size to compare objects: “The box is bigger than the ball, because I can put the ball inside the box.”	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling material, construction kits, other 3-D geometric objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) **Features of Objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling material, construction kits, other 3-D geometric objects	**Describing 3-D objects: colour** Learners talk about the colours of objects and then sort objects according to colour. Identifying and naming objects and their colours, as well as comparing sizes of objects, can be practised during work with patterns. **3-D objects in Grade 2** Learners work with • balls and objects shaped like balls; and • various boxes and other objects shaped like rectangular prisms or cubes. Learners investigate which of the objects can roll, which slide. **Focussing on features of 3-D objects** Learners can make a slide or incline by placing a box under one end of a large book. They can then experiment to see whether objects slide or roll. This is a continuation of what they did in Grade 1, but now cylinders are included. Learners can also investigate whether they can make stacks or towers using only balls, or only boxes. **Recognising and naming balls (spheres) and boxes (prisms)** Learners should be given a range of objects to work with: • shaped like spheres, e.g. balls or different size, marbles, oranges etc.; and • shaped like prisms, such as blocks, bricks, boxes of different sizes, e.g. matchboxes, cereal boxes, tea boxes, toothpaste boxes. Learners can find objects shaped like a ball (sphere), or shaped like a box (prisms) when given a collection of objects. Learners can find or show objects shaped like boxes (prisms) in the classroom. e.g. this brick is shaped like a box or this orange is shaped like a ball.	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**			During independent time learners can continue to • sort objects according to size; • sort objects according to colour; • build with objects; and • make balls and box shapes (prisms) from clay or play dough. **Written exercises** Although most of the work with 3-D objects is done practically, work must be consolidated through written exercises.	
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling material, construction kits, other 3-D geometric objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) **Features of Objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling material, construction kits, other 3-D geometric objects	**Language** It is important to develop learners' ability to talk about 3-D objects. • Language of size: Big, bigger, biggest, small, smaller, smallest • Colours • Language of objects: Boxes, balls (learners are not expected to know the term sphere) • Language of position to describe construction e.g. on top of, under, behind, in front, next to, alongside, under, over, near, between, inside, outside The language of size and colour can be developed in the language or Life Skills lesson time and applied or practised in the Mathematics lesson time. The language of position can be developed in the Language or life Skills Lesson time and when learners focus specifically on position. It can be applied or practised when learners work with 3-D objects.	3 lessons

GRADE 2 TERM 1 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Telling the time** • Know days of week • Know months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours, half hours and quarter hours **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks. Use clocks to calculate length of time in hours, half hours or quarter hours.	**Telling the time** • Knows days of week • Knows months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours on analogue clocks	In Grade 1 learners spoke about • the sequences of events; and • the duration of time. They learned the days of the week and months of the year and used these as well as other language to talk about the sequencing of events from their lives. They spoke about how long things take, using language such as longer or shorter and faster or slower. Learners ordered sequences of pictures such as • the steps to make a sandwich or a cup of tea; • photographs showing a baby grown into an elderly person; • life cycle of animals e.g. egg to chicken, or egg to frog or egg to a butterfly; and • regular events in the day (waking up, being at school, playing, eating supper, sleeping). They place birthdays on the calendar throughout the year. In Grade 2 learners continue to practise talking about the duration of time and the sequencing of time. During whole class teaching time and focus group time, learners continue to talk about the day of the week, month of the year and the date of the current day, as well as days before and days to come. Learners become familiar with calendars by the continual placing of • birthdays; • religious festivals; • historical events; • school events; and • public holidays on the calendar During independent work time learners continue to sequence events from their daily lives and sequence pictures of events in order.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.1 Time	**Telling the time** • Know days of week • Know months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours, half hours and quarter hours **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks. Use clocks to calculate length of time in hours, half hours or quarter hours.	**Telling the time** • Knows days of week • Knows months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours on analogue clocks	**What is different from Grade 1?** A focus in Grade 2 is on telling the time, especially reading clocks. In Term 1 learners focus their attention on telling the time in hours, using an analogue clock. However, learners should also tell the time of regular events during the day on a continual basis. For example, learners can be asked to tell the time when school starts, at break time and at home time, or when they change from one lesson to another. Choose times where the clock shows an exact hour. It is useful to have a large working clock displayed in the classroom, so that learners can refer to it. Learners can also make models of clocks. You can then ask them to show various times and include some calculations e.g. Show me 10 o'clock. Show me what the time will be 2 hours after 10.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, wider **Introducing formal measuring** • Estimate, measure, compare order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length.	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc. • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, wider **Introducing formal measuring** Estimate, measure, order and record length using metres (either metre sticks or metre long lengths of string) as the standard unit of length.	**What is different from Grade 1?** In Grade 1 learners focused on • placing objects directly next to each to compare lengths, heights and widths; and • informal measurement with non-standard units of length. In Term 1 of Grade 2 learners should continue to focus on informal measurement using non-standard units, but can also be introduced to metres as a unit of measurement. **Informal measurement of length using non-standard units of length** Learners can learn all the principles and practises of measurement using non-standard units. Measuring with non-standard units should not be considered to be inferior to measuring with standard units. Measuring length with non-standard units involves counting how many of the chosen unit are the same length as the object being measured. For example the length of the desk is 8 hand spans. Learners should measure a variety of objects using a range of objects as informal units. There are three ways to use informal units: length, distance and height. • Pack out in a row across the object being measured, a number of objects of the same length such as matchboxes, identically shaped bottle tops or counters, new pencils etc. For example, to measure the width of a desk, new pencils can be packed out end to end across the desk. Here it is important that - all the objects are the same length. You cannot state that your book is as wide as 12 bottle tops if the bottle tops are of different sizes e.g. 2 litre milk bottle tops, plastic cool drink bottle tops, metal bottle tops etc - no gaps are left between the objects: they need to be packed out so that they touch each other • Use two identical objects as the non-standard units. Place the one next to the other, and then move the first to the other side of the second. This is done when measuring with hand spans, foot lengths or paces. • Use only one object as the non-standard measure, either flipping it over or marking its end point before sliding it along.	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, wider **Introducing formal measuring** • Estimate, measure, compare order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length.	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc. • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, wider **Introducing formal measuring** Estimate, measure, order and record length using metres (either metre sticks or metre long lengths of string) as the standard unit of length.	Learners should be taught always to state the unit e.g. the book is 12 bottle tops wide, the classroom is 9 paces long. Once learners have measured with any unit a couple of times, they should estimate about how many of that unit long the object to be measured is. Estimation before measuring is important, but can only be done once learners have done some measuring with that unit. Learners need to be taught that in order to compare lengths, heights or widths the same unit needs to be used. For example, if the width of the doorway measured is 20 hand spans and the width of the desk is 8 pencil lengths, you cannot say whether the doorway is wider than the desk. Learners need to measure with a range of informal units, so that they can • begin to understand that the smaller the unit, the larger the number of times it will be used, e.g. the width of the classroom could be 20 paces but 48 foot lengths; and • begin to use units which are appropriate to what they are measuring, e.g. measuring the width of the classroom with bottle tops is a waste of time. **Introducing formal measurement** Most of the time spent on measurement in Grade 2 should be on informal measurement. However, you can give learners the opportunity to begin to develop a sense of how long a metre is. This is best done if learners measure with a 1 metre long "instrument" (such as a metre ruler, a stick that is cut to 1 metre long or pieces of string that are 1 metre long). Seeing the 1 metre length helps learners to form an image of how long a metre is. It is possible to measure in metres with a trundle wheel, but the metre length is not as easily seen. Learners can begin by finding things that are exactly 1 metre long. It is useful to have everyday referents as comparisons, e.g. the width of a door and height of a window is often 1 m. This helps learners to use these lengths or widths that they can see to estimate the lengths of other objects they measure. Once learners have some experience of measuring in metres, they should estimate before every measurement Learners can then find things that are either longer or shorter than 1 metre. Finally they can measure a variety of lengths or distances in metres. **Recording measurements** Although measuring is a practical skill, learners should record their measurements (with both informal units and metres) at all times. **Measuring length as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the contexts of • informal measurement of length, e.g. Lebo's desk is 11 hand spans long. Teacher's desk is 19 hand spans long. How much longer is the teacher's desk? • measuring lengths in metres Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term.	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 **Mass**	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Measure their own mass in kilograms using a bathroom scale		In Grade 1 it was recommended that learners focus on working with a measuring balance to • compare the mass of objects directly; • order and compare the mass of three or more objects, by placing pairs of objects on a balance, until all objects can be sequenced; and • find the mass of objects using informal units of mass. Learners also focussed on developing the language to talk about mass. During independent work time learners can practise to estimate, measure, compare, order and record mass using a balance and informal units of mass. **Measuring mass as a context for solving problems and calculations** Problem-solving and calculations can continue to use the context of mass given in informal measurements. During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of informal measurement of mass, e.g. The duster has a mass of 11 marbles. The box of crayons has a mass of 8 marbles. Together they will have a mass of how many marbles? Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups • **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint		In Grade 1 it was recommended that learners focus on • developing the language to talk about differences in volume; • comparing the volumes in two identical containers; • comparing the volumes in two different-looking containers, especially wider and narrower containers; and • measuring volumes and capacities with non-standard instruments and units. **What is capacity? What is volume?** A bottle can have a capacity of four full cups, but it may not be filled to its full capacity; it could, for example, only contain a volume of one cup of water at a particular time. Capacity is the total amount that an object can hold (or the amount of space inside the object). Volume is the amount of space that something takes up. Sometimes learners will be measuring how much liquid (or sand or other substances) are in a container. This is measuring the volume of the substance in the container. At other times learners will be measuring how much a container can hold if it is filled to its maximum capacity. During independent work time learners can practise to estimate, measure, compare, order and record volumes and capacities with non-standard instruments and informal units of capacity. Cooking and baking are a useful context in which learners can practise measuring capacity. Choose recipes in which measurements are given in cups, teaspoons and other informal units. **Measuring capacity as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of informal measurement of capacity or volume, e.g. Gogo uses 2 cups of milk to make a pudding. If she doubles the recipe, how much milk will she need? Take account of the number range appropriate for the term, as well as the range of problems types.	

GRADE 2 TERM 1 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES or TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
5.4 Collect and organise data	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher	**Collect and organise data** Collect data about the class or school to answer questions posed by the teacher	**What is different from Grade 1?** • Learners no longer work with collections of objects. • Learners continue to work with pictographs - both constructing them as part of the data cycle and analysing pictographs that they are given. **The complete data handling cycle** In the data handling cycle, • learners collect information to answer a question. In the Foundation and Intermediate Phase this question is normally provided by the teacher or textbook; • learners sort and represent the information in ways which make it easier to analyse. The form of representation that learners in Grade 2 practise is a pictograph; and • learners analyse the information in the pictograph by answering questions posed by the teacher. A class pictograph It is recommended that Grade 2 learners work through the complete data cycle to make a class pictograph at least twice in the year (once in Term 1 and once in Term 3). Working together as a class helps learners to be involved in all the stages of the process without getting lost in the detail of any stage, e.g. drawing all the pictures. Making a class graph allows you to focus the learners' attention on the key aspects of data handling and also on what they need to know about the important features of a pictograph. Features of a pictograph that learners need to be taught: • Where and how to label the graph (graph title) • Where and how to label the categories • The pictograph needs to have a key which explains what each picture means • The pictures or the spaces for pictures need to be the same size • How to place the pictures evenly in rows • How to read the graph	3 lessons
5.5 Represent data	**Represent data** Represent data in pictograph	**Represent data** Represent data in pictograph		
5.6 Analyse and interpret data	**Analyse and interpret data** Answer questions about data in pictograph	**Analyse and Interpret data** Answer questions about data in pictograph		

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
			Learners need to know that it is important first to read the graph title, so that they know what the data is about. They also need to read the titles of the horizontal and vertical axes. Learners do not need to know the technical terms used to describe parts of the graph, only that they must read along the "bottom" and "side" to see what the graph is about. We normally read from left to right, but when learners read graphs they need to read from left to right and bottom to top. This needs to be explained to learners. They also need to practise these skills. **Choosing a topic and asking questions to collect data** In Grade 2 you should pose questions, e.g. "What are our class's favourite TV programmes?" Teachers in the phase should ensure that different topics are chosen for data collection and analysis in each of the grades. Suitable topics include favourite sports, favourite cool drinks, favourite colours, favourite pass, favourite foods, favourite TV programmes etc. **Setting categories to collect information** Give learners a range of categories to choose from. **Representing data** Learners can each get a piece of paper the same size to draw their answer. The drawings are then arranged in rows to make a pictograph. Titles are added to the axes and the graph. **Analyse and interpret data** Learners answer questions that you pose about the picture graph, e.g. "What TV programme is the most popular in our class?" "What programme is the favourite of the fewest learners in the class?" "Do more learners like …. or …..?" "How many more learners prefer …. to ….?"	

GRADE 2 TERM 2 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
1.1 Count objects	**Counting concrete objects** Estimate and count to at least 200 everyday objects reliably. The strategy of grouping is encouraged.	Count to at least 150 everyday objects reliably. Give a reasonable estimate of a number of objects that can be checked by counting.	**What is different from Term 1?** In Term 2 the number range has increased and learners now count 150 objects. Because this is a large number of objects to count, the focus has to be on counting in groups. This is a skill that learners have been practising since Grade 1 and it is now applied to a higher number range. It is important that by the end of the term learners have seen a collection of 150 objects and they can suggest the most efficient way to count it. Counting objects in this term supports: • the counting skills necessary for understanding place value; • rote counting; • the saying of number names; • the recognition of number symbols; and • the counting skills necessary for calculating. **Resources:** Careful consideration needs to be given to the kind of apparatus used. • Structured apparatus, such as a string of counting beads • The abacus to practice counting in groups of ten • Bundles of 2, bundles of 5 and ten which are then all counted • The Dienes blocks, especially the base ten blocks • Play money	-

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.2 Count forwards and backwards	Count forwards and backwards in: • 1s from any number between 0 and 200 • 10s from any multiple between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200	**Counts forwards** and **backwards in:** • 1s from any number between 0 and 150 • 10s from any multiple of 10 between 0 and 150 • 5s from any multiple of 5 between 0 and 150 • 2s from any multiple of 2 between 0 and 150 • 3s from any multiple of 3 between 0 and 99 • 4s from any multiple 4 between 0 and 100	**What is different from Term 1** In Term 2 the counting number range has increased and learners start counting in threes and fours for the first time. This can be introduced when counting out physical objects, counting on a string of number beads, using the hundred grid and the number line. By the end of the term learners are able to respond to questions such as: • Start at 132, count on in ones to 150. • Start at 120 and count back in ones to 98. • Start at 60 and count on in twos to 100. • Start at 100 and count on in twos to 138. • Start at 3 and count on in threes to 30. • Start at 60, count back in threes to 42. • Start at 4 and count in fours to 40. • Start at 84 and count back in fours to 68. • Start at 45 and count in fives to 100. • Start at 100 and count back in tens to 10. Learners should also be counting back from any given multiple.	

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<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 1</th><th>SOME CLARIFICATION NOTES or TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr>
<td>1.3
Number symbols and number names</td>
<td>Recognise, identify and read numbers
• Recognise, identify and read number symbols 0 - 200.
• Write number symbols 0 –200.
• Recognise, identify and read number names 0 - 100.
• Write number names 0 - 100.</td>
<td>Recognise, identify and read numbers
• Recognise, identify and read number symbols 0 - 150.
• Write number symbols 0 - 150.
• Recognise, identify and reads number names 0 - 50.
• Write number names 0 - 50.</td>
<td>What is different from Term 1?
Learners continue to read and write number symbols and number names to an increased number range. Learners will be recognising, reading and writing symbols beyond one hundred and write number names to 50.
Care should be taken when talking about three-digit numbers, for example one should say “ three hundred and twenty-three” rather than “ one, two, three”.
When writing three-digit numbers between 100 and 110, the digit in the tens position is zero. Some learners find it difficult to write these numbers in symbols when they are given symbols in words. For example, writing 102 might be difficult for some learners. They might write 1002. Place value cards are particularly useful for helping learners to understand how to represent these numbers correctly. Learners should also be given plenty of practice writing these numbers.
Examples of written recording:
• Write the number symbols.
<table><tr><td>One hundred and thirty-one</td><td></td></tr><tr><td>One hundred and forty-seven</td><td></td></tr></table>• Match number names to number symbols
• Complete number sequence
• Complete number lines and number tracks</td>
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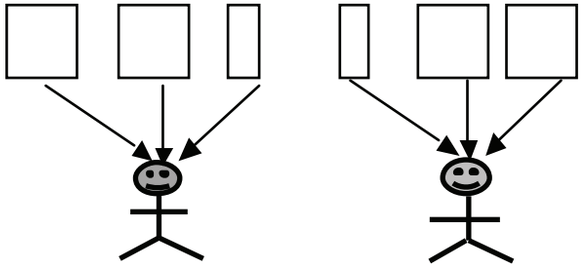
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.4 **Describe, compare and order numbers**	**Describe, compare and order numbers to 99** • Describe and compare whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to • Describe and order whole numbers up to 99 from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** Position objects ion a line from first to tenth or first to last e.g. first, second, third … twentieth.	**Describe, compare and order numbers to 50** • Describe and compare whole numbers using smaller than, greater than, more than, less than and is equal to • **Describe and order** whole numbers from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** Position objects on a line from first to fifteenth or first to last e.g. first, second, third … tenth.	**What is different from Term 1** During this term learners continue to order and compare numbers. The number line remains an important image that is particularly helpful for assessing where a number is positioned in relation to other numbers. The number line image will also support learners in their mental strategies for calculations. **Further independent activities:** Practise writing first to tenth. Record the following in class work books: • Which number comes just before 46? • Which number comes after 48? • Which number lies between 45 and 47? • Use the given number line and fill in the missing numbers. • Write 1 more than each of these numbers: - 1 more than 23 is ___ - 1 more than 29 is ___ - 1 more than 42 is ____ • Write 1 less than each of these numbers: - 1 less than 20 is___ - 1 less than 31 is ___ - 1 less than 42 is ___ • Write 10 more than each of these numbers: - 10 more than 20 is___ - 10 more than 30 is ___ • Write 10 less than each of these numbers. - 10 less than 50 is____ - 10 less than 40 is____ • Write the numbers in order from the biggest to the smallest. (130, 133, 123, 143, 103, 113) • Complete the sentence. Fill in more or less: - 24 is _____ than 24 - 36 is _____ than 19	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 Place value	**Recognise the place value of at least two-digit numbers to 99** • Recognise what each digit represents • Decompose two-digit numbers into multiple of tens and ones • Identify and state the value of each digit	**Recognise the place value of at least two-digit numbers to 50** • Recognise what each digit represents • Decompose two-digit numbers into multiple of tens and ones • Identify and state the value of each digit	**What is different from Term 1** During this term the number range has increased from 25 to 50. Learners now apply their knowledge of place value concepts to a higher number range. During this term learners continue to: • count and group to show tens and ones in different ways; • count pre-grouped/pre-structured apparatus; • use place value cards to show the number grouped and counted; • show different arrangements of numbers, for example, 35 can be shown as 35 loose ones, 3 tens and 5 loose ones and 2 groups of tens and 15 loose ones; and • state the value of each digit. The above work is often done in focus groups and during independent time learners can record the following: 48 = 4 groups of tens and 8 loose ones 48 = 40 and 8 This is supported by using the Flard cards or place value cards. **The value of the digits** Learners should start saying what each digit represents. Ask learners: • What number does the 7 represent in 27? • What number does the 4 represent in 49? Learners should use the place value cards to prove their statements.	
SOLVING PROBLEMS IN CONTEXT				
1.6 Problem-solving techniques	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Learners are expected to solve word problems using the following techniques: • · Drawings or concrete apparatus e.g. counters • · Building up or breaking down numbers • · Doubling and halving • · Number lines **Drawings or concrete apparatus** Learners will continue to draw pictures and use concrete apparatus to solve problems. Drawing up to 30 or 50 objects individually becomes inefficient and should be discouraged. Encourage them to include number symbols in their recordings, including in picture representations. Learners can also be encouraged to write number sentences. See notes for Term 1.	

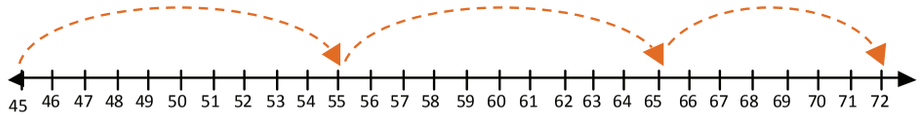
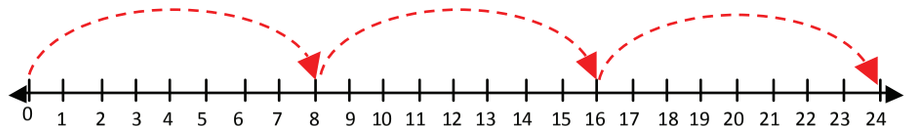
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.7 Addition and subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 99.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 50.	**What is different from Term 1** During this term learners continue practising doing word problems and work on using the following techniques when solving problems: • Drawings or concrete apparatus e.g. counters • Building up and breaking down of numbers • Doubling and halving • Number lines The focus during this term remains on recording. Learners should be writing down number sentences as a written record for the problem solved. It is important to watch which learners struggle to write a number sentence to deal with particular problems. If learners ask you to show them how to represent a problem with a number sentence after they have solved it, it is a good time to show them. For examples of problems that can be done this term, see Term 2 notes.	
1.8 Repeated addition leading to multiplication	Solve word problems in context and explains own solution to problems using repeated addition or multiplication with answers up to 50.	Solve word problems in context and explains own solution to problems involving multiplication with answers up to 30.	**What is different from Term 1** The number range for the term has increased to 30. Learners should be encouraged to write number sentences for all the word problems. One can expect learners to use repeated addition number sentences to show the solution. During this term learners should be writing multiplication number sentences for their solutions. They were introduced to the multiplication sign in Term 1 and should use this experience when solving multiplication number problems. Repeated addition and grid/array type problems should show a multiplication number sentence. There will still be learners who will be far more confident in recording their solutions using repeated addition and not multiplication. **Examples of problems that can be done this term** Repeated addition • How many wheels do 8 bicycles have? • How many eyes do 9 children have? **Rate** Thami drinks 6 glasses of water every day. How many glasses of water does he drink in a week? **Grids/ Arrays** Mr Khumalo plants 6 rows of cabbage plants. There are 5 plants in a row. How many cabbage plants are there altogether?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.9 Grouping and sharing leading to division	Solves and explain solutions to practical problems that involve equal sharing and grouping up to 99 with answers that can include remainders.	Solves and explain solutions to practical problems that involve equal sharing and grouping up to 50 with answers that can include remainders.	**Examples of problems that can be done this term** During this term allow learners to use drawings and concrete apparatus to show their solutions. Number sentences should be used. Learner might use repeated subtraction to show how they arrived at an answer. **Array/Grid** Mongezi packs out 20 counters into 10 rows. How many counters are in a row? **Grouping** *Grouping, discarding the remainder* Stella sells apples in bags of 6 apples each. She has 40 apples. How many bags of 6 apples each can she make up? *Grouping, incorporating the remainder in the answer* Ben wants to take 35 eggs to his grandmother. How many egg boxes that can take 6 eggs each does he need to pack all the eggs? **Sharing** *Sharing, discarding the remainder* • Share 45 sweets among 4 friends so that they all get the same number of sweets. • Sue and Greg do a piece of work together. Sue works for 3 hours and Greg works for 1 hour. They get paid R40. How must they share the money?	
1.10 Sharing leading to fractions	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$ etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{5}$ etc.	**What is different from Grade 1** One of the first goals in the development of fractions should be to help learners construct the idea of fractional parts of the whole - the parts that result when the whole or unit has been partitioned into equally sized portions or fair shares. Learners seem to understand the idea of separating a quantity into two or more parts to be shared fairly among friends. They eventually make connections between the idea of fair shares and fractional parts. Sharing activities are therefore good places to begin the idea of fractions. Our curriculum also introduces the concept of sharing resulting in fractional parts. Sharing activities are generally posed in the form of simple word problems. Initially when learners perform sharing activities (division) they find dividing or sharing leaves left-over pieces. They then share the left-over pieces again. The language of fractions can be introduced verbally. Then one can write out fraction words, e.g. one-half, one-quarter, one.=third. When writing about many fractions parts. e.g. 3 halves, 3 quarters, write this as the figure and the word. The expression 3 over 2 or 3 over 4 is meaningless and it is best to leave this symbolism to the Intermediate Phase.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.10 Sharing leading to fractions	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. etc.	**Sharing** In the examples below an equal sharing situation with a remainder that can also be shared is used. Two children share 5 chocolate bars so that each gets the same amount. How much can each child have? Learners will give each child 2 and then halve the remaining chocolate bar  **Remainders** It is important that learners draw their answers. Initially let learners describe in their own words the 'part' that they have broken up. Expect that when learners cut up the remaining piece. The pieces may be of unequal size. This might not influence how they describe the sharing process. Once learners can share fairly well, fraction names can be given to the parts. Moving from sharing problems with solutions that have remainders to solutions with whole numbers and fractional parts, means that learners are exposed to improper fractions and mixed numbers. Learners are not required to know and use this terminology. For example: 2 and a half piece can be formally written as 2 ½, which is a mixed number. **Sharing tasks and fraction language** The discussion of learners' solutions is a good time to introduce the vocabulary of fractional parts. When a chocolate bar has been broken into equal shares, simply say, 'we call these fourths'. The whole biscuit has been cut into four parts. All the parts are the same size. Learners need to be aware of two aspects of fractional parts: • The number of parts; and • the equality of the parts.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.10 Sharing leading to fractions	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. etc.	Sharing activities help learners to develop the following concepts: • When we divide something into 2 equal parts, we call these parts halves. • When we divide something into 3 equal parts, we call these parts thirds. • When we divide something into 4 equal parts, we call these parts quarters. • When we divide something into 5 equal parts, we call these parts fifths. The focus of fraction word problems in this term allows learners to: • share and group things equally; • name fraction parts; • find fractions of whole objects; and • recognise that a fraction is part of a whole. **Examples** of problems suitable for Term 2 • Erin, Tawfiq and Thami must share 4 chocolate bars equally. How much chocolate must each child get? Draw a picture to show your answer. • Miles, Hannah, Mathew and Ndaweni share 5 fruit bars. How can they share them equally? Draw a picture to show your answer. • Serebolo and Jamie share 1 liquorice stick. Jamie says each one must get a half. Is she correct? Draw a picture to show your answer. It is important that when learners draw the solutions they are able to describe how they shared. At the beginning use learners' informal language to describe the fractional parts. Once they are confident and understand the concept of a 'whole and a bit', the fraction name can be introduced. Then one can write out fraction words, e.g. one-half, one quarter, one third. The fraction symbol is not introduced, as the expression 1 over 2 is meaningless and it is best to leave this symbolism to later grades.	
1.11 Money	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5), and bank notes (R10, R20, R50) • Solve money problems involving totals and change to R99 and in cents up to 90c	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5), and bank notes (R10, R20, R50) • Solve money problems involving totals and change in cents up to 50c or rands to R50	**What is different from Term 1** During this term learners practise recognising money and breaking up money into smaller parts. **Examples of problems that can be done this term** • Could you share 50c equally among four children? Explain how. • Joe spent 50c on 10c bubblegum sweets. How many bubblegum sweets did he buy? • Thenje pays R5 to travel by taxi to school in the morning. She pays with a R20 note. How much change does she receive? How much money will she have left when she returns home by taxi? • Zurina's taxi fare is R5,50. How much change does she get from R10? Mia spent R38. She had R50. How much money does she have left?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
CONTEXT-FREE CALCULATIONS				
1.12 **Techniques** (**methods or strategies**)	Use the following techniques when performing calculations: • drawings or concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	**What is different from Term 1** Learners are expected to solve context-free calculations using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines **Drawings or concrete apparatus** Learners will continue to draw pictures and use concrete apparatus to solve problems. It is important that the pictures or drawings contain numbers as well as number sentences. **Building up and breaking down** This is one of the most important techniques in the Foundation Phase (it is also used frequently throughout the Intermediate Phase) Using this technique allows learners to split (decompose) and recombine numbers to help make calculations easier. It is important that learners apply known knowledge when breaking up numbers e.g. • breaking up using place value; • breaking up using multiples of 10; and • breaking up into number pairs **Doubling and halving** Learner often find doubling easy; however, it is useful to train learners to apply their knowledge of doubling: • Use recognition of doubles to see near-doubles **Doubles** **Near doubles** 12 + 12 12 + 13 25 + 25 25 + 24 • Use a doubling strategy and then compensate for the difference, e.g. 13 + 14 = double 13 plus 1 This technique is quite sophisticated and requires a strong number sense. Learners who are able to choose this as a technique are quite flexible in the strategies they use. **Example:** On one day at the clinic 24 children were given flu vaccinations. The next day 25 children were vaccinated. How many children were vaccinated altogether? The problem could be solved by using doubling. A learner might say double 24 plus 1 or double 25 minus 1.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • drawings or concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	**Number lines** Using number lines in order to help themcalculate will give learners a way to record their thinking and to keep track of it. It also allows learners to have a recording image that they can use to explain how they solved the problem. Learners have been using number lines since Grade 1. By now they should be able to construct blank number lines on which they put the starting number and then determine how to get from one to the other. Example of how learners can use the number line: • Addition and subtraction. Learners should be constructing their own number lines and breaking up the numbers in manageable parts. **Example:** 45 + 27  • **Multiplication** Number lines should continue to be used to support repeated addition. Equal jumps are recorded on the number line and supporting sentences can be recorded as well. **Example:**  8 + 8 + 8 = 24 3 hops of 8 make 24 3 groups of 8 = 24 3 × 8 = 24 For a given multiplication learners should be able to explain how jumps can be made on the number line.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 20	• Add to 50 • Subtract from 50 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 15	**What is different from Term 1?** Learners in Grade 2 will continue to use concrete apparatus and other images to help establish number sense and to calculate. The use of these images will become more and more abstract over time. By the end of the year in Grade 3 learners should be calculating up to three-digit numbers without the use of concrete apparatus. Learners in Grade 2 continue to use and refine their own calculating strategies. They need to be supported in making sure that their recording is systematic. so that it can be read by themselves and others. Grade 2s will use a wide variety of recordings and will be more confident in using numbers and symbols as a recording method. Learners should be able to 'think' about the question posed to them and look at the number range of the problem to decide on the best strategy. Through problem-solving learners have started developing their own calculating strategy and their own recording method. In Grade 2 they will refine this. During this term they should become confident in reading their recording methods and explaining how they arrived at the answer. Learners should be able to do the following with addition and subtraction: Although learners are using concrete apparatus and images to support their calculations when it comes to working with numbers, they should be able to calculate on an abstract level. During the term learners need to continue calculating doubling questions in a variety of ways so that they can use near doubling as a calculating strategy. **Example:** Double 20. Write this as an addition number sentence Copy and complete: • 12 + 12 = □ • 15 + □ = 30 • 16 + □ = 32 • 17 + 17 = □ • 36 = 18 + □ • 38 = □ + 19 Possible methods to show addition and subtraction calculations.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 20	• Add to 50 • Subtract from 50 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 15	**Breaking down a number into smaller parts to make a calculation easier** **Using knowledge of place value to break down numbers into tens and ones** *Adding two-digit numbers by breaking up both numbers* 23 + 36 = ☐ 23 + 36 = (20 + 3) + (30 + 6) = (20 + 30) + (3 + 6) = 50 + 9 = 59 **Adding by breaking up one number** Adding two-digit numbers by breaking up one number 23 + 36 = ☐ 23 + (30 + 6) 23 + 30 → 53 + 6 = 59 Learners might break down the number in ways that are manageable for them. This means that they will do it in different ways: 23 + 36 = ☐ 23 + (10 + 10 + 10 + 6) 23 + 10 → 33 + 10 → 43 + 10 → 53 + 6 = 59 **Subtraction** • Breaking up both numbers 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	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 20	• Add to 50 • Subtract from 50 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 15	• Subtracting by breaking up one number 47 – 26 = ☐ 47 – (20 + 6) 47 – 20 = 27 27 – 6 = 21 42 – 26 = ☐ (30 + 12) – 26 30 – 26 = 4 12 + 4 = 16 • Expect that some learners might break up the number in different ways to make it easier for them calculate: 47 – 26 = ☐ 47 – (10 + 10 + 6) 47 – 10 → 37 – 10 → 27 – 6 = 21 **Using and applying previous knowledge as techniques** The techniques shown below allow learners to formalise their counting and number sense. Practising the techniques below will encourage learners to reflect upon the relationships between numbers and teach learners that they can actually use and apply their knowledge to help them calculate. **Count on and count back** Counting up in ones from 39 is an appropriate strategy because the numbers are close to one another. 48 – 39 = ☐ **Identify near doubles** 24 + 25 explaining that it is double 24 plus 1 or double 25 minus 1. 24 + 24 + 1 Learners might record their strategies using arrows 24 + (20 + 4) + 1 24 + 20 → 44 + 4 → 48 + 1 = 49	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and subtraction**	• Add to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 20	• Add to 50 • Subtract from 50 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 15	**Using halving to break down a number** 29 + 12 29 + (6 + 6) 29 + 6 → 35 + 6 = 41 **Change a number to a multiple of ten and then subtract or add ones** Count up or down to the nearest 10 28 + 19 = ☐ Here learners need to say to themselves that they have two options. Change 28 or 19 to the nearest multiple of 10. The choice is theirs. The sum can be written as: 28 + 19 = 28 + 20 – 1 28 + 20 → 48 – 1 = 47 Some learners might break down 20 into 2 groups of 10 to calculate accurately. It helps learners to become more confident in and more independent at mathematics, if they have strategies - to check their solutions themselves; and - to judge the reasonableness of their solutions.	

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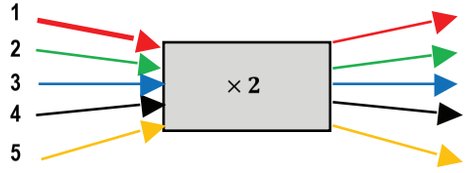
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 1</th><th>SOME CLARIFICATION NOTES or TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr>
<td>1.14
Repeated addition leading to multiplication</td>
<td>• Multiply numbers 1 to 10 by 1, 2, 5, 3 and 4
• Use appropriate symbols (+, x, =, ☐)</td>
<td>• Multiply numbers 1 to 10 by 2, 5
• Use appropriate symbols (+, x, =, ☐)</td>
<td>
What is different in Term 2?
During the second term learners keep practising their understanding of multiplication. Multiplying 1 to 10 by 5 is introduced.
For introducing multiplication by 5, see the notes for multiplying by 2 in Term 1
By the end of the term learners should be able to record the following:
1 group of 5 is 5 or 1 times 2 is 2 or 1 x 2 = 2
2 groups of 2 are 4 or 2 times 2 is 4 or 2 x 2 = 4
3 groups of 2 are 6 or 3 times 2 is 6 or 3 x 2 = 6
The focus is not on memorising tables but rather on building the concept of multiplication. Learners are also learning to read and understand the multiplication number sentence.
Multiple images for multiplication should be provided and lots of recording done in the class work book.
Examples of written work
Recording in tables:
<table>
<tr><td>Number of children</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></tr>
<tr><td>Number of legs</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Flow diagrams


When working with number patterns, multiplication can be linked to skip counting, by investigating patterns of multiples on a number grid.
Example: Learners can record 2 s and 5 s on a number grid. They can talk about which numbers occur in both the two-times table and the five-times table.
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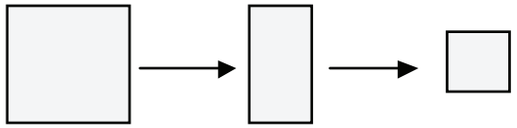
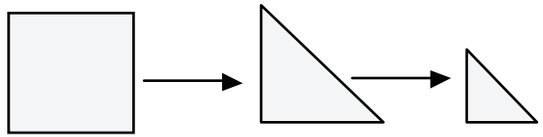
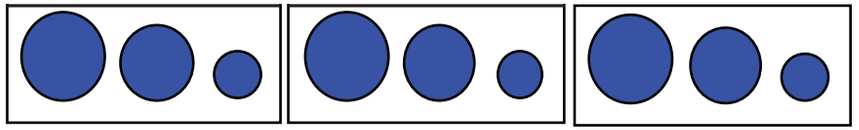
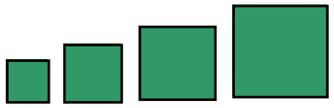
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number Concept: Range 99** • Order a given set of selected numbers • Compare numbers to 99 and say which is 1, 2, 3, 4, 5, and 10 more or less **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Calculation Strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number Concept: Range 50** • Order a given set of selected numbers • Compare numbers to 100 and say which is 1, 2, 3, 4, 5, and 10 more or less **Rapidly recall:** Recall addition and subtraction facts to 10 **Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number concept:** Calculating strategies, number concept, knowledge and known number facts are developed through problem-solving and calculations. These are practised during the mental mathematics time. This helps learners to become familiar with them and to be able to use them with ease when calculating and solving problems in contexts. **Examples of** questions that can be asked: **Number names and symbols** Hold up a card or write down a number name. Choose a learner to write the matching numeral. **More or less** What is? • 1 less than 50 • 1 more than 39 • 3 less than 27 • 10 more than 20 What is the 5th letter of the alphabet? What is the 9th month of the year? **Before and after** What number comes just before 37? What number comes just after 39? **Ordering and comparing** Which is more: 21 or 41? Give me a number between 37 and 39. **Addition and subtraction facts:** See notes for Term 1.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 **Mental mathematics**	**Number Concept: Range 99** • Order a given set of selected numbers • Compare numbers to 99 and say which is 1, 2, 3, 4, 5, and 10 more or less **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Calculation Strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number Concept: Range 50** • Order a given set of selected numbers • Compare numbers to 100 and say which is 1, 2, 3, 4, 5, and 10 more or less **Rapidly recall:** Recall addition and subtraction facts to 10 **Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Calculation Strategies:** Use calculation strategies to add and subtract efficiently. Add several numbers by using strategies such as: • Look for pairs of numbers that make 10 and use these first 2 + 7 + 8 2 + 8 make 10 and then add 7 Put the larger number first in order to count on or count back • Start with the largest number 3 + 6 Restate the number sentence: 6 + 3 and count on to 9 • Use doubling as a mental calculation strategy Identify near doubles. **Example:** 5 + 4 = 9 explaining that it is double 4 plus 1 or double 5 minus 1 Recognise that when two numbers are close in size to each other then it is easier to find a difference by counting up rather than counting back. 8 - 6 = 2 and explain that counting up from 6 to 8 gives 2 Some mental mathematics can be done without apparatus, but it is often useful to do mental mathematics with apparatus. Recommended apparatus • A number line (structured and empty) • A number grid • Place value cards (Flard cards) • Counting beads	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.17 Fractions	• Use and name fractions including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	• Use and name fractions including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	**This term focuses on:** During this term learners are introduced to fractions. Learners will be introduced to fractions through sharing word problems and activities. However, the concept of fractional parts is so important that it should be developed further using additional activities. • Making half and quarter shapes by folding and cutting Learners can fold paper into half and name each part. It is important that they understand that when you make two equal parts from something, you call each part a half. They could fold the piece of paper into half again. The importance here is to fold the page in different ways to obtain a different-looking half.  or  Always ask learners to predict how many pieces they will get and allow them to unfold the page and check. Comparing the two different half shapes or the two different quarter shapes can lead to interesting conversations on shape and size.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES or TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.17 Fractions	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	You could ask learners: Can I call these two shapes by the same number name, one half? Prove to me that I can call these two shapes by the number name one quarter. Learners should name each part and this can be done by writing the fractions. For example: • Combining to make a whole Let learners use fraction circles or cut out circles from paper to find out how the half and quarter shapes can be combined to make the whole again. • Colouring or shading fractions These kind of activities encourage: · knowing that fractions are equal parts; · identifying fraction parts; and naming fraction parts. **Writing fraction names** We do not introduce learners to writing the symbol of fractions. Learners learn how to label fraction parts by writing one half or one quarter.	

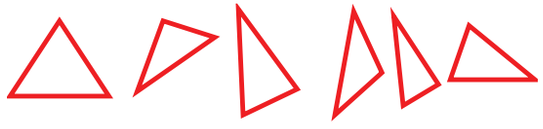
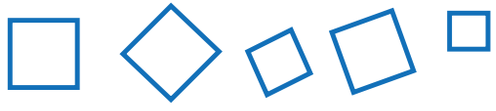
GRADE 2 TERM 2 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create and describe own patterns** Create and describe own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create and describe own patterns** Create and describe own geometric patterns • with physical objects • by drawing lines, shapes or objects	In Grade 1 and Term, 1 Grade 2 it was recommended that learners work with patterns in which elements (shapes, lines or objects) are repeated in exactly the same way. In Term 2 of Grade 2 learners can begin to work with patterns in which the size of the shapes or number of shapes changes in a predictable way. Some patterns have identical groups of shapes or objects repeated, where the size of the shape in each group changes in a regular, predictable way. e.g. the shape gets smaller.  Some patterns are made up from a single kind of shape, but each example of the shape increases or decreases in size **Example**  Some patterns are made up from groups in which the same shapes of objects occur, but the number of each kind of shape or object increases or decreases in a regular way e.g. Copying the pattern helps learners to see the logic of how the pattern is made. Extending the pattern helps learners to check that they have properly understood the logic of the pattern. Describing the pattern helps learners to develop their language and speaking skills. It also helps you to see how learners have interpreted the pattern. It is usually easier for learners to talk about the pattern after they have made it. By now learners should be able to describe patterns without the aid of guiding questions. Continue to focus on developing the language they need to describe the patterns.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 **Number patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 200 **Create and describe own patterns** Create own number patterns.	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 150. Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 150 • 10s from any multiple of 10 between 0 and 150 • 5s from any multiple of 5 between 0 and 150 • 2s from any multiple of 2 between 0 and 150 • 3s and 4s from any multiple of 3 and 4 between 0 and 150	See notes for Term 1, but extend the number range to 150.	3 lessons

GRADE 2 TERM 2 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS: FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.1 **Position, orientation and views**	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and views** Match different views of the same everyday object. **Position and directions** Follow directions to move around the classroom.	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and directions** Follow directions to move around the classroom. .	**Recommended focus for Term 2: language of position, following directions** The focus in Term 2 can be on position and orientation. In Term 3 learners can work with views. Begin by assessing what learners know and remember about position and orientation. **What is different from Grade 1** In Grade 2, learners consolidate the work that they have done on position, orientation and views in Grade 1. **Language of position** Language of position should be introduced and practised through practical activities that involve learners in physical movement, including songs and rhymes with movement and games with movement words. This can be done through whole class teaching time or focus group teaching time. It is suggested that you spend two lessons on position activities during Term 2, but then continue to introduce and practise position words for short parts of whole class, focus group and independent work time. The language of position can also be practised during Language and Life Skills lessons. The language of position can be consolidated through written recording such as colouring or matching drawings with words, drawing an object or shape when told its position relative to another object or shape, colouring or matching drawings with words. **Position and directions** Teaching learners to follow directions should be done through practical activities in which learners move themselves according to instructions. In Grade 2 learners can be given either verbal or written directions to move around the classroom, e.g. “come to the front of the class”; “stand next to your chair”; “jump over the rubbish bin”.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of Objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling, construction kits, other 3-D geometric objects.		No specific focus on 3-D work is recommended for Term 2. However, work on 3-D can be consolidated through written exercises. Learners can also continue to build D-3 objects from recycling material or construction kits during independent work time.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	**What is new in Grade 2** • rectangles Most work with shapes in Grade 2 is done practically with concrete objects. All work should be consolidated through written exercises. Learners start with free play with various shapes including making pictures with cut-out geometric shapes. This can be done in independent time. This can also be done during Life Skills lessons. Learners copy pictures made up of geometric shapes. These pictures can be provided by the textbook or the teacher. This helps learners to be able to identify • circles and squares of different sizes; • squares, rectangles and triangles in different positions; and, • triangles and rectangles with different shapes. This can be done in independent time. This can also be done during Life Skills lessons.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	**Comparing and describing 2-D shapes: size** Learners compare the size of similar shapes e.g. • order circles from smallest to greatest, • put all squares or the same size together, Use the language of size to compare different shapes e.g. “I drew a triangle inside the square, so the triangle is smaller than the square.” **Describing 2-D shapes: colour** Learners talk about the colours of shapes and then sort shapes according to colour. Identifying and naming objects and their colours, as well as comparing sizes of objects, can be practised during work with patterns. **Recognising and naming circles, triangles, squares and rectangles** Learners should work with circles and squares of different sizes and triangles with different shapes. It is important that learners do not only see one example of each shape. Most commercial sets of shapes give only one example of triangles. Learners need to be able to recognise - Triangles that are shaped differently and placed in different positions. These are some examples of triangles:  - Squares of different sizes, placed in different positions. These are some examples of squares:  - Rectangles with different shapes, placed in different position. These are some examples of rectangles: 	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	- Circles of different sizes. These are some examples of circles: It is useful for learners to work with cut-out cardboard models of shapes. This allows learners to see different triangles, squares and rectangles placed in different positions. Learners sort shapes according to whether they have straight or round sides. Learners sort and groups shapes according to whether they are triangles, squares, or circles. Work is consolidated through written exercises. These exercises can include colouring, matching names to shapes etc.	3 lessons
3.4 **Symmetry**	**Symmetry** Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes.	**Symmetry** Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes.	Learners should look for lines of symmetry in concrete objects and pictures. Written exercises - should **NOT** only be "draw in the other half'; - should include examples where learners draw in the line of symmetry. The line of symmetry should not always be a vertical line, e.g. in a picture of a snake the line of symmetry could be horizontal; and - may include examples with more than one line of symmetry. If learners are not sure whether a picture or shape has a line of symmetry, they can test by folding the piece of paper and seeing whether the two halves match exactly. If they do, then the fold line is the line of symmetry.	1 lesson

GRADE 2 TERM 2 4.MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Telling the time** • Know days of week • Know months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours. half hours and quarter hours **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks. Use clocks to calculate length of time in hours, half hours or quarter hours.	**Telling the time** • Know days of week • Know months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours and half hours on analogue clocks **Calculate length of time and passing of time** Use clocks to calculate length of time in hours or half hours.	Learners continue to practise talking about the duration of time and the sequencing of time. During whole class teaching time and focus group time, learners continue to talk about the day of the week and month of the year and the date of the current day, as well as days before and days to come. Learners become familiar with calendars by the continual placing of • Birthday; • religious festivals; • historical events; • school events; and • public holidays on the calendar. During Independent work time learners continue to sequence events from their daily lives and sequence pictures of events. Learners also work with exercises related to telling the time in hours. **What is different from Term 1?** A focus in Term 2 is telling them time in hours and half hours using an analogue clock. This can be the focus of a lesson. It should include talking about the use of a.m. and p.m. with 12-hour time. Telling the time, should then be practised during the term on a continual basis. For example, learners can be asked to tell the time when school starts, at break time and at home time, or when they change from one lesson to another. Choose times where the clock shows an exact hour or a half hour. It is useful to have a large clock displayed in the classroom, so that learners can refer to it. Learners can also make models of clocks. You can then ask them to show various times and include some calculations e.g. “Show me 10 o’clock.” “Show me what the time will be half an hour later.”	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, wider **Introducing formal measuring** Estimate, measure, compare order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length	During Term 1 it was recommended that learners focus on estimating, measuring, comparing and recording lengths, widths and heights with informal units but also do a some estimating, measuring, comparing and recording measurements in metres. Both these methods of measuring length can be practised in independent work time throughout the term. All work should be recorded. During time allocated to Numbers, Operations and Relationships learners can solve problems that use the contexts of • informal measurement of length; and • measuring lengths in metres. Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term.		

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Measure their own mass in kilograms using a bathroom scale	**Informal measuring** • Estimate, measure, compare, order and record mass using a balance and non-standard measures e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Where bathroom scales are available, learners can measure their own mass in kilograms using a bathroom scale. The expectation is that learners only read to the nearest whole kilogram.	**What is different in Grade 2?** In Grade 1 it was recommended that learners focus on working with a measuring balance to • directly comparing the mass of objects, • ordering and comparing the masses of 3 or more objects, by placing pairs of objects on a balance, until all objects can be sequenced • find the mass of objects using informal units of mass Learners also focussed on developing the language to talk about mass. Learners should begin by consolidating what they know about using a balance and informal units to measure mass. Then they can be exposed to mass in kilograms **Informal measurement of mass using a balance and non-standard units** Learners can learn all the principles and practises of measurement using non-standard units. Measuring with non-standard units should not be considered to be inferior to measuring with standard units. Commercial mass balances can be used. If you don't have a commercial balance, you can make one by attaching a pair of one of the following to a coat hanger: a yoghurt cup, the cut off base of a 2 litre bottle, the cut off bottom of a litre milk or cold drink box (identical containers are attached to either side of the coat hanger). Measuring with mass with non-standard units involves counting how many of the chosen unit have the same mass as the object being measured. For example a ruler has the same mass as 9 blocks. Learners should measure a variety of objects using a range of objects as informal units. Learners should be taught to always state the unit when giving the mass e.g. the book is has the same mass as 34 marbles. Once learners have measured with any unit a couple of times, they should estimate about how many of that unit will have the same mass as the object being measured. Estimation before measuring is important, but can only be done once learners have done some measuring with that unit. Learners need to be taught that in order to compare masses of different objects the same unit needs to be used. For example if a ruler has a mass of 20 blocks and a pair of scissors has the mass of 20 marbles, you cannot say whether they have the same mass or not, or which one is heavier. **Recording measurements** Although measuring is a practical skill learners should record their measurements at all times.	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Measure their own mass in kilograms using a bathroom scale	**Informal measuring** • Estimate, measure, compare, order and record mass using a balance and non-standard measures e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Where bathroom scales are available, learners can measure their own mass in kilograms using a bathroom scale. The expectation is that learners only read to the nearest whole kilogram.	**Working with kilograms** Learners can begin to be introduced to kilograms by working with groceries that are sold in kilograms, where the number of kilograms is stated on the packaging. For example learners can compare the mass of packages of different substances (such as rice, sugar, mealie meal, flour or washing powder) that are sold in 1 kg amounts. They can place these on a balance to see that although the size of the packages may differ, they have more or less the same mass. Learners can then be given a range of packages of different items to sequence from heaviest to lightest, where they sequence according to the mass stated on the package e.g. 2 kg rice, 1 kg sugar, 5 kg mealie meal, 10 kg samp. **Reading bath room scales** Where bath room scales are available learners can use these to read their own mass. There are two kinds of mass meters: digital and analogue. Digital scales are easier to read because the mass is written in numbers. If you have a digital bathroom scale check that it states the mass only in whole kilograms. Some scales you can re-set to show only whole kilograms. If you cannot set it to show whole kilograms, teach learners to ignore the parts of kilograms for now. Most analogue bathroom scales have every 10 kg numbered, with a longer line showing the position of 5 kg. The 1kg lines are usually not numbered. This is similar to the way lines and numbers work on a ruler. Let learner start by counting to see that there are 10 spaces before the 10 kg mark, so that each space represents one kilogram, and the longer line represent 5 kg. Learners can read measurement of real bathroom scales as well as pictures of bathroom scales. It is easier to read the mass of a picture of a bathroom scale than off a real scale. **Recording measurements** Although measuring is a practical skill learners should record their measurements at all times. **Measuring mass as a context for solving problems and calculations** During time allocated to *Numbers, Operations and Relationships* learners can solve problems that use the context of • informal measurement of mass **Example:** The duster has a mass of 11 marbles. The box of crayons has a mass of 8 marbles. Together they will have a mass of how many marbles? • measuring mass in kilograms **Example:** Puleka bought 12 kg of mealie meal, 5 kg of sugar and 2kg of rice. How much did her shopping weigh altogether. Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term.	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint	Following recipes, including baking, is a useful context in which learners can practise measuring. Choose recipes where ingredients are given in cups, teaspoons or informal units. So far this year it was recommended that learners focus on • developing the language to talk about differences in volume. • comparing the volumes in two identical containers, • comparing the volumes in two different looking containers especially wider and narrower containers • measuring volumes and capacities with non-standard instruments and units. During independent work time learners can to estimate, measure, compare, order and record volumes and capacities with non-standard instruments and informal units of capacity. Cooking and baking are useful a context in which learners can practise measuring capacity. Choose recipes in which measurements are given in cups, teaspoons and other informal units. **Measuring capacity as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of informal measurement of capacity/volume e.g. Gogo uses 2 cups of milk to make a pudding. If she doubles the recipe, how much milk will she need? Take account of the number range appropriate for the term, as well as the range of problems types		

GRADE 2 TERM 2 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
5.4 Collect and organise data	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher • Organise data in tallies			
5.5 Represent data	**Represent data** • Represent data in pictograph			
5.6 Analyse and interpret data	**Analyse and interpret data** • Answer questions about data in pictograph	Analyse data from representations provided.	Learners should have experienced the whole data cycle in Term 1, they can focus on analysing representations that are given to them. It is recommended that in Term 2 learners analyse (answer questions about) at least one pictograph Learners answer questions that you ask about the picture graph e.g. • "What TV programme is the most popular in our class?" • "What programme is the favourite of the fewest learners in the class?" • "Do more learners like …. or …..?" • "How many more learners prefer …. than ….?"	1 lesson

GRADE 2 TERM 3 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
1.1 Count objects	**Counting concrete objects** Estimate and count to at least 200 everyday objects reliably. The strategy of grouping is encouraged.	Count to at least 180 everyday objects reliably. Give a reasonable estimate of a number of objects that can be checked by counting	**What is different from Term 2?** In Term 2 the number range has increased and learners now count 180 objects. Counting objects in this term continues to support: • the counting skills necessary for understanding place value; • rote counting; • the saying of number names; • the recognition of number symbols; and • the counting skills necessary for calculating. The focus is still on group counting using a variety of structured or pre-grouped apparatus. It is useful to use some of the same apparatus when doing place value. Example: Learners can use the base 10 blocks to count in tens and show groups of 10. Useful questions to ask learners when counting objects are: • How do you know that you've counted that number? • How can you check your answer?	
1.2 Count forwards and backwards	Count forwards and backwards in: • 1s, from any number between 0 and 200 • 10s from any multiple between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200	**Counts forwards** and **backwards in:** • 1s from any number between 0 and 180 • 10s from any multiple of 10 between 0 and 180 • 5s from any multiple of 5 between 0 and 180 • 2s from any multiple of 2 between 0 and 180 • 3s from any multiple of 3 and between 0 and 180 4s from any multiple of 4 between 0 and 180	**What is different from Term 2?** The number range in Term 3 increases from 150 to 180. When doing rote or oral counting it is necessary to focus learners' attention on the numbers they are counting. For example,ask: When we count in twos from 120 to 140 will we count the number 121? Why not? It is still important that the number line and the 100 grid be used to see how the words they are saying connect with the structure of the number system. Learners need to have a number grid from 100 to 200 to use for identifying and counting. See the notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
		REPRESENT WHOLE NUMBERS		
1.3 Number symbols and number names	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 0 - 200 • Write number symbols 0 - 200 • Recognise, identify and read number names 0 - 100 • Write number names 0 - 100	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 0 - 180 • Write number symbols 0 - 180 • Recognise, identify and reads number names 0 - 75 • Write number names 0 - 75	**What is different from Term 2?** The number range for: • knowing, reading and writing number symbols increases to180; and • knowing, reading and writing to 75. Learners should be able to identify numbers and begin to explain the difference in their own words. **Example:** They have to look at the following number cards and be able to tell the difference between any two numbers: 16 11 16 13 16 Also see notes for Term 2	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.4 **Describe, compare and order numbers**	**Order and compare numbers to 99** • **Order** whole numbers up to 99 from smallest to greatest, and greatest to smallest • **Compare** whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to **Use ordinal numbers to show order, place or position** Position objects on a line from first to tenth or first to last e.g. first, second, third … twentieth	**Order and compare numbers to 75** • **Order** whole numbers from smallest to greatest, and greatest to smallest • **Compare** whole numbers using smaller than, greater than, more than, less than and is equal to **Use ordinal numbers to show order, place or position** Position objects on a line from first to twentieth or first to last e.g. first, second, third … tenth.	**What is different from Term 2?** In this term learners order and compare numbers to 75. Up until now learners have been comparing and ordering numbers in order to develop a feel for the size of numbers in relation to each other. Questions on numbers should be carefully chosen to assist learners to develop higher order thinking skills about number value. Learners need to be challenged by the type of questions asked. Also help learners to develop the language to explain their thinking. Examples of questions may include: • Give me a number between 50 and 60. Is the number closer to 50 or 60? Explain your answer using a number line. • Learners should be taught how to think about the ordering of numbers. Learners should explain why 15 is smaller than 50. Explanations can be supported by using concrete apparatus. By the end of the term they should, for example: • know which numbers are smaller than 50, more than 50; and • be able to show the position of all numbers in the 30s; 40s etc., using the number grid. Instead of always giving learners number sentences to complete, sometimes ask them to make up their own sentences, to show relative size of numbers. Example: Make the following sentences true: • ☐ is 1 more than ☐ • ☐ is 1 less than ☐ • ☐ is 10 more than ☐ • ☐ is 10 less than ☐ Also see notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 **Place value**	**Recognise the place value of at least two-digits numbers to 99** • Know what each digit represents • Decompose two-digit numbers up to 99 into multiples of tens and ones • Identify and state the value of each digit	**Recognise the place value of at least 2-digit numbers to 75** • Know what each digit represents • Decompose two digit numbers into multiple of tens and ones • Identify and state the value of each digit	**What is different from Term 2?** In this term learners continue to develop their understanding of place value concepts to 75. During this term learners continue to: • count and group to show tens and ones in different ways; • count pre-grouped/pre-structured apparatus; • use place value cards to show the amount grouped and counted; and • show different arrangements of numbers. Example: 35 can be shown as 35 loose ones, 3 tens and 5 loose ones and 2 groups of tens and 15 loose ones. The above work is often done in focus groups and during independent time learners can record the following: 68 = 6 groups of tens and 8 loose ones 68 = 60 and 8 This is supported by using the Flard cards or place value cards. Learners should be able to respond to questions and instructions such as: • Which number is the same as 50 and 7? • Show me 75 using the place value cards. • Show me 75 on the abacus. • Show me 75 using the base ten blocks. • Show me 75 using unifix cubes. • Show me 75 using the string beads. • Count out 70 matchsticks using bundles of 10. How many bundles of 10 did you get? The recording in class workbooks and workbooks continue during independent time.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
SOLVING PROBLEMS IN CONTEXT				
1.6 Problem-solving techniques	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Use the following techniques when solving problem and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines	Learners are expected to solve the word problems using the following techniques: • Drawings or concrete apparatus e.g. counters • Building up or breaking down numbers • Doubling and halving • Number lines See notes for Term 2.	
1.7 Addition and subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 99.	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 75.	**What is different from Term 2?** Learners continue to work with the following type word problems outlined in Section 2 but the number range has increased to 75. See notes for Term 2.	
1.8 Repeated addition leading to multiplication	Solve word problems in context and explains own solution to problems using repeated addition or multiplication with answers up to 50.	Solve word problems in context and explains own solution to problems using repeated addition leading to multiplication with answers up to 40.	**What is different from Term 1** Learners continue to work with the following type word problems outlined in chapter 2 but the number range has increased to 40 See notes for Term 2.	
1.9 Grouping and sharing leading to division	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 99 with answers that can include remainders.	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 75 with answers that can include remainders.	During this term learners to continue to use drawings and concrete apparatus to show their solutions. Number sentences should be used. Learners will use repeated subtraction to show how they arrived at an answer. See notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.10 **Sharing leading to fractions**	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ etc	The focus of fraction word problems in this term continues to allow learners to: • share and group things equally; • name fraction parts; • find fractions of whole objects; • recognise that a fraction is part of a whole; and • write fractions as one third. During this term learners name thirds and fifths. It is important that learners are exposed to fractions other than one half and one quarter. **Examples of problems that can be done this term**: • Six friends share 7 liquorice sticks equally. Draw a picture to show your answer. Compare your answer with that of a friend. • Eight friends share 9 liquorice sticks equally. Draw a picture to show your answer. Compare your answer with that of a friend. • 1 quarter See notes for Term 2.	
1.11 **Money**	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5), and bank notes (R10, R20, R50) • Solve money problems involving totals and change to R99 and in cents up to 90c	• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5), and bank notes (R10, R20, R50) • Solve money problems involving totals and change in cents up to 75c or rands to R75	**Examples of problems that can be done:** • 35 learners and 1 teacher go on school trip to a nature reserve. The school pays R1.20 per learner to enter the nature reserve. How much must be paid? • Ma Hewu buys 2 loaves of bread for her family each day. A loaf costs R4, 99. How much does she spend in 5 days? See notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
CONTEXT-FREE CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • drawings or concrete apparatus e.g. counters • building up and breaking down numbers • doubling and halving • number lines	Use the following techniques when performing calculations: • Drawings or concrete apparatus e.g. Counters • Building up and breaking down numbers • Doubling and halving • Number lines	Learners are expected to solve context-free calculations using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines See notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and subtraction**	• Add to 99 • Subtract from 99 • Use appropriate symbols (+,-,=,□) • Practise number bonds to 20	• Add to 75 • Subtract from 75 • Use appropriate symbols (+,-,=,□) • Practise number bonds 20	See notes for Term 2. Learners continue to break down the numbers and gain confidence in their recording strategies. Possible methods to show addition and subtraction calculations: **Breaking down a number into smaller parts to make a calculation easier** **Using knowledge of place value to break down numbers into tens and ones** Adding two-digit numbers by breaking up both numbers 33 + 36 = □ 33 + 36 = (30 + 3) + (30 + 6) = (30 + 30) + (3 + 6) = 60 + 9 = 69 **Adding by breaking up one number** 33 + 36 = □ 33 + (30 + 6) 33 + 30 → 63 + 6 = 69 Learners might break down the number in ways that are manageable for them. This means that they will do it in different ways 33 + 36 = □ 33 + (10 + 10 + 10 + 6) 33 + 10 → 43 + 10 → 53 + 10 → 63 + 6 = 69 **Subtraction** • Breaking up both numbers 75 – 54 = □ 75 – 54 = (70 + 7) – (50 + 4) = (70 – 50) + (7 – 4) = 20 + 3 = 23 • Subtracting by breaking up one number 75 – 54 = □ 75 – (50 + 4) 75 – 50 → 27 – 4 = 23	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and subtraction**	• Add to 99 • Subtract from 99 • Use appropriate symbols (+,-,=,□) • Practise number bonds to 20	• Add to 75 • Subtract from 75 • Use appropriate symbols (+,-,=,□) • Practise number bonds 20	Expect that some learners might break up the number in different ways to make easier for them calculate: 75- 54 = □ 75- (20 + 20 + 10 + 6) 75- 20 → 57 – 20 → 37- 10 → 27- 4 = 23 **Using halving to break down a number** 59 + 12 59 + (6 + 6) 59 + 6 → 65 + 6 = 71 **Using and applying previous knowledge as techniques** The techniques shown below allow learners to formalise their counting and number sense. Practising the techniques below will encourage learners to reflect upon the relationships between numbers and teach learners that they can actually use and apply their knowledge to help them calculate. **Count on and counting back** 68 – 59 = □ Counting up in ones from 59 is an appropriate strategy because the numbers are close to one another. **Identify near doubles** 34 + 35 explaining that it is double 34 plus 1 or double 35 minus 1 34 + 34 + 1 Learners might record their strategies using arrows: 34 + (30 + 4) + 1 34 + 30 → 64 + 4 → 68 + 1 = 69 **Change a number to a multiple of ten and then subtract or add ones** Count up or down to the nearest 10 58 + 19 = □ Here learners need to say to themselves that they have two options. Change 58 or 19 to the nearest multiple of 10. The choice is theirs. The sum can be written as: 58 + 19 = 58 + 20 – 1 58 + 20 → 78 – 1 = 77 Some learners might break down 20 into 2 groups of 10 to calculate accurately.	

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REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 3</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
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<td>1.14
Repeated addition leading to multiplication</td>
<td>• Multiply numbers 1 to 10 by 1, 2, 5, 3 and 4
• Use appropriate symbols
• (+, x, =, □)</td>
<td>• Multiply numbers 1 to 10 by 2, 5, 4
• Use appropriate symbols(+, x, =, □)</td>
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What is different from Term 2?
During the third term learners keep practising their understanding of multiplication and use the multiplication grid for the first time.
They continue to:
• record in the following way:
1 group of 2 is 2 or 1 times 2 is 2 or 1 x 2 = 2
2 groups of 2 are 4 or 2 times 2 is 4 or 2 x 2 = 4
3 groups of 2 are 6 or 3 times 2 is 6 or 3 x 2 = 6
During this term learners start multiplying by 4. Multiplying by 2 and 5 continue to be practised.
Multiple images for multiplication should continue to be provided and lots of recording should be done in the class work. Understanding can be consolidated in the workbooks as well. Number lines, flow diagrams and tables can be used to build up understanding of the operation. Learners should be given number sentences to complete. such as:
6 x 2 = □
5 x 7 = □
4 x 6 = □
Learners should use the multiplication grid to find the answers. This will help them to read and understand the table and master multiplication facts.
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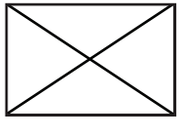
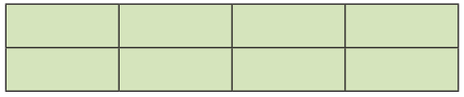
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number Concept: Range 99** • Order a given set of selected numbers • Compare numbers to 99 and say which is1,2,3,4,5 and 10 more or less **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number Concept: Range 75** • Order a given set of selected numbers • Compare numbers to 75 and say which is1,2,3,4,5 and 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to 15 • Add or subtract multiples of 10 from 0 to 50 **Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Examples of questions that can be asked:Number concept:** **Number names and symbols** Hold up a card or write down a number name. Choose a learner to write the matching numeral. **More or less** What is • 1 less than 45 • 1 more than 69 • 5 less than 36 • 10 more than 30 What is the 5th letter of the alphabet? What is the 9th month of the year? **Ordering and comparing** Which is more: 21 or 171? Give any number between 154 and 159. **Addition and subtraction facts:** • Know by heart all addition and subtraction number bonds to 20 □ + △ = 20 □ + △ = 16 18 = □ - △ Add and subtract fact for all numbers to 15. Example 1 + 14 = 15 14 + 1 = 15 2 + 13 = 12 13 + 2 = 15 15 - 4 = 11 15 - 11 = 4 15 - 5 = 10 15 - 10 = 5 Quickly recall addition doubles up to 15. This should include corresponding subtraction facts. • 1 + 1 = 2 • 2 + 2 = 4 • 3 + 3 = 6 • 4 + 4 = 8	

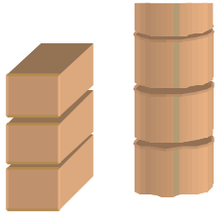
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number Concept: Range 99** • Order a given set of selected numbers • Compare numbers to 99 and say which is1,2,3,4,5 and 10 more or less **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Calculation strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number Concept: Range 75** • Order a given set of selected numbers • Compare numbers to 75 and say which is1,2,3,4,5 and 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to 15 • Add or subtract multiples of 10 from 0 to 50 **Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	Show me the number to add to make 15 (writing down or using the place value or flard cards) • 8 • 2 • 9 Show me the number left when …. is taken away from 15 (writing down or using the place value or Flard cards) • 5 • 13 • 0 **Calculation strategies:** See notes for Term 2.	

1.17 **Fractions**	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 third	**What is different in Term 2?** During this term learners' attention is focused on how the fraction name is linked to the number of equal parts that the whole has been divided into. A variety of diagrams can be used to build further understanding. Example:  The following type questions can be asked: How many equal parts are there? What do we call each part? How many equal parts are there? What do we call each part?  How many equal parts are there? What do we call each part? These kind of activities encourage: • knowing that fractions are equal parts; • identifying fraction parts; and • naming fraction parts. Writing We do not introduce learners to writing the symbol of fractions. Learners learn how to label fraction parts as 1 quarter, 1 fifth	

GRADE 2 TERM 3 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION (in lessons of 1 hour 24 minutes)**
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects	Continue to give learners a similar range of patterns to Term 2. See notes for Term 2. Allow learners first to copy, then extend and finally describe the patterns. By now they should be able to describe patterns without the aid of guiding questions. Continue to focus on developing the language they need to describe the patterns	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 **Number patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 200 **Create own patterns** Create own number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 180 Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 180 • 10s from any multiple of 10 between 0 and 180 • 5s from any multiple of 5 between 0 and 180 • 2s from any multiple of 2 between 0 and 180 • 3s and 4s from any multiple of 3 and 4 between 0 and 180 **Create own number patterns**	See notes for Term 1, but extend the number range to 180.	3 lessons

GRADE 2 TERM 3 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS: FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.1 **Position, orientation and views**	**Language of position** Describe the position of one object in relation to another e.g. on top of, in front of, behind, left, right, up, down, next to. **Position and views** Match different views of the same everyday object. **Position and directions** Follow directions to move around the classroom.	**Position and views** • Match different views of the same everyday object **Position and directions** • Follow directions to move around the classroom	**Recommended focus for Term 3: Position and views** **What is different from Grade 1?** In Grade 2 learners practise and consolidate what they have learned about matching different views of the same everyday objects. **Position and views** Learners in the Foundation Phase need to understand that objects look different when you look at them from different positions. Learners may take for granted that objects such as cars look small when they are far away. As learners work more with books and illustrations in books, they need to understand why something in the foreground is show larger than something in the background. In focus group time learners can experiment with placing their hands in front of them, to block their view of larger objects that are further away. In Grade 2 learners should be given exercises in which they can match different views (views from the top, views from the side, views from the front) of different everyday objects. This will eventually help learners to interpret drawings of geometric objects done from different perspectives.	1 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling, construction kits, other 3-D geometric objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide	**What is new in Term 3:** Cylinders are added to the objects. **3-D objects in Grade 2** Learners work with • balls and objects shaped like balls; • cylinders and objects shaped like cylinders; and • various boxes and other objects shaped like rectangular prisms or cubes. **Focussing on features of 3-D objects: Rolling and sliding** This is a continuation of what they did in Grade 1 and Term 1, but now cylinders are included. Learners can also investigate whether they can make stacks or towers using only balls, or only boxes, only cylinders.  **Recognising and naming balls (spheres) and boxes (prisms) and cylinders** Learners continue to name, sort and group objects, but now cylinders are added. Learners should be given a range of objects to work with shaped like: • spheres e.g. balls or different size, marbles, oranges etc.; • prisms e.g. blocks, bricks, boxes of different sizes e.g. matchboxes, cereal boxes, tea boxes, toothpaste boxes; and • cylinders including both long and narrow cylinders e.g. pieces of piping with a cylindrical shape, cardboard inner sleeves of roller towels or toilet rolls; and short, wide cylinders, e.g. shoe polish tins, snuff tins etc.	2 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling, construction kits, other 3-D geometric objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide	Learners can find objects shaped like a ball (sphere), or shaped like a box (prisms) or shaped like a cylinder when given a collection of objects. Learners can find or show objects shaped like boxes (prisms) in the classroom e.g. “this coffee tin is shaped like a cylinder”. During independent time learners can continue to • build with objects; and • make balls, cylinders and box shapes (prisms) from clay or play dough. **Written exercises** Although most of the work with 3-D objects is done practically, work must be consolidated through written exercises. **Language** Continue to develop learners’ ability to talk about 3-D objects: See notes for Term 1.	2 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of Shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	No specific focus on 2-D shapes is recommended for Term 2. However, work on 2-D shapes can be consolidated through written exercises during Independent work time. Learners can continue to make pictures with 2-D geometric shapes both during independent work time or during arts and culture time.		

GRADE 2 TERM 3 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 **Time**	**Telling the time** • Name and sequence days of week • Name and sequence months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours. half hours and quarter hours **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks. Use clocks to calculate length of time in hours, half hours or quarter hours.	**Telling the time** • Name and sequence days of week • Name and sequence months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours, half hours and quarter hours on analogue clocks **Calculate lengths of time and passing of time** • Use calendars to calculate and describe lengths of time in days or weeks • Use clocks to calculate length of time in hours or half hours	Learners continue to practise talking about the duration of time and the sequencing of time. During whole class teaching time and focus group time, learners continue to talk about the day of the week, and month of the year and the date of the current day, as well as days before and days to come. Learners become familiar with calendars by the continual placing of • Birthdays; • religious festivals; • historical events; • school events; and • public holidays on the calendar. During independent work time learners continue to sequence events from their daily lives and sequence pictures of events in order. Learners also work with exercises related to telling the time in hours and half hours. **What is different from Term 2?** • Telling the time in hours, half hours and quarter hours A focus in Term 3 is telling time in hours and half hours and quarter hours using an analogue clock. This can be the focus of two lessons. Telling the time however, should then be practised during the term on a continual basis. For example, learners can be asked to tell the time when school starts, at break time and at home time, or when they change from one lesson to another. Choose times where the clock shows an exact hour or a half hour or a quarter of an hour. It is useful to have a large working clock displayed in the classroom, so that learners can refer to it. Learners can make models of clocks. You can then ask them to show various times e.g. “Show me 10 o’clock. Show me what the time was a quarter of an hour before.”	3 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.1 **Time**	**Telling the time** • Name and sequence days of week • Name and sequence months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours. half hours and quarter hours **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks. Use clocks to calculate length of time in hours, half hours or quarter hours.	**Telling the time** • Name and sequence days of week • Name and sequence months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours, half hours and quarter hours on analogue clocks **Calculate lengths of time and passing of time** • Use calendars to calculate and describe lengths of time in days or weeks • Use clocks to calculate length of time in hours or half hours	Learners should also do calculations using the clock e.g. they show the time is 12 noon; ask them what the time will be in 3 hours' time. They move the hands of their model clocks (or look at the class clock or picture of a clock) to calculate their answer. Learners are not expected to calculate length of time in hours or half hours without having access to a clock face. • Use calendars to calculate and describe lengths of time in days or weeks Learners focus on reading calendars. They learn to find and give specific dates. Learners calculate length of time in days or weeks, while looking at a calendar. **Learners are not expected to convert between weeks and days.** **Learners are not expected to do calculations which involve calculating time between dates if they do not have access to a calendar.**	3 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, wider. **Introducing formal measuring** Estimate, measure, compare order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length	During Term 1 it was recommended that learners focus on estimating, measuring, comparing and recording lengths, widths and heights with informal units but also do some estimating, measuring, comparing and recording measurements in metres. Both these kinds of measuring length can be practised in independent work time throughout the term. All work should be recorded. **Measuring length as a context for solving problems and calculations** During time allocated to *Numbers, Operations and Relationships* learners can solve problems that use the contexts of • informal measurement of length e.g. It is 27 paces to the admin office. It is 36 paces to the school gate. How much further is it to the school gate? • measuring lengths in metres Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term.		

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Measure their own mass in kilograms using a bathroom scale	Learners can continue to practise estimating, measuring, comparing and recording mass using informal measures and a measuring balance during independent work time. **Measuring mass as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of mass; and • measuring mass in kilograms. Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term.		

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 **Capacity/ Volume**	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups. **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint	**Informal measuring** • Estimate, measure, compare, order and record the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. The bottle has the capacity of 4 cups **Introducing formal measuring** Estimate, measure, compare, order and record the capacity of objects by measuring in litres using • using bottles with a capacity of 1 litre • a measuring jug which has numbered calibration lines in litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint	**What is different from Grade 1?** In Grade 1 it was recommended that learners focus on • developing the language to talk about differences in volume; • comparing the volumes in two identical containers; • comparing the volumes in two different looking containers especially wider and narrower containers; and informal measuring with non-standard units. In Grade 2 learners continue to focus on doing informal measurement with non-standard units of volume. Learners also develop a sense of how much 1 litre is. **What is capacity? What is volume?** Capacity is the amount that an object can hold (or the amount of space inside the object). Volume is the amount of space that something takes up. So a bottle can have capacity of 1 litre, but at a particular time it may not be filled to its full capacity; it may for example only contain a volume of one cup of liquid. **Informal measurement of capacity using non-standard units** Learners can learn all the principles and practises of measurement using non-standard units. Measuring with non-standard units should not be considered to be inferior to measuring with standard units. Learners should get the opportunity to measure volume/capacity using a range of objects as informal units e.g. cups (but not necessarily measuring cups), spoons (but not necessarily measuring teaspoons), bottle tops such as 2 litre milk bottle tops, small cans, small bottles etc. Measuring volume/capacity with non-standard units involves counting how many times you fill and pour from the chosen unit until you reach the required capacity/volume. Learners should be taught always to state the unit e.g. there are 48 teaspoons of water in the bottle or there just less than a cup of water in the bottle. Once learners have measured with any unit a couple of times, they should estimate about capacity/volume using that unit. Estimation before measuring is important, but can only be done once learners have done some measuring with that unit.	3 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups. **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint	**Informal measuring** • Estimate, measure, compare, order and record the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. The bottle has the capacity of 4 cups **Introducing formal measuring** Estimate, measure, compare, order and record the capacity of objects by measuring in litres using • using bottles with a capacity of 1 litre • a measuring jug which has numbered calibration lines in litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint	Learners need to be taught that in order to compare volumes or capacity, the same unit needs to be used. For example, if a glass holds 20 teaspoons of water and a cup holds 10 tablespoons of water, you cannot say that the glass holds more water. Learners need to measure with a range of informal units, so that they can • begin to understand that the smaller the unit, the more time you will need to use/fill it, e.g. the volume in a bottle could be 20 tablespoonfuls but also 1 cup; • begin to use units which are appropriate to what they are measuring, e.g. measuring a full 2 litre bottle with teaspoons is a waste of time. **Introducing formal measuring** • Becoming familiar with litres Learners are told that litres are a common standard unit of measuring capacity and volume. They should learn the word and the abbreviation, because on many commercial containers and many measuring jugs the abbreviated form of the word is used. Learners develop a sense of how much a litre is, by filling and pouring from: • Different-looking 1 litre containers, e.g. cold drink bottles, milk bottles, milk cartons, juice cartons; and • measuring jugs which show 1 litre calibration lines. Learners measure in litres using any of the containers mentioned above. They estimate and then measure the capacity of a range of containers such as large yoghurt tubs, ice cream tubs, lunch boxes, large jugs, large bottles, empty paint tins, buckets etc. Items of different capacity should be chosen. Learners describe the capacity as “less than 1 litre, 2 litres, between 1 and 2 litres, 5 litres” etc. Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres, e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint. **Recording measurements** Although measuring is a practical skill. learners should record their measurements at all times, including all informal and formal measurement. **Measuring capacity as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of capacity/volume, e.g. Gogo uses 2 cups of milk to make a pudding. If she doubles the recipe, how much milk will she need? • litres Take account of the number range appropriate for the term, as well as the range of problems types.	3 lessons

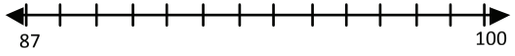
GRADE 2 TERM 3 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS** **REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS** **SUGGESTED FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessonsof 1 hour 24 minutes)
5.4 **Collect and organise data**	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher • Organise data in tallies	**Collect and organise data** Collect data about the class or school to answer questions posed by the teacher **Represent data** • Represent data in pictograph **Analyse and Interpret data** • Answer questions about data in pictograph	**Organise data** It was recommended that learners work through the whole data cycle in Term 1. It is recommended that in Term 3 learners make individual pictographs from data provided in either picture form or tables. **Represent data** Since learners will be drawing all the pictures that make up the pictograph, it is important to choose topics that have categories that are easy for learners to draw e.g. favourite types of cool drink, since it is fairly easy to draw a simplified can to represent each cool drink; fruit are also fairly easy to draw so favourite fruit is also a possibility. Drawing pictures to show favourite sports, favourite TV programmes etc. may be too difficult for most Grade 2 learners. It is easier for learners to draw graphs if they are given blocked paper. Remind learners about the key features of a pictograph (see Term 1). **Analyse and interpret data** Learners should answer questions that you ask about the pictograph: See Term 1 for suitable question types.	3 lessons
5.5 **Represent data**	**Represent data** • Represent data in pictograph			
5.6 **Analyse and interpret data**	**Analyse and Interpret data** • Answer questions about data in pictograph			

GRADE 2 TERM 4 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS** **REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS** **FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
1.1 **Counting objects**	**Counting concrete objects** Estimate and count to at least 200 everyday objects reliably. The strategy of grouping is encouraged.	**Counting concrete objects** Estimate and count to at least 200 everyday objects reliably. The strategy of grouping is encouraged.	**What is different from Term 3?** During this term learners count out 200 objects. By the end of this term learners should have seen, touched and moved 200 objects. They should have a sense of the 'muchness' of 200. Continue to focus on grouping objects. By the end of the term they should be able to respond to the following question types and instructions: • Count the counters in groups of fives, tens. Rearrange and count again. Do you still have the same number of counters? • Here are 200 counters. Count them by grouping them in tens. To count all 200 counters, would you prefer to count them in groups of 20 or 25? Why? • Decide what would be the best way to count a collection of pencils. • Here are 80 counters. If we count in 2s or 10s, will the total number of counters still be the same? • Count 46 counters by grouping them in 2s. Is it quicker to count in twos than to count in ones? • How many groups of 10 did you count in 120 counters?	

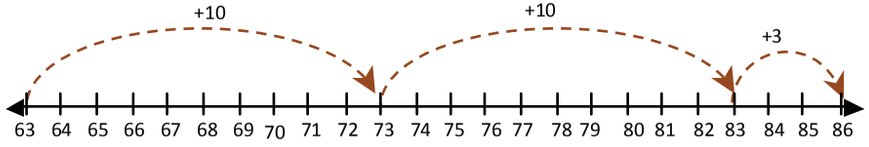
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.2 Count forwards and backwards	Count forwards and backwards in: • 1s from any number between 0 and 200 • 10s from any multiple between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200	Count forwards and backwards in: • 1s from any number between 0 and 200 • 10s from any multiple between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200	**What is different from Term 3?** During this term learners count forwards and backwards to 200. Towards the end of the term learners should consolidate their counting by linking the skip counting to the times tables. Learners should describe what they notice in the times tables and be able to recognise this when doing skip counting. They should begin to apply this skill to predict what numbers would be in the count. Example: Ask learners: When we count in twos, will we use the number 20? Is the number 20 in the 2 times table? By the end of the term they should be able to respond to questions such as: • Count in tens from 170 to 200. • Count backwards in tens from180 to 140. • Count in fives from 115 to 145. • Count backwards in fives from 135 to 110. • Count in threes from 66 to 81. • Count backwards in threes from 190 to 169. • Count in fours from 120 to 140. • Count backwards in fours from 180 to 160. Learners can use number grids, number lines, number tracks, abacus and counting beads to support the counting.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.3 Number symbols and number names	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 0 – 200 • Write number symbols 0 – 200 • Recognise, identify and read number names 0 – 100 • Write number names 0 – 100		**What is different from Term 3?** During this term learners now recognise, read and write number symbols to 200. Knowledge of the number symbols is reinforced when counting objects and when counting forwards and backwards. By the end of the term learners should be able to respond to the following type questions or instructions: Write the number symbol: Twenty-three Fifty-seven Ninety-two One hundred and nine One hundred and eleven One hundred and twenty-seven Match the symbols to the number names 66 — Ninety-one 8 — Fifty-three 172 — Fourty 109 — Thirty-eight 91 — One hundred and seventy-two 40 — Sixty-six 53 — Ninety-one 38 — One hundred and nine 	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.3 **Number symbols and number names**			Read aloud the numbers on each card: **198** **67**	
1.4 **Describe, compare, order numbers**	**Order and compare numbers to 99** • Order whole numbers up to 99 from smallest to greatest, and greatest to smallest • Compare whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to **Use ordinal numbers to show order, place or position** Position objects in a line from first to tenth or first to last e.g. first, second, third … twentieth.		**What is different from Term 3?** The number range has increased to 99. **By the end of the term learners should be able to:** Use read and to write First, second, third, fourth, fifth, sixth…….. and abbreviations: 1st, 2nd, 3rd, 4th, Use, read and write the following language of ordering and comparing • How many…… • As many as, the same number as… • Equal to, more than, less than, fewer than, greater than, smaller than, larger than…… • Most, least, smallest, largest • Order, first, last, before, after, next, between, halfway between Use the sign = to represent equality Learners should be able to respond to questions such as: Who is standing second in the queue? Which pencil is the shortest? Order numbers to at least 100 and position them on a number line or using square grids.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.4 Describe, compare, order numbers			Fill in the missing numbers on parts of a 100 grid  Write where these numbers would go: 88, 90, 92... Fill in the missing number: 115 | | 117 139 | | 141 187 | | 185 Answer orally to the following questions: Which numbers lie between 82 and 87? Which numbers lie between 45 and 50? Which numbers lie between 69 and 75? Write the numbers in order from the biggest to the smallest: 127, 132, 165, 111, 189, 173, 156 Write the numbers in order from the smallest to the biggest: 89, 62, 56, 72, 45, 39, 17 Show, read and write ordinal numbers.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
PLACE VALUE				
1.5 Place value	**Recognise the place value of at least two-digits numbers to 99** • Recognise what each digit represents • Decompose two-digit numbers up to 99 into multiples of tens and ones (TU) • Identify and state the value of each digit		**By the end of the term learners should be able to:** • Understand and use the vocabulary of place value: Use, read and begin to write: Ones or units, tens, digit, one-digit number, two-digit number, ...place value... • Partition two-digit numbers in multiple of tens and ones Write the number: 6 tens and 3 ones _____ 2 tens and 5 ones _____ 12 tens and 8 ones _____ 18 tens and 4 ones _____ • Use apparatus: Show 4 tens and 5 ones using the abacus. Show 7 tens and 6 ones using the abacus. Say what the digit 8 in 28 represents. And the 2? Say which number is equivalent to or the same as: - 6 tens - Nine tens and three ones - Five tens and nine ones Which number needs to go into each box? a) 34 = ☐ + 4 b) 78 = 70 + ☐ **Resources** Objects that can be grouped: • Counting sticks • Counters that can be threaded • Matchsticks • Ice cream sticks • Interlocking cubes	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
SOLVING PROBLEMS IN CONTEXT				
1.6 Problem-solving techniques	Use the following techniques when solving problems and explain solutions to problems: • drawings or concrete apparatus e.g. counters • building up and breaking down of numbers • doubling and halving • number lines		Learners are expected to solve the word problems using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines See Notes for Terms 1 and 2 for: • Drawings or concrete apparatus • Building up and breaking down • Doubling and halving **Number lines** Using number lines in order to help them calculate will allow learners a way to record their thinking and to keep track of it. It also allows learners to have a recording image that they can use to explain how they solved the problem. Learners have been using number lines since Grade 1. In Term 4 they should be able to construct blank number lines on which they put the starting number and then determine how to get from one to the other. Example of how learners can use the number line: 23 children went on an excursion today. There are still 63 children at school. How many children were there to begin with?  Allow learners to choose the technique most comfortable for them. However if learners are using techniques that are not efficient then they need to be guided to do so. Note that learners often use different ways of solving a problem that may not be what the teacher expects. For example, a division problem may be solved by repeated subtraction, addition, or multiplication. Learners' methods will change in the course of the year as their understanding of and familiarity with the problem types grow, and as their number concept develops.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.7 Addition, subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction with answers up to 99.		**Examples of problems that learners should be able to do by the end of the term** Addition and subtraction There are at least three basic types of addition and subtraction problems and each type can be posed in different ways. The basic types are: Change Noluthando had 25 sweets. Silo gave her 18 sweets. How many sweets does she have now? Noluthando had 53 sweets. She gave 32 sweets to Silo. How many sweets does she have now? Combine The grade 2 class has 37 green triangles and 19 blue triangles. How many triangles do they have? They have 63 circles; 27 are green and the rest are blue. How many blue circles do they have? Compare Nosisi has 13 bananas. Themba has 5 bananas. How many more bananas does Nosisi have than Themba? Posing each problem in different ways Problems have to be posed in different ways. For example, both of these are change problems, but the “unknowns” are in different places in the problem. Noluthando had some sweets. Silo gave her 18 more sweets. Now she has 43 sweets. How many sweets did Noluthando have in the beginning? Noluthando had 25 apples. Silo gave her some apples. She now has 43 apples. How many apples did Silo give her?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.8 Repeated addition leading to multiplica-tion	Solve word problems in context and explains own solution to problems using repeated addition leading to multiplication with answers up to 50.		Examples of problems that learners should be able to do by the end of the term Repeated addition How many wheels do 20 bicycles have? Rate Thami walks 6 blocks a day. How many blocks does he walk in a week? Grids Mr Khumalo plants 7 rows of cabbages. There are 8 cabbages in a row. How many cabbages are there altogether?	
1.9 Grouping and sharing leading to division	Solves and explain solutions to practical problems that involve equal sharing and grouping up to 99 with answers that can include remainders.		Examples of problems that learners should be able to do by the end of the term Grouping Grouping, discarding the remainder Stella sells apples in bags of 10 apples each. She has 80 apples. How many bags of 10 apples each can she make up? Grouping, incorporating the remainder in the answer A farmer has 47 eggs. How many egg boxes that can take 6 eggs each does he need to pack all the eggs? Sharing Sharing, discarding the remainder Share 54 sweets among 7 friends so that they all get the same number of sweets.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.10 Sharing leading to fractions	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary fractions e.g. $\frac{1}{2}, \frac{1}{4}, \frac{1}{3}, \frac{1}{5}$ etc.		The focus of fraction word problems in this term continues to allow learners to: • share and group things equally; • name fraction parts; • find fractions of whole objects; • recognise that a fraction is part of a whole; • write fractions as 1 third. During this term learners name more fractions. It is important that learners are exposed to fractions other than one half and one quarter. **Examples of problems that can be done:** Sharing, leading to fractions • Share 7 chocolate bars among 3 friends so that they all get the same amount of chocolate bar and there is nothing left over. • Three pancakes are shared equally among 4 friends. How many does each one get? By the end of the term learners should know the following concepts: When you divide something into: • two equal parts it is called halving. Each part is called a half; • three equal parts, each part is called a third; • four equal parts, each part is called a quarter; • five equal parts, each part is called a fifth; and • six equal parts, each part is called a sixth. Examples of problems that learners should be able to do by the end of the term **Sharing, leading to fractions** Share 11 chocolate bars among 4 friends so that they all get the same amount of chocolate bar and there is nothing left over. **Fraction of a collection** Grandmother gives Kiki 12 oranges. Kiki makes juice with one third of the oranges. How many oranges did she use? This problem type must only be posed after learners have solved four or five problems of the 'sharing, leading to fractions' type and know the names of fractional pieces. **Putting fractions together** The netball coach gives half an orange to each player. There are 14 players. How many oranges does she need? This problem type must only be posed after learners have solved four or five problems of 'sharing, leading to fractions' type and know the names of fractional pieces.	

<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 4</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr><td>1.11
Money</td><td>• Recognise and identify the South African coins (5c, 10c, 20c, 50c, R1, R2, R5) and bank notes (R10, R20, R50)
• Solve money problems involving totals and change in cents up to 99c or rands to R99</td><td></td><td>Examples of problems that learners should be able to do by the end of the term
Problem situations with different functional relationships
Heila sells hotdogs at R4 each. Make a table to help her find the amount for large orders.
<table><tr><td>Number of hotdogs</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>Cost in R</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>Use the table to find the cost of 7 hotdogs and 15 hotdogs.
Sedick charges R20 for travel costs, and then R5 per hour for babysitting. Complete this table for him.
<table><tr><td>Number of hours</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>10</td></tr><tr><td>Cost in R</td><td>25</td><td>30</td><td></td><td></td><td></td><td></td></tr></table>Note that Heila’s problem and Sedick’s problem work differently.</td><td></td></tr>
<tr><td colspan="5">CONTEXT-FREE CALCULATIONS</td></tr>
<tr><td>1.12
Techniques
(methods or strategies)</td><td>Use the following techniques when performing calculations:
• Drawings or concrete apparatus e.g. Counters
• Building up and breaking down numbers
• Doubling and halving
• Number lines</td><td></td><td>Learners are expected to solve context free calculations using the following techniques:
• Building up or breaking down numbers
• Doubling and halving
• Number lines
See notes for Terms 1 and 2.</td><td></td></tr>
</table>

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and subtraction**	• Add to 99 • Subtract from 99 • Use appropriate symbols(+, –, =, □) • Practise number bonds 20		During this term learners continue to break down numbers in order to calculate. Possible methods to show addition and subtraction calculations **Breaking down a number into smaller parts to make a calculation easier** **Using knowledge of place value to break down numbers into tens and ones** Adding two-digit numbers by breaking up both numbers 43 + 36 = □ 43 + 36 = (40 + 3) + (30 + 6) = (40 + 30) + (3 + 6) = 70 + 9 = 79 **Adding by breaking up one number** 43 + 36 = □ 43 + (30 + 6) 43 + 30 → 73 + 6 = 79 Learners might break down the number in ways that are manageable for them. This means that they will do it in different ways. 43 + 36 = □ 43 + (10 + 10 + 10 + 6) 43 + 10 → 53 + 10 → 63 + 10 → 73 + 6 = 79 **Subtraction** • Breaking up both numbers 87 – 56 = □ 87 – 56 = (80 + 7) - (50 + 6) = (80 - 50) + (7 - 6) = 30 + 1 = 31	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 99 • Subtract from 99 • Use appropriate symbols(+, -, =, □) • Practise number bonds 20		• Subtracting by breaking up one number 87 - 56 = □ 87 - (50 + 6) 87 - 50 → 37 - 6 = 31 Expect that some learners might break up the number in different ways to make easier for them calculate: 87 - 56 = □ 87 - (20 + 20 + 10 + 6) 87 - 20 → 67 - 20 → 47 - 10 = 37 - 6 = 31 **Using halving to break down a number** 69 + 12 69 + (6 + 6) 69 + 6 → 75 + 6 = 81 **Count on and count back** 78 - 69 = □ Counting up in ones from 69 is an appropriate strategy because the numbers are close to each other. **Identify near doubles** 34 + 35 explaining that it is double 34 plus 1 or double 35 minus 1. 34 + 34 + 1 Learners might record their strategies using arrows 34 + (30 + 4) + 1 34 + 30 → 64 + 4 → 68 + 1 = 69 **Change a number to a multiple of ten and then subtract or add ones** Count up or down to the nearest 10 58 + 19 = □ Here learners need to say to themselves that they have two options. Change 58 or 19 to the nearest multiple of 10. The choice is theirs. The sum can be written as: 58 + 19 = 58 + 20 - 1 58 + 20 → 78 - 1 = 77 Some learners might break down twenty into 2 groups of 10 to calculate accurately.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 **Addition and subtraction**	• Add to 99 • Subtract from 99 • Use appropriate symbols(+, -, =, □) • Practise number bonds 20		**By the end of the year learners should be able to:** Use and understand the language of addition Understand that adding zero leaves a number unchanged 75 + 0 = 75 0 + 75 = 75 75 = 75 + 0 75 = 0 + 75 Respond to written questions phrased in a variety of ways such as: • add together 43 and 9 • add 10 to 67 • 11 plus 83 • 80 = 62 + 8 + □ • What is 30 more than 60 • Find the sum of 56 and 14 • Add twelve to seventy-five • What number is 10 more than 83 • What number must you add to 45 to get 78? • 4 tens plus 3 tens • 12 tens plus 8 ones • 45 + 10 = □ 45 + 20 = □ 45 + 30 = □ **Know that □ stands for an unknown number** 42 + 44 = □ 5 + 7 + □ = 80 57 + □ = 95 □ + 15 = 81 With the aid of apparatus: Add three numbers together 26 + □ + □ = 72 Choose three of these numbers: 15, 19, 22, 25 Add them up. What different totals can you make?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 99 • Subtract from 99 • Use appropriate symbols(+, -, =, □) • Practise number bonds 20		**Respond to written questions and explain how they arrived at their answer:** • Add 6, 12 and 14. • What is the sum of 10, 5 and 19. **Understanding subtraction by the end of the year.** By the end of the year learners should be able to: Understand and use the vocabulary of subtraction: Take away, subtract, how many are left, how much less is ... than..., difference between, how much more is ... than...., how many more to make... and read and write the minus sign (-) Continue to develop understanding of subtraction as: • taking away; and • finding the difference between. Understand that subtracting zero leaves a number unchanged: 92 - 0 = 92 92 = 92 - 0 Respond to written questions phrased in a variety of ways such as: • 37 take away 3 • Take 40 from 80 • 62 subtract 42 • Subtract 45 from 90 • What is the difference between 38 and 57? • How many less is 17 than 49 • What number must you subtract from 56 to get 22? • What number must you subtract from 56 to get 32 • What number must you subtract from 56 to get 42 • Find pairs of numbers with a difference of 10 Know that □ stands for an unknown number. 57 - 34 = □ 62 - □ = 48 98 - 42 = □ 13 - 6 = 15 - □ □ - 18 = 24	

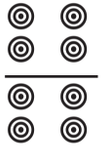
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 99 • Subtract from 99 • Use appropriate symbols(+, -, =, □) • Practise number bonds 20		Begin to understand that: 25 - 10 is different from 10 - 25 Use the relationship between addition and subtraction Say and write corresponding subtraction facts to a given addition fact and vice versa. For example: 73 + 17 =90 implies that 90 - 17 = 73 17 + 73 = 90 implies that 90 - 73 = 17 42 - 18 = 24 implies that 24 + 18 = 42 42 - 24 = 18 implies that 18 + 24 = 42 Without the use of apparatus answer the following: If you know that 62 + 29 = 91. What is: 29 + 62 91 - 29 91 - 62 If you know that 66 - 50 = 16 What is: 66 - 16 50 + 16 16 + 50 Write and answer the following: 57 - 34 = 23 □ + 23 = 57 □ - 23 = 34 34 + 23 = □ 12 + 46 = 58 12 + □ = 58 58 - □ = 12 □ - 46 = 12 Write four different number sentences using 3 numbers. For example: 20, 30 and 50 20 + 30 = 50 30 + 20 = 50 50 - 30 = 20 50 - 20 = 30	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.14 **Repeated addition leading to multiplication**	• Multiply numbers 1 to 10 by 1, 2, 5, 3 and 4 up to 50 • Use appropriate symbols(+, x, =, □)		**What is different in Term 4?** During this term learners will be multiplying in threes for the first time. See the notes in Term 1 for introducing new concepts **By the end of the term learners should be able to:** Use the language of multiplication in practical situations: Double, times, multiply, multiplied by, multiple of.., lots of, groups of ..., times as (big, long, wide ...), twice, three times as much, and read and write the multiplication sign (x) Use this language to do multiplication calculations Understand multiplication as repeated addition **Example:** 6 added together 3 times is the same as: 6 + 6 + 6 = 18 3 lots of 6 = 18 3 times 6 = 18 3x6=18 3 x 5 = 18 Understand multiplication as describing an array 5 x 3 =15 3 x 5 = 15 Respond to questions such as: four fives Double 6 6 times 5	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.14 **Repeated addition leading to multiplication**	• Multiply numbers 1 to 10 by 1, 2, 5, 3 and 4 up to 50 • Use appropriate symbols(+, x, =, □)		Three counters in a row. There are 4 rows. How many counters altogether 2 multiplied by 4 8 times 2 Recognise the use of the place holder □ to stand for an unknown number. 3 groups of 2 are 6 or 3 times 2 is 6 or 3 x 2 = □ 4 groups of 3 are 12 or 4 times 3 is 12 or 4 x 3 = □ 6 groups of 3 are 18 or 6 times 3 is 18 or 6 x □ = 18 7 + □ = 14 2 groups of 7 = □ 2 + □ + □ + □ + □ + □ + □ = 14 □ x 7 = 14 1 x 2 = □ 2 x 2 = □ 3 x 2 = □ 1 x 5 = □ 2 x 5 = □ 3 x 5 = □	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 **Mental mathematics**	**Number concept: Range 99** • Order a given set of selected numbers. • Compare numbers to 99 and say which is 1, 2, 3, 4, 5 and 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Use the relationship between addition and subtraction • Number line • Doubling and halving • Building up and breaking down		**Examples of questions that can be asked:** **Number concept:** **Number names and symbols** Hold up a card or write down a number name. Choose a learner to write the matching numeral. **More or less** What is • 1 less than 70 • 1 more than 80 • 3 less than 51 • 4 less than 67 • 5 less than 85 • 10 more than 90 • 10 less 80 What is the 5th letter of the alphabet? What is the 9th month of the year? **Ordering and comparing** Which is more: 21 or 171? Give me a number between 154 and 159. **Addition and subtraction facts:** • Know all addition and subtraction number bonds to 20. □ + △ = 20 □ + △ = 16 19 = □ - △	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number concept: Range 99** • Order a given set of selected numbers. • Compare numbers to 99 and say which is 1, 2, 3, 4, 5 and 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use calculation strategies to add and subtract efficiently: • Put the larger number first in order to count on or count back • Use the relationship between addition and subtraction • Number line • Doubling and halving • Building up and breaking down		Add and subtract facts for all numbers up to and including 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 Quickly recall addition doubles to 20. This should include corresponding subtraction facts. • 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 Show me the number to add to make 20 (writing down or using the place value or Flard cards). • 8 • 2 • 9 • 15 • 3 Show me the number left when …. is taken away from 20 (writing down or using the place value or Flard cards). • 5 • 18 • 0 • 14 • 7 **Calculation strategies:** See notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.17 Fractions	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	• Use and name fractions in familiar contexts including halves, quarters, thirds and fifths. • Recognise fractions in diagrammatic form • Write fractions as 1 half, 2 thirds	**What is different in Term 4?** During Term 3 learner's attention was focused on how the fraction name is linked to the number of equal parts into which the whole has been divided. A variety of diagrams were used to build up further understanding. Learners continue to name fractions in diagrams during this term. They are also naming fraction parts when doing word sums. Fraction parts identified are written as 1 half, 1 third, 1 quarter. The focus in this term should be on the whole. Learners should be able to: Complete the sentences Two halves are the same as _____ whole Three thirds are the same as ____ whole Four quarters are the same as ____ whole During this term learners will find fractions of a group of objects. Example: Using counters arranged in arrays learners will find: 1 half of 8 counters. Learners can divide the 8 counters into 2 groups of 4.  Allow learners to use concrete apparatus to do this and to arrange the counters into arrays. By the end of the term learners should be able to find: • 1 half of a collection of objects; • 1 quarter of a collection of objects; • 1 third of a collection of objects; and • 1 fifth of a collection of objects.	

GRADE 2 TERM 4 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects ; and • simple patterns made with drawings of lines, shapes or objects **Create and describe own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	Learners will work with patterns from nature, modern everyday life and our cultural heritage from Grade 1 to Grade 6. This means that you do not need to spend a lot of time on this topic. You also need to choose activities and patterns that are appropriate to each grade. One kind of pattern learners can look for is symmetry, e.g. most leaves and animals' faces are symmetrical. So are many insects if viewed from above and the patterns on many birds if viewed from below. Learners can also look at patterns on • fences (wire, wooden or vibracrete); • brickwork and floor tiles; • roofing; • clothes and material; • plates, cups and saucers; • soccer balls; • animals such as cows, moths and butterflies, zebra, giraffe, leopards, birds, insects; • flowers and leaves; • wallpaper, including wallpaper made of printed packaging that is often found inside shacks and informal housing, • traditional or modern beadwork; and • traditional clay pots or woven baskets. **How can learners describe the patterns they see around them?** There are different ways to describe the patterns we see around us. Most patterns around us are made up of lines, shapes or objects. The shapes or objects do not need to be linked to the geometrical 2-D shapes and 3-D objects worked with in Grade 2. All that learners are looking at is • what is repeated e.g. dots, lines, any kind of shape; and • how it is repeated.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects ; and • simple patterns made with drawings of lines, shapes or objects **Create and describe own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Patterns around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	Example: - Straight lines that cross each other (like in a dishcloth), lines that run along the bottom of material or across a shirt, lines that run up the legs of trousers, - Curved lines like those one gets when cutting across an onion - Lines that are irregular, as on fingerprints and zebras and wrinkles on elephants, rhino and very old people - Wavy lines that one gets when cutting across a cabbage, or that one finds on a sand dune - Dots that are the same size, dots that are evenly spread - Shapes that are the same size, e.g. brick patterns on a wall or paving - Shapes that are the same colour - Patterns made by the same shape facing in different directions e.g. triangles facing up or down in traditional beadwork, or paving bricks facing in different directions - Patterns made with shapes that are all different, like those on a giraffe	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 Number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 200. **Create own patterns** Create own number patterns.	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 200. Sequences should show counting forwards and backwards in: • 1s, from any number between 0 and 200 • 10s from any multiple between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200 **Create own number patterns**	See notes for Term 1, but extend the number range to 200	3 lessons

GRADE 2 TERM 4 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS: FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of Objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of Objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide **Focussed activities** • Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, building blocks, recycling, construction kits, other 3-D geometric objects	**Range of Objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of Objects** Describe, sort and compare 3-D objects in terms of: • size • objects that roll • objects that slide	**Suggested focus or Term 4** Work is consolidated through written exercises.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	**Range of shapes** Recognise and name 2-D shapes • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • size • colour • shape • straight sides • round sides	See notes for Term 2 This term you can practise, revise and consolidate work on 2-D shapes. Focus on recognising and naming circles, squares, rectangles and triangles and talking about whether their sides are straight or round. Do different activities from those in Term 2, but keep the focus on features of shapes and naming shapes.	3 lessons
3.4 **Symmetry**	**Symmetry** Recognise and draw line of symmetry in 2-D geometrical and non geometrical shapes.	**Symmetry** Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes.	See notes for Term 2.	1 lesson

GRADE 2 TERM 4 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS** **REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS** **SUGGESTED FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 **Time**	**Telling the time** • Name and sequence days of week • Name and sequence months of year • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in hours. half hours and quarter hours **Calculate length of time and passing of time** • Use calendars to calculate and describe lengths of time in days or weeks • Use clocks to calculate length of time in hours, half hours or quarter hours	**Telling the time** • Tell 12-hour time in hours, half hours and quarter hours on analogue clocks **Calculate length of time and passing of time** • Use clocks to calculate length of time in hours, half hours or quarter hours	Learners continue to practice talking about the duration of time and the sequencing of time. During whole class teaching time and focus group time, learners continue to talk about the day of the week, month of the year and the date of the current day, as well as days before and days to come. Learners become familiar with calendars by the continual placing of • Birthdays; • religious festivals; • historical events; • school events; and • public holidays on the calendar. **Telling the time in hours, half hours and quarter hours** See notes for Term 3.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, wider. **Introducing formal measuring** • Estimate, measure, compare order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length	**Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre long lengths of string) as the standard unit of length	**What is different from Term 1?** During Term 1 it was recommended that learners focus on estimating, measuring, comparing and recording lengths, widths and heights with informal units, but that learners also begin to measure in metres. In Term 4 the focus can be on estimating, measuring, comparing and recording length, heights and widths in metres: See notes for Term 1. This consolidation can be in the form of written exercises.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a balance e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour • Measure their own mass in kilograms using a bathroom scale	**Introducing formal measuring** Learners do written tasks to consolidate the following, including reading pictures of • products with mass written on them, • pictures of mass on bathroom scales where the needle points to a whole kilogram.	In Term 2 learners - measured mass informally using a balance; - ordered products according to the mass stated on the package; and - read bathroom scales (both real scales and pictures of scales) See notes for Term 2. In Term 4 learners should consolidate their skills in reading bathroom scales and pictures of bathroom scales to the nearest whole kilogram. This consolidation can be in the form of written exercises.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) or the volume in containers by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of 4 cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint	**Introducing formal measuring** Learners do written tasks to consolidate the following, including reading pictures of • products with their capacity written on them in order to sequence in order • pictures of jugs where the volume is near to a numbered 1 litre or 2 litre gradation line The expectation is that learners only read to the nearest numbered gradation line. The describe their volume as almost/nearly/ close to/ a bit more than/ more or less/ or exactly the number (of litres) they read off the jug	During independent work time learners should continue to - estimate and measure, compare, order and record the capacity of containers or the volume in containers using non-standard measures. Following recipes, including baking, is a useful context in which learners can practise measuring. Choose recipes where ingredients are given in cups, teaspoons or informal units; - compare and order the capacity a range of bottles and grocery items where the volume is stated on the packaging; and - use either 1 litre bottles or 1 litre jugs to estimate and measure, compare, order and record the capacity of containers or the volume in containers in litres. See the notes for Term 3. Learners should be given written tasks to consolidate the following, including reading pictures of • products with their capacity written on them in order to sequence in order; and • pictures of jugs where the volume is near to a numbered 1 litre or 2 litre gradation line. The expectation is that learners only read to the nearest numbered gradation line. The describe their volume as almost/nearly/ close to/ a bit more than/ more or less/ or exactly the number (of litres) they read off the jug.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
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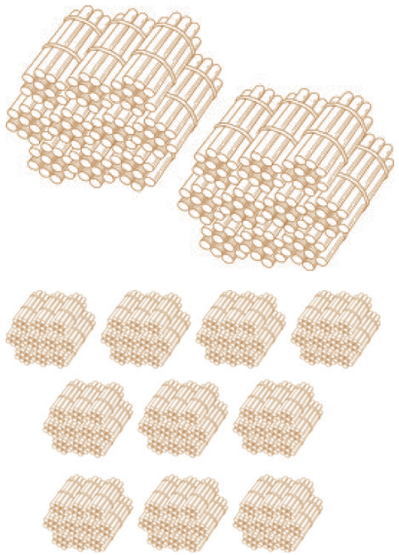
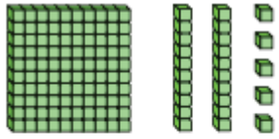
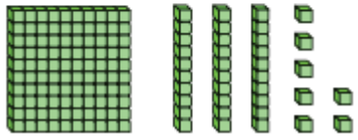
GRADE 2 TERM 4 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS** **REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS** **SUGGESTED FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
5.4 **Collect and organise data**	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher • Organise data in tallies			
5.5 Represent data	**Represent data** Represent data in pictograph			
5.6 **Analyse and interpret data**	**Analyse and Interpret data** Answer questions about data in pictograph	**Analyse and Interpret data** Analyse data from representations provided	**Analyse and Interpret data provided** By this stage of the year, learner should be familiar with pictographs. It is recommended that in Term 4 learners focus on analysing data. Give learners data to analyse in at least 1 pictograph Learners should answer questions that you pose to the graph and table: See Term 1 for suitable types of questions	1 lesson

3.5.3 Clarification of Grade 3 content

GRADE 3 TERM 1 1. NUMBERS, OPERATIONS AND RELATIONSHIPS
Grade 3 learners will now consolidate what they learnt in Grade and use these skills to work with numbers between and Learners in grade will now • read and write numbers in symbols and words to • continue to identify and position numbers; • use their knowledge of place value to locate the hundreds, tens and ones and to explain their relationship; • partition three-digit numbers. they will use their knowledge of place value to compare and order numbers and should give reasons for their choice; • continue counting forwards and backwards, now in intervals of and they will now begin recognising the relationships between counting in s and s; • know to count large collections of objects by grouping. They now to count systematically, accurately and can give a method on how to check the result; • add and subtract numbers mentally to ; • solve different kinds of problems and will learn how to organise their written responses in a systematic way; • choose the correct operation when doing problem-solving in contexts; • can record their calculations using the plus (), minus () and equals () sign. They can explain their answers and describe their methods; • work with formal ways to record addition and subtraction calculations, for example they will break up one or two numbers to add and subtract; and • will be able to choose from a range of strategies to solve the problem. For example to subtract: the learner will know to subtract by counting on or back. • The curriculum expects that the Grade learners work far less with concrete apparatus to represent addition and subtraction. By the end of the year learners should be able to add and subtract using pencil and paper methods. • The learner entering Grade should be able to understand the value of numbers and break up the numbers in order to calculate. The learner has begun to understand as ones and as tens and ones. The learner does not need concrete apparatus to help this understanding. In Grade 3 learners will continually need opportunities to practise breaking up numbers in order to understand the value of numbers and to use this knowledge in order to break up numbers to add and subtract.

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.1 Count objects	**Counting concrete Objects** Estimate and count reliably to at least objects. The strategy of grouping is encouraged.	• Group to at least objects to estimate and count reliably • Give a reasonable estimate of a number of objects that can be checked by counting	During Grade learners continue to count out everyday objects. The number range will increase to by the end of the year. This means that careful consideration needs to be given to the kind of apparatus used: • Dienes blocks • Place value cards During the first term learners practise and consolidate counting objects to The focus is on grouping the objects. Learners should have a strong sense that it is better, more efficient and quicker to count in groups of tens, twenties, fifties and hundreds than in ones. They start counting in hundreds, forwards and backwards during the first term. To support the rote counting, learners can organise the objects in groups of 100s. Example: Each group shows a hundred. 	

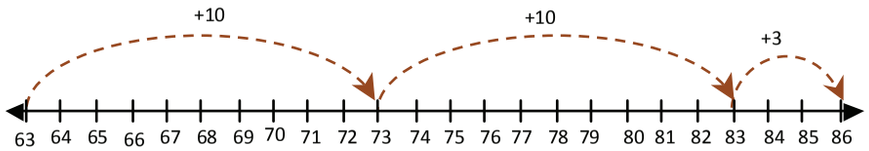
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.1 Count objects	**Counting concrete Objects** Estimate and count reliably to at least objects. The strategy of grouping is encouraged.	• Group to at least objects to estimate and count reliably • Give a reasonable estimate of a number of objects that can be checked by counting	During this term and for the rest of the year learners need to be made aware of how the counting of objects will help in calculations. **Example:** Counting objects by breaking up objects into groups of ten, 20s, 50s or even hundreds will allow learners to break up numbers when adding or subtracting. To add 362 + 527, learners can break up the number into place value parts. i.e. 362 + 527 = (300 + 60 + 2) + (500 + 20 + 7). Learners can count the hundreds together because they have done so when counting objects grouped in hundreds. Learners then count the tens (they have done so since Grade 1) and then the ones. Learners need to understand why they are spending their time counting objects. The links need to be made explicit. During this term learners can represent numbers using the Dienes blocks or base ten blocks. Learners used these apparatus in Grade 2.   Learners should be able to complete the following statement: The value of these base blocks are_____ Learners can use the place value cards to show the value of each digit. The focus of these kinds of activities is not only on counting objects. At the same time learners are: • understanding the value of a digit; • breaking down and building up numbers; and • reading number symbols.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.2 Count forwards and backwards	Count forwards and backwards in: • the intervals specified in grade 2 with increased number ranges from any given number • in 20s, 25s, 50s,100s to at least 1 000	Count forwards and backwards in: • the intervals specified in Grade 2 with increased number ranges • 100s to at least 500	**What is different from Grade 2?** Learners count in 100s for the first time. They do this to 500. Learners need supporting base ten apparatus such as: • Counting beads • Dienes blocks • Number lines • Number grids The skip counting needs to be linked to the times tables. Counting in 4s will help learners when they say: • 1 four is 4 • 2 fours are 8 • 3 fours are 12 The skip counting also supports understanding multiplication and will help learners when they complete number sequences.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.3 Number symbols and number names	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 0 - 1 000 • Write number symbols 0 - 1 000 • Recognise, identify and read number names 0 - 1 000 • Write number names to 0 - 1 000	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 0 - 500 • Write number symbols 0 - 500 • Recognise, identify and reads number names 0 - 250 • Write number names 0 - 500	**What is different from Grade 2?** During this term learners recognise, read and write number symbols to . They read number names to and write number names to The reading and writing number symbols is also practised when: • counting objects; • counting forwards and backwards; • completing number sequences; and • ordering and comparing numbers. Care should be taken to say numbers correctly; one needs to say 323 as “three hundred and twenty-three”, NOT as “323”. When writing three-digit numbers, the numbers between 100 and 110; 200 and 210; 300 and 310, 400 and 410, the digit in the tens position is zero. Some learners find it difficult to write these numbers in symbols when they are given the number in words. For example, it may be difficult for some learners to write ‘three hundred and four’ in symbols. They might write 3004. Place value cards are particularly useful for helping learners to understand how to represent these numbers correctly. Learners should also be given plenty of practice writing these numbers.	
1.4 Describe, compare and order numbers	**Describe, compare and order numbers to 999** • **Describe and compare** whole numbers up to 999 using smaller than, greater than, more than, less than and is equal to • **Describe and order** whole numbers up to 999 from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** Use, read and write ordinal numbers, including abbreviated form up to 31.	**Describe, compare and order numbers to 99** • **Describe and compare** whole numbers up to 99 using smaller than, greater than, more than, less than and is equal to • **Describe and order** whole numbers up to 99 from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** Use, read and write ordinal numbers, including abbreviated form up to 31.	**What is different from Grade 2?** During this term learners consolidate ordering and comparing numbers to and should be able to give reasons for why one number is bigger than another. Allow learners to use a number line, number track, number grids or even their knowledge of breaking up numbers into tens and ones to illustrate their understanding. When ordering numbers learners must be able to say why a number is bigger than another using the value of the digits to explain themselves. Example: is smaller than because: I know that and, and and . Also is three bundles of ten and is five bundles of ten. There are more bundles of ten in 50 than 30. For working with ordinal numbers the calendar is ideal because it allows the learner to talk about the 23rd or the 31st day of the month. Learners need to practise reading and writing the abbreviated form.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 Place value	**Recognise the place value of three-digit numbers to 999** • Recognise what each digit represents • Decompose three-digit numbers up to 999 into multiples of 100, multiple of ten and ones • Identify and state the value of each digit	**Recognise the place value of numbers to 99** • Recognise what each digit represents • Decompose two-digit numbers up to 99 into multiples of ten and ones • Identify and state the value of each digit	**What is different from Grade 2?** This term is about consolidating the place value understanding from Grade 2. Learners continue to do similar type activities as in Grade 2, Term 4: **Decompose two-digit numbers into multiples of tens and ones** Learners can decompose numbers into: • Multiples of tens and ones e.g. 73 = 70 + 3 (place value cards are useful to do this) **Building up two-digit numbers from their place value parts** Example: Write the number: a) 6 tens and 3 ones _____ b) 2 tens and 5 ones _____ c) 12 tens and 8 ones _____ d) 18 tens and 4 ones _____ **Use apparatus to show the partitioning of numbers:** • **Abacus** a) Show 4 tens and 5 ones using the abacus. b) Show 7 tens and 6 ones using the abacus. 	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 Place value	**Recognise the place value of three-digit numbers to 999** • Recognise what each digit represents • Decompose three-digit numbers up to 999 into multiples of 100, multiple of tens and ones • Identify and state the value of each digit	**Recognise the place value of numbers to 99** • Recognise what each digit represents • Decompose two-digit numbers up to 99 into multiples of tens and ones • Identify and state the value of each digit	• Place value cards Learners also use place value cards to show the parts of a number. Example: **The following type of questions can be asked:** · Say what the digit 8 in 28 represents? And the 2? · Say which number is equivalent or the same as: a) 6 tens b) Nine tens and three ones c) Five tens and nine ones	d)
SOLVE PROBLEMS IN CONTEXT				
1.6 Problem-solving techniques	Use the following techniques when solving problem and explain solutions to problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when solving problems: • building up and breaking down numbers • doubling and halving • number lines	**What is different from Grade 2?** Learners are expected to solve the word problems using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines Drawing up to 99 objects individually becomes inefficient and should be discouraged. Encourage the inclusion of number symbols in their recordings, including in picture representations. Learners can also be encouraged to write number sentences. Allow learners to choose the technique most comfortable for them. The number range and the type of problem will also determine the technique that is used. However, if learners are using techniques that are not efficient then they need to be guided to use more efficient methods. **Building up and breaking down** This is one of the most important techniques in the Foundation Phase. Using this technique allows learners to split (decompose) and recombine numbers to help make calculations easier. They will largely be using this technique in the Intermediate Phase as well. **Doubling and halving** This technique is quite sophisticated and requires a strong number sense. Learners who are able to choose this as a technique are quite flexible in the strategies they use. Knowing how to double will allow learners to use the strategy of near doubles.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.6 Problem-solving techniques	Use the following techniques when solving problem and explain solutions to problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when solving problems: • building up and breaking down numbers • doubling and halving • number lines	Example: Word problem: On one day at the clinic 45 children were given flu vaccinations. The next day 46 children were vaccinated. How many children were vaccinated altogether? The problem could be solved by using doubling. A learner might say double 45 plus 1 or double 46 minus 1. **Number lines** Using number lines in order to help them calculate will give learners a way to record their thinking and to keep track of it. It also allows learners to have a recording image that they can use to explain how they solved the problem. Learners have been using number lines since Grade 1. Learners should be able to construct blank number lines on which they put the starting number and then determine how to get from one to the other. **Example** of how learners can use the number line: 23 children went on an excursion today. There are still 63children at school. How many children were there to begin with?  	
1.7 Addition and subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction leading answers up to 999.	Solve word problems in context and explain own solution to problems involving addition, subtraction leading answers up to 99.	**Examples of problems that can be done this term** In this term, learners consolidate work done in Grade 2. See notes on problem-solving types in Grade 2, Section 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.8 Repeated addition leading to multiplication	Solve word problems in context and explain own solution to problems using multiplication with answers up to 99.	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 50.	**Examples of problems that can be done this term** • A builder needs to lay 6 rows of paving bricks, with 8 bricks in each row. How many bricks will he need? • Marlene has 4 bags of sweets. Each bag contains 6 sweets. How many sweets are there altogether? • Mom wants to bake 12 cakes. If each cake needs 2 eggs, how many eggs must Mom buy? • If each learner reads 3 books during July, how many books would a class of 20 read? **Problem type: Array** • A vegetable garden has 12 rows of plants. Each row has 7 plants. How many plants are there in the garden? • A vegetable garden has 12 rows of plants. Every row has the same number of plants. If there are a total of 48 plants, how many plants are in each row? • A vegetable garden has 48 plants that are planted in rows. There are 7 plants in each row. How many rows are there? **Using doubling to solve problems** • Justin is 8 years old. • His older brother is twice as old as Justin. • His father is four times as old as Justin. • His grandfather is twice as old as his father. • What are each of their ages? • Shepi's book is 48 pages long. He is on page 26; has he read more than half the book? In Grade 3 learners are expected to recognise a multiplication word sum. Learners should be encouraged to use numbers even with pictures, rather than only using apparatus or pictures on their own.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.9 Grouping and sharing leading to division	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 200 with answers that may include remainders	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 50 with answers that may include remainders.	During this term the division sign is introduced. It is important that learners understand the following concepts of division before the sign is used: Problems that involve sharing are often about: • sharing equally; and • how much each one gets. Problems that involve sharing is often about: • How many groups can be made? **Examples of problems that can be done this term** • If learners and teachers are going to the concert and people can fit into a mini-bus, how many times must the minibus drive up and down, before all the learners are at the concert? • Mongezi packs out counters into rows. How many counters in a row? • 35 girls want to play netball. How many teams of girls will there be? • Estimate first: • Will it be more or less than 10? • Will it be more or less than 20? • Marlene buys 44 sweets. She divides them equally into 4 packets to sell. How many sweets are there in a bag? • Marlene buys 48 sweets. She wants to divide them into bags with six sweets each. How many bags does she need?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.10 Fractions	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. 1/2,1/4,3/4,2/5. etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. 1/2,1/4,3/4, etc.	In Grade 2 learners were introduced to fractions and: • shared and grouped things equally; • named fraction parts; • identified fractions in different contexts; • wrote fraction names as 1 third, 1 fifth; • found fractions of whole objects; and • found fractions of a collection of objects. **What is different from Grade 2?** During this term, learners continue to work with unitary fractions such as 1 half, 1 third, 1 quarter, 1 fifth. Learners are also introduced to non-unitary fractions e.g. 3 quarters or 2 thirds. Learners are not required to use the terms *unitary* and *non-unitary.* **Examples of problems that can be done this term** • Sharing, leading to fractions Share 8 chocolate bars among 3 friends so that they all get the same amount of chocolate bar and there is nothing left over. • Fraction of a collection a) Find 1 quarter of 16 sweets. b) 8 sweets are which fraction of 24 sweets? c) Grandmother gives Kiki R12. Kiki wants to save a third of the money. How much money must she save? d) This problem type must only be posed after learners have solved four or five problems of the “sharing, leading to fractions” type and know the names of fractional pieces. **Writing fractions** Learners are not required to write the fraction symbol. Learners have learned how to label fraction parts as 1 fifth, 3 quarters or 3 sixths. This helps them firstly to understand that the fraction names describe how many equal parts the whole has been divided into, for example, halves, thirds, quarters, etc and secondly how many of those parts are being considered, e.g. 2 thirds. **Representing fractions word problems** • Learners must draw their answers to prove that they understand the problem. • Expect that some learners may draw the fraction correctly but misname the fraction part. Assist these learners to name fractions parts correctly (see notes relating to naming fractions under context-free calculations) • Learners must name the parts that have been shared by writing them as 2 thirds.	.

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.11 Money	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rand or cents. • Convert between rand and cents	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in Rand or cents.	During this term learners continue to solve money problems. **Example:** • Grade 3 learners need R759 for the class camp. They have collected R250. How much more money do they need? • Write 325c as rands and cents. • How many different ways can you make R400 using only bank notes? How do you know whether you have all the solutions? • Travis has a 50c piece and four 20c pieces. Toffees cost R1,20. How much change will he get? • If a school tracksuit costs R150, what will 2 tracksuits cost? **Buying and selling problems** **Example** • Pedro's granny gave him R5. Which 3 sweets can he buy? Choc chuckle R2,70; gums R1,80; sour worms R1,40; peach treats R1,60; magic mints R2,20; toffee R1,20. • Damon bought three books for R80 each, how much change will he get from R300? • Packets of 5 mints cost 44c each. Mr King needs 88 mints. How many packets should he buy? What will he pay?	

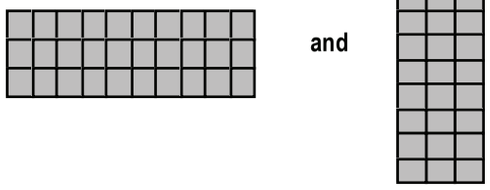
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
CONTEXT-FREE CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines	These techniques will be used in both problem-solving and in context-free calculations. **Building up and breaking down** This is one of the most important techniques in the Foundation Phase. Using this technique allows learners to split (decompose) and recombine numbers to help make calculations easier. They will largely be using this technique in the Intermediate Phase as well. It is important that learners apply known knowledge when breaking up numbers e.g. • breaking up using place value; • breaking up using multiples of 10; and • breaking up into number pairs.- **Number lines** Learners will continue to use and construct their own number lines in order to calculate. It is most likely that the number line will be used more in addition or subtraction calculations. **Addition and subtraction.** Learners should be constructing their own number lines and breaking up the numbers in manageable parts. **Example:** 45 + 27 The number line should start at 45 and learners can create 2 jumps of 10 and then one jump showing 7. **Multiplication** Number lines should continue to be used to support repeated addition. Equal jumps are recorded on the number line and supporting sentences can be recorded as well.	

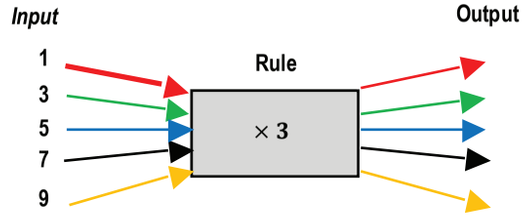
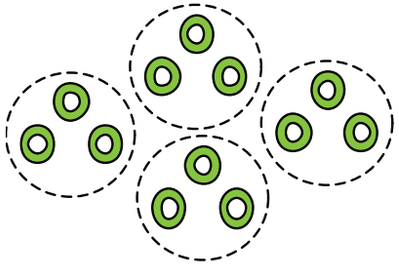
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 30	• Add up to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 20	During this term learners practise and consolidate the work done in Grade 2. If learners: • work only with loose counters; • draw images of 1s only; and • count all in 1s when working with totals that are more than 30, it slows them down, but also increases their chances of making calculation errors. This makes it important for them to develop more efficient strategies. Building up and breaking down numbers becomes one of the important strategies that learners will use during this term. Possible methods to show addition and subtraction calculations. **Breaking down a number into smaller parts to make a calculation easier** Learners might break down the number in ways that are manageable for them. This means that they will do it in different ways. **Using knowledge of place value to break down numbers into tens and ones** • Adding two-digit numbers by breaking up both numbers 43 + 36 = □ 43 + 36 = (40 + 3) + (30 + 6) = (40 + 30) + (3 + 6) = 70 + 9 = 79 • Adding by breaking up one number 43 + 36 = □ 43 + (30 + 6) 43 + 30 → 73 + 6 = 79 • Breaking up into groups of ten 43 + 36 = □ 43 + (10 + 10 + 10 + 6) 43 + 10→ 53 + 10→ 63 + 10→ 73 + 6 = 79	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 30	• Add up to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 20	**Subtraction** • Subtracting by breaking up both numbers 87– 56 = □ 87– 56 = (80 + 7) – (50 + 6) = (80– 50) + (7– 6) = 30 + 1 = 31 • Subtracting by breaking up one number 87–56 = □ 87– (50 + 6) 87– 50 → 37 – 6 = 1 Expect that some learners might break up the number in different ways to make easier for them to calculate: • Breaking up into multiples of 10 87– 56 = □ 87– (20 + 20 + 10 + 6) 87– 20 → 67–20 → 47– 10 → 37– 6 → 31 **Using and applying previous knowledge as techniques** • Using halving to break down a number 69 + 12 69 + (6 + 6) 69 + 6 → 75 + 6 = 81 • Count on and count back 78 – 69 = □ Counting up in ones from 69 is an appropriate strategy because the numbers are close to one another. • Identify near doubles 34 + 35 explaining that it is double 34 plus 1 or double 35 minus 1. 34 + 34 + 1	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 30	• Add up to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 20	Learners might record their strategies using the arrow notation to keep track of their calculations 34 + (30 + 4) + 1 34 + 30 → 64 + 4 → 68 + 1 → 69 • Change a number to a multiple of ten and then subtract or add ones **Count up or down to the nearest 10** 58 + 19 = □ Here learners need to say to themselves that they have two options. Change 58 or 19 to the nearest multiple of 10. The choice is theirs. The sum can be written as: 58 + 19 = 58 + 20 – 1 58 + 20 → 78 – 1 = 77 Some learners might break down 20 into 2 groups of 10 to calculate accurately. **Practise bonds to 20** Bonds to 20 should be done using a variety of supporting images. **Developing and practising addition and subtraction skills** Learners need to practise certain kinds of addition and subtraction skills. • Add or subtract single digits from any two-digit number without crossing the tens: Example: a) 65 + 4 b) 89 – 3 • Add a single digit to a multiple of 10 Example: a) 70 + 5 b) 90 + 3 • Subtract a single digit from a multiple of 10 Example: a) 80 – 6 b) 50 – 3	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 30	• Add up to 99 • Subtract from 99 • Use appropriate symbols (+, –, =, □) • Practise number bonds to 20	• Add or subtract 10 to and from any two-digit number Example: a) 56 + 10 b) 68 + 10 c) 79 – 10 d) 57 – 10 • Add or subtract a pair of multiples of 10 without crossing 100 a) 40 + 30 b) 80 – 50 **Checking results of calculations** Judging reasonableness of solutions Learners should be trained to judge the reasonableness of solutions. One way to do this is to estimate their answers before calculating. When adding two numbers that are close to each other, e.g. 45 and 46, learners can use doubling as a way of estimating their answers. Checking solutions Learners should know that they can • Check an addition calculation by subtracting. Example: If 36 + 18 = 54; then 54– 18 = 36 • Check a subtraction calculation by adding Example 84– 48 = 36, then 36 + 48 = 84 Using the inverse operation to check solutions is one reason for teaching addition and subtraction together.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.14 Repeated addition leading to multiplication	• Multiply numbers 1 to 10 by to a total of 99 • Use appropriate symbols (x, =, □)	• Multiply numbers 1 to 10 by • Use appropriate symbols (x, =, □)	In Grade 2 learners multiplied numbers 1 to 10 by 1, 2, 5, 3 and 4 up to 50. They were introduced to the sign and used it in number sentences. Learners in Grade 3 should continue to practise and use the language of multiplication in practical situations; double, twice, multiply, multiplied by, lots of, groups of, times, three times as much. The language should also be used when doing multiplication calculations. During this term learners will be multiplying in threes for the first time. Learners entering Grade 3 should be able to represent repeated addition using the multiplication sign. Learners are able to describe multiplication in different ways. They understand that 3 lots of 6 or 3 groups of 6 can be written as 6 + 6 + 6. There is also an understanding that 3 times 6 can be written as 3 × 6. This knowledge continues to be developed in Grade 3. Learners will continue to use concrete apparatus, arrays and number lines to understand and represent multiplication From Grade 3 learners need to be aware that multiplication can be done in any order. Example: Learners should be able to understand and write the following: 3 × 10 = □ 10 × 3 = □ 30 = 10 × □ 30 = 3 × □ The above statements should be supported by using frequent images that allow learners to see that 3 × 10 and 10 × 3 give the same answer. Example:  **and**	

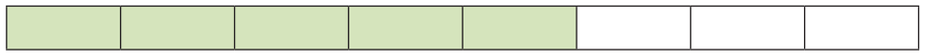
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
			By the end of the term learners should be able to begin to understand that multiplication can be done in any order. This concept should continue to be practised throughout the year. Learners can also use flow diagrams to record multiplication facts. Example:  	
1.15 Division	• Divide numbers to by • Use appropriate symbols (÷,=, □)	• Divide numbers to by • Use appropriate symbols (÷,=, □)	The division sign is introduced in Grade 3. For two years the concepts of sharing and grouping have been practised and now it is time to link these two concepts. The division symbol can be introduced when learners are doing word problems. The introduction of the symbol can be supported through the images below as well. It is important to use familiar images. **Example** 12 grouped into 3s give 4 groups  $4 \times 3 = 12$ 12 shared between 4 gives 3 each 12 grouped into 4s gives 3 groups $3 \times 4 = 12$ 12 shared between 3 gives 4 each **12 ÷ 3 = 4 means:** 12 grouped into 3 gives 4 groups, and 12 shared between 3 gives 4 each.	

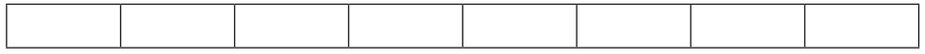
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number Concept: Range 999** • Order a given set of selected numbers • Compare numbers to 999 and say which is 1,2,3,4,5 and 10 more or less **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of from to • Multiplication and division facts for the: • two times table up to • ten times table up to **Calculation Strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division	**Number Concept: Range 200** • Order a given set of selected numbers Range 200 • Compare numbers to 200 and say which is 1,2,3,4,5 and 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to • Add or subtract multiples of from to **Mental strategies** Use calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	Calculating strategies, number concept, knowledge and known number facts are developed through problem-solving and calculations. These are practised during the mental mathematics time. This helps learners to become familiar with them and to be able to use them with ease when calculating and solving problems in context. During this term learners continue to develop their ability to work flexibly with numbers. The mental strategies that learners develop will help with written calculations and will help learners to make estimates. Examples of questions that can be asked: Number concept: Number names and symbols Hold up a card or write down a number name. Choose a learner to write the matching numeral. **More or less** What is • 1 less than 200 • 1 more than 199 • 2 more than 102 • 2 less than 105 • 3 more than 77 • 3 less than 51 • 4 more than 68 • 4 less than 167 • 5 more than 129 • 5 less than 185 • 10 more than 90 • 10 less 160 What is the 5th letter of the alphabet? What is the 9th month of the year?	.

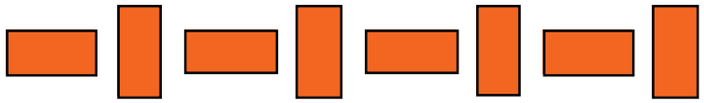
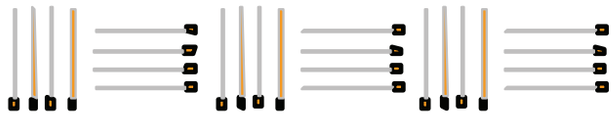
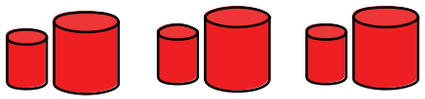
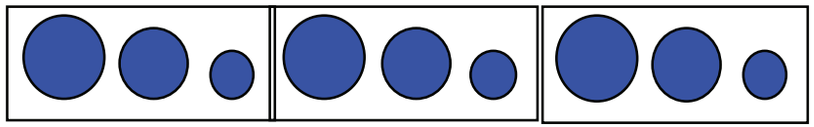
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number Concept: Range 999** • Order a given set of selected numbers • Compare numbers to 999 and say which is 1,2,3,4,5 and 10 more or less **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of from to • Multiplication and division facts for the: • two times table up to • ten times table up to **Calculation Strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division	**Number Concept: Range 200** • Order a given set of selected numbers Range 200 • Compare numbers to 200 and say which is 1,2,3,4,5 and 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to • Add or subtract multiples of from to **Mental strategies** Use calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Ordering and comparing** Which is more: or ? Give me a number between 1 and **Rapidly recall** Addition and subtraction facts: • Know by heart all addition and subtraction number bonds to 20 Example a) _____+ △ = 20 b) _____+ △ = 16 Add and subtract fact for all numbers up to and including 20 Examples 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 Quickly recall addition doubles to . This should include corresponding subtraction facts. Examples**:** 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 **Examples:** Show me the number to add to ... to make(writing down or using the place value or Flard cards). a) 8 b) 2 c) 9 d) 15 e) 3	.

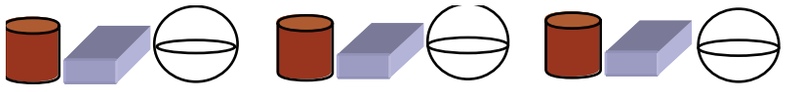
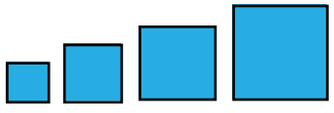
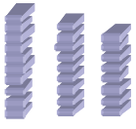
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number Concept: Range 999** • Order a given set of selected numbers • Compare numbers to 999 and say which is 1,2,3,4,5 and 10 more or less **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of from to • Multiplication and division facts for the: • two times table up to • ten times table up to **Calculation Strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division	**Number Concept: Range 200** • Order a given set of selected numbers Range 200 • Compare numbers to 200 and say which is 1,2,3,4,5 and 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to • Add or subtract multiples of from to **Mental strategies** Use calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Examples:** Show me the number left when … Is taken away from (writing down or using the place value or Flard cards). a) 5 b) 18 c) 0 d) 14 e) 7 Add or subtract multiples of 10 from 100 Examples: a) Say how many steps must be taken on a number line to get from 30 to 100 or from 100 to 50. b) Find pairs of cards to make 100. c) Put numbers in the boxes to make 100 □ + 70 = 100 20 + □ = 100 100 – □ = 90 100 – 40 = □ **Calculation strategies:** Use calculation strategies to add and subtract efficiently. Add several numbers by using strategies such as: • Look for pairs of numbers that make 10 and use these first 2 + 7 + 8 2 + 8 make 10 and then add 7. Put the larger number first in order to count on or count back • Start with the greatest number 5 + 15 Restate the number sentence: 15 + 5 and count on to 20	.

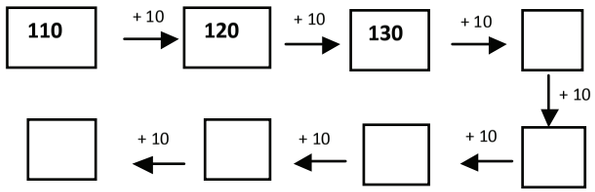
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number Concept: Range 999** • Order a given set of selected numbers • Compare numbers to 999 and say which is 1,2,3,4,5 and 10 more or less **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of from to • Multiplication and division facts for the: • two times table up to • ten times table up to **Calculation Strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division	**Number Concept: Range 200** • Order a given set of selected numbers Range 200 • Compare numbers to 200 and say which is 1,2,3,4,5 and 10 more or less **Rapidly recall:** • Recall addition and subtraction facts to • Add or subtract multiples of from to **Mental strategies** Use calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	• Change a number to 10 and then subtract or add 1 **Example:** 8 + 9 = 17 and explain that one could do 8 + 9 = 8 + 10 – 1 6 + 11 = 17 and explain that one could do 6 + 10 + 1 17 – 9 = 8 and explain that one could do 17 – 10 + 1 • Break up a number into its parts and then add Build up and break down numbers: Continue to break up numbers into ‘small bits’ 8 + 12 = 8+ (10+2) = 8 + 2 + 10 = 10 + 10 = 20 • Use doubling as a mental calculation strategy Identify near doubles Example: 5 + 6 = 11 explaining that it is double 5 plus 1 or double 6 minus 1 Recognise that when two numbers are close in size to each other then it is easier to find a difference by counting up, not counting back. 15 – 11 = 4 and explain that counting up from 11 to 15 gives 4 Some mental mathematics can be done without apparatus, but it is often useful to do mental mathematics with apparatus, Recommended apparatus • a number line (structured and empty) • a number grid • place value cards (flard cards) • counting beads	.

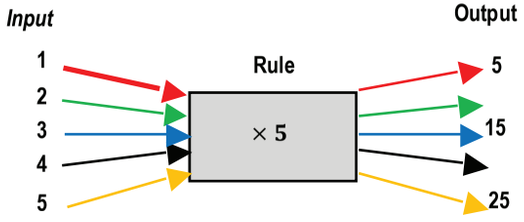
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.17 Fractions	• Use and name fractions in familiar contexts including halves, quarters eighths, thirds, sixths, fifths, • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that one half and two quarters are equivalent • Write fractions as 1 half, 2 thirds,	• Use and name fractions in familiar contexts including halves, quarters eighths, thirds, sixths, fifths, • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that one half and two quarters are equivalent • Write fractions as 1 half, 1 third	In Grade 2 learners were introduced to fractions. They: • shared and grouped things equally; • named fraction parts for unitary fractions; • identified fractions in different contexts; • wrote fraction names as 1 third, 1 fifth; • found fractions of whole objects; and • found fractions of a collection of objects. During this term learners are introduced to non-unitary fractions, e.g. 3 quarters or 2 thirds. They continue to work with unitary fractions. They are also working with eighths and sixths. Examples of questions: Into how many equal parts has each shape been divided? How many parts of each shape are shaded? What fraction of each shape is shaded? What fraction of each shape is not shaded? A. B C D  Learners should be given the opportunity to colour in shapes themselves.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.17 Fractions	• Use and name fractions in familiar contexts including halves, quarters eighths, thirds, sixths, fifths, • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that one half and two quarters are equivalent • Write fractions as 1 half, 2 thirds,	• Use and name fractions in familiar contexts including halves, quarters eighths, thirds, sixths, fifths, • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that one half and two quarters are equivalent • Write fractions as 1 half, 1 third	Example: Colour in 2 third of this shape A. Colour in 2 quarters of this shape B Colour in 4 fifths of this shape C Colour in 6 eights of this shape D 	

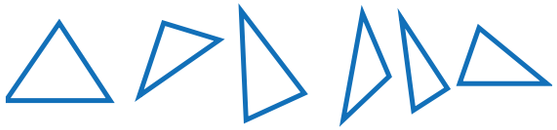
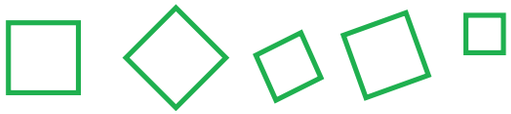
GRADE 3 TERM 1 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawings lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** • Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns**: Simple patterns in which shapes, or groups of shapes are repeated in exactly the same way **Create own patterns** • Create own geometric patterns • with physical objects • by drawing lines, shapes or objects	In Grade 3 learners can work with patterns in which • the elements are repeated in the same way; • the size of the shapes changes in predictable ways; and • the number of shapes or objects changes in a predictable way. Patterns can be made by using one object but having the colours of the object change in a regular way, e.g. Patterns can be made by using one shape or object but having the position of the shape or object change in a regular way Example: a)  b)  Some patterns have identical groups of shapes or objects repeated, where the size of the shape in each group changes in a regular, predictable way, e.g. the size of the shape gets bigger or smaller. Example: The size of the shape gets bigger  Example: The size of the shape gets smaller 	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawings lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** • Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns**: Simple patterns in which shapes, or groups of shapes are repeated in exactly the same way **Create own patterns** • Create own geometric patterns • with physical objects • by drawing lines, shapes or objects	Patterns can be made by making identical groups, where each group has only one kind of object but the position of the objects in a group changes. Identical groups are repeated. Example:  Some patterns are made from a single kind of shape, but each example of the shape increases or decreases in size Example:  Some patterns are made from groups in which the same shapes of objects occur, but the number of each kind of shape or objects increases or decreases in a regular way. Example:  • Copying the pattern helps learners to see the logic of how the pattern is made. • Extending the pattern helps learners to check that they have properly understood the logic of the pattern. • Describing the pattern helps learners to develop their language and speaking skills. It also helps you to see how learners have interpreted the pattern. It is usually easier for learners to talk about the pattern after they have made it. By now learners should be able to describe patterns without the aid of guiding questions. Continue to focus on developing the language they need to describe the patterns.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 Number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least **Create and describe own patterns** Create own number patterns.	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 100. • Sequences should show counting forwards and backwards in: - 1s from any number between 0 and 200 - 10s from any multiple between 0 and 200 - 5s from any multiple of 5 between 0 and 200 - 2s from any multiple of 2 between 0 and 200 - 3s from any multiple of 3 between 0 and 200 - 4s from any multiple of 4 between 0 and 200 - 100s to at least 500	Number sequences can be linked with and support counting. As learners' counting skills change and develop, the kinds of number sequences learners work with can develop. Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 200 • 10s from any multiple between 0 and 200 • 5s from any multiple of 5 between 0 and 200 • 2s from any multiple of 2 between 0 and 200 • 3s from any multiple of 3 between 0 and 200 • 4s from any multiple of 4 between 0 and 200 • 100s from any multiple of 100 to at least 500 Learners can point to numbers as they count. It is useful to give learners number sequences in different representations Example • A written sequence of numbers • Number lines - with only the numbers being counted shown - sections of number lines e.g. • Number grids • Number chains Learners can cover, colour, or circle numbers as they count on number lines and number grids. Learners can fill in missing numbers on number lines, number grids, in written number sequences and number chains Example 	3 lessons

<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 1</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr>
<td>2.2
Number patterns</td>
<td>Copy, extend and describe
Copy, extend and describe simple number sequences to at least
Create and describe own patterns
Create own number patterns.</td>
<td>Copy, extend and describe
Copy, extend and describe simple number sequences to at least 100.
• Sequences should show counting forwards and backwards in:
- 1s from any number between 0 and 200
- 10s from any multiple between 0 and 200
- 5s from any multiple of 5 between 0 and 200
- 2s from any multiple of 2 between 0 and 200
- 3s from any multiple of 3 between 0 and 200
- 4s from any multiple of 4 between 0 and 200
- 100s to at least 500</td>
<td>Just as number sequences can support counting, so learners can count in groups, either objects or pictures, and rewrite these numbers into tables and flow diagrams as a way of developing and supporting multiplication.
In Term 1 focus on 2s, 5s and 10s e.g.
Count in 5s
<table>
<tr><td>R5 coins</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></tr>
<tr><td>Total money</td><td>R5</td><td>R10</td><td>R15</td><td>R20</td><td>R25</td><td>R30</td><td>R35</td><td>R40</td><td>R45</td></tr>
</table>


By the end of the term learners work with counting sequences to and from 100.</td>
<td>3 lessons</td>
</tr>
</table>

GRADE 3 TERM 1 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS: FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Draw shapes** • circles • triangles • squares • rectangles	**Range of shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides	**What is different from Grade 2?** In Grade 3 learners consolidate work done on 2-D shapes in Grade 2, but do not focus on size or colour when working with shapes. This allows learners more time to focus on the new work with 3-D objects, position, orientation and views and symmetry. Most work with shapes in Grade 3 is done practically with concrete objects. All work should be consolidated through written exercises. **Recognising and naming circles, triangles, squares and rectangles** Learners should work with circles and squares of different sizes and triangles that are differently shaped. It is important that learners do not only see one example of each shape. Most commercial sets of shapes give only one example of triangles. Learners need to be able to recognise • Circles that have different sizes Example: • Triangles that are shaped differently and placed in different positions Example:  • Squares of different sizes in different positions Example: 	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Draw shapes** • circles • triangles • squares • rectangles	**Range of shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides	• Rectangles that are shaped differently, and placed in different positions Example: It is useful for learners to work with cut-out cardboard models of shapes. This allows learners to see different triangles, squares and rectangles placed in different positions. Learners sort shapes according to whether they have straight or round sides. Learners sort and groups shapes according to whether they are triangles, rectangles, squares or circles. Work is consolidated through written exercises.	2 lessons

GRADE 3 TERM 1 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months Use clocks to calculate length of time in hours or half hours.	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones	**What is different from Grade 2?** Digital instruments are introduced. In Grade 2 learners read time in hours, half hours and quarter hours on analogue clocks. In Grade 3 learners work with digital instruments for the first time. They still keep to the 12-hour format and use a.m.and p.m. where necessary. Learners continue to practise talking about the duration of time and the sequencing of time. During whole class teaching time and focus group time, learners continue to talk about the day of the week, month of the year and the date of the current day, as well as days before and days to come. Learners continue to place the following on a calendar as the events arise • birthdays • religious festivals • historical events • school events • public holidays Continue to ask learners to tell the time in hours, half hours and quarter hours using analogue clocks at regular intervals on an almost daily basis. For example, learners can be asked to tell the time when school starts, at break time and at home time, or when they change from one lesson to another. Choose times where the clock shows an exact hour or half hour or quarter hour. It is useful to have a large, working clock displayed in the classroom, so that learners can refer to it. Learners can also make models of clocks. You can then ask learners to show various times and include some calculations e.g. “Show me 10 o’clock. What was the time a quarter of an hour before 10?” During independent work time learners continue do exercises related to telling the time in hours, half hours and quarter hours on analogue clocks. Learners can do calculations with weeks or days if provided with a calendar or section of a calendar, e.g. finding dates and calculating the time differences between them.	3lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.1 Time	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months Use clocks to calculate length of time in hours or half hours.	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones	**Digital time** • Time is shown in digital 12 hour format on many domestic appliances e.g. cell phones, microwaves, CD and DVD-players etc. Learners may well be more familiar with this form of time than analogue clocks. Spend about 3 lessons familiarising learners with digital 12-hour time format. • Remind learners about the meanings of a.m. and p.m. • Show learners which digits refer to hours and which digits refer to minutes in digital time. • Explain that there are 60 minutes in an hour; so there are 30 minutes in a half hour and 15 minutes in a quarter of an hour. This will help learners to connect minutes with reading in hours, half hours and quarter hours on analogue clocks, which is what they did in Grade 2. • Give learners plenty of practice in reading digital time in 12 hour format. • Have a working digital clock on display in the classroom. Ask learners to give the time regularly during the day over the entire year. Let learners make model clocks, which they can use for telling the time and calculating time differences.	3lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison, e.g. longer, shorter, taller, and wider **Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length • Estimate and measure lengths in centimetres using a ruler No conversions between metres and centimetres required		During Grade 2 it was recommended that learners focus on estimating, measuring, comparing and recording lengths, widths and heights • with informal units; and • measuring in metres using a metre stick or 1 metre lengths of string. During independent work times learners can practise these measuring skills. **Measuring length as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of length; and • measuring length in metres. Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term. Lessons focussing on measuring length will start in Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 **Mass**	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a measuring balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour or in grams e.g. 500 grams of salt • Measure their own mass in kilograms using a bathroom scale No conversions between millilitres and litres required	In Grade 2 learners • measured mass informally using a measuring balance; • ordered products according to the mass stated on the package; and • read bathroom scales (both real scales and pictures of scales). During independent work times learners can practise these measuring skills. **Measuring mass as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of mass; and • measuring mass in kilograms. Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term. Lessons focussing on measuring mass will start in Term 2.		

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 **Capacity/ Volume**	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has a capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres, e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres No conversions between millilitres and litres required	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container, e.g. the bottle has the capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres - using bottles with a capacity of 1 litre, or containers whose capacity is stated in millilitres e.g. cool drink cans - measuring jugs in which numbered calibration lines show litres, half litres and quarter litres - measuring jugs which have numbered calibration lines for millilitres. Learners are not expected to read volumes at unnumbered calibration lines - Measuring cups and teaspoons which indicate their capacity • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres No conversions between millilitres and litres required	**What is different from Grade 2?** In Grade 2 learners • estimated and measured, compared, ordered and recorded the capacity of containers or the volume in containers using non-standard measures; • compared and ordered the capacity of a range of bottles and grocery items where the volume is stated on the packaging; and • used either 1 litre bottles or 1 litre jugs to estimate and measure, compare, order and record the capacity of containers or the volume in containers in litres. In Grade 3 learners are introduced to millilitres. **What is capacity? What is volume?** A bottle can have a 1 litre capacity, but it may not be filled to its full capacity, it could, for example, only contain a volume of one cup of water Capacity is the total amount that an object can hold (or the amount of space inside the object). Volume is the amount of space that something takes up. Sometimes learners will be measuring how much liquid (or sand or other substances) are in a container. This is measuring the volume of the substance in the container. At other times learners will be measuring how much a container can hold if it is filled to its maximum capacity. Learners should continue to measure using non-standard units of capacity **Informal measurement of capacity using non-standard units of capacity** Learners can learn all the principles and practises of measurement using non-standard units. Measuring with non-standard units should not be considered to be inferior to measuring with standard units. Learners should get the opportunity to measure volume/capacity using a range of objects as informal units e.g. cups (but not necessarily measuring cups), spoons (but not necessarily measuring teaspoons), bottle tops such as 2 litre milk bottle tops, small cans, small bottles etc.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 **Capacity/ Volume**	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has a capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres, e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres No conversions between millilitres and litres required	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container, e.g. the bottle has the capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres - using bottles with a capacity of 1 litre, or containers whose capacity is stated in millilitres e.g. cool drink cans - measuring jugs in which numbered calibration lines show litres, half litres and quarter litres - measuring jugs which have numbered calibration lines for millilitres. Learners are not expected to read volumes at unnumbered calibration lines - Measuring cups and teaspoons which indicate their capacity • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres No conversions between millilitres and litres required	Measuring volume/capacity with non-standard units involves counting how times you fill and pour from the chosen unit whose volume is being measured. Learners should be taught always to state the unit e.g. there are 48 teaspoons of water in the bottle or there just less than a cup of water in the bottle. Once learners have measured with any unit a couple of times, they should estimate capacity/volume using that unit. Estimation before measuring is important, but can only be done once learners have done some measuring with that unit. Learners need to be taught that in order to compare volume or capacity, the same unit needs to be used. For example, if a glass holds 20 teaspoons of water and a cup holds 10 tablespoons of water, you cannot say that the glass holds more water. Learners need to measure with a range of informal units, so that they can • begin to understand that the smaller the unit, the more time you will need to use/fill it, e.g. the volume in a bottle could be 20 tablespoonfuls but also 1 cup; • begin to use units which are appropriate to what they are measuring, e.g. measuring a full 2 litre bottle with teaspoons is a waste of time. **Introducing formal measuring** • Estimate, measure, compare, order and record volumes and capacities in litres Remind learners that litres are a common standard unit of measuring capacity and volume. The abbreviated form (l) is used on most measuring jugs and commercial goods sold by volume. Check that learners remember the abbreviation for litres. Learners measure in litres using: • 1 litre containers such as cold drink bottles, milk bottles, milk cartons, juice cartons; and • measuring jugs which show 1 litre calibration lines. They estimate and then measure the capacity of a range of containers such as large yoghurt tubs, ice cream tubs, lunch boxes, large jugs, large bottles, empty paint tins, buckets etc. Items of different capacity should be chosen. Learners describe the capacity as “less than 1 litre, 2 litres, between 1 and 2 litres, 5 litres” etc.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has a capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres, e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres No conversions between millilitres and litres required	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container, e.g. the bottle has the capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres - using bottles with a capacity of 1 litre, or containers whose capacity is stated in millilitres e.g. cool drink cans - measuring jugs in which numbered calibration lines show litres, half litres and quarter litres - measuring jugs which have numbered calibration lines for millilitres. Learners are not expected to read volumes at unnumbered calibration lines - Measuring cups and teaspoons which indicate their capacity • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres No conversions between millilitres and litres required	Learners compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint. • Estimate, measure, compare, order and record volumes and capacities in millilitres Talk with learners about millilitres being a common standard unit of measuring capacity and volume. Explain that millilitres are a smaller unit than litres. They should learn the word and the abbreviation, because on many commercial containers and many measuring jugs the abbreviated form of the word is used. Learners should compare, order and record the capacity of commercially packaged objects whose capacity is stated in millilitres, e.g. 500 ml of milk, 750 ml vinegar, 330 ml cold drink, 200 ml cold drink, 400 ml floor polish etc. Learners should measure regularly enough with: • standard measuring cups to begin to get a sense of how much 250 ml is; • measuring teaspoons to begin to get a sense of how much 5 ml is; • measuring jugs calibrated in millilitres - here the expectation is that learners only read at the numbered calibration lines - they will focus on reading unnumbered calibration lines in the Intermediate Phase. Following recipes, including baking, is a useful context in which learners can practise measuring. Learners are NOT expected • to know that 1 000 ml = 1 litre, • to do conversions between millilitres and litres, or • read unnumbered calibration lines on measuring jugs (this is done from Grade 4). **Recording measurements** Although measuring is a practical skill, learners should record their measurements at all times, including all informal and formal measurement. **Measuring capacity/volume as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of capacity/volume e.g. Gogo uses 2 cups of milk to make a pudding. If she doubles the recipe, how much milk will she need? • litres • millilitres Take account of the number range appropriate for the term, as well as the range of problems types.	2 lessons

GRADE 3 TERM 1 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 1**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
5.4 **Collect and organise data**	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher • Organise data supplied by teacher or book • Organise data in - lists - tallies - tables	**Collect and organise data** Collect data about the class or school to answer questions posed by the teacher. Use tallies to record data in categories provided. **Represent data** Represent data in • Table • Bar graph **Analyse and Interpret data** Answer questions about data in bar	**What is different from Grade 2?** • Learners organise data into lists, tallies, tables • Learners are introduced to bar graphs • Learners continue to work with pictographs - both constructing them as part of the data cycle and analysing pictographs that they are given **The complete data cycle** In the data handling cycle, • learners collect information to answer a question. In the Foundation and Intermediate Phase this question is normally provided by the teacher or text book; • learners sort and represent the information in ways which make it easier to analyse. The form of representation that learners in Grade 3 deal with are lists, tallies, tables, pictographs and bar graphs; and • learners analyse the information by answering questions posed by the teacher. A class bar graph It is recommended that Grade 3 learners work through the whole data cycle at least once in the year: Working together as a class helps learners to be involved in all the stages of the process without getting lost in the detail of any stage. Making a class bar graph allows you to focus the learners on the key aspects of data handling and to introduce learners to the key features of a bar graph • where and how to label the graph (graph title) • where and how to label the axes (axes titles) • how to draw the bars - draw the bars the correct length to show the data - make the bars the same width - leave a space between bars - label each bar clearly • how to read the graph	3 lessons
5.5 **Represent data**	**Represent data** Represent data in • pictograph • bar graphs			
5.6 **Analyse and interpret data**	**Analyse and Interpret data** Answer questions about data presented in • pictographs • bar graphs			

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 1	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
5.6 Analyse and interpret data	**Analyse and Interpret data** Answer questions about data presented in • pictographs • bar graphs		Learners need to know that it is important to read the graph title first, so that they know what the data is about. They also need to read the titles of the horizontal and vertical axes. Learners do not need to know the technical terms used to describe parts of the graph, only that they must read along the "bottom" and "side" to see what the graph is about. We normally read from left to right, but when learners read graphs they need to read left to right and bottom to top. This needs to be explained to learners. They also need to practice these skills. Working through the whole data cycle can take 3 lessons. **Collect and organise data** In Grade 3 you should pose the questions that allow learners to collect data e.g. "What are our class's favourite colours?" Teachers in the phase should ensure that different topics are chosen for data collection and analysis in each of the grades. Suitable topics include favourite sports, favourite cool drinks, favourite colours, favourite pass times, favourite foods, favourite TV programmes etc. Learners can start by calling out options. Once you get an idea of the range of answers, you should set categories for learners to choose from. Let learners practise all the "non-graph" forms of representation i.e. lists, tallies and tables e.g. - list the names of each learners under the category they have chosen as favourite; - show learners how to make a tally table from the list (teaching learners how to tally can take a whole lesson); and - make a table with numbers from the tally table. Once the data is in a table, show learners how to draw the bar graph (see guidelines above). **Analyse and interpret data** Learners answer questions that you pose about the picture graph Example**:** a) "What colour is the most popular in our class?" b) "What colour is the favourite of the fewest learners in the class?" c) "Do more learners like …. or …?" d) "How many more learners prefer … than …?"	

GRADE 3 TERM 2 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
1.1 Counting objects	**Counting concrete objects** Estimate and count reliably to at least 1000 everyday objects. The strategy of grouping is encouraged.	Group to at least 500 everyday objects to estimate and count reliably. Give a reasonable estimate of a number of objects that can be checked by counting	**What is different from Term 1?** The number range increases to 500. The increase in the number range assumes that learners can: • group objects in order to count; • count in tens to 500 and say the number names in sequence; and • match the symbol to the amount counted by writing the number or showing the number with place value cards. See notes for Term 1.	
1.2 Count forwards and backwards	Count forwards and backwards in: • 1s from any number between 0 and 1000 • 10s from any multiple between 0 and 1000 • 5s from any multiple of 5 between 0 and 1000 • 2s from any multiple of 2 between 0 and 1000 • 3s from any multiple of 3 between 0 and 1000 • 4s from any multiple of 4 between 0 and 1000 • in 20s, 25s, 50s, 100s to at least 1 000	• 1s from any number between 0 and 500 • 10s from any multiple between 0 and 500 • 5s from any multiple of 5 between 0 and 500 • 2s from any multiple of 2 between 0 and 500 • 3s from any multiple of 3 between 0 and 500 • 4s from any multiple of 4 between 0 and 500 • 50s,100s to at least 1000	**What is different from Term 1?** During this term learners start counting in 50s. The number range now increases to 1 000. During this term learners continue to apply skip counting to the multiplication tables and to number sequences. See notes for Term 1.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.3 Number symbols and number names	• Recognise, identify **and read numbers** • Recognise, identify and read number symbols 0 - 1 000 • Write number symbols 0 - 1 000 • Recognise, identify and read number names 0 - 1 000 • Write number names 0 - 1 000	• Recognise, identify **and read numbers** • Recognise, identify and read number symbols 0 - 1 000 • Write number symbols 0 - 1 000 • Recognise, identify and read number names 0 - 250 • Write number names 0 - 250	The reading and writing number symbols continues to be practised when: • counting objects; • counting forwards and backwards; • completing number sequences; and • ordering and comparing numbers. See notes for Term 1.	
1.4 Describe, compare and order numbers	**Order and compare numbers to 999** • Describe and compare whole numbers up to 999 using smaller than, greater than, more than, fewer than and is equal to. • Describe and order whole numbers up to 999 from smallest to greatest, and greatest to smallest . **Use ordinal numbers to show order, place or position** • Use, read and write ordinal numbers, including abbreviated form up to 31.	**Order and compare numbers to 500** • Describe and compare whole numbers up to 500 using smaller than, greater than, more than, fewer than and is equal to. • Describe and order whole numbers up to 500 from smallest to greatest, and greatest to smallest . **Use ordinal numbers to show order, place or position** • Use, read and write ordinal numbers, including abbreviated form up to 31.	During this term the number range increases from 99 to 500. Learners are now ordering three-digit numbers. To order three-digit numbers, learners need to: • say the number name; • write the number; and • recognise the value of each digit. Allow learners to use a number line, number track, number grids or even their knowledge of breaking up numbers into hundreds, tens and ones to illustrate their understanding. When ordering numbers learners must be able to say why a number is bigger than another using the value of the digits to explain themselves. Example**:** 239 is smaller than 339 because I know that and 30 and 9 and and 30 and 9. Learner should be able to explain that 300 is more than 200 by using grouped objects to show the number of 100s in each number. Learners could also locate the position of the number on the line by saying that 339 comes after 239, therefore I know it is bigger.	

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1.5 Place value	**Recognise the place value of three-digit numbers to 999** • Know what each digit represents • Decompose 3 digit numbers up to 999 into multiples of 100, multiple of tens and ones • Identify and state the value of each digit	**Recognise the place value of numbers to 500** • Know what each digit represents • Decompose 3 digit numbers up to 500 into multiples of hundreds, tens and ones . • Identify and state the value of each digit	**What is different from Term 1?** During the second term learners decompose three-digit numbers for the first time. The place value system is extended to include hundreds. Learners' understanding of place value can be developed by asking questions such as, find ten more or fewer than a number. As a result of regular experiences in developing place value concepts, learners should be able to count confidently in 100s, discover patterns related to place value and build up and break down two-and three-digit numbers. During this term learners learn to say and write down the value of a digit in the number. In 452 the value of the 5 is fifty. In 325, the value of the 5 is five. It is important to link the understanding of 50 to 5 bundles of ten and 5 to five loose ones. This will help learners when ordering and comparing numbers. The place value cards (flared Cards) are equally important. Place value cards are used to break up numbers to show the value of each digit. Learners can make their own set of place value cards. An envelope can be pasted at the back of their class workbook and the cards stored in there. The cards can even be used when they are doing addition and can be one way that they use to check their answers. Use their Flard cards to demonstrate this 	c)

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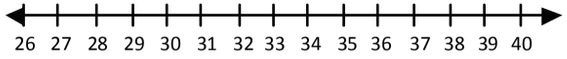
1.5 Place value	**Recognise the place value of three-digit numbers to 999** • Know what each digit represents • Decompose 3 digit numbers up to 999 into multiples of 100, multiple of tens and ones (HTU) • Identify and state the value of each digit	**Recognise the place value of numbers to 500** • Know what each digit represents • Decompose 3 digit numbers up to 500 into multiples of hundreds, tens and ones (HTU). • Identify and state the value of each digit	**Decompose two-digit numbers into multiples of hundreds, tens and ones** Learners can decompose numbers into: • The hundreds, tens value and ones value e.g. 273 = 200 + 70 + 3 (place value cards are useful to do this) **Building up two-digit numbers from their place value parts** Example Write the number: 1 hundred and 3 tens 2 hundred and 4 tens and 5 ones 3 hundred + 9 tens + 2 ones 4 hundred + 5 tens + 7 ones Example: Complete: a) 346 = 300 + ☐ + 6 b) 400 + 20 + 8 = ☐	c)

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
			SOLVE PROBLEMS IN CONTEXT	
1.6 Problem-solving techniques	Use the following techniques when solving problem and explain solutions to problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when solving problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Learners are continue to solve the word problems using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines See notes for Term 1. **What is different in different from Term 1?** **Rounding off** During this term learners start rounding off numbers to the nearest 10. Rounding off is the most familiar form of estimation. If a learner is a good estimator his or her ability to round off should be flexible and well understood. Before learners can use rounding off as a technique when adding or subtracting, they need to practise the technique first. This can be done by using the number line.	
			SOLVE PROBLEMS IN CONTEXT	
1.6 Problem-solving techniques	Use the following techniques when solving problem and explain solutions to problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when solving problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Example:  Is 33 closer to 30 or 40? Is 37 closer to 30 or 40? Learners need to understand that: 35 is halfway between 30 and 40. We say that the nearest 10 to 35 is 40 because we round up when the number is halfway between two tens. See notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.7 Addition and subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction leading answers up to 999.	Solve word problems in context and explain own solution to problems involving addition, subtraction leading answers up to 400	**Examples of problems that can be done this term** Addition and subtraction problems • Pamela has collected 413 bottle tops. If Ken gives her 29 bottle tops, he will have the same number as Pamela. - How many bottle tops will they both have? - How many bottle tops did Ken have to begin with? • Mrs Zibi lent R80,00 to Mrs Magadla. Mrs Zibi now has R366,00 left. How much money did Mrs Zibi have in the beginning? • Jan read 115 pages. Nandi read 126 pages. How many more pages did Nandi read than Jan? • Ben has 218 marbles. He has 97 fewer marbles than Anna. How many marbles does Anna have?	
1.8 Repeated addition leading to multiplication	Solve word problems in context and explain own solution to problems using multiplication with answers up to 99.	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75	**Examples of problems that can be done this term** See Term 1 for more examples and change the number range accordingly • The manager has to order tyres for 8 buses. If each bus needs six tyres and a spare, how many tyres must the manager order ? • A school pool is 10 meters long. Luvuyo swims 6 laps. How far did he swim? **Problem type: Array** • A vegetable garden has 12 rows of plants. Each row has 7 plants. How many plants are there in the garden? • A vegetable garden has 12 rows of plants. Every row has the same number of plants. If there are a total of 48 plants, how many plants are in each row? • A vegetable garden has 48 plants that are planted in rows. There are 7 plants in each row. How many rows are there? **Comparison/Ratio** • Samuel has 6 sweets. Samuel has three times as many as Moeketsi. How many sweets does Moeketsi have? • Marlene has 18 sweets. This is three times as many as Samuel has. How many sweets does Samuel have? This type of problem is introduced for the first time in Term 2. Learners may take longer to solve problems of these types.	

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1.9 Grouping and sharing leading to division	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 100 with answers that may include remainders.	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 75 with answers that may include remainders.	**Examples of problems that can be done this term** How many cars are needed to transport 24 learners if four can fit into a car? There are 65 socks in a drawer. How many pairs of socks are there? **Grouping** David sells bags with ten oranges each. He has 40 oranges. How many bags can he fill? Tony has 66 sweets. Each day he eats 3 sweets. How many days can he eat sweets?	
1.10 Sharing leading to division	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{3}{4}$, $\frac{2}{5}$, etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{3}{4}$, etc.	During term 1 learners were introduced to non-unitary fractions e.g. 3 quarters or 2 thirds. Sufficient opportunity should be given to know these fractions. **Examples of problems that can be done this term** a) Sharing, leading to fractions b) Share 8 chocolate bars among 3 friends so that they all get the same amount of chocolate bar and there is nothing left over c) Fraction of a collection d) Find 1 quarter of 20 sweets. e) 6 sweets are which fraction of 24 sweets f) Grandmother gives Kiki R12. Kiki wants to save a third of the money. How much money must she save? This problem type must only be posed after learners have solved four or five problems of the sharing, leading to fractions type and know the names of fractional pieces. **Writing** Learners are not required to write the fraction symbol. Learners continue to label fraction parts as 1 fifth, 3 quarters or 3 sixths. **Representing fraction word problems** Learners must draw their answers to prove that they understand the problem. Expect that some learners may draw correctly but misname the fraction part. Assist these learners to name fractions correctly (see the notes on naming fractions under context-free calculations). Learners must name the parts that have been shared by writing it as 2 thirds.	

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1.11 Money	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rand or cents. • Convert between Rand and cents	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rand or cents	**Examples of problems that can be done this term:** • Value of money and making up totals e.g. - Write 525c as rand and cents. - In how many different ways can you make up R400 using only bank notes? How do you know whether you have all the solutions? - Travis has a 50c piece and four 20c pieces. Toffees cost R1,20. How much change will he get? • Mandla pays R2,50 to take a taxi to school. - What does it cost him to get to and from school each day? - The train costs R6 for a return ticket. Which is cheaper, the train or the taxi? • Buying and selling problems - Pedro's granny gave him R5. Which 3 sweets can he buy? Choc chuckle R2,70; gums R1,80; sour worms R1,40; peach treats R1,60; magic mints R2,20; toffee R1,20. - Damon bought three books for R80 each; how much change will he get from R300? - Packets of 5 mints cost 44c each. Mr King needs 88 mints. How many packets should he buy? What will he pay? • Three buses drive on a toll road and are charged R40 each. How much do they pay in total? (It is expected that learners will use repeated addition problems where the rand value is so large.)	.

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CONTEXT-FREE CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Learners are expected to use the following techniques when doing context free calculations: • Building up or breaking down numbers • Doubling and halving • Number lines • Rounding off in tens Allow learners to choose the technique most comfortable for them. However, if learners are using techniques that are not efficient they need to be guided to use more efficient methods. See notes for Term 1 on • building up and breaking down; • doubling and halving; and • number lines. **Rounding off in tens** See the explanation in the problem-solving section of Term 2.	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 30	• Add up to • Subtract from • Use appropriate symbols (+, –, =, ☐) • Practice number bonds to 30	**What is different in Term 2?** During this term learners calculate with three-digit numbers for the first time. In order to calculate with three-digit numbers confidently, they should already be able to: • read and write number symbols to • order and compare numbers to at least • count in groups to ; and • count in intervals of and to . During this term learners continue to break down numbers in order to calculate. Building up and breaking down numbers remains one of the important strategies that learners will use during this term. **Possible methods to show addition and subtraction calculations.** • Breaking down a number into smaller parts to make a calculation easier Most of the strategies that learners use involve breaking down numbers. They continue to do so with three-digit numbers. • Adding by breaking down one number Adding three-digit with two-digit Example**:** 324 + 82 = ☐ 324 + 82 = (300 + 20 + 4) + (80 + 2) = 300 + (20 + 80)+ (4 + 2) = (300 + 100) + 6 = 400 + 6 = 406 Example: Adding three-digits and three-digits Break up both numbers 323 + 136 = ☐ 323 + 136 =(300 + 20 + 3) + (100 + 30 + 6) = (300 + 100) + (20 + 30) + (3 + 6) = 400 + 50 + 9 = 459	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 30	• Add up to • Subtract from • Use appropriate symbols (+, –, =, ☐) • Practice number bonds to 30	• Adding (by breaking down the number to be added) Learners will break down the number in ways that are manageable for them. This means that they will do it in different ways. Example: 324 + 82 = ☐ 324 + (40 + 40 + 2) 324 + 40→ 364 + 40→ 404 + 2 = 406 Example: Adding 3 digit with 3-digits 323 + 136 = ☐ 323 + 136 = 323 + (100 + 30 + 6) = (323 + 100) + 30 + 6 = (423 + 30) + 6 = 453 + 6 = 459 Counting on 40 from 324 could be done by counting in 10s. • Subtraction • Breaking up both numbers three-digit subtract two-digit Example: 389 – 137 = ☐ 389 – 137 = (300 + 80 + 9) – (100 + 30 + 7) = (300 – 100) + (80 – 30) + (9 – 7) = 200 + 50 + 2 = 252 • Subtracting by breaking up one number Example: 389- 137 = ☐ 389 – (100 + 30 + 7) 389- 100 → 289- 30 → 259- 7 = 252 • Using halving to break down a number Example: 225 + 16 = 225 + 8 +8 = (225 + 8) + 8 = 233 + 8 = 241	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 30	• Add up to • Subtract from • Use appropriate symbols (+, –, =, ☐) • Practice number bonds to 30	• Count on and counting back 305 + 298 = ☐ Counting up in ones from 298 is an appropriate strategy because the numbers are close to one another. • Identify near doubles Example: 145 + 146 = 191 explaining that it is double 145 plus 1 or double 146 minus 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 • Change a number to a multiple of ten and then subtract or add ones Count up or down to the nearest 10 Example: 288 + 11 288 + 10 = 298 298 – 1 = 297 Example: 188 + 19 188 + 20 = 208 208 – 1 = 207 **Developing and practising addition and subtraction skills.** Learners need to practise certain kinds of addition and subtraction skills. • Practising Bonds to 30 • Add and subtract multiples of 10	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 30	• Add up to • Subtract from • Use appropriate symbols (+, –, =, ☐) • Practice number bonds to 30	Learners should have opportunities to do the following type calculations with numbers up to 400: Add or subtract a pair of multiples of 10, crossing 100 40 + 70 70 + 80 120 – 30 150 – 60 Add or subtract 10 to or from any two or three digit number, including crossing the 100s. Example: 65 + 10 124 + 10 326 – 10 358 – 10 Add or subtract a single digit to or from a three-digit number without crossing the tens. Example: 234 +5 475 + □ = 479 768 – 4 Add and subtract a single digit to and from a multiple of 100 Example: 200 + 4 300 + 3 300 – 6 400 – 5 Begin to add and subtract a pair of multiples of 100. 100 + 100 100 + 200 Learners should be given opportunities to practise patterns in addition and subtraction.. If I know that 1+ 1 = 2 Then What is: 10 + 10 100 + 100	

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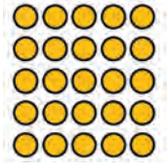
1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols (+, –, =, ☐) • Practise number bonds to 30	• Add up to • Subtract from • Use appropriate symbols (+, –, =, ☐) • Practice number bonds to 30	**Checking results of calculations** Judging reasonableness of solutions Learners should be trained to judge the reasonableness of solutions. One way to do this is to estimate their answers before calculating. When adding two numbers that are close to each other e.g. 145 and 146, learners can use doubling as a way of estimating their answers. **Checking solutions** Learners should know that they can • check an addition calculation by subtracting. Example: If 236 + 18 = 254; then 254 – 18 = 236; and • check an subtraction calculation by adding. Example 384 – 48 = 336, then 336 + 48 = 384. Using the inverse operation to check solutions is one reason for teaching addition and subtraction together.	

<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 2</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr>
<td>1.14
Repeated addition leading to multiplication</td>
<td>• Multiply numbers 1 to 10 by 2, 3, 4, 5, 10 to a total of 99
• Use appropriate symbols (x, =, □)</td>
<td>• Multiply 2, 4, 5, 10, 3 to a total of 50
• Use appropriate symbols (x, =, □)</td>
<td>During this term learners continue to:
• use and understand the language of multiplication;
• represent multiplication as arrays;use the appropriate symbols to interpret number sentences;
• understand that repeated addition can be represented using the multiplication symbol;
• practise and understand that multiplication can be done in any order (the commutative law or property); and
• use the number line to show multiplication calculations and be able to explain the representation (how the jumps show repeated addition).
Learners can continue to use arrays to write repeated addition and multiplication number sentences.
Example:
Write two addition and two multiplication number sentences for the array.
 
The images used to describe multiplication can be widened.
The multiplication table can be introduced. Example:
<table>
<tr><td>×</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>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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<tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Chanting of the tables can be done. Learners do not have to know the tables in Grade 3. The focus is on the language, which allows a mental image for grouping.
Example:
• One two is two
• Two twos are four
• Three twos are six
• Four twos are eight</td>
<td></td>
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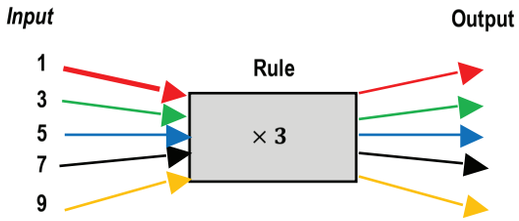
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.14 Repeated addition leading to multiplication	• Multiply numbers 1 to 10 by 2, 3, 4, 5, 10 to a total of 99 • Use appropriate symbols (x, =, □)	• Multiply 2, 4, 5, 10, 3 to a total of 50 • Use appropriate symbols (x, =, □)	• Five twos are ten • Six two are twelve • Seven twos are fourteen • Eight twos are sixteen • Nine twos are eighteen • Ten twos are twenty. Saying it in this manner supports the knowledge developed in repeated addition. The chanting should be supported by pointing to counting sequences or a number line. Learners can also use flow diagrams to record multiplication facts e.g. Example 	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.15 Division	• Divide numbers to 99 by 1, 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, □)	• Divide numbers to 50 by 2, 4, 5, 10, 4 • Use appropriate symbols (÷, =, □)	During the second term learners continue to practise and consolidate using the division sign. They should understand that a division number sentence could describe a situation involving grouping or sharing. **What is different from Term 1?** During this term learners should be able to write and describe corresponding division sentences: Learners should be able to record the following: 30 ÷ 6 = □ and that 30 ÷ 5 = □ Learners also need to develop written strategies for their division calculations. Example**:** **Repeated subtraction** In order to calculate 12 ÷ 4 = □. Learners need to use their pictures showing grouping or sharing. 	
	• Divide numbers to 99 by 1, 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, □)	• Divide numbers to 50 by 2, 4, 5, 10, 4 • Use appropriate symbols (÷, =, □)	Share one group of 4 then the second group of 4 and then the third group of 4 12- 4 → 8 – 4 → 4- 4 = 0 As one group of 4 is put on one side learners can subtract the first 4 and then count how many they have left. They keep on doing this until they have subtracted everything. The emphasis in grade 3 should be on grouping rather than sharing. Doing repeated subtraction with this number range is appropriate. Learners will have to be given division number sentences to complete that allow for doing repeated subtraction. Doing repeated subtraction for 96 ÷ 3 is not an appropriate or efficient strategy because the number range is too high. At first it might be difficult for learners to 'see' which number sentences (which number ranges) are appropriate for doing repeated subtraction.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number concept: Range 999** • Order a given set of selected numbers. • Compare numbers to 999 and say which is 1,2,3,4,5 and 10 more or fewer **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 • Multiplication and division facts for the: • two times table up to 2 x 10 • ten times table up to 10 x 10 **Calculation strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division	**Number concept: Range 500** • Order a given set of selected numbers. Range 500 • Compare numbers to 500 and say which is 1,2,3,4,5 and 10 more or fewer **Rapidly recall:** • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use the following calculation strategies • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction	**Number concept** Examples of questions that can be asked: **Number names and symbols** Hold up a card or write down a number name. Choose a learner to write the matching numeral. **More or fewer** What is: • 1 fewer than 500 • 1 more than 499 • 2 more than 502 • 2 fewer than 405 • 3 more than 477 • 3 fewer than 251 • 4 fewer than 185 • 10 more than 490 • 10 fewer 660 What is the 5th letter of the alphabet? What is the 9th month of the year? **Ordering and comparing** Which is more: 621 or 671? Give me a number between 154 and 159. Addition and subtraction facts: See notes for Term 1. Add or subtract multiples of 10 from 100 Say how many steps must be taken on a number line to get from 30 to 100 or from 100 to 50. Find pairs of cards to make 100 Put numbers in the boxes to make 100. □ + 70 = 100 20 + □ = 100 100 – □ = 90 100 – 40 = □ **Calculation strategies:** See notes for Term 1	

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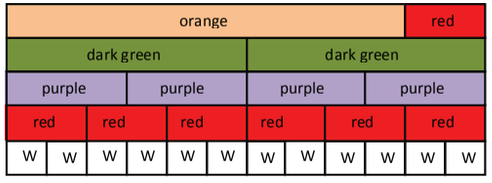
1.17 Fractions	• Use and name fractions in familiar contexts including halves, quarters eighths, thirds, sixths, fifths, • Recognise fractions in diagrammatic form • Begin to recognise that 2 halves or 3 thirds make one whole and that 1 half and 2 quarters are equivalent Write fractions as 1 half, 2 thirds,		During this term learners continue to: • learn the names of fraction parts; • use the names in different contexts; • identify the fraction part; • begin to understand the relative size of fractions; • find fractions of objects; and • learn about equivalent fractions. During this term learners compare fractions. • Using fraction strips or Cuisenaire rods. Example**:** These models are ideal for teaching learners to name fractions and to compare them. For example:  Show a fraction wall indicating 1 whole, halves, thirds, quarters, fifths, sixths, eighths, tenths. It is best that learners work with concrete apparatus and not compare fractions using the fractions wall in pictures. Learners need to manipulate the objects by measuring them against one another. The following questions could be asked: • How many halves equal a whole? • How many quarters equal a whole? • How many quarters are there in one half? Let learners place the strips alongside each other to find the answers. • How many thirds equal a whole? • How many sixths equal a third? • How many sixths equal a half? • Which is bigger, 1 thirds or 1 half? • Which is bigger 2 thirds or 3 quarters?	

GRADE 3 TERM 2 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawings lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Range of patterns**: Simple patterns in which shapes, or groups of shapes are repeated in exactly the same way Patterns in which the number or size of shapes in each stage changes in a predictable way i.e. regular increasing patterns **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects	Continue to give learners a similar range of patterns to Term 1, but include all new shapes and objects into the patterns as they are dealt with in Shape and Space. See patterns notes Term 1 and Space and Shape notes Term 2. Allow learners to copy first, then extend and finally describe the patterns. By now they should be able to describe patterns without the aid of guiding questions. Continue to focus on developing the language they need to describe the patterns	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 Number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 1 000. **Create own patterns** Create own number patterns.	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 150. Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 500 • 10s from any multiple of 10 between 0 and 500 • 5s from any multiple of 5 between 0 and 500 • 2s from any multiple of 2 between 0 and 500 • 3s from any multiple of 3 between 0 & 500 • 4s from any multiple of 4 between 0 and 500 • 50s,100s to at least 1000	See notes for Term 1, Extend the number range and counting sequences as follows • 1s from any number between 0 and 500 • 10s from any multiple of 10 between 0 and 500 • 5s from any multiple of 5 between 0 and 500 • 2s from any multiple of 2 between 0 and 500 • 100s from any multiple of 100 to at least 1 000 • 50s from any multiple of 50 to at least 1 000 • 3s from any multiple of 3 between 0 & 500 • 4s from any multiple of 4 between 0 and 500 Use objects, pictures, tables and flow diagram to support learners' transition from skip counting and sequences to multiplication by 10, 5, 2, 4. Help learners to use patterns they know as the basis for practising and learning other patterns e.g. • sequences of 2s to lay the basis for sequences of 4s; and • sequences of 5s to lay the basis for sequences of 50s.	3 lessons

GRADE 3 TERM 2 3. SPACE AND SHAPE (GEOMTERY)				
TOPICS	**CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS: FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.1 **Position, orientation and views**	**Position and views** • Match different views of the same everyday object • Name an everyday object when shown an unusual view of it • Read, interpret and draw informal maps, or top views of a collection of objects • Find objects on maps **Position and directions** • Follow directions to move around the classroom, and school • Give directions to move around the classroom and school • Follow directions from one place to another on an informal map	**Position and views** • Match different views of the same everyday object • Name an everyday object when shown an unusual view of it **Position and directions** • Follow directions to move around the classroom, and school Give directions to move around the classroom and school	**What is different from Grade 2?** • No specific focus on developing the language of position, as this was done in Grades 1 and 2 • Follow more elaborate directions i.e. to move around the school, rather than just the classroom • Give directions to places in the classroom and school • Maps and top views of collections of objects. This is the focus of Term 3 **Recommended focus for Term 2** In Term 2, it is recommended that Grade 2 work be revised, and that you add • identification of objects from a picture showing an unusual view of it; and • following directions to places outside the classroom. Begin by assessing what learners know and remember about position and orientation. **Position and directions** • Following directions This should be done through practical activities in which learners move themselves according to instructions. In Grade 3 learners can be given either verbal or written directions - to move around the classroom e.g. “come to the front of the class”; “stand next to your chair”; “jump over the dirt bin”; and - to move around the classroom or school i.e. or longer directions, “Go through the doorway, turn left, continue down the passage, cross the field, where are you now?”	2 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.1 **Position, orientation and views**	**Position and views** • Match different views of the same everyday object • Name an everyday object when shown an unusual view of it • Read, interpret and draw informal maps, or top views of a collection of objects • Find objects on maps **Position and directions** • Follow directions to move around the classroom, and school • Give directions to move around the classroom and school • Follow directions from one place to another on an informal map	**Position and views** • Match different views of the same everyday object • Name an everyday object when shown an unusual view of it **Position and directions** • Follow directions to move around the classroom, and school Give directions to move around the classroom and school	• Giving directions. Some learners will find it easy to give directions by modelling what they say on the directions that you have given. For other learners it helps to provide guidelines for the key elements of directions. - Say whether you continue or move in the direction you are facing or turn around. - Say whether you go straight, turn left or turn right. - Give landmarks where you need to turn e.g. when you get to the secretary's office turn left; and - Say how far to go. There are different ways to say how far to go, e.g. o walk 30 paces or walk 10 metres; o walk past 3 classroom, or walk until you have passed Mr Radebe's classroom; or o walk for about 1 minute. **Position and views** In Grade 3 learners should be given exercises in which they can match different views (views from the top, views from the side, views from the front) of different everyday objects. This will eventually help learners to interpret drawings of geometric objects done from different perspectives. Learners should also be given exercises in which they identify an object from a picture drawn, or photograph taken from an usual view,e.g. a top view of a cow or a front view of a toothbrush.	2 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focussed activities** • Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, clay, toothpicks, straws, other 3-D geometric objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focussed activities** • Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, clay, toothpicks, straws, other 3-D geometric objects **Range of shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides	**What is different from Grade 2?** • Learners no longer look at whether objects can roll or slide; they look at whether surfaces are flat or curved. • Where objects have flat surfaces learners look at whether these surfaces are squares, rectangles, triangles or circles. • Cones and pyramids are introduced (these can be a focus of Terms 3 and 4). **Recommended focus of Term 2** Learners work with the same objects as they did in Grade 2 i.e. • balls and objects shaped like balls; • cylinders and objects shaped like cylinders; and • various boxes and other objects shaped like rectangular prisms or cubes. Learners can focus on the new objects (pyramids and cones) in Terms 3 and 4. **Recognising and naming balls (spheres) and boxes (prisms) and cylinders** • Learners continue to name, sort and group objects. Learners should be given a range of objects to work with: • shaped like spheres, e.g. balls or different size, marbles, oranges etc.; • shaped like prisms, e.g. blocks, bricks, boxes of different sizes e.g. matchboxes, cereal boxes, tea boxes, toothpaste boxes; and • shaped like cylinders, including both long and narrow cylinders e.g. pieces of piping with a cylindrical shape, cardboard inner sleeves of roller towels or toilet rolls and short, wide cylinders, e.g. shoe polish tins, snuff tins etc. Learners can find objects shaped like a ball (sphere), or shaped like a box (prisms) or shaped like a cylinder when given a collection of objects. Learners can find or show objects shaped like boxes (prisms) in the classroom. e.g. “this can of tomatoes is shaped like a cylinder”. During independent time learners can continue to make balls and cylinders and box shapes (prisms) from clay or play dough. **Focussing on features of 3-D objects: flat or curved surfaces, the shapes of flat surfaces** • Building single 3-D objects Learners use cut-out cardboard squares or rectangles to make a box. This focuses learners on the shape of the flat surfaces of the box. Learners then look at the flat surfaces on prisms and cylinders and describe them according to whether they are circular, square or rectangular.	3 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
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TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of Shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Draw shapes** • circles • triangles • squares • rectangles	No specific focus on 2-D shapes is recommended for Term 2. However, learners can consolidate what they have learned about recognising and naming 2-D shapes in Term 2, through doing written exercises during independent work time.		
3.4 **Symmetry**	**Symmetry** • Recognise and draw line of symmetry in 2-D geometrical and non=geometrical shapes • Determine line of symmetry through paper folding and reflection	**Symmetry** • Determine line of symmetry through paper folding and reflection	**What is new in Grade 3?** • Finding the line of symmetry through paper folding and reflection. Paper-folding activities that develop an understanding of symmetry include: • activities in which wet paint is placed on the page before folding it; and • activities in which paper is cut or torn on the fold line. These activities can be done both in the Mathematics lesson and the Life Skills lessons. Ask learners to predict what shape they will get once they unfold the cut paper. This helps to train their ability to visualise symmetrical shapes.	2 lessons

GRADE 3 TERM 2 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including - converting between days and weeks - converting between weeks and months Use clocks to calculate length of time in hours or half hours including	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • Use clocks to calculate length of time in hours or half hours	Learners continue to practise talking about the duration of time and the sequencing of time. During whole class teaching time and focus group time, learners continue to talk about the day of the week, month of the year and the date of the current day, as well as days before and days to come. Learners continue to place the following on a calendar as the events arise • birthdays • religious festivals • historical events • school events • public holidays Continue to ask learners to tell the time in hours, half hours and quarter hours using analogue clocks and in hours and minutes on a digital clock at regular intervals on an almost daily basis. See notes for Term 1. **Digital time** Spend about 2 lessons revising the reading of time on digital clocks. See notes for Term 1. During independent work time learners continue do exercises related to telling the time • in hours, half hours and quarter hours on analogue clocks; and • in hours and minutes on a digital clock. Learners can do calculations with weeks or days if provided with a calendar or section of a calendar e.g. finding dates and calculating the time differences between them.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, and wider. **Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. • Estimate and measure lengths in centimetres using a ruler. No conversions between metres and centimetres required	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, wider **Introducing formal measuring** • Estimate, measure, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length.	**What is different from Grade 2?** In Grade 2 learners • focused on informal measurement with non-standard units of length; and • were introduced to measuring in metres. In Term 2 of Grade 3 learners can continue to do informal measurement using non-standard units, and measuring in metres. In Term 3 they can begin to measure in centimetres using a ruler. **Estimating, measuring, comparing and recording lengths, heights and widths using non-standard units of length** Learners can learn all the principles and practices of measurement using non-standard units. Measuring with non-standard units should not be considered to be inferior to measuring with standard units. Measuring length with non-standard units involves counting how many of the chosen unit are the same length as the object being measured. For example, the length of the desk is 8 hand spans. Learners should measure a variety of objects using a range of objects as informal units. There are three ways to use informal units: • Pack out in a row across the object being measured a number of objects of the same length, such as matchboxes, identically shaped bottle tops or counters, new pencils etc. For example, to measure the width of a desk, new pencils can be packed out end to end across the desk. Here it is important that - all the objects are the same length. You cannot state that your book is as wide as 12 bottle tops if the bottle tops are of different sizes e.g. 2 litre milk bottle tops, plastic cool drink bottle tops, metal bottle tops etc; and - no gaps are left between the objects: they need to be packed out so that they touch each other.	2 lessons

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4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, and wider. **Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. • Estimate and measure lengths in centimetres using a ruler. No conversions between metres and centimetres required	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, wider **Introducing formal measuring** • Estimate, measure, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length.	Learners can find things that are exactly 1 metre long. It is useful to have everyday referents as comparisons e.g. the width of a door and height of a window are often 1 m. This helps learners to use these lengths or widths that they can see to estimate the lengths of other objects they measure. Learners should estimate before every measurement. Learners can find things that are either longer to shorter than 1 metre. Learners can measure a variety of lengths in metres. Different lengths should be compared. **Recording measurements** Although measuring is a practical skill, learners should record their measurements (with both informal units and metres) at all times. **Measuring length as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the contexts of • informal measurement of length; and • measuring lengths in metres. Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a measuring balance e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour or in grams e.g. 500 grams of salt • Measure their own mass in kilograms using a bathroom scale • No conversions between grams and kilograms required	**Informal measuring** • Estimate, measure, compare, order and record mass using a measuring balance and non-standard measures e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms, e.g. 2 kilograms of rice and 1 kilogram of flour or in grams, e.g. 500 grams of salt • Where bathroom scales are available, learners can measure their own mass in kilograms using a bathroom scale. The expectation is that learners only read to the nearest numbered gradation line. They describe their mass as almost/nearly/close to/a bit more than/more or less/or exactly the number (of kilograms) they read off the mass meter. • Where balancing scales with mass pieces calibrated in grams are available, learners can measure the mass of different objects. No conversions between grams and kilograms required	**What is different from Grade 2?** In Grade 2 learners focussed on informal measurement with non-standard units of mass. Learners used a measuring balance to do this. They also began to work with kilograms. They ordered everyday products which have their mass stated in kilograms. They read their mass off bathroom scales. **Informal measurement of mass using a measuring balance and non-standard units** Learners can learn all the principles and practises of measurement using non-standard units. Measuring with non-standard units should not be considered to be inferior to measuring with standard units. Learners should consolidate their measuring skills by doing some informal measuring of mass with non-standard units. Commercial mass balances can be used. If you don't have a commercial balance, you can make one by attaching a pair of one of the following to a coat hanger: a yoghurt cup, the cut-off base of a 2 litre bottle, the cut-off bottom of a litre milk or cold drink box (identical containers are attached to either side of the coat hanger). Measuring with mass with non-standard units involves counting how many of the chosen unit are the same mass as the object being measured. For example, a ruler has the same mass as 9 blocks. Learners should measure a variety of objects using a range of objects as informal units. Learners should be taught always to state the unit when giving the mass, e.g. the book is has the same mass as 34 marbles. Once learners have measured with any unit a couple of times, they should estimate about how many of that unit will have the same mass as the object being measured. Estimation before measuring is important, but can only be done once learners have done some measuring with that unit. Learners need to be taught that in order to compare masses of different objects the same unit needs to be used. For example if a ruler has a mass of 20 blocks and a pair of scissors has a mass of 20 marbles, you cannot say whether they have the same mass or not, or which one is heavier.	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a measuring balance e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour or in grams e.g. 500 grams of salt • Measure their own mass in kilograms using a bathroom scale • No conversions between grams and kilograms required	**Informal measuring** • Estimate, measure, compare, order and record mass using a measuring balance and non-standard measures e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms, e.g. 2 kilograms of rice and 1 kilogram of flour or in grams, e.g. 500 grams of salt • Where bathroom scales are available, learners can measure their own mass in kilograms using a bathroom scale. The expectation is that learners only read to the nearest numbered gradation line. They describe their mass as almost/nearly/close to/a bit more than/more or less/or exactly the number (of kilograms) they read off the mass meter. • Where balancing scales with mass pieces calibrated in grams are available, learners can measure the mass of different objects. No conversions between grams and kilograms required	**Recording measurements** Although measuring is a practical skill, learners should record their measurements at all times. **Working with kilograms** o ordering products according to mass Learners can work with groceries that are sold in kilograms, where the number of kilograms is stated on the packaging. Learners can compare the mass of packages of different substances (such as rice, sugar, mealie meal, flour or washing powder) that are sold in 1 kg amounts. They can place these on a measuring balance to see that although the size of the packages may differ, they have more or less the same mass. Learners can then be given a range of packages of different items to sequence from heaviest to lightest, where they sequence according to the mass stated on the package e.g. 2 kg rice, 1 kg sugar, 5 kg mealie meal, 10 kg samp. Learners will need to know the abbreviation “kg” for kilograms. **Working with grams** o ordering products according to mass Learners can work with groceries that are sold in grams, where the number of grams is stated on the packaging. Learners can compare the mass of packages of different substances (such as cereals, tea, coffee, salt, beans, small packets of sugar, small packets of milk powder, packets of jelly, small packets of rice etc) that are sold in grams. Learners can then be given a range of packages of different items to sequence from heaviest to lightest, where they sequence according to the mass stated on the package e.g. 2 kg rice, 1 kg sugar, 5 kg mealie meal, 10 kg samp. It is important that learners are exposed to small, heavy packages like salt and large light packages like rice crispies or corn flakes. This allows them to understand that bigger items are not always heavier than smaller items, unless the same substance is being compared. You can only be certain that the bigger item has the greater mass if - the same substance is being compared; and - you check the masses on a scale (which is not required in the Foundation Phase). Learners will need to know the abbreviation “g” for grams.	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 2	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 Mass	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a measuring balance e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour or in grams e.g. 500 grams of salt • Measure their own mass in kilograms using a bathroom scale • No conversions between grams and kilograms required	**Informal measuring** • Estimate, measure, compare, order and record mass using a measuring balance and non-standard measures e.g. blocks, bricks etc • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms, e.g. 2 kilograms of rice and 1 kilogram of flour or in grams, e.g. 500 grams of salt • Where bathroom scales are available, learners can measure their own mass in kilograms using a bathroom scale. The expectation is that learners only read to the nearest numbered gradation line. They describe their mass as almost/nearly/close to/a bit more than/more or less/or exactly the number (of kilograms) they read off the mass meter. • Where balancing scales with mass pieces calibrated in grams are available, learners can measure the mass of different objects. No conversions between grams and kilograms required	Learners are NOT required to read kitchen scales in grams. This is done in the Intermediate Phase. **Reading bathroom scales in kilograms** Where bathroom scales are available learners can use these to read their own mass. There are two kinds of mass meters: digital and analogue. Digital scales are easier to read because the mass is written in numbers. If you have a digital bathroom scale, check that it states the mass only in whole kilograms. You can re-set some scales to show only whole kilograms. If you cannot set it to show only whole kilograms, teach learners to ignore the parts of kilograms for now. Most analogue bathroom scales have every 10 kg numbered, with a longer line showing the position of 5 kg. The 1 kg lines are usually not numbered. This is similar to the way lines and numbers work on a ruler. Let learners start by counting to see that there are 10 spaces before the 10 kg mark, so that each space represents 1 kilogram, and the longer line represents 5 kg. Learners can read measurement off real bathroom scales as well as pictures of bathroom scales. It is easier to read the mass off a picture of a bathroom scale than off a real scale. **Recording measurements** Although measuring is a practical skill,learners should record their measurements at all times. **Measuring mass as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of mass; and • measuring mass in kilograms. Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term. Learners are NOT expected • to know that 1 000 g = 1 kg; or • to do conversions between grams and kilograms. Calculations in grams can be chosen so that they do not go over 1 000 g.	3 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of 4 cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres No conversions between millilitres and litres required	During independent work time learners should continue to Estimate and measure, compare, order and record the capacity of containers or the volume in containers using non-standard measures. Following recipes, including baking, is a useful context in which learners can practise measuring. Choose recipes where ingredients are given in cups, teaspoons or informal units. • Compare and order the capacity of a range of bottles and grocery items where the volume is stated on the packaging. • Use either 1 litre bottles or 1 litre jugs to estimate and measure, compare, order and record the capacity of containers or the volume in containers in litres. See the notes for Term 3. Learners should be given written tasks to consolidate the following, including reading pictures of • products with their capacity written on them in order to sequence in order; and • pictures of jugs where the volume is near to a numbered 1 litre or 2 litre gradation line. The expectation is that learners only read to the nearest numbered gradation line. They describe their volume as almost/nearly/close to/a bit more than/more or less/ exactly the number (of litres) they read off the jug. **Measuring capacity as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of capacity/volume; • e.g. Gogo uses 2 cups of milk to make a pudding. If she doubles the recipe, how much milk will she need? • litres Take account of the number range appropriate for the term, as well as the range of problems types.	

GRADE 3 TERM 2 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 2**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
5.4 **Collect and organise data**	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher • Organise data supplied by teacher or book Organise data in o lists o tallies o tables			
5.5 **Represent data**	**Represent data** Represent data in • pictograph • bar graphs			
5.6 **Analyse and interpret data**	**Analyse and Interpret data** Answer questions about data presented in • pictographs • bar graphs	Analyse data from representations provided.	If learners have worked through the whole data cycle in Term 1, then analysing different forms of data representations should be more meaningful. It is recommended that in Term 2 you give learners data to analyse in at least • 1 pictograph • table Learners should answer questions that you ask about the graph and table; see Term 1 for suitable types of questions	1 lesson

GRADE 3 TERM 3 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS** **REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS** **SUGGESTED FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION**
1.1 **Count objects**	**Counting concrete objects** Estimate and counts to at least 1 000 everyday objects reliably. The strategy of grouping is encouraged.	Group to at least 700 everyday objects to estimate and count reliably. Give a reasonable estimate of a number of objects that can be checked by counting.	**What is different from Term 2?** The number range has increased and learners should be given the opportunity to touch, move and count out 700 objects grouped differently. See the notes for Term 1 and 2	
1.2 **Count forwards and backwards**	Count forwards and backwards in: • 1s from any number between 0 and 1000 • 10s from any multiple between 0 and 1000 • 5s from any multiple of 5 between 0 and 1000 • 2s from any multiple of 2 between 0 and 1000 • 3s from any multiple of 3 between 0 and 1000 • 4s from any multiple of 4 between 0 and 1000 • 20s, 25s, 50s,100s to at least 1 000	Count forwards and backwards in: • 1s from any number between 0 and 700 • 10s from any multiple between 0 and 700 • 5s from any multiple of 5 between 0 and 700 • 2s from any multiple of 2 between 0 and 700 • 3s from any multiple of 3 between 0 and 700 • 4s from any multiple of 4 between 0 and 700 • 20s, 25s, 50s,100s to at least 1000	**What is different from Term 2** The number range increases to 700. **See Term 1 and 2 notes**	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.3 **Number symbols and number names**	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 0 - 1 000 • Write number symbols 0 - 1 000 • Recognise, identify and read number names 0 - 1 000 • Write number names 0 - 1000	Recognise, identify and read numbers • Recognise, identify and read number symbols 0 - 1 000 • Write number symbols 0 - 1 000 • Recognise, identify and reads number names 0 - 500 • Write number names 0 - 500	**What is different from Term 2** Learners identify, read and write: • number symbols to 1 000; and • number names to 500. See Term 2 notes–	
1.4 **Describe, compare and order numbers**	**Order and compare numbers to 999** • Order whole numbers up to 999 from smallest to greatest, and greatest to smallest • Compare whole numbers up to 999 using smaller than, greater than, more than, fewer than and is equal to. **Use ordinal numbers to show order, place or position** • Use, read and write ordinal numbers, including abbreviated form up to 31.	**Order and compare numbers to 500** • Order whole numbers up to 500 from smallest to greatest, and greatest to smallest • Compare whole numbers up to 500 using smaller than, greater than, more than, fewer than and is equal to. **Use ordinal numbers to show order, place or position** • Use, read and write ordinal numbers, including abbreviated form up to 31.	**What is different from Term 2** Learners order and compare numbers to 500 and continue to use the abbreviated form for writing ordinal numbers.. **See term 2 notes**	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.5 **Place value**	**Recognise the place value of three-digit numbers to 999** • Know what each digit represents • Decompose three-digit numbers up to 999 into multiples of 100, multiple of tens and ones/unit • Identify and state the value of each digit	**Recognise the place value of numbers to 750** • Know what each digit represents • Decompose three-digit numbers up to 750 into multiple of hundreds, tens and ones/units • Identify and state the value of each digit	**What is different in Term 3** The same type of questions and instructions are given in term 3. The number range has increased but learners are still working with three- digit numbers. The focus during this term should continue to be on: • the value of the number; • decomposing numbers into hundreds, tens and ones using place value cards and base ten blocks; and • writing the expanded form of numbers. See notes for Term 2.	
NUMBER PROBLEMS				
1.6 **Problem-solving techniques**	Use the following techniques when solving problem and explain solutions to problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when solving problem: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Learners are expected to solve the word problems using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines • Rounding off See notes for Term 2.	
1.7 **Addition and subtraction**	Solve word problems in context and explain own solution to problems involving addition, subtraction leading answers up to 999.	Solve word problems in context and explain own solution to problems involving addition, subtraction leading answers up to 800	Examples of types of problems that can be done this term • Addition and subtraction problems • Pamela has collected 413 bottle tops. If Ken give her 29 bottle tops, he will have the same number as Pamela. - How many bottle tops will they both have? - How many bottle tops did Ken have to begin with? • The grade 2s have a collection of 500 marbles. The Grade 3s have 170 fewer marbles than the Grade 2s. How many marbles do the Grade 3s have? • Mark and Martha collect 250 stickers. Mark found 160. How many stickers did Martha find?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.8 **Repeated addition leading to multiplication**	Solve word problems in context and explain own solution to problems using multiplication with answers up to 99.	Solve number problems in context and explain own solution to problems involving multiplication with answers up to 75.	**Examples of types of problems that can be done this term** **Problem type 9: Array** • A vegetable garden has 12 rows of plants. Each row has 7 plants. How many plants are there in the garden? • A vegetable garden has 12 rows of plants. Every row has the same number of plants. If there are a total of 48 plants, how many plants are in each row? • A vegetable garden has 48 plants that are planted in rows. There are 7 plants in each row. How many rows are there? **Comparison/Ratio** Samuel has 6 sweets. Samuel has three times as many as Moeketsi. How many sweets does Moeketsi have? Marlene has 18 sweets. This is three times as many as Samuel has. How many sweets does Samuel have? Rate Peaches are sold at R8 per kilogram. If I buy 4 kilogram, how much will it cost? Peaches cost R8 per kilogram. If I have R32, how many kilograms can I buy? I buy 4 kilograms of peaches and it costs me R32. What is the price for one kilogram? **Using rounding off** A taxi takes 15 passengers. Can 73 people fit into 5 taxis?	
1.9 **Grouping and sharing leading to division**	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 200 with answers that may include remainders.	Solve and explain solutions to practical problems that involve equal sharing and grouping up to 150 with answers that may include remainders.	**Examples of kinds of problems that can be done this term** • Mrs Tshongwe packs 66 muffins into packets of 6. How many packets does she have? • Remi gets R72 from selling R9,00 raffle tickets. How many tickets did he sell? • The community helps the 9 families who lost possessions in a fire. There are 75 blankets for the families to share equally. a) How many does each family receive? b) How many are left? **Rate** • Peaches cost R8 per kilogram. If I have R32, how many kilograms can I buy? • I buy 4 kilograms of peaches and it costs me R32. What is the price for one kilogram? Rate problems are new problem types in Term 3. Learners may need more time when solving these problems. See notes for Term 2.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.10 **Sharing leading to fractions**	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. etc.	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions e.g. etc.	**Examples of problems that can be done this term** Sharing, leading to fractions • Share 7 chocolate bars among 3 friends so that they all get the same amount of chocolate bar and there is nothing left over. • Share 13 bars of chocolates equally among 4 children. How much does each get? Fraction of a collection • Grandmother gives Kiki R12. Kiki wants to save a third of the money. How much money must she save? • There are 12 biscuits on a plate. Nomonde takes one quarter of the biscuits. How much is left? **Writing** Learners are not required to write the fraction symbol. Learners learn how to label fraction parts as 1 fifth, 3 quarters or 3 sixths. This helps them firstly to understand that the fraction names describe how many equal parts the whole has been divided into, for example, halves, thirds, quarters, etc and secondly how many of those parts are being considered, e.g. 2 thirds. **Representing fractions word problems** Learners must draw their answers to prove that they understand the problem. Expect that some learners may draw correctly but misname the fraction part. Learners must name the parts that have been shared by writing it as 2 thirds.	
1.11 **Money**	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rand or cents • Convert between rand and cents	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rand or cents. • Convert between rand and cents	**Examples of problems that can be done this term** Value of money and making up totals e.g. Write 325c as rand and cents. In how many different ways can you make up R400 using only bank notes? How do you know whether you have all the solutions? Mr Lebethe is a builder and receives a bonus for completing a job on time. He decides to share the bonus between the carpenter and himself. Each person receives R400. What is the value of the bonus? Nina and her three friends shared R20,60. How much did each of them get?	

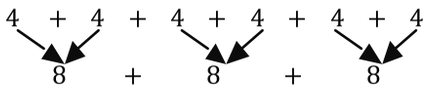
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
CONTEXT-FREE CALCULATIONS				
1.12 **Techniques (methods or strategies)**	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens	Learners are expected to calculate word problems using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines • Rounding off in tens See notes for Term 1.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.13 **Addition or subtraction**	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30	• Add up to 800 • Subtract from 800 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 30	During this term learners continue to calculate with three digit numbers till 800. In order to calculate with three-digit numbers learners have to be able to: • confidently read and write number symbols to 800; • confidently order and compare numbers to at least 800; • confidently count in groups to 800; and • count confidently in intervals of 2, 3, 4, 5, 10, 50 and 100 to 800. **Possible methods to show addition and subtraction calculations.** • Adding by breaking down both number Adding three-digit with two-digit 524 + 82 = □ = (500 + 20 + 4) + (80 + 2) = 500 + (20 + 80+ (4 + 2) = (500 + 100) + 6 = 600 + 6 = 606 Adding three-digits and three-digits 323 + 436 = □ 323 + 436 = (300 + 20 + 3) + (400 + 30 + 6) = (300 + 400) + (20 + 30) + (3 + 6) = 700 + 50 + 9 = 759 • Adding (by breaking down the number to be added) Learners will break down the number in ways that are manageable for them. This means that they will do it in different ways. 524 + 82 = □ 524 + (40 + 40 + 2) 524 + 40 564 + 40 604 + 2 = 606 Counting on 40 from 524 could be done by counting in 10s. Adding three-digit and three-digits 323 + 436 = □ = 323 + (400 + 20 + 6) = (323 + 400) + 20 + 6 = (723 + 20) + 6 = 743 + 6 = 749	

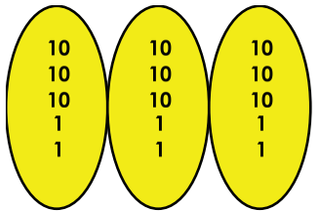
TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.13 **Addition or subtraction**	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30	• Add up to 800 • Subtract from 800 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 30	• Subtraction by breaking up both numbers three-digit subtract two-digit 889 – 137 = □ 889 – 137 = (800 + 80 + 9) – (100 + 30 + 7) = (800 – 100) + (80 – 30) + (9 – 7) = 700 + 50 + 2 = 752 • Subtracting by breaking up one number 889 – 137 = □ 889 – (100 + 30 + 7) 889 – 100 789 – 30 759 – 7 = 752 • Using halving to break down a number 525 + 16 = 525 + 8 + 8 = (525 + 8) + 8 = 533 + 8 = 541 • Count on and count back 805 = 798 = □ Counting up in ones from 798 is an appropriate strategy because the numbers are close to each other. • Identify near doubles 245 + 246 One can say the above sum as double 245 + 1 pr double 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	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.13 **Addition or subtraction**	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30	• Add up to 800 • Subtract from 800 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 30	• Change a number to a multiple of ten and then subtract or add ones Count up or down to the nearest 10 588 + 9 588 + 10 = 598 598 – 1 = 597 588 + 19 588 + 20 = 608 608 – 1 = 607 **Developing and practising addition and subtraction skills** Learners need practice to practice certain kinds of addition and subtraction skills Learners should have opportunities to do the following type of calculations with numbers up to 800: Add or subtract a pair of multiples of 10, crossing 100 • 40 + 70 • 70 + 80 • 120 – 30 • 150 – 60 Add or subtract 10 to or from any two or three-digit number including crossing the 100s Example: • 65 + 10 • 124 + 10 • 326 – 10 • 358 – 10 Add or subtract a single digit to or from a three-digit number without crossing the tens Example: • 634 + 5 • 775 + □ = 779 • 768 – 4 Add and subtract a single digit to and from a multiple of 100	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.13 **Addition or subtraction**	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30	• Add up to 800 • Subtract from 800 • Use appropriate symbols (+, –, =, □) • Practice number bonds to 30	Example: • 600 + 4 • 500 + 3 • 700 – 6 • 800 – 5 Begin to add and subtract a pair of multiples of 100 • 100 + 100 • 100 + 200 • 200 + 200 • 300 + 400 Learners should be given opportunities to practice patterns in addition and subtraction If I know that 1 + 1 = 2 Then What is: • 10 + 10 • 100 + 100 Begin to add or subtract a pair of multiples from any three-digit number Example: • 675 + 100 • 762 – 100 **Checking results of calculations** Judging reasonableness of solutions Learners should be trained to judge the reasonableness of solutions. One way to do this is to estimate their answers before calculating. When adding two numbers that are close to each other, e.g. 145 and 146, learners can use doubling as a way of estimating their answers. **Checking solutions** Learners should know that they can • check an addition calculation by subtracting. **Example:** If 436 + 118 = 454; then 454 – 118 = 436 • check a subtraction calculation by adding. **Example:** 684 – 248 = 436, then 436 + 248 = 684 Using the inverse operation to check solutions is one reason for teaching addition and subtraction together.	

<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
SUGGESTED FOCUS FOR TERM 3</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION</th></tr>
<tr>
<td>1.14
Repeated addition leading to multiplication</td>
<td>• Multiply numbers 2, 3, 4, 5, 10 to a total of 99
• Use appropriate symbols(x, =, □)</td>
<td>• Multiply 2, 3, 4, 5, 10 to a total of 99
• Use appropriate symbols(x, =, □)</td>
<td>During this term learners continue to:
• use and understand the language of multiplication;
• represent multiplication as arrays;
• use the appropriate symbols to interpret number sentences;
• understand that repeated addition can be represented using the multiplication symbol;
• practise and understand that multiplication can be done in any order (the commutative law or property);
• use the number line to show multiplication calculations and be able to explain the representation (how the jumps show repeated addition); and
• begin to understand the distributive property of multiplication.
Learners continue to use various images to understand multiplication. See notes for Term 2.
Useful multiplication strategies
• Using doubling
Example:
Fill in the times five row. What patterns do you see?
<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>× 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>× 10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Double the numbers in the times five row to get the numbers in the times 10 row. What patterns do you see?
Fill in the times two row.
<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>× 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>× 4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Double the numbers in the times two row to get the numbers in the times four row. What patterns do you see?
• Using halving
Three groups of 8 is 24
six groups of 4 is 24
 
Therefore:
6 groups of 4 is the same as 3 groups of 8.</td>
<td></td>
</tr>
</table>

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.15 **Division**	• Divide numbers to 99 by 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, □)	• Divide numbers to 99 by 2, 4, 5, 10, 3, • Use appropriate symbols(÷, =, □)	**What is different from Term 2?** During this term the number range learners will work with has increased to 99. Working with an increased number range means that learners need to begin to work with appropriate calculation strategies and written recordings to arrive at their answers. **Recording strategies** During Terms 3 and 4 learners will be practising recording division using numbers and become less dependent on drawings. The recording strategies will not be accessible to learners if they do not understand the operation. In attempting to try a method that they do not understand will result in errors that learners themselves will not have the ability to detect. It is important that learners are able to identify links among multiplication and division. The purpose of the written recordings should also be to develop learners' understanding of number relationships. **Using multiplication** Learners should be able to use their knowledge of multiplication. They should begin to say: "What do I know about multiplication in order to find the answer?" 96 ÷ 3 = □ I know: 10 x 3 = 30 Then: 96 – 30 = 66 I know 10 x 3 = 30 Then: 66 – 30 = 36 I know 10 x 3 = 30 Then: 36 – 30 = 6 6 ÷ 3 = 2 In the above method, learners use multiplication and then repeatedly subtract from 96. They then add up how many times they have subtracted: 2 + 10 + 10 + 10 = 32 **Breaking up numbers** Learners could 'chunk' 96 into numbers that are associated with 3. Once again learners are using and applying their knowledge of multiplication in order to do a division calculation.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.15 **Division**	• Divide numbers to 99 by 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, □)	• Divide numbers to 99 by 2, 4, 5, 10, 3, • Use appropriate symbols(÷, =, □)	96 ÷ 3 = □ 96 = 30 + 30 + 30 + 6 10 groups of 3 / 10 groups of 3 / 10 groups of 3 / 2 groups of 3 What learners are doing in both examples is using repeated subtraction by 'chunking'. Just as multiplication 'builds' up numbers, division can be seen as 'breaking down' numbers'. In this way the understanding of division is reinforced as the inverse to multiplication. Learners may use repeated subtraction as chunking, and record in it ways that are similar to shown below.  96 ÷ 3 = □ 96 ÷ 3 = 32 **Working with remainders** Learners will have worked with remainders when doing grouping and sharing word problems. It is important that they are presented with division number sentences (context-free) that allow for remainders. Example: Explain to learners that: If they know that 28 ÷ 7 = 4. What would **29** ÷ 7 = 4 be? It is expected that learners record their answers in the following way: 29 ÷ 7 = 4 remainder 1. We want learners to be able to say which division facts they know; e.g. I know 25 ÷ 5 = 5 therefore 26 ÷ 5 = 5 remainder 1	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.16 **Mental mathematics**	**Number concept: Range 999** • Order a given set of selected numbers • Compare numbers to 999 and say which is more or fewer • Know which number is 1 more or 1 fewer • Know which number is 2 more or 2 fewer • Know which number is 3 more or 3 les • Know which number is 4 more 4 fewer • Know which number is 5 more or 5 fewer • Know which number is 10 more or 10 fewer **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 • Multiplication and division facts for the: • two times table up to 2 x 10 • ten times table up to 10 x 10 **Calculation strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division	**Number concept: Range 700** • Order a given set of selected numbers • Compare numbers to 200 and say which is more or fewer • Know which number is 1 more or 1 fewer • Know which number is 2 more or 2 fewer • Know which number is 3 more or 3 fewer • Know which number is 4 more or 4 fewer • Know which number is 5 more or 5 fewer • Know which number is 10 more or fewer **Rapidly recall:** • Recall addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 **Mental strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division	**Mental mathematics** See notes for Term 2, but use the higher number range specified in Term 3.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS SUGGESTED FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION
1.17 Common fractions	• Use and name fractions in familiar contexts including halves, quarters eighths, thirds, sixths, fifths • Recognise fractions in diagrammatic form • Begin to recognise that two halves or three thirds make one whole and that one half and two quarters are equivalent • Write fractions as 1 half, 2 thirds		During this term learners continue to: • learn the names of fraction parts; • use the names in different contexts; • identify the fraction part; • begin to understand the relative size of fractions; • find fractions of objects; • learn about equivalent fractions and • compare fractions. During this term learners can begin to **count fractional parts** and learn new fraction names. Counting fractional parts allow learners to see multiple parts and gives them the language for mixed and improper fractions. Fraction circles are ideal to use for this concept. Encourage learners to count as they would count a collection of objects, e.g. one-fourth, two-fourths, three-fourths, four-fourths, five fourths ... You can ask learners to make one whole using the fourths and then ask: "If we have five fourths, is that more than one whole, less than one whole, or the same as one whole?" Also take this opportunity to prepare the groundwork for mixed fractions by asking: "take seven thirds. How many wholes can you make? How many parts are left over?" We want learners to say that there are: "two wholes and one third left over." This type of activity encourages: • Understanding the number of halves in wholes • Different ways to talk about multiple numbers of halves	

GRADE 3 TERM 3 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create own patterns** Create own geometric patterns • with physical objects • by drawing lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects Patterns in which the number or size of shapes in each stage changes in a predictable way i.e. regularly increasing **Range of patterns**: Patterns in which the number of shapes in each stage changes in a predictable way i.e. regular increasing patterns **Create own patterns** Create own geometric patterns; • with physical objects • by drawing lines, shapes or objects	Continue to give learners a similar range of patterns as Term 1, but include all new shapes and objects in the patterns as they are dealt with in Shape and Space. See pattern notes Term 1 and Space and Shape notes Term 2. Allow learners to copy first, then extend and finally describe the patterns. By now they should be able to describe patterns without the aid of guiding questions. Continue to focus on developing the language they need to describe the patterns	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 3	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 **Number patterns**	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 200. **Create own patterns** Create own number patterns.	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 180. Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 750 • 10s from any multiple of 10 between 0 and 750 • 5s from any multiple of 5 between 0 and 750 • 2s from any multiple of 2 between 0 and 750 • 3s from any multiple of 3 between 0 & 750 • 4s from any multiple of 4 between 0 and 750 • 20s,25s, 50s,100s to at least 1000 **Create and describe own patterns** Create and describe own number patterns.	See notes for Term 1 Extend the sequences to include the following • 1s from any number between 0 and 750 • 10s from any multiple of 10 between 0 and 750 • 5s from any multiple of 5 between 0 and 750 • 2s from any multiple of 2 between 0 and 750 • 100s from any multiple of 100 to at least 1 000 • 50s from any multiple of 50 to at least 1 000 • 25s from any multiple of 25 to at least 1 000 • 20s from any multiple of 20 to at least 1 000 • 3s from any multiple of 3 between 0 & 750 • 4s from any multiple of 4 between 0 and 750 Use objects, pictures, tables and flow diagram to support learners' transition from skip counting and sequences to multiplication by 10, 5, 2, 4, 3. Help learners to use patterns they know as the basis for practising and learning other patterns e.g. • sequences of 2s to lay the basis for sequences of 20s	3 lessons

GRADE 3 TERM 3 3. SPACE AND SHAPE (GOMETRY)				
TOPICS	**CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS: FOCUS FOR TERM 13**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.1 **Position, orientation and views**	**Position and views** • Match different views of the same everyday object • Name an everyday object when shown an unusual view of it • Read, interpret and draw informal maps, or top views of a collection of objects. • Find objects on maps • Position and directions • Follow directions to move around the classroom, and school • Give directions to move around the classroom and school • Follow directions from one place to another on an informal map	**Position and views** • Read, interpret and draw informal maps or top views of a collection of objects • Find objects on maps **Position and directions** Follow directions from one place to another on an informal map	**What is new to Grade 3** • Maps, plans and top views of collections of objects - finding objects on maps - following directions on maps - drawing informal maps, plans or top views of collections of objects **Reading, interpreting maps** Maps are a stylised top view of an area. In Grade 3 learners only work with informal maps; this does not include standard road maps or standard geographical maps. It can help learners to start with plans or top views of smaller areas e.g. a tray of objects or a plan of the classroom. before looking at maps of bigger areas. In Term 2 deal with matched top views, side views and front views. An oblique view is a view partly from above and partly from the side. Young children see an oblique view of the world more often than a top view. It can help learners to start by matching oblique views of areas with maps of the same areas. When two views (the oblique and the top view) are provided, learners can match what they see in the one view with the other. First help learners start to understand maps and plans, then ask them to find objects on a plan or places on the map, e.g. “Find the clinic; what is next to it?” Once learners can easily find individual places on a map, start to give them directions from one place on the map to the next. **Drawing top views of collections of objects and informal maps** It is easier for learners to draw a top view of something they can look down on, than it is for them to draw a map from memory or their imagination. A starting place for drawing top views is to let learners look down on a collection of objects e.g. the objects on the teacher’s desk, or a tray of objects placed on the ground, and ask learners to draw it from above. Learners can then move on to drawing informal plans and maps of small areas e.g. the classroom, the school grounds.	3 lessons

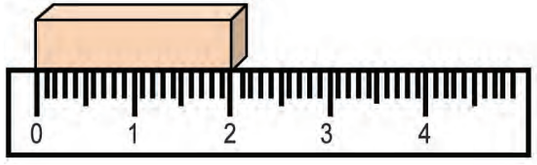
TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 13	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, clay, toothpicks, straws, other 3-D geometric objects.	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D2-D shapes, clay, toothpicks, straws, other 3-D geometric objects.	**Recommended focus of Term 3** - Learners can focus on the objects new to Grade 3, i.e. pyramids and cones. - Learners build objects from straws or pipe cleaners or toothpicks or rolled paper tubes. Introduce learners to cones and pyramids. **Focussing on features of 3-D Objects: flat or curved surfaces, the shapes of flat surfaces** • Flat or curved surfaces In Term 2 • Learners focussed on whether objects had flat or curved surfaces. • Learners described the shape of the flat surfaces by saying whether they were circles, triangles, squares or rectangles. Learners continue to do this in Term 3, but now they also look at pyramids and cones. • Building single 3-D objects Learners use toothpicks, rolled paper tubes, straws or pipe cleaners to make a pyramid. This focusses learners on the edges of the pyramid. Learners are not expected to count the number of edges or corners (this is done in Grade 6). **Recognising and naming objects** Learners should be given a range of objects to work with: - shaped like spheres, e.g. balls or different size, marbles, oranges etc.; - shaped like prisms, e.g. blocks, bricks, boxes of different sizes e.g. matchboxes, cereal boxes, tea boxes, toothpaste boxes; - shaped like cylinders, including both long and narrow cylinders, e.g. pieces of piping with a cylindrical shape, cardboard inner sleeves of roller towel or toilet rolls and short, wide cylinders, e.g. shoe polish tins, snuff tins etc.; - shaped like cones; and - shaped like pyramids. Learners should be asked to find and show objects shaped like a ball (sphere), or shaped like a box (prisms) or shaped like a (cylinder), shaped like a pyramid, or shaped like a cone - when given a collection of objects; or - in the classroom, e.g. this brick is shaped like a box or this orange is shaped like a ball.	4 lessons

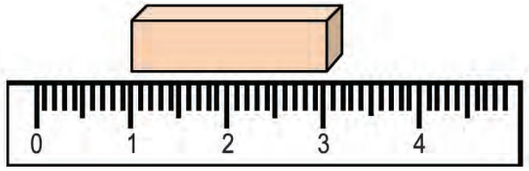
TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 13	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, clay, toothpicks, straws, other 3-D geometric objects.	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focussed activities** Observe and build given 3-D objects using concrete materials such as cut-out 2-D2-D shapes, clay, toothpicks, straws, other 3-D geometric objects.	During independent time learners can make balls and cylinders and box shapes (prisms), pyramids and cones from clay or play dough. **Written exercises** Although most of the work with 3-D objects is done practically, work must be consolidated through written exercises. The focus in Grade 3 should be on naming objects and talking about their surfaces. Learners are not expected to count or know the number of square, rectangular, triangular or circular surfaces an object has, nor the number of edges or corners objects have. **Language** Useful language ability to talk about 3-D objects: Surface, flat, curved, boxes, balls, cylinders, pyramids, cones	4 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 13	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
3.3 **2-D shapes**	**Range of shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Draw shapes** • circles • triangles • squares • rectangles	**Range of shapes** • circles • triangles • squares • rectangles **Features of shapes** Describe, sort and compare 2-D shapes in terms of: • shape • straight sides • round sides **Draw shapes** • circles • triangles • squares • rectangles	See notes for Term 1. Learners should keep the same focus, but do different activities. Learners work with circles and squares of different sizes and triangles and rectangles with different shapes. They sort them according to whether they have straight or round sides. Learners sort and groups shapes according to whether they are triangles, squares, rectangles or circles. Work is consolidated through written exercises, which should include drawing all the required shapes.	2 lessons

GRADE 3 TERM 3 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months Use clocks to calculate length of time in hours or half hours including	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months • Use clocks to calculate length of time in hours, half hours and quarter hours	Learners continue to practise talking about the duration of time and the sequencing of time. During whole class teaching time and focus group time, learners continue to talk about the day of the week, month of the year and the date of the current day, as well as days before and days to come. Learners continue to place the following on a calendar as the events arise • birthdays; • religious festivals; • historical events; • school events; and • public holidays. Continue to ask learners to tell the time at regular intervals on an almost daily basis - in hours and minutes on a digital clock; and - in hours, half hours and quarter hours using analogue clocks. For example, learners can be asked to tell the time when school starts, at break time and at home time, or when they change from one lesson to another. Choose times where the clock shows an exact hour or half hour or quarter hour. It is useful to have a large, working clock displayed in the classroom, so that learners can refer to it. Learners can also make models of clocks. You can then ask them to show various times and include some calculations, e.g. “Show me 10 o’clock. What was the time a quarter of an hour before 10?” See notes for Term 1. During independent work time learners continue do exercises related to telling the time - in hours, half hours and quarter hours on analogue clocks; and - in hours and minutes on a digital clock.	5 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 13	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.1 **Time**	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months Use clocks to calculate length of time in hours or half hours including	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in - hours - half hours - quarter hours - minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months • Use clocks to calculate length of time in hours, half hours and quarter hours	Learners can do calculations with weeks or days if provided with a calendar or section of a calendar, e.g. finding dates and calculating the time differences between them. **Reading analogue time in minutes** Spend about 3 lessons focussing learners on the skill needed to read analogue time in minutes. - Remind learners about the meanings of a.m. and p.m. - Remind learners that there are 60 minutes in an hour; so there are 30 minutes in a half hour and 15 minutes in a quarter of an hour. Let them count in 5s as you point to the numbers on an analogue clock. - Explain the conventions “past” and “to”. - Give learners plenty of practise in analogue time in minutes. Ask learners to give the time regularly during the day over the entire year. Learners can check on a digital clock whether they have given the correct time when reading an analogue clock. Let learners make model clocks which they can use for telling the time and calculating time differences.	5 lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 13	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, and wider. **Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. • Estimate and measure lengths in centimetres using a ruler No conversions between metres and centimetres required	**Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. • Estimate, measure and record lengths in centimetres using a ruler.	**What is different from Term 2?** In Term 2 learners focussed on • informal measurement with non-standard units of length; and • measuring in metres. In Term 3 learners can begin to measure in centimetres using a ruler. This will be the first measuring instrument that learners use where they need to read off measurements at the numbered gradation lines. **Estimating, measuring, comparing and recording lengths, heights and widths using metres** • Learner should consolidate their understanding of the length of 1 metre and using metre lengths for measuring. See notes for Term 2. **Estimating, measuring, comparing and recording lengths, heights and widths in centimetres using a ruler** • Using a ruler Show learners how to start measuring from zero. When learners used informal units, they lined up the start of the objects being used as a unit with the start of the object being measured. When measuring in centimetres, you do not line up the start of the ruler with the start of theobject being measured. You line up the object being measured with the zero on the ruler.  The eraser is 2 cm long. It is also possible to align the start of the object being measured with another number on the ruler and then subtract the number at the start of the object from the end of the object.	. lessons

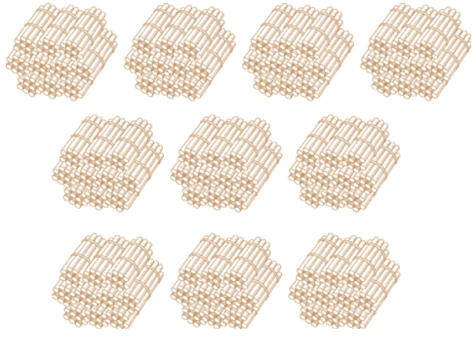
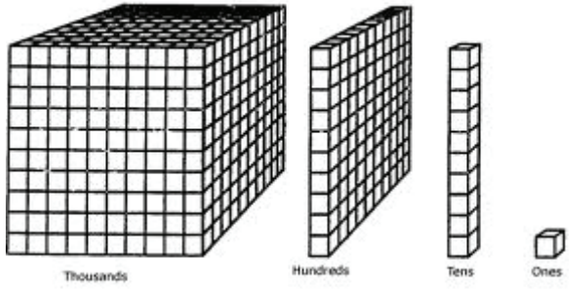
TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 13	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, and wider. **Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. • Estimate and measure lengths in centimetres using a ruler No conversions between metres and centimetres required	**Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length. • Estimate, measure and record lengths in centimetres using a ruler.	 The eraser is (3 cm - 1 cm)= 2 cm long Unless learners ask about this, or find it out for themselves, it can be left to Grade 4. • Estimating in centimetres Learners should try to find things that are exactly 1 centimetre long. Perhaps one of their fingers is 1 cm wide. This can be used as a reference point for estimating lengths, widths and heights in centimetres. Once learners have some experience of measuring in centimetres, they should estimate before every measurement. • Lines, drawings and objects Let learners start by measuring lines. It is easier to measure lengths of lines that make up the lengths, heights or widths of drawings of objects when using a ruler. It is more difficult to measure the lengths, height or widths of physical objects using a ruler. In Grade 4 learners will measure in centimetres and millimetres. In Grade 3 they are not expected to use millimetres. • Comparing measurements in centimetres Learners should compare lengths, widths and heights of objects measured in centimetres. • Recording measurements Although measuring is a practical skill, learners should record their measurements (with both informal units and metres) at all times. **Measuring length as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the contexts of • informal measurement of length; • measuring lengths in metres; and • measuring length in centimetres. Take account of the number range appropriate for the term, as well as the range of problems types appropriate for the term. Learners are NOT expected • to know that 100 cm = 1 m; • to do conversions between centimetres and metres; • read lengths in millimetres (this is done from Grade 4); • to know that 10 mm = 1 cm; or • to do conversions between centimetres and millimetres. Calculations in centimetres can be chosen so that they do not go over 100 cm.	· lessons

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 13	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 **Mass**	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a measuring balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour or in grams e.g. 500 grams of salt • Measure their own mass in kilograms using a bathroom scale No conversions between millilitres and litres required		During independent work time learners can continue to • Estimate, measure, order, compare and record the mass of objects using a measuring balance with informal units of measure. • Compare, order and record their findings - groceries with their mass stated in kilograms - groceries with the mass stated in grams See the notes for Term 2. **Measuring mass as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of mass; • mass in kilograms; and • mass in grams. Take into account the number range appropriate for the term, as well as the range of problems types appropriate for the term.	

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 13	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity four 4cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres No conversions between millilitres and litres required		During independent work time learners should continue to Estimate and measure, compare, order and record the capacity of containers or the volume in containers using non-standard measures. Following recipes, including baking, is a useful context in which learners can practise measuring. Choose recipes where ingredients are given in cups, teaspoons or informal units. • Compare and order the capacity a range of bottles and grocery items where the volume is stated on the packaging. • Use either 1 litre bottles or 1 litre jugs to estimate and measure, compare, order and record the capacity of containers or the volume in containers in litres. • Use containers marked in millilitres e.g. 200 ml, 330 ml, 500 ml, 750 ml, or 250 ml measuring cups, or 5 ml measuring spoons, or jugs which have millilitres lines marked on them to measure volumes or capacities of unlabelled containers. See the notes in Term 1. Learners should be given written tasks to consolidate the following, including reading pictures of: • products with their capacity written in litres on them in order to sequence in order • pictures of jugs where the volume is near to a numbered 1 litre or 2 litre gradation line. The expectation is that learners only read to the nearest numbered gradation line. They describe their volume as almost/nearly/close to/a bit more than/more or less/ exactly the number (of litres) they read off the jug. • products with their capacity written in millilitres on them in order to sequence in order • pictures of jugs where the volume is near to a numbered millilitre gradation line The expectation is that learners only read to the nearest numbered gradation line. **Measuring capacity as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of capacity/volume e.g. Gogo uses 2 cups of milk to make a pudding. If she doubles the recipe, how much milk will she need? • litres • millilitres Take into account the number range appropriate for the term, as well as the range of problems types	

TOPICS	CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS: FOCUS FOR TERM 13	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.5 **Perimeter and area**	**Perimeter** • Investigate the distance around 2-D shapes and 3-D objects using string **Area** • Investigate the area using tiling	**Perimeter** Investigate the distance around 2-D shapes and 3-D objects using string	**Measuring around objects or measuring a perimeter is new in Grade 3.** Perimeter is only measured informally in Grade 3. Give learners plenty of practice using pieces of string to measure around a range of different objects such their heads, bottles (include tall bottles that look narrower and shorter bottles that look wider) cans, mugs, boxes etc. Let learners first estimate which objects they think have the greater perimeter and then check by marking the distances off on the piece of string and comparing them. Learners can also measure the perimeter of 2-D shapes using a piece of string. Learners can also do informal measurement of perimeters using non-standard units such bottle tops, matchboxes etc.	1 lesson

GRADE 3 TERM 3 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 3**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
5.4 **Collect and organise data**	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher • Organise data supplied by teacher or book • Organise data in - lists - tallies - tables	**Collect and organise data** Collect data about the class or school to answer questions posed by the teacher **Represent data** Represent data in bar **Analyse and interpret data** Answer questions about data in bar	It was recommended that in Term 1 learners make a class bar graph, and that in Term 2 they analyse pictographs and tables that you provide. In Term 3 learners can either work through the whole data cycle (see notes for Term 1) or start with data presented in a list or tally or table and re-organise this into a bar graph. It is easier for learners to draw bar graphs using block paper. You will probably need to remind learners about the key features of a bar graph (see Term 1 notes). Learners should answer questions on the bar graph; see Term 1 for suitable types of questions.	3 lessons
5.5 **Represent data**	**Represent data** Represent data in • pictograph • bar graphs			
5.6 **Analyse and interpret data**	**Analyse and interpret data** Answer questions about data presented in • pictographs • bar graphs			

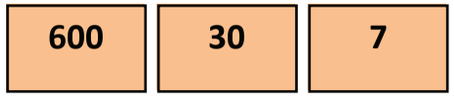
GRADE 3 TERM 4 1. NUMBERS, OPERATIONS AND RELATIONSHIPS				
TOPICS	**CONCEPTS AND SKILLS** **REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS** **FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
1.1 **Counting objects**	**Counting concrete Objects** Estimate and count reliably to at least 1 000 everyday objects. The strategy of grouping is encouraged.		By the end of this term learners should have seen, touched and moved 1 000 objects. They should have a sense of the 'muchness' of 1 000. The strategy of grouping is encouraged.   	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.1 Counting objects	**Counting concrete Objects** Estimate and count reliably to at least 1 000 everyday objects. The strategy of grouping is encouraged.		By the end of the term they should be able to respond to the following type of questions and instructions: • Count the counters in groups of fives, tens. • Rearrange and count again. Do you still have the same number of counters? • Here are 200 counters. Count them by grouping them in tens. To count all 200 counters, would you prefer to count them in groups of 20 or 25? Why? • Decide what would be the best way to count a collection of pencils. • Here are 80 counters. • If we count in twos or tens, will the total number of counters still be the same? • Count 46 counters by grouping them in twos. Is it quicker to count in twos than to count in ones?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.2 Count forwards and backwards	Counts forwards and backwards in: • 1s from any number between 0 and 1000 • 10s from any multiple between 0 and 1000 • 5s from any multiple of 5 between 0 and 1000 • 2s from any multiple of 2 between 0 and 1000 • 3s from any multiple of 3 between 0 and 1000 • 4s from any multiple of 4 between 0 and 1000 in 20s, 25s, 50s,100s to at least 1 000	Counts forwards and backwards in: • 1s from any number between 0 and 1000 • 10s from any multiple between 0 and 1000 • 5s from any multiple of 5 between 0 and 1000 • 2s from any multiple of 2 between 0 and 1000 • 3s from any multiple of 3 between 0 and 1000 • 4s from any multiple of 4 between 0 and 1000 in 20s, 25s, 50s,100s to at least 1 000	**By the end of the term learners should be able to:** Count confidently, verbally in ones, tens, fives, twos, twenties, twenty-fives, fifties and hundreds to 1000 Respond to questions such as: Count in tens from 400 to 500. Now count back again. Count in 2s from 564 to 580. Now count back again Count back in tens from 200 to 40. Count in fifties from 600 to 800. How many fifties did you count? Count back in 100s from 620. How many hundreds did you count? Count back in ones from 876 to 866. How many ones did you count? How can you make sure that you are correct? Count forward 15 steps in 5s from 305. Where are you now? If you count in 25s from 525 to 850 will you use the number 725? Count and check What number comes next? 467, 468, 469, 725, 750, 775, 420, 440, 460 820, 800, 780 Count using number lines Draw an empty number line and show the following numbers on it: 602, 604, 610. Now where would you place 606? Count using your number line from 602 to 610. Count in tens from 314 to 344. Which digits change? Which digits do not change? Why do the hundreds not change? If you count backward, what happens?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.3 Number symbols and number names	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 0 to 1 000 • Write number symbols 0 - 1 000 • Recognise, identify and read number names 0 - 1000 • Write number names 0 - 1000	**Recognise, identify and read numbers** • Recognise, identify and read number symbols 0 to 1 000 • Write number symbols 0 - 1 000 • Recognise, identify and read number names 0 - 1000 • Write number names 0 - 1000	**By the end of the term learners should be able to do the following:** Read and write numbers to at least 1 000 Respond to questions such as: • What number is on this card? **642** • Find the card with 738 or seven hundred and thirty-eight. Read the following numbers aloud: 534, 947, 974, 345 Read these words: • Three hundred and forty-two • Eight hundred and twenty-one • Four hundred and sixty-nine • One thousand • Twenty-nine Write in number symbols • Five hundred and seventy • Four hundred • Six hundred and eighty-five	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.4 Describe, compare, order numbers	**Describe, order and compare numbers to 999** • Describe and compare whole numbers up to 999 using smaller than, greater than, more than, fewer than and is equal to. • Describe and order whole numbers up to 999 from smallest to greatest, and greatest to smallest. **Use ordinal numbers to show order, place or position** • Use, read and write ordinal numbers, including abbreviated form up to 31	**Describe, order and compare numbers to 999** • Describe and compare whole numbers up to 999 using smaller than, greater than, more than, fewer than and is equal to. • Describe and order whole numbers up to 999 from smallest to greatest, and greatest to smallest **Use ordinal numbers to show order, place or position** Use, read and write ordinal numbers, including abbreviated form up to 31	**By the end of the term learners should be able to do the following:** Order numbers to at least 1000 Respond to questions posed in a variety of ways: Study the number line. Where does 450 appear? Where does 700 appear? Where does 350 appear. Now fill in the rest of the numbers. Write the numbers from greatest to smallest 345, 428, 389, 561, 600, 739, 620, 824 Compare numbers to 999 **Examples** • What number is 1 more than 563 • What number comes after 768 • What number is 1 fewer than 431 • What number is 10 more than 620 • What number is 10 fewer than 650 • What number is 20 more than 480 • What number is 20 fewer than 740 • What number is 25 more than 625 • What number is 50 more than 250 • What number is 50 fewer than 700 • What number is 100 more than 300 Answer true or false. Give a reason for your answer 220 is closer to 200 than 250 403 is not closer to 400 than 420 15 is closer to 0 than to 30 Fill in more than or fewer than 145 is _____ 154 823 is _____ 789 466 is _____ 664 Use the digits 9, 0, 6 to make the biggest number you can. What is the smallest number you can make?	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 Place value	**Recognise the place value of three-digit numbers to 999** • Recognise what each digit represents • Decompose 3 digit numbers up to 999 into multiples of 100, multiple of tens and ones (HTU) • Identify and state the value of each digit		During this term consolidation of the following concepts needs to be reinforced and encouraged: • Numbers can be broken up into hundreds, tens and ones. • Understand that 51 is greater than 15 because 51 contains 5 groups/bundles of tens and 15 only one group/bundle of ten. • When counting in tens, when learners reach 40 they know that they have counted 4 tens. **By the end of the term learners should be able to:** **Use, read and write this language to work with place value and understand it.** Units or ones, tens, hundreds, digit, one-digit, two-digit number ..., three-digit number, place value ... **Recognise 0 as place holder in two and three-digit numbers such as:** 60 305 720 **Break up a number to show the value of each digit** 637 = 600 + 30 + 7 Use their flard cards to demonstrate this  Use the Dienes blocks to show the place value of a number. **Respond to questions such as:** Say what the digit 7 in 127 represents And the 2? And the 1? How many hundreds are there in each of the following numbers: 300, 500, 700, 412, 568 How many bundles of tens are there in each of the following numbers? 50, 80, 100, 200, 700, 120 **Write the numbers:** One hundred and five Six hundred and twenty-five Four hundred and eight-nine Three hundred and three	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.5 Place value	**Recognise the place value of three-digit numbers to 999** • Recognise what each digit represents • Decompose 3 digit numbers up to 999 into multiples of 100, multiple of tens and ones (HTU) • Identify and state the value of each digit		**Write the numbers:** 1 hundred + 2 tens Two hundred + 3 tens + 7 ones Four hundred + 9 tens + 3 ones Explain what number needs to go into each box 872 = □ + 70 + 2 129 = 100 + □ + 20 + 9 346 = 300 + 40 + □ Write down the value of each digit in 762	
SOLVE PROBLEMS IN CONTEXT				
1.6 Problem-solving techniques	Use the following techniques when solving problem and explain solutions to problems: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens		Learners are expected to solve the word problems using the following techniques: • Building up or breaking down numbers • Doubling and halving • Number lines • Rounding off in tens See notes for Term 2 on the following strategies • Building up and breaking down • Doubling and halving • Number lines **Rounding off in tens** During this term learners can apply the technique of rounding off when doing word problems. Example: Noah has R48,00. The pack of cards he collects costs R5,00. How many packs of cards can he buy? The learner can round off R48 to the nearest ten, which is R50,00. This means he can 'nearly' buy 10 packs. Learners will have to do the calculation and then work out if their answer is reasonably close to the amount rounded off. Allow learners to choose the technique most comfortable for them. However, if learners are using techniques that are not efficient then they need to be guided to choose more efficient techniques. Learners do not have to be fluent in the techniques. They will be able to use them again in the Intermediate Phase.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.7 Addition, subtraction	Solve word problems in context and explain own solution to problems involving addition, subtraction leading answers up to 999.		**By the end of the term learners should be able to do the following type problems.** **Addition and subtraction** There are at least three basic types of addition and subtraction problems and each type can be posed in different ways. The basic types are: Change Noluthando collected 234 stickers. Silo gave her 80 more stickers. How many stickers does she have now? 500 passengers on a train. 176 passengers got off. How many passengers were left on the train? Combine Nosisi collects items for the schools recycling projects. She collected 124 plastic bottles and 268 tin cans. How many items has she collected? The shop has 368 packets of chips; 82 are chippos and the rest are ziksnacks. How many packets or Zicksnacks are there? Compare Grade 2 collected R446. Grade 3 collected R729. How much more money did the Grade 3s collect? **Posing each problem in different ways** Problems have to be posed in different ways. For example, both of these are change problems, but the “unknowns” are in different places in the problem. The shop had packets of mealie meal; 55 more were ordered. Now there are 170 packets of mealie meal. How many packets were there in the beginning? The shop had 500 packets of sugar. After selling some packets, they had 324 packets of sugar left. How manypackets did they sell?	

<table>
<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
REQUIREMENT BY YEAR END</th><th>CONCEPTS AND SKILLS
FOCUS FOR TERM 4</th><th>SOME CLARIFICATION NOTES OR TEACHING GUIDELINES</th><th>DURATION
(in lessons of 1 hour 24 minutes)</th></tr>
<tr><td>1.8
Repeated addition leading to multiplication</td><td>Solve word problems in context and explain own solution to problems using multiplication with answers up to 99.</td><td></td><td>Examples of problems that can be done this term
Repeated addition
How many wheels do 36 cars have?
Rate
Thami saves 35c every week. How much money does he save in 8 weeks?
Grids
Mr Khumalo plants 20 rows of orange trees. There are 12 trees in a row. How many trees are there altogether?
Problem situations with different functional relationships
Heila sells hotdogs at R4 each. Make a table to help her find the amount for large orders.
<table>
<tr><td>Number of hotdogs</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>Cost in R</td><td>4</td><td>8</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Use the table to find the cost of seven hotdogs and 23 hotdogs.
Sedick charges R20 for travel costs, and then R5 per hour for babysitting. Complete this table for him.</td><td></td></tr>
<tr><td>1.9
Grouping and sharing leading to division</td><td>Solve and explain solutions to practical problems that involve equal sharing and grouping up to 200 with answers that may include remainders.</td><td></td><td>Examples of problems that can be done this term
Grouping
Grouping, discarding the remainder
A bakery sells bread rolls in bags of 12. They have 118 rolls. How many bags of 12 rolls each can they make up?
Grouping, incorporating the remainder in the answer
A farmer has 227 eggs. How many egg boxes that can take 6 eggs each does he need to pack all the eggs?
Sharing
Sharing, discarding the remainder
Five friends share 84 sweets so that they all get the same number of sweets. How many sweets does each get?</td><td></td></tr>
</table>

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.10 Sharing leading to fractions	Solve and explain solutions to practical problems that involve equal sharing leading to solutions that include unitary and non-unitary fractions 1/2,1/4,3/4,2/5 e.g. etc.		**Examples of problems that can be done this term** Sharing, leading to fractions Share 15 chocolate bars among 6 friends so that they all get the same amount of chocolate bar and there is nothing left over. Share 7 chocolate bars among 3 friends so that they all get the same amount of chocolate bar and there is nothing left over. **Fraction of a collection** Grandmother gives Kiki R12. Kiki wants to save a third of the money. How much money must she save? This problem type must only be posed after learners have solved four or five problems of the sharing, leading to fractions type and know the names of fractional pieces. **Putting fractions together** The netball coach gives half an orange to each player. There are 14 players. How many oranges does she need? This problem type must only be posed after learners have solved four or five problems of the sharing, leading to fractions type and know the names of fractional pieces. **Writing fractions** Learners are not required to write the fraction symbol. Learners learn how to label fraction parts as 1 fifth, 3 quarters or 3 sixths. This helps them firstly to understand that the fraction names describe how many equal parts the whole has been divided into, for example, halves, thirds, quarters, etc. and secondly how many of those parts are being considered, e.g. 2 thirds. **Representing fraction word problems** Learners must draw their answers to prove that they understand the problem. Expect that some learners may draw correctly but misname the fraction part. Learners must name the parts that have been shared by writing it as 2 thirds.	

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1.11 Money	• Recognise and identify the South African coins and bank notes • Solve money problems involving totals and change in rands or cents. • Convert between rands and cents		**Examples of problems that can be done this term** • Value of money and making up totals e.g. - Write 325c as rands and cents. - In how many different ways can you make up R400 using only bank notes? How do you know whether you have all the solutions? - Travis has a 50c piece and four 20c pieces. Toffees cost R1,20. How much change will he get? • Mandla pays R5,50 to take a taxi to school. - What does it cost him to get to and from school each day? Buying and selling problems • Pedro's granny gave him R5. Which 3 sweets can he buy? Choc chuckle R2,70; gums R1,80; sour worms R1,40; peach treats R1,60; magic mints R2,20; toffee R1,20. • Damon bought three books for R80 each; how much change will he get from R300? • Packets of 5 mints cost 44c each. Mr King needs 88 mints. How many packets should he buy? What will he pay?	
CALCULATIONS				
1.12 Techniques (methods or strategies)	Use the following techniques when performing calculations: • building up and breaking down numbers • doubling and halving • number lines • rounding off in tens		See notes for Term 3.	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30		During this term learners continue to break down numbers in order to calculate. Possible methods to show addition and subtraction calculations. **Breaking down a number into smaller parts to make a calculation easier** **Using knowledge of place value to break down numbers into hundred, tens and ones** • Adding by breaking down both numbers Adding three-digit with two-digit 524 + 82 = □ = (500 + 20 + 4) + (80 + 2) = 500 + (20 + 80+ (4 + 2) = (500 + 100) + 6 = 600 + 6 = 606 Adding three-digits and three-digits 323 + 436 = □ 323 + 436 = (300 + 20 + 3) + (400 + 30 + 6) = (300 + 400) + (20 + 30) + (3 + 6) = 700 + 50 + 9 = 759 • Adding (by breaking down the number to be added) Learners will break down the number in ways that are manageable for them. This means that they will do it in different ways. 524 + 82 = □ 524 + (40 + 40 + 2) 524 + 40 → 564 + 40 → 604 + 2 = 606 Adding three-digit and three-digits 323 + 436 = □ = 323 + (400 + 20 + 6) = (323 + 400) + 20 + 6 = (723 + 20) + 6 = 743 + 6 = 749	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30		• Subtracting by breaking up both numbers Three-digit subtract three-digit 889 – 137 = □ 889 – 137 = (800 + 80 + 9) – (100 + 30 + 7) = (800 – 100) + (80 – 30) + (9 – 7) = 700 + 50 + 2 = 752 • Subtracting by breaking up one number Three-digit subtract three-digit 889 – 137 = □ 889 – (100 + 30 + 7) 889 – 100 → 789 – 30 → 759 – 7 = 752 • Using halving to break down a number 525 + 16 = 525 + 8 + 8 = (525 + 8) + 8 = 533 + 8 = 541 • Count on and count back 805 = 798 = □ Counting up in ones from 798 is an appropriate strategy because the numbers are close to each other. • Identify near doubles 245 + 246 One can say the above sum as double 245 + 1 or double 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	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30		**Developing and practising addition and subtraction skills** Learners need to practise certain kinds of addition and subtraction skills **Count up or down to the nearest 10** 588 + 9 588 + 10 = 598 598 – 1 = 597 588 + 19 588 + 20 = 608 608 – 1 = 607 Learners should have opportunities to do the following type of calculations with numbers up to 800: Add or subtract a pair of multiples of 10, crossing 100 40 + 70 70 + 80 120 – 30 150 – 60 Add or subtract 10 to or from any two or three-digit number, including crossing the 100s Example: 65 + 10 124 + 10 326 – 10 358 – 10 Add or subtract a single digit to or from a three-digit number without crossing the tens. Example: 634 +5 775 + □ = 779 768 – 4	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30		Add and subtract a single digit to and from a multiple of 100 Example: 600 + 4 500 + 3 700 – 6 800 – 5 Begin to add and subtract a pair of multiples of 100 100 + 100 100 + 200 200 + 200 300 + 400 Learners should be given opportunities to practise patterns in addition and subtraction. If I know that 1 + 1 = 2 Then What is: 10 + 10 100 + 100 Begin to add or subtract a pair of multiples from any three digit number Example: 675 + 100 762 – 100 **Understanding addition by the end of the year** By the end of the year learners should be able to: Use and understand the language of addition: more, add, sum, total, altogether, equals, sign….and read and write the addition sign (+) and the equals sign (=) Continue to develop an understanding of addition as counting on and steps along a number line. For example, answer the following. What do I need to add to 67 to make 85? This is the number sentence for my question: 67 + □ = 85.	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30		Respond to the following type of questions: • add together 43 and 19 • add ten to 167 • 51 plus 83 • Add 70 to 50 • 280 = 120 + 80 + □ • What is 30 more than 160 • Find the sum of 156 and 14 • Add twelve to a hundred and seventy-five • What number is ten more than 483? • What number must you add to 45 to get 178? • What number must you add to 25 to get 178? • What must I add to 56 to make 170? • Three hundred plus four tens plus 3 ones • 12 tens plus 8 ones • 245 + 10 = □ 245 + 20 = □ 245 + 30 = □ Know that □ stands for an unknown number 45 + 81 = □ 67 + □ = 125 47 + 32 + 8 = □ 31 + □ + 20 = 160 □ + △ = 100 □ + △ = 120 □ + △ = 450 Understand and use the knowledge that addition can be done in any order: 178 + 12 = 190 therefore 12 + 178 = 190	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30		**Understanding subtraction by the end of the year** Use and understand the language of subtraction: Take away, subtract, how many are left, how much less is.. than..., difference between, how much more is...than...., how many more to make... and read and write the minus sign (-) Continue to develop understanding of subtraction as: • taking away; and • finding the difference between. Understand that subtracting zero leaves a number unchanged: 192 - 0 = 192 and 192 = 192 - 0 Respond to written question phrased in a variety of ways such as: • 37 take away 13 • Take 40 from 280 • 162 subtract 42 • Subtract 45 from 390 • What is the difference between 738 and 157? • How many fewer is 117 than 449? • What number must you subtract from 56 to get 122? • What number must you subtract from 56 to get 132? • What number must you subtract from 56 to get 142? • Find pairs of numbers with a difference of 10 • There are 45 pencils in the teacher's drawer. She hands out 17 pencils. How many are left? Find pairs of numbers with a difference of 20. Know that □ stands for an unknown number. 557 – 134 = □ 800 – 530 = □ 762 – □ = 448 598 – 42 = □	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30		687 – □ = 375 13 – 6 = 15 – □ □ – 18 = 24 174 – 14 = □ 199 – □ = 25 Begin to understand that: 125 – 10 is different from 10 – 125 Understand the relationship between addition and subtraction. Use the relationship between addition and subtraction. Say and write corresponding subtraction fact to a given addition fact and vice versa. For example: 25 + 68 = 93 implies that 93 – 68 = 25 68 + 25 = 93 implies that 93 – 25 = 68 122 – 104 = 18 implies that 18 + 104 = 122 Without the use of apparatus answer the following: You know that 145 + 120 = 265 What is: 120 + 145 265 – 120 265 – 145 You know that 154 – 38 = 116 What is: 154 – 116 116 + 38 38 + 116 Write and answer the following 64 – 37 = □ therefore 37 + □ = 64 137 – 17 = □ therefore □ + Δ = 137 200 – 100 = □ therefore □ + 100 = 200 89 – 38 = 51 ; 51 is the difference because □ + Δ = 89 Write four number sentences using these numbers. 160, 35, 125	

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1.13 Addition and subtraction	• Add to 999 • Subtract from 999 • Use appropriate symbols(+, –, =, □) • Practise number bonds to 30		**Checking results of calculations** **Judging reasonableness of solutions** Learners should be trained to judge the reasonableness of solutions. One way to do this is to estimate their answers before calculating. When adding two numbers that are close to each other, e.g. 45 and 46, learners can use doubling as a way of estimating their answers. **Checking solutions** Learners should know that they can • check an addition calculation by subtracting. Example: If 36 + 18 = 54; then 54 – 18 = 36 • check an subtraction calculation by adding Example 84 – 48 = 36, then 36 + 48 = 84 Using the inverse operation to check solutions is one reason for teaching addition and subtraction together.	
1.14 Repeated addition leading to multiplication	• Multiply numbers 1 to 10 by 1, 2, 3, 4, 5, 10 • Use appropriate symbols(x, =, □)		During this term learners continue to: • use and understand the language of multiplication; • represent multiplication as arrays; • use the appropriate symbols to interpret number sentences; • understand that repeated addition can be represented using the multiplication symbol; • practise and understand that multiplication can be done in any order (the commutative law or property); • use the number line to show multiplication calculations and be able to explain the representation (how the jumps show repeated addition); and • chant the multiplication tables. By the end of the term learners should be able to: Use the language of multiplication in practical situations: Double, times, multiply, multiplied by, multiple of.., lots of, groups of.., times as (big, long, wide..), twice, three times as much, and read and write the multiplication sign (x) Use the language to do multiplication calculations	

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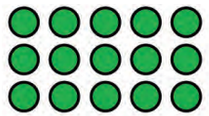
1.14 Repeated addition leading to multiplication	• Multiply numbers 1 to 10 by 1, 2, 3, 4, 5, 10 • Use appropriate symbols(x, =, □)		**Understand multiplication as repeated addition** 6 added together 3 times is the same as: 6 + 6 + 6 = 18 3 lots of 6 = 18 3 times 6 = 18 6 x 3 = 183 x 6 = 18  $5\times3=15$ $3\times5=15$ **Understand multiplication as describing an array** Begin to recognise that multiplication can be done in any order **Respond to questions posed in different ways** Two fives Double 5 3 times 5 Three counters in a row. There are 4 rows. How many counters altogether? 2 multiplied by 7 16 times 2 **Understanding the commutative law of multiplication** 3 x 4 = 12 is the same as 4 x 3 = 12 **Recognise the use of the place holder □ to stand for an unknown number.** 2 + 2 + 2 = □ 2 x □ = 6 5 + 5 +5 + 5 + 5 therefore 5 x r = 25 4 + 4 + 4 therefore 4 x 3 = □ 10 + 10 + 10 + 10 + 10 therefore 10 x □ = 50 5 x □ = □ x 5 = 45 4 x 8 = □ x 4	.

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<tr><th>TOPICS</th><th>CONCEPTS AND SKILLS
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<tr><td>1.14
Repeated addition leading to multiplication</td><td>• Multiply numbers 1 to 10 by 1, 2, 3, 4, 5, 10
• Use appropriate symbols(x, =, □)</td><td></td><td>8 + 8 + 8 = 3 eights = 8 x □ = 24
Understand the relationship between multiplication and doubling
Copy the table below. Fill in the ‘times 4 row’
<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>4s</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>2s</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Used a variety of images to do multiplication
• Multiplication grids
• Flow charts
• Tables</td><td>.</td></tr>
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1.15 Division	• Divide numbers to 99 by 1, 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, □)		**What is different from Term 3?** By the end of the term we have to ensure that learners can: • understand that halving is the inverse of doubling and recall doubles of all numbers to 20 and the corresponding halves; • experience division as grouping; • understand and appreciate the relationship between multiplication and division and that they are inverse operations; • use practical and informal methods written methods to do division of two-digit by one-digit numbers; • use their knowledge of place value to do multiplication and division calculations; • explain what calculation they did and why; • discuss their answers and explain their thinking; and • use knowledge of number operations and corresponding inverses, including doubling and halving, to estimate and check calculations. **Recording strategies** There are certain recording strategies that learners may use in Grade 3. Learners will not be fluent in all these strategies. They need to be guided in looking at the division number sentence and deciding on the appropriate strategy that needs to be used. It is expected that learners will no longer be dependent on drawing pictures and will using numbers to explain their thinking. **Repeated subtraction** This strategy will have been used when solving word problems and learners need to be guided in looking at the number range and decide whether or not the calculation can be done using repeated subtraction. 40 ÷ 8 = □ 40 – 8 → 32 – 8 → 24 – 8 → 16 – 8 → 8 – 8 = 0 Learners count the number of times they subtracted 8 to get to 0. **Repeated addition** Some learners might use this strategy if they understand the relationship between multiplication and division. Once again the number range will determine if this strategy is appropriate or not. 40 ÷ 8 = □ 8 + 8 → 16 + 8 → 24+ 8 → 32 + 8 → 40 Learners count the number of times they subtracted 8 to get to 0.	

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1.15 Division	• Divide numbers to 99 by 1, 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, □)		**Use multiplication** Learners should be able to say: "What do I know about multiplication that can help me calculate division?" Learners can write down the multiplication facts they know in a clue board, to assist them to divide **Clue board** I know: 10 x 3 = 30 I know: 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 Therefore 72 ÷ 3 = 24 **Distributive property** The distributive property of division over addition means that the number can be broken up into parts that are easier to calculate. 39 ÷ 3 = □ = (30 + 9) ÷ 3 = (30 ÷ 3) + (9 ÷ 3) = 10 + 3 = 13	

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1.15 Division	• Divide numbers to 99 by 1, 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, □)		Breaking up the numbers into halves: 60 is halved Here learners say to themselves: "What do I know about dividing by 5?" Learners know that 30 is divisible by 5 leaving no remainder. 60 ÷ 5 = □ 30 ÷ 5 = 6 30 ÷ 5 = 6 6 + 6 = 12 Using halving to divide by 4 Learners have been doubling and halving for three years. They need to use these skills as calculating strategies. Knowledge of doubling and halving can be applied to division: 96 ÷ 4 = □ 96 ÷ 2 = 48 48 ÷ 2 = 24 **By the end of the term learners should be able to:** Understand, use and begin to read: One each, two, each … share, half, halve, whole, divide, divide by 3, divide by 4, divide into 2, divide into 3, left over, divided by … equal groups of ..., left over Read, write and use the division sign (÷) Use this language to do division calculations Understand division as grouping, or repeated subtraction Respond to written questions posed in a variety of ways: Share 16 by 2 Divide 20 by 5 How many fives make 50? How many 10c coins make 50c? How many fours in 20, in 28, in 36? How many fives in 20, in 40, in 50, in 60?	

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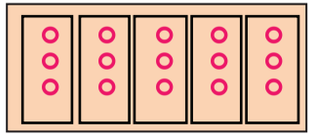
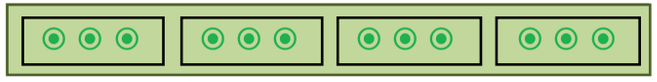
1.15 Division	• Divide numbers to 99 by 1, 2, 3, 4, 5, 10 • Use appropriate symbols (÷, =, □)		Annina says she learns 5 new words every day. She takes □ days to learn 40 words. 6 tens ÷ 3 = □ tens Recognise the use of symbols such as □for unknown numbers Look at the counters below and complete the number sentences  There are □ groups of 3 15 – 3 – 3 – □ – □ – □ = 0 15 ÷ 3 = □ Look at the drawing and complete the sentences:  There are □ dots all together and there are Δ groups of 3 dots each. Therefore: □ ÷ 3 = Δ There are □ dots all together and there are 4 groups of 3 dots in each. Therefore: □ ÷ 4 = Δ Copy and complete: 20 ÷ 2 = □ 20 ÷ □ = 10 20 ÷ □ = 2 21 ÷ 3 = □ 21 ÷ □ = 7 21 ÷ 7 = □ Understand the rules for dividing by 1 and 0 6 ÷1 = □ 8 ÷ 1 = □ 12 ÷ □ = 12 6 ÷ 0 = □ □ ÷ 4 = 0 1 ÷ 1 = □ 0 ÷ 7 = □	

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<tr><td>1.15
Division</td><td>• Divide numbers to 99 by 1, 2, 3, 4, 5, 10
• Use appropriate symbols (÷, =, □)</td><td></td><td>Use, read and begin to write:
Left over, remainder....
Calculate remainders when doing division calculations:
12 ÷ 5 is 2 remainder 2
23 ÷ 7 is 3 remainder 2
Understand the relationship between multiplication and halving
Answer the following type of questions:
Copy the table below.
Fill in the ‘times 4’ row. What pattern do you see?
<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>
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<tr><td>2s</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
Halve the numbers in the ‘times 4’ row to get the numbers in the ‘times 2’ row.
What patterns do you see?
Understand that division reverses multiplication.
Show these number sentences with drawings
4 x 5 = □ 20 ÷ 5 = □
12 x 4 = □ 48 ÷ 4 = □</td><td></td></tr>
</table>

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1.16 Mental mathematics	**Number concept: Range 999** • Order a given set of selected numbers. • Compare numbers to 999 and say which is 1, 2, 3, 4, 5 and 10 more or fewer **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 • Multiplication and division facts for the: - two times table up to 2 x 10 - ten times table up to 10 x 10 **Calculation strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division		**Examples of questions that can be asked:** **Number concept:** **Number names and symbols** Hold up a card or write down a number name. Choose a learner to write the matching numeral. **More or fewer** What is 1 fewer than 900 1 more than 899 2 more than 702 2 fewer than 405 3 more than 477 3 fewer than 251 4 more than 868 4 fewer than 967 5 more than 729 5 fewer than 685 10 more than 490 10 fewer 660 What is the 5th letter of the alphabet? What is the 9th month of the year? **Ordering and comparing** Which is more: 621 or 671? Give me a number between 154 and 159.	

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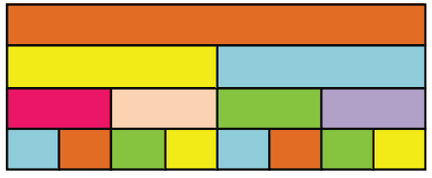
1.16 Mental mathematics	**Number concept: Range 999** • Order a given set of selected numbers. • Compare numbers to 999 and say which is 1, 2, 3, 4, 5 and 10 more or fewer **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 • Multiplication and division facts for the: - two times table up to 2 x 10 - ten times table up to 10 x 10 **Calculation strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division		**Addition and subtraction facts:** • Know by heart all addition and subtraction number bonds to 20. □ + △ = 20 □ + △ = 16 20 = □ - △ Add and subtract fact for all numbers up to and including 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 Quickly recall addition doubles to 20. This should include corresponding subtraction facts. • 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 Show me the number to add to make 20 (writing down or using the place value or Flard cards). • 8 • 2 • 9 • 15 • 3	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number concept: Range 999** • Order a given set of selected numbers. • Compare numbers to 999 and say which is 1,2,3,4,5 and 10 more or fewer **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 • Multiplication and division facts for the: - two times table up to 2 x 10 - ten times table up to 10 x 10 **Calculation strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division		Show me the number left when …. Is taken away from 20 (writing down or using the place value or flard cards) • 5 • 18 • 0 • 14 • 7 **Calculation strategies:** Use calculation strategies to add and subtract efficiently. Add several numbers by using strategies such as: • Look for pairs of numbers that make 10 and use these first 2 + 7 + 8 2 + 8 make 10 and then add 7. • Put the larger number first in order to count on or count back 5 + 15 Restate the number sentence: 15 + 5 and count on to 20 • Change a number to 10 and then subtract or add 1 For example: 8 + 9 = 17 and explain that one could do 8 + 9 = 8 + 10 – 1 6 + 11 = 17 and explain that one could do 6 + 10 + 1 17 – 9 = 8 and explain that one could do 17 – 10 + 1 • Break up a number into its parts and then add Build up and break down numbers: For example work out mentally and explain: Continue to break up numbers into ‘small bits’ 8 + 12 = 8 plus (10 + 2) = 8 + 2 + 10 = 10 + 10 = 20	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.16 Mental mathematics	**Number concept: Range 999** • Order a given set of selected numbers. • Compare numbers to 999 and say which is 1, 2, 3, 4, 5 and 10 more or fewer **Rapidly recall:** • Addition and subtraction facts to 20 • Add or subtract multiples of 10 from 0 to 100 • Multiplication and division facts for the: - two times table up to 2 x 10 - ten times table up to 10 x 10 **Calculation strategies** Use the following calculation strategies: • Put the larger number first in order to count on or count back • Number line • Doubling and halving • Building up and breaking down • Use the relationship between addition and subtraction • Use the relationship between multiplication and division		• Use doubling as a mental calculation strategy Identify near doubles. For example: 8 + 7 = 15 explaining that it is double 7 plus 1 or double 8 minus 1 Recognise that when two numbers are close in size to each other it is easier to find a difference by counting up, not counting back. 17 – 13 = 4 and explain that counting up from 13 to 17 gives 4 Some mental mathematics can be done without apparatus, but it is often useful to do mental mathematics with apparatus. **Recommended apparatus** • A number line (structured and empty) • A number grid • Place value cards (flard cards) • Counting beads	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
1.17 Fractions	• Use and name fractions in familiar contexts including halves, quarters eighths, thirds, sixths, fifths • Recognise fractions in diagrammatic form • Begin to recognise that 2 halves or 3 thirds make one whole and that 1 half and 2 quarters are equivalent • Write fractions as 1 half, 2 thirds		By the end of the term learners should be able to: • recognise fractions of shapes and reinforce their understanding that halves must be of equal size; • know that four quarters make one whole and that each quarter must be the same size; • find fractions of a group of objects; • read and write fraction names; and • order, describe and compare fractions. By the end of the term learners understand fractions as part of a whole and be able to answer similar questions: • halves = one whole • quarters = one whole • thirds = one whole • halves = one whole • fifths = one whole • sixths = one whole Respond to questions such as: When a shape is divided into 2 equal parts, we call these parts___ When a shape is divided into 3 equal parts, we call these parts___ When a shape is divided into ____ equal parts we call these parts quarters. **Able to compare the size of fractions**  Is 1 half bigger or smaller than 3 quarters? How many quarters is the same as 1 whole? How many eighths is the same as 1 whole? Are two quarters equal to 1 half? Find a fraction of a collection of objects. There are 12 beads. 8 are pink and 4 are white. What fraction of the beads is white?	

GRADE 3 TERM 4 2. PATTERNS, FUNCTIONS AND ALGEBRA				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create and describe own patterns** Create and describe own geometric patterns • with physical objects • by drawings lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	Learners will work with patterns from nature, modern everyday life and our cultural heritage from Grade 1 to Grade 6. This means that you do not need to spend a lot of time on this topic. You also need to choose activities and patterns that are appropriate to each grade. One kind of pattern learners can look for is symmetry, e.g. most leaves and animals faces are symmetrical. So are many insects if viewed from above and the patterns on many birds if viewed from below. In Grade 3 there is a focus on finding the line of symmetry through paper folding and reflection. Learners can make patterns by cutting shapes into folded paper. This can include making doilies and traditional shelving paper with cut-out patterns. Learners can then look at and talk about patterns on crocheted doilies and pictures of patterns cut into traditional paper shelving. Learners can also look at patterns on • fences (wire, wooden or vibracrete); • brickwork and floor tiles; • roofing; • clothes and material; • plates, cups and saucers; • soccer balls; • animals such as cows, moths and butterflies, zebra, giraffe, leopards, birds, insects; • flowers and leaves; • wallpaper, including wallpaper made of printed packaging that is often found inside shacks and informal housing; • traditional or modern beadwork; and • traditional clay pots or woven baskets.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.1 Geometric patterns	**Copy, extend and describe** Copy, extend and describe in words • simple patterns made with physical objects • simple patterns made with drawings of lines, shapes or objects **Create and describe own patterns** Create and describe own geometric patterns • with physical objects • by drawings lines, shapes or objects **Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**Patterns all around us** Identify, describe in words and copy geometric patterns • in nature • from modern everyday life • from our cultural heritage	**How can learners describe the patterns they see around them?** There are different ways to describe the patterns we see around us. Most patterns around us are made up of lines, shapes or objects. The shapes or objects do not need to be linked to the geometrical 2-D shapes and 3-D objects worked with in Grade 2. All that learners are looking at is • what is repeated e.g. dots, lines, any kind of shape; and • how it is repeated e.g. • straight lines that cross each other (as in a dishcloth), lines that run along the bottom of material or across a shirt, lines that run up the legs of trousers; • curved lines like the circular lines visible when you cut across an onion; • lines that are irregular like the lines of finger prints and zebra stripes and wrinkles on elephants, rhino and very old people; • wavy lines that you get when you cut across a cabbage, or that you find on a sand dune; • dots that are the same size, dots that are evenly spread; • shapes that are the same size; • shapes that are the same colour; or • patterns made with shapes that are all different: the shapes that make the patterns on the hide of a giraffe are all different.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
2.2 Number patterns	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 200 . **Create and describe own patterns** Create and describe own number patterns.	**Copy, extend and describe** Copy, extend and describe simple number sequences to at least 1 000. Sequences should show counting forwards and backwards in: • 1s from any number between 0 and 1 000 • 10s from any multiple of 10 between 0 and 1 000 • 5s from any multiple of 5 between 0 and 1 000 • 2s from any multiple of 2 between 0 and 1 000 • 100s from any multiple of 100 to at least 1 000 • 50s from any multiple of 50 to at least 1 000 • 25s from any multiple of 25 to at least 1 000 • 20s from any multiple of 20 to at least 1 000 • **Create and describe own patterns** • Create and describe own number patterns • the intervals specified in grade 2 with increased number ranges • 20s, 25s, 50s,100s to at least 1000	See notes for Term 1. Extend the sequences to include the following • 1s from any number between 0 and 1 000 • 10s from any multiple of 10 between 0 and 1 000 • 5s from any multiple of 5 between 0 and 1 000 • 2s from any multiple of 2 between 0 and 1 000 • 100s from any multiple of 100 to at least 1 000 • 50s from any multiple of 50 to at least 1 000 • 25s from any multiple of 25 to at least 1 000 • 20s from any multiple of 20 to at least 1 000 Use objects, pictures, tables and a flow diagram to support learners' transition from skip counting and sequences to multiplication by 10, 5, 2, 4, 3.	3lessons

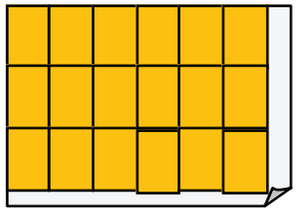
GRADE 3 TERM 4 3. SPACE AND SHAPE (GEOMETRY)				
TOPICS	**CONCEPTS AND SKILLS: REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS: FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
3.2 **3-D objects**	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces **Focussed activities** • Observe and build given 3-D objects using concrete materials such as cut-out 2-D shapes, clay, toothpicks, straws, other 3-D geometric objects	**Range of objects** Recognise and name 3-D objects in the classroom and in pictures • ball shapes, (spheres) • box shapes (prisms) • cylinders • pyramids • cones **Features of objects** Describe, sort and compare 3-D objects in terms of: • 2-D shapes that make up the faces of 3-D objects • flat or curved surfaces	See Notes for Term 2. This term you can practise, revise and consolidate work on 3-D objects through written exercises. Focus on recognising and naming • ball shapes (spheres); • box shapes (prisms); • cylinders; • pyramids; and • cones when shown pictures of geometric or everyday objects. Questions should focus learners on • whether the surfaces of objects are curved or flat; and • whether the flat surfaces of objects are triangles, rectangles, squares or circles.	1 lesson
3.4 **Symmetry**	**Symmetry** • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes • Determine line of symmetry through paper folding and reflection	**Symmetry** • Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes	The work on symmetry through paper folding done in Term 2 should help learners to identify lines of symmetry in drawings of geometrical and non-geometrical objects. Written exercises should include examples where • the line of symmetry is not a vertical line; and • there is more than one line of symmetry in the shape or object.	1 lesson

GRADE 3 TERM 4 4. MEASUREMENT				
TOPICS	**CONCEPTS AND SKILLS REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
4.1 Time	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in o hours o half hours o quarter hours o minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months Use clocks to calculate length of time in hours or half hours, and quarter hours	**Telling the time** • Read dates on calendars • Place birthdays, religious festivals, public holidays, historical events, school events on a calendar • Tell 12-hour time in o hours o half hours o quarter hours o minutes on analogue clocks and digital clocks and other digital instruments that show time e.g. cell phones **Calculate length of time and passing of time** Use calendars to calculate and describe lengths of time in days or weeks or months including • converting between days and weeks • converting between weeks and months Use clocks to calculate length of time in hours, half hours and quarter hours	Learners continue to practice talking about the duration of time and the sequencing of time. During whole class teaching time and focus group time, learners continue to talk about the day of the week, month of the year and the date of the current day; as well as days before and days to come. Learners continue to place the following on a calendar as the events arise • birthdays; • religious festivals; • historical events; • school events; and • public holidays. Continue to ask learners to tell the time at regular intervals on an almost daily basis. o in hours and minutes on a digital clock; and o in hours, half hours and quarter hours using analogue clocks. For example, learners can be asked to tell the time when school starts, at break time and at home time, or when they change from one lesson to another. Choose times where the clock shows an exact hour or half hour or quarter hour. It is useful to have a large clock displayed in the classroom, so that learners can refer to it. Learners can also make models of clocks. You can then ask them to show various times and include some calculations e.g. “Show me 10 o’clock. What was the time a quarter of an hour before 10?” During independent work time learners continue do exercises related to telling the time o in hours, half hours and quarter hours on analogue clocks; and o in hours and minutes on a digital clock. Learners can do calculations with weeks or days if provided with a calendar or section of a calendar e.g. finding dates and calculating the time differences between them. **Reading analogue time in minutes** Spend about 2 lessons focussing on consolidating learners on the skill of reading analogue time in minutes. See notes for Term 3.	2 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.2 Length	**Informal measuring** • Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters etc • Describe the length of objects by counting and stating how many informal units long they are • Use language to talk about the comparison e.g. longer, shorter, taller, and wider **Introducing formal measuring** • Estimate, measure, compare, order and record length using metres (either metre sticks or metre lengths of string) as the standard unit of length • Estimate and measure lengths in centimetres using a ruler No conversions between metres and centimetres required		All kinds of measuring length listed in the column alongside can be practised in independent work time throughout the term. All work should be recorded.	

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.3 **Mass**	**Informal measuring** • Estimate, measure, compare, order and record mass using non-standard measures and a measuring balance e.g. blocks, bricks etc. • Use language to talk about the comparison e.g. light, heavy, lighter, heavier **Introducing formal measuring** • Compare, order and record the mass of commercially packaged objects which have their mass stated in kilograms e.g. 2 kilograms of rice and 1 kilogram of flour or in grams e.g. 500 grams of salt • Measure their own mass in kilograms using a bathroom scale No conversions between grams and kilograms required	**Introducing formal measuring** Learners do written tasks to consolidate the following, including reading pictures of • products with mass written on them • pictures of mass on bathroom scales where the needle points to a numbered gradation line	To consolidate the work done on mass throughout the year, learners should do written exercises in which they • read pictures which allow them to compare the mass of objects shown on a measuring balance; • read pictures which allow them to state the mass of objects on a measuring balance with informal units of measurement; • compare, order and record their findings of o pictures of groceries with their mass stated in kilograms; and o pictures of groceries with the mass stated in grams; and • read pictures of bathroom scales where the mass is shown to the nearest whole kilogram. See the notes for Term 2. **Measuring mass as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of mass; • mass in kilograms; and mass in grams. Take into account the number range appropriate for the term, as well as the range of problems types appropriate for the term.	1 lessons

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.4 Capacity/ Volume	**Informal measuring** • Estimate and measure, compare and order the capacity of containers (i.e. the amount the container can hold if filled) by using non-standard measures e.g. spoons and cups • Describe the capacity of the container by counting and stating how many of the informal units it takes to fill the container e.g. the bottle has the capacity of four cups **Introducing formal measuring** • Estimate, measure, compare, order and record the capacity of objects by measuring in litres, half litres and quarter litres • Compare, order and record the capacity of commercially packaged objects whose capacity is stated in litres e.g. 2 litres of milk, 1 litre of cool drink, 5 litres of paint or in millilitres e.g. 500 ml of milk, 340 millilitres of cool drink, 750 millilitres of oil • Know that a standard cup is 250 millilitres • Know that a teaspoon is 5 millilitres No conversions between millilitres and litres required	**Introducing formal measuring** Learners do written tasks to consolidate the following, including reading pictures of • products with their capacity written on them in order to sequence in order • pictures of jugs where the volume is near to a numbered 1 litre or 2 litre gradation line or half litres or quarter litre • pictures of jugs where the volume is near to a numbered millilitres gradation line The expectation is that learners only read to the nearest numbered gradation line. The describe their volume as almost/nearly/close to/a bit more than/more or less/ exactly the number (of litres) they read off the jug No conversions between millilitres and litres required	During independent work time learners should continue to • estimate and measure, compare, order and record the capacity of containers or the volume in containers using non-standard measures; • compare and order the capacity of a range of bottles and grocery items where the volume is stated on the packaging; and • use either 1 litre bottles or 1 litre jugs to estimate and measure, compare, order and record the capacity of containers or the volume in containers in litres. See the notes for Term 3. Learners should be given written tasks to consolidate the following, including reading pictures of • products with their capacity written on them in order to sequence; and • pictures of jugs where the volume is near to a numbered 1 litre or 2 litre gradation line. The expectation is that learners only read to the nearest numbered gradation line. They describe their volume as almost/nearly/close to/a bit more than/more or less/ exactly the number (of litres) they read off the jug. **Measuring capacity as a context for solving problems and calculations** During time allocated to Numbers, Operations and Relationships learners can solve problems that use the context of • informal measurement of capacity/volume e.g. Gogo uses 2 cups of milk to makea pudding. If she doubles the recipe, how much milk will she need? • litres • millilitres Take into account the number range appropriate for the term, as well as the range of problems types.	1 lesson

TOPICS	CONCEPTS AND SKILLS REQUIREMENT BY YEAR END	CONCEPTS AND SKILLS FOCUS FOR TERM 4	SOME CLARIFICATION NOTES OR TEACHING GUIDELINES	DURATION (in lessons of 1 hour 24 minutes)
4.5 **Perimeter and area**	**Perimeter** • Investigate the distance around 2-D shapes and 3-D objects using string • **Area** • Investigate the area using tiling	**Area** Investigate the area using tiling	Learners are introduced to measuring area for the first time in Grade 3. In Grade 3 and for most of the Intermediate Phase area is only measured informally. Learners find out how many shapes or objects cover a surface. They pack out shapes or objects without leaving gaps between the shapes or objects. They then count how many of the shapes cover the surface. For example, learners can pack out squares or rectangles onto a page; they count how many of the shapes cover the page. Learners should state the area of the page in terms of the shape e.g. my page has an area of 16 rectangles. It is most likely that the shapes will not cover the page entirely, as shown below.  Learners should then state the size of the page by taking this into account e.g. my page has an area of more than 18 rectangles but fewer than 28 rectangles. Let learners tile the same area with different shapes and similar shapes of different sizes. This will allow learners to see that • the smaller the shape, the more of them will fit onto a surface; and • the shape you choose will affect the numerical answer you get. Learners are not expected to calculate areas by counting squares on a square grid; this they will do in the Intermediate Phase.	2 lessons

GRADE 3 TERM 4 5. DATA HANDLING				
TOPICS	**CONCEPTS AND SKILLS** **REQUIREMENT BY YEAR END**	**CONCEPTS AND SKILLS** **FOCUS FOR TERM 4**	**SOME CLARIFICATION NOTES OR TEACHING GUIDELINES**	**DURATION** (in lessons of 1 hour 24 minutes)
5.4 **Collect and organise data**	**Collect and organise data** • Collect data about the class or school to answer questions posed by the teacher • Organise data supplied by teacher or book • Organise data in - lists - tallies - tables			
5.5 **Represent data**	**Represent data** Represent data in • pictograph • bar graphs			
5.6 **Analyse and interpret data**	**Analyse and Interpret data** Answer questions about data presented in • pictographs • bar graphs	Analyse data from representations provided.	By this stage of the year, learner should have been exposed to all forms of data required in Grade 3 (lists, tallies, tables, pictographs, bar graphs). It is recommended that in Term 4 learners focus on analysing data. You give learners data to analyse in at least • one bar graph; and • one table. Learners should answer questions that you ask about the graph and table; see Term 1 for suitable types of questions.	1 lesson

SECTION 4: ASSESSMENT

4.1 INTRODUCTION

Assessment is a continuous planned process of identifying, gathering and interpreting information about the performance of learners, using various forms of assessment. It involves four steps:

- generating and collecting evidence of achievement;
- evaluating this evidence;
- recording the findings and
- using this information to understand and thereby assist the learner's development in order to improve the process of learning and teaching.

Assessment should be both informal (Assessment for Learning) and formal (Assessment of Learning). In both cases regular feedback should be provided to learners to enhance the learning experience.

In the Foundation Phase, the main techniques of **formal** and **informal** assessment are observation by the teacher, oral discussions, practical demonstrations and written recording. Grade R assessment should be mainly oral and practical.

4.2 INFORMAL OR DAILY ASSESSMENT

Assessment for learning is the process of continuously collecting information on a learner's achievement. This is also called informal assessment. It is a daily monitoring of learners' progress. This is done through observations, discussions, practical demonstrations, informal classroom interactions, etc. It should not be seen as separate from learning activities taking place in the classroom. Informal assessment enables the teacher to monitor learner's progress and to make daily instructional decisions. Informal assessment is used:

- to provide feedback to the learners
- to inform planning for teaching

At times the teacher may keep a checklist or use an observation schedule as a way of recording learners' progress. At times learners or the teacher may mark an exercise. However, informal assessment does not become part of the learners' formal record. The results of informal daily assessment tasks are not taken into account for promotion and certification purposes.

4.3 FORMAL ASSESSMENT

All assessment tasks that make up a formal programme of assessment for the year are regarded as Formal Assessment. Formal assessment tasks are marked and formally recorded by the teacher for progression and certification purposes. Formal assessment provides teachers with a systematic way of evaluating how well learners are progressing in a grade and in a particular subject.

The teacher can only observe about 10 learners at a time, therefore formal assessment tasks will happen mainly in small group focused sessions and it will take a few days to assess the whole class. All the materials and apparatus that learners normally use should be available as usual, (counters, number charts, etc.)

The forms of assessment used should be age and developmental level appropriate. Formal assessments must cater for a range of cognitive levels and abilities of learners. The design of these tasks should cover the content of the subject in a variety of ways.

A variety of forms of assessment (observation, oral, practical and written) should be used to give each learner the opportunity to demonstrate what he or she can do. This is because some learners are more easily able to show what they know in some forms of assessment. For example,

- Some learners who find it difficult to read are good at Mathematics.
- Other learners may not be at the required level of competence in the language of learning and teaching.

Assessment tasks in Mathematics need to include activities and exercises that are not language based, and not reading dependent, to reflect the real abilities of these learners.

However, cognisance should also be taken of what is being assessed. Certain knowledge and skills are best assessed with particular forms of assessment. Different kinds of assessments are appropriate to the skills and concepts necessary for different topics at different age groups. It is useful to use an observation checklist to assess learners measuring in the early grades. Rubrics can be used to evaluate learner's problem solving skills.

4.4 PROGRAMME OF FORMAL ASSESSMENT

The requirements for formal assessment of Mathematics in Grades 1 - 3 are spelt out in the table below:

	TERM 1	TERM 2	TERM 3	TERM 4	TOTAL
Grade 1	2	2	2	1	7
Grade 2	2	2	2	2	8
Grade 3	2	3	3	2	10

Teachers are encouraged to conduct a baseline assessment in the first term. Learners' results in the baseline assessment should not be used to label their ability, but rather to decide how to pitch the initial activities and to assess what aspects of work need more attention. Learners develop at different rates. Some learners have a slow start, but at a later stage they may progress quickly in Mathematics.

Formal Mathematics assessment tasks include more than one topic in Mathematics. The assessment tasks over the year need to cover all content areas and topics, but not everything in the curriculum needs to be formally assessed or formally reported upon. Numbers, Operations and Relationships make up 60% of Mathematics in Grades 1 - 3. This means that 60% of the formal assessment each term and over the year should be focused on Numbers, Operations and Relationships.

Each formal assessment task should not be seen as a single event or test. Some of the criteria can be assessed at the same time, but others will be assessed at different times. For example, if learners' skip counting skills are being assessed, their ability to do the following could be assessed in the same exercise or event:

- Complete counting sequences
- Read and write number symbols
- Count.

However, if an assessment task contains both solving problems by grouping or sharing, and assessing learners' ability to measure capacity; it is more likely that these aspects of Mathematics will be assessed at different times and in different.

4.5 RECORDING AND REPORTING

Recording is a process in which the teacher documents the level of a learner's performance in a specific assessment task. It indicates learner progress towards the achievement of the knowledge as prescribed in the Curriculum and

Assessment Policy Statements. Records of learner performance should provide evidence of the learner's conceptual progression within a grade and her/his readiness to progress or being promoted to the next grade. Records of learner performance should also be used to verify the progress made by teachers and learners in the teaching and learning process.

Reporting is a process of communicating learner performance to learners, parents, schools, and other stakeholders. Learner performance can be reported in a number of ways. These include report cards, parents' meetings, school visitation days, parent-teacher conferences, phone calls, letters, class or school newsletters, etc. Teachers in all grades report in percentages against the subject. The various achievement levels and their corresponding percentage bands are as shown in the table below.

Codes and percentages for recording and reporting

Rating code	Description of competence	Percentage
7	Outstanding achievement	80 - 100
6	Meritorious achievement	70 - 79
5	Substantial achievement	60 - 69
4	Adequate achievement	50 - 59
3	Moderate achievement	40 - 49
2	Elementary achievement	30 - 39
1	Not achieved	0 - 29

4.6 MODERATION OF ASSESSMENT

Moderation refers to the process that ensures that the assessment tasks are fair, valid and reliable. Moderation should be implemented at school, district, provincial and national levels. Comprehensive and appropriate moderation practices must be in place for the quality assurance of all subject assessments.

4.7 GENERAL

This document should be read in conjunction with:

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 EXEMPLAR ASSESSMENT TASKS FOR GRADES 1 TO 3

Exemplar assessment checklists are given below. The aim is to assist teachers to plan and implement formal assessment in a continuous way.

GRADE 1				
Observation checklist for capacity/volume				
Content Area	Topic	Criteria	✓ or ×	Comments
Measurement	**Capacity/volume**	Compare and order the amount of liquid (volume) in two containers placed next to each other.		
		Comparing volumes of two or more different-looking containers by pouring into a third container.		
		Record the capacity of containers by using non-standard measures, e.g. spoons and cups.		
		Answer questions about which container holds more.		
		Use language to talk about the comparison e.g. more than, less than, full, empty.		

GRADE 1				
Observation checklist for mass				
Content Area	Topic	Criteria	✓ or ×	Comments
Measurement	**Mass**	Order and compare the mass of three or more objects, by placing pairs of objects on a balance, until all objects can be sequenced.		
		State the unit when giving the mass, e.g. the book has the same mass as 34 marbles.		
		Use language to talk about the comparison, e.g. light, heavy, lighter, heavier.		
		Ability to record measurements taken		

Using rubrics to assess problem-solving

Problem-solving can be assessed using a rubric.

What is considered to be an appropriate way of solving a problem,

- changes as learners develop and increase their understanding of number concept and their operational skills; and
- depends on both the number range in the problem and the nature of the problem.

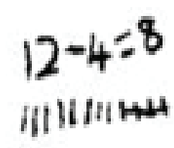
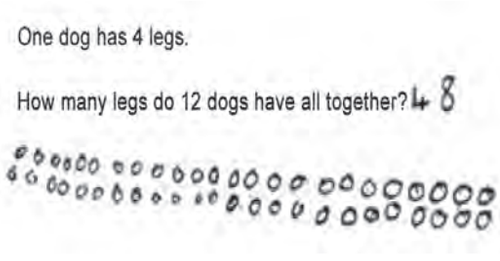
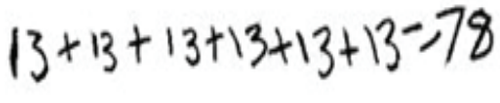
GRADE 1	
Rubric problem-solving	
Does not know where to start or does something inappropriate.	1
Understands problem and starts but cannot finish correctly.	2-3
Understands problem and solves using drawings (marks) or counters. Can explain. May make small errors.	4-5
Completes problem correctly. Can explain own and others' thinking competently.	6-7

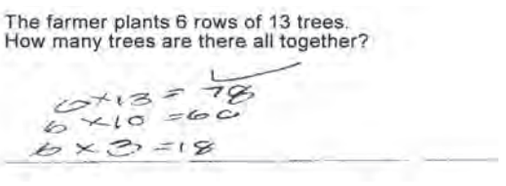
GRADE 2	
Rubric problem-solving	
Does not know where to start or does something inappropriate.	1
Understands problem and starts but cannot finish correctly or Understands problem and solves using drawings (marks) or counters only. *	2-3
Understands problem and solves using numbers, but makes small errors. Can explain.	4-5
Completes problem correctly using number knowledge and techniques like breaking down and recombining numbers, doubling, halving, number lines etc. Can explain own and others' thinking competently.	6-7

* The number range with which Grade 2 learners work begins to make it inefficient to calculate by drawing pictures and counting them. Learners' number sense needs to be sufficiently developed for them to use numbers in problem-solving and calculating.

GRADE 3	
Rubric problem-solving	
Does not know where to start or does something inappropriate.	1
Understands problem and starts but cannot finish correctly, or uses marks (drawings) or counters.	2-3
Understands problem and solves using numbers. Can explain.	4-5
Completes problem correctly using number knowledge and techniques like breaking down and recombining numbers, doubling, rounding and compensating, number lines etc appropriately. Can explain own and others' thinking competently.	6-7

Examples of how to apply this rubric to problems solved by Grade 1 - 3 learners

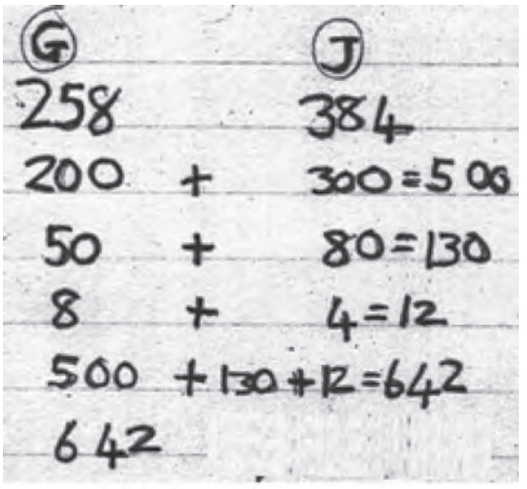
A dog has 4 legs. How many legs do 12 dogs have?	
	**Grade 1: Rating: 1.** The learner does not understand the problem, so he or she uses an inappropriate strategy or operation.
	**Grade 1: Rating 6** The learner has understood the problem, solved the problem in an appropriate way for Grade 1 and can explain the problem. **Grade 2: Rating 4** The learner has understood and solved the problem. However, a grade 2 learner should be using number and operational symbols to add repeatedly (or multiply, depending on the time of year).
The farmer plants 6 rows of trees with 13 trees in each row. How many trees does he plant all together?	
	**Grade 2 learner, Rating 6** The learner has understood and solved the problem, using appropriate number and operational symbols for Grade 2. **Grade 3 learner: Rating 4** The learners have understood and solved the problem in an adequate way. However, they do not get an outstanding rating since they have not shown the techniques and operations available to Grade 3 learners i.e. multiplication using breaking down and recombining numbers: see below.



Grade 3 learner: Rating 5

Completes problem correctly using appropriate number and operational symbols as well as appropriate techniques like breaking down and recombining numbers. Can explain own and others' thinking competently.

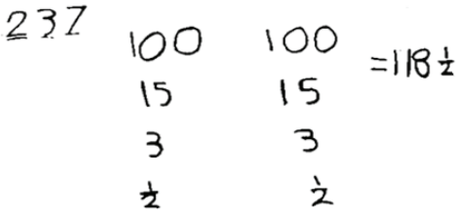
Gino has 258 stickers and Josie has 384 stickers. How many stickers do they have altogether?



Grade 3: Rating: 5

Completes problem correctly using number knowledge and techniques like breaking down and recombining numbers, doubling, rounding and compensating, number lines etc. appropriately. Can explain own and others' thinking competently.

What is half of 237?



Grade 3. Rating: 5

Solves problem correctly using number knowledge and techniques like breaking down and recombining numbers, doubling, halving, rounding and compensating, number lines etc. appropriately. Can explain own and others' thinking competently.

Grade 1 Term 1: Exemplar baseline assessment task

Type of activity	Criteria	✓ or ×	Comments
Oral	Is the learner able to • count out objects to 10? • say which collection of objects is smallest/biggest? • read number symbols to 5?		
Practical	Is the learner able to • sequence objects? • copy a pattern? • place objects in front of him/her? • place objects behind him/her? • sort objects according to one attribute? • engage with a problem in order to find a solution?		

Grade 1 Term 1: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts out 10 objects reliably, saying the names in sequence
		Writes and reads number symbols from 1 to 5
		Orders numbers 1 - 5 from smallest to greatest
		Uses language to describe relative size of numbers: before, after, between
	Solve Problems	Solves word problems in context involving addition, subtraction with answers up to 5 using apparatus or drawings and explains own solution to problems
		Solves practical problems involving equal sharing and grouping with whole numbers up to 5 and with answers that may include remainders by using apparatus or drawings Explains solutions
	Calculations	Does addition up to 5 using apparatus or drawings
		Does subtraction from any number 5 or fewer using apparatus or drawings
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting in ones up to 10 e.g. 1, 2, 3, 4, __, __, __, __, 9, 10
Space and shape (Geometry)	Position	Follows instructions to place one object in relation to another e.g. put the pencil inside the box; put the pencil on the right hand side of the box
	3-D	Recognises and names • ball shapes (spheres) • box shapes (prisms)
Measurement	Time	Describes when something happens using language e.g. morning, afternoon, night, early, late
	Length	Measures lengths, widths or heights using informal measures. States measurement in informal units
	Mass	Measures and compares mass of three or more objects using a balancing scale using informal measurements. Order the objects according to mass. Describes order using lighter, heavier, heaviest
Data handling	Sorting collections of objects	Collects and sorts everyday physical objects according to criteria given by teacher Draws a picture of the sorted objects or describes the sorted collection

Grade 1 Term 2: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts out 20 objects reliably, saying the names in sequence
		Says which of two given collections of objects is more or fewer where both collections are 10 or fewer
		Reads number symbols from up to 30
		Writes number symbols to 10
	Solve Problems	Solves word problems in context involving addition, subtraction with answers up to 10 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
	Calculations	Does addition up to 10 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +
		Does subtraction from any number 10 or fewer using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using -
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting to 30 • in ones e.g. 20, 21, 22, 23, __, __, __, __, 28; __; 30. • in fives e.g.5, 10, 15, __, __, 30,
	Geometric Patterns	Copies and extents a pattern • made by using one object but having the colours of the objects change in a regular way. or • made by using similar objects of different size
Space and shape (Geometry)	2-D	Identifies and names circles squares triangles

Grade 1 Term 2: Exemplar Assessment Task 2

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards and backwards in 1s between 1 and 50
		Counts forward in 5s, 2s to 50
		Uses language to describe relative size of numbers: before, after, between
		Compare the size of numbers up to 10 using language e.g. more than, fewer than etc.
		Uses language to describe relative size of numbers: before, after, between
		Orders numbers 1 - 10 from smallest to greatest
		Reads number symbols from up to 50
	Solve Problems	Solves practical problems involving equal sharing and grouping with whole numbers up to 10 and with answers that may include remainders by one of the following • apparatus • drawings • number lines Explains solutions
	Solve Problems	Solves word problems in context involving repeated addition with answers up to 10 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
	Money	Recognises South African currency coins 5c, 10c, 20, 50c, R1, R2; R5
		Solves money problems involving totals and change to R10 and in cents up to 20c cents
	Calculations	Does repeated addition up to 10 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting • in ones back from 50 e.g. 50, 49, 48, __, __, 45, __, __, 42; __; 40. • in tens to 50 e.g.10, 20, 30, __, __,
Measurement	Capacity/ Volume	Estimates, measures, compares, orders and records the capacity of containers by using non-standard measures e.g. spoons and cups
Data handling	Sorts collections of objects	Collects and sorts everyday physical objects according to criteria given by teacher Draws a picture of the sorted objects or describes the sorted collection

Grade 1 Term 3: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts out 40 objects reliably, saying the names in sequence
		Says which of two given collections of objects is more or fewer where both collections are 15 or fewer
		Reads number symbols from up to 70
		Writes number symbols to 20
	Solve Problems	Solves word problems in context involving addition, subtraction with answers up to 15 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
	Calculations	Does addition up to 15 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +, =
		Does subtraction from any number 15 or less using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using -, =
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting • in ones. back from 60 e.g. 60, 59, 58, __, __, __, 54, __, __, 51. • in twos e.g.44, 46, 48, __, __, __,56; __, 60
	Geometric Patterns	Copies, extend and describes patterns where different shapes are used to make up a group, but the groups of objects are repeated in exactly the same way
Space and shape (Geometry)	3-D	Recognises and names • ball shapes (spheres) • box shapes (prisms)
		Sorts objects into those that roll and those that slide

Grade 1 Term 3: Exemplar Assessment Task 2

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards in 10s, 5s, 2s to 80
		Uses language to describe relative size of numbers: before, after, between
		Compare the size of numbers up to 15 using language e.g. more than, fewer than etc
		Can split numbers 11 - 15 into 10 + ones e.g. 12 = 10 + 2
	Solve Problems	Solves word problems in context involving repeated addition with answers up to 15 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
		Solves practical problems involving equal sharing and grouping with whole numbers up to 15 and with answers that can include remainders by one of the following • apparatus • drawings • number lines Explains solutions
	Money	Recognises South African currency coins 5c, 10c, 20, 50c, R1, R2; R5
		Solve money problems involving totals and change to R20 and in cents up to 20c cents
	Calculations	Does repeated addition up to 15 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +, =
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting • in ones back from 80 e.g. 80, 79, 78, __, __, __, __, 73, ___; __; 70. • in tens to 80 e.g.10, 20, 30, __, __,__, __, __, • in fives e.g.5, 10, 15, __, __, 30, __, __.45, __, __, 60, __, __, __, 80
Space and shape (Geometry)	Symmetry	Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes
Measurement	Length	Estimate, measure, compare, order and record length using non-standard measures e.g. hand spans, paces, pencil lengths, counters, etc.
Data handling	Data	Answer questions about data in pictograph

Grade 1 Term 4: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts out 50 objects reliably, saying the names in sequence
		Says which of two given collections of objects is more or fewer where both collections are 20 or fewer
		Reads number symbols from up to 80
	Solve Problems	Solves word problems in context involving addition, subtraction with answers up to 20 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
	Calculations	Does addition up to 20 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +, =
		Does subtraction from any number 20 or fewer using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using -, =
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting • in ones e.g. back from 80: 80, 79, 78, __, __, __, 74, __, __, 71. in twos e.g. 64, 66, 68, __, __, __,76; __, 80
Space and shape (Geometry)	2-D	Recognises and names • circles • triangles • squares Sorts according to whether round or straight sides
Measurement	Mass	• Estimates, measures, compares, orders and record mass using non-standard measures and a balancing scale e.g. blocks, bricks, etc. • Uses language to talk about the comparison e.g. light, heavy, lighter, heavier

Grade 1 Term 4: Exemplar Assessment Task 2

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards in 10s, 5s, 2s to 100
		Uses language to describe relative size of numbers: before, after, between
		Compare the size of numbers up to 20 using language e.g. more than, fewer than etc
		Orders numbers 1 - 20 from greatest to smallest
		Can split numbers 11 - 20 into 10 + ones e.g. 14 = 10 + 4
		Reads number symbols from up to 100
		Writes number symbols to 20
	Solve Problems	Solves word problems in context involving repeated addition with answers up to 20 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
		Solves practical problems involving equal sharing and grouping with whole numbers up to 20 and with answers that may include remainders by one of the following • apparatus • drawings • number lines Explains solutions
	Money	Recognises South African currency coins 5c, 10c, 20, 50c, R1, R2; R5
		Solves money problems involving totals and change to R20 and in cents up to 50c cents
	Calculations	Does repeated addition up to 20 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +, =
Patterns, functions and Algebra	Number Patterns	Completes number sequences of counting • in ones backwards e.g. 99, 98, __, 96, __, __, __, 92, ___; __; 89. • in tens to 100 e.g.10, 20, 30, __, __, __, __, __, 90, __. in fives e.g. 20, 25, 30, __, __.45, __, __, 60, __, 70__, __,__, 90
Space and Shape (Geometry)	Position	Applies language of position to follow directions to move around the classroom
		Matches different views of the same object
Measurement	Time	Knows days of week Knows months of year
Data handling	Data	Answers questions about data in pictograph

Grade 2 Term 1: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationship	Number Concept	Groups and counts up to 100 objects
		Compares and orders whole numbers up to 25
		Decomposes two-digit numbers up to 25 into tens and ones e.g. 23 = 20 + 3
		Reads and writes number symbols from 0 to 100
	Solve Problems	Solves word problems in context involving addition, subtraction with answers up to 20 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
	Money	Recognises South African currency coins 5c, 10c, 20, 50c, R1, R2; R5 and notes R10, R20, R50
		Solves money problems involving totals and change to R20 and in cents up to 50c cents
	Calculations	Does addition up to 20 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +, =
		Does subtraction up to 20 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +, =
Patterns, functions and Algebra	Number Patterns	Completes number sequences of counting forwards and backwards • in ones from 0 - 100 e.g. 99, 98, 97, __, __, __, 93, __, 91, 90 • in tens from 0 - 100 e.g. 10, 20, 30, __, __, __, 70__, __, 100 • in twos from 0 - 100 e.g. 80, 82, 84, __, __, 90, _, __, __, ____, 100
Space and shape (Geometry)	3-D	Recognises and names • ball shapes (spheres) • box shapes (prisms)
	2-D shapes	Recognises and names circles, triangles, squares and rectangles
Measurement	Time	Tells time on analogue clock in hours
	Length	Estimates, measures, compares, orders and records lengths, widths or heights in metres

Grade 2 Term 2: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts pictures of grouped objects up to 150
		Compares numbers up to 50
		Reads and writes numbers from 0 - 150
		Counts forwards and backwards in 10s, 2s, 5s to 150
	Solve Problems	Solves practical problems involving equal sharing and grouping with whole numbers up to 50 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting forwards and backwards in ones from 0 - 150 e.g.131, 132, 133, __, __, __, 137, __, ___, ___, 141 • in tens between 0 & 200 e.g.150, 140, 130, __, __, 100, __, __.70, __, __, 40 • counting in twos e.g. 150, 148, 146, 144, __, __, 138, __, __, 132. • counting in fives from 0 - 150 e.g. 105, 110, 115, __, __, __, 135, __, __, 150
		Copies, extends and describes patterns where different shapes are used to make up a group, but the groups of shapes are repeated in exactly the same way
Measurement	Time	Tells time on analogue clock in hours and half hours

Grade 2 Term 2: Exemplar Assessment Task 2

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards in 3s, 4s
	Solve Problems	Solves and explains solutions to problems that involve equal sharing that lead to fractions
	Fractions	Recognises and uses halves, thirds, quarters, fifths in familiar contexts
		Recognises fractions in diagrammatic form
		Writes fractions in form 1 half, 1 third etc
	Calculations	Does addition up to 50 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +, =
		Does subtraction up to 50 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using _, =
Patterns, functions and algebra	Number Patterns	Completes number sequences between 0 & 150 • counting in ones • counting in fours e.g.4, 8, 12 __, __, 24, __, 32, __, __, __, 48 • counting in threes e.g. 3, 6, 9, __, __,21, __, __,__, 33, 36.
Measurement	Mass	Estimates, measures, compares, orders and records mass using non-standard measures and a balancing scale e.g. blocks, bricks, etc.
		Orders products on which the mass is written in kilograms

Grade 2 Term 3: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts up to 180 pictures of grouped objects
		Compares and orders numbers up to 75
		Reads and writes number symbols up to 180
		Counts forwards and backwards in 2s, 10s, 5s between 0 & 180
		Decomposes two-digit numbers up to 75 into tens and ones e.g. 48 = 40 + 8
	Solve Problems	Solves word problems in context involving repeated addition leading to multiplication up to 40 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
	Calculations	Can multiply the numbers 1 - 10 by 5, 4 using one of the following • apparatus • drawings • number lines Writes a number sentence using x, =
Patterns, functions and algebra	Number Patterns	Completes number sequences of • counting forwards and backwards in ones between 0 & 180 e.g. • 180, 170, 160, __, __, 120, __,__ 90, • counting in twos e.g. 150, 152, 154, __, 156, __, 160, __, __, 166 • counting in fives from 0 - 150 e.g.120, 125, 130, 135, __, __, __, 155, __, __, 170, __, 180
Space and shape (Geometry)	Position	Applies language of position to follow directions to move around the classroom

Grade 2 Term 3: Exemplar Assessment Task 2

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards in 4s, 3s
	Solve Problems	Solves and explains solutions to problems that involve equal sharing that lead to fractions
	Fractions	Recognises and uses halves, thirds, quarters, fifths in familiar contexts
		Recognises fractions in diagrammatic form
		Writes fractions in form 1 half, 1 third etc
Patterns, functions and algebra	Number Patterns	Completes number sequences between 0 & 180 • counting in ones • counting in fours e.g. 104,108, 112 __, __, 124, __, 132, __, __, __, 148 • counting in threes e.g. 103, 106, 109, __, __,121, __, __,__, 133, 136.
	Geometric Patterns	Copies, extends and describes a geometric pattern in which the same shapes occur, but the number of each kind of shape increases or decreases in a regular way
Space and shape (Geometry)	Position	Matches different views of the same object
	2-D shapes	Recognises and names circles, triangles, squares and rectangles
		Sorts shapes into those with straight sides and those with round sides
Measurement	Capacity/ Volume	Estimates, measures, compares, orders and records the capacity of containers by using non-standard measures e.g. spoons and cups
	Time	Reads analogue time in hours, half hours or quarter hours
		Uses a calendar to calculate length of time in days or weeks
Data handling	Data	Constructs a pictograph on blocked paper when given the data

Grade 2 Term 4: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts pictures of grouped objects up to 200
		Orders and compares numbers to 99
	Solve Problems	Solves word problems in context that involve grouping or sharing up to 99 with answers that include remainder in using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
	Money	Recognises South African currency coins 5c, 10c, 20, 50c, R1, R2; R5 and notes R10, R20, R50
		Solves money problems involving totals and change to R99 and in cents up to 95c cents
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting forwards and backwards • in ones between 0 and 200 • in tens between 0 and 200 e.g. 130, 140, 150, __, ___, ___, __, 200
Space and shape (Geometry)	2-D	Recognises and names • circles • triangles • squares • rectangles Sorts according to whether round or straight sides
Measurement	Time	Uses a clock to calculate length of time passes in hours, half hours or quarter hours

Grade 2 Term 4: Exemplar Assessment Task 2

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards and backwards in 2s, 5s to 200
		Reads and writes number symbols from up to 200
	Calculations	Does addition up to 99 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using +, =
		Does subtraction from any number 99 or fewer using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving Writes a number sentence using -, =
Patterns, functions and algebra	Number Patterns	Completes number sequences between 0 & 200 • counting in twos e.g. 160, 162, 164, __, 166, __, 170, __, __, 176, __, 180 • counting in fives from 0 - 200 e.g.160, 165, 170, __, __, __, 190__, 200
Data handling	Data	Answers questions about data in pictograph

Grade 2 Term 4: Exemplar Assessment Task 3

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards in 4s, 3s
	Solve Problems	Solves word problems in context involving repeated addition leading to multiplication with answers up to 50 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
	Calculations	Can multiply the numbers 1 - 10 by 3 using one of the following • apparatus • drawings • number lines • doubling Writes a number sentence using x, =
Patterns, functions and algebra	Number Patterns	Completes number sequences between 0 and 180 • counting in ones • counting back in fours e.g. 48,44, 40 __, __, 28, __, __, 16, __, __, 0 • counting back in threes e.g. 36, 33, 30, __, __, 21, 18, __,__, 9, __, __, 0.
Space and shape (Geometry)	3-D	Recognises and names • ball shapes (spheres) • box shapes (prisms) • cylinders
		Sorts objects into those that roll and those that slide
	Symmetry	Recognises and draws line of symmetry in 2-D geometrical and non-geometrical shapes
Measurement	Capacity/ Volume	Orders everyday products whose capacity is written on them in litres
		Reads volume in litres from pictures of measuring jugs

Grade 3 Term 1: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationship	Number Concept	Groups and counts up to 200 objects
		Compares and orders whole numbers up to 99
		Reads and writes number symbols from 0 to 500
		Decomposes two-digit numbers up to 99 into tens and ones e.g. 78 = 70 + 8
	Solve Problems	Solves word problems in context involving addition, subtraction with answers up to 99 using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 and explains own solution to problems
	Money	Solves money problems involving totals and change in rands or in cents
	Calculations	Does addition up to 99 using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 Writes a number sentence using +, =
		Does subtraction up to 99 using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 Writes a number sentence using +, =
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting forwards and backwards • in ones between 0 and 200 e.g. 199,1 98, 197, __, __, __, 13, __, 191, 190 • in tens between 0 and 200 e.g. 110, 120, 130, __, __, __, 170__, __, 200 • in hundreds between 0 and 500 e.g. 100, 200, 300, __, __, • in fives between 0 and 200 e.g. 150, 155, 160, __, __, __, 180, __, __, 195, __ • in twos between 0 and 200 e.g. 180,182, 184, __, __, 190, _, __, __, ___, 200
Space and shape (Geometry)	2-D shapes	Recognises and names circles, triangles, squares and rectangles
		Sorts shapes into those with straight sides and those with round sides
Measurement	Time	Reads dates on a calendar
		Tells time on analogue clock in hours, half hours and quarter hours
	Capacity/ Volume	Estimates, measures, compares, orders and records the capacity of containers by using non-standard measures e.g. spoons and cups
		Orders everyday products whose capacity is written on them in millilitres

Grade 3 Term 2: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts pictures of grouped objects (e.g. grouped in 10s, 25s, 50s or 100s) up to 500
		Orders and compares numbers up to 500
		Reads and write numbers from 0 - 1 000
	Solve Problems	Solves practical problems involving equal sharing and grouping with whole numbers up to 75 using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 and explains own solution to problems
	Calculations	Divides numbers to 50 by 2, 5, 10
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting forwards and backwards • in ones between 0 and 500 e.g. 389, 399, 400,, __, __, __, 404, __, ___, ___, 408 • in tens between 0 and 500 e.g. 300, 310, 320, __, __, 350, __, __.370, __, __, 400 • in hundreds between 0 and 1 000 e.g. 1000, 900, 800, __, __, 500, __, __.200, __, 0
Space and shape (Geometry)	3-D objects	Recognises and names • ball shapes (spheres) • box shapes (prisms) • cylinders
		Sorts objects into those that have curved and those that have flat surfaces
Measurement	Length	Estimates, measures, orders and compares lengths, heights and widths using informal measures
		Estimates, measures, orders and compares length using metres

Grade 3 Term 2: Exemplar Assessment Task 2

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards and backwards in 2s, 4s or 3s to 500
	Calculations	Does addition up to 400 using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 Writes a number sentence using +, =
		Does subtraction from 400 or fewer using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 Writes a number sentence using _, =
Patterns, functions and algebra	Number Patterns	Completes number sequences of • counting in twos between 0 and 500 e.g. 450, 448, 446, 444, __, __, 438, __, __, 432. • counting in fours between 0 and 500 e.g. 404, 408, 412 __, __, 424, __, 432, __, __, __, 448 • counting in threes between 0 and 500 e.g. 403,406, 409, __, __,421, __, __,__, 433, 436.
	Geometric Patterns	Copies, extends and describes patterns where different shapes are used to make up a group, but the groups of shapes are repeated in exactly the same way

Grade 3 Term 2: Exemplar Assessment Task 3

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards in 5s, 50s, 100s between 0 and 500
		Decomposes three-digit numbers into hundreds, tens and ones e.g. 247 = 200 + 40 + 7
	Solve Problems	Solves and explains solutions to problems that involve equal sharing that lead to fractions
	Fractions	Recognises and uses halves, quarters, eighths, thirds, sixths, fifths in familiar contexts
		Recognises fractions in diagrammatic form
		Writes fractions in form 1 half, 2 thirds etc
Patterns, functions and algebra	Number Patterns	Completes number sequences • counting in fives between 0 - 500 e.g. 105, 110, 115, __, __, __, 135, __, __, 150 • counting in fifties between 0 - 1000 e.g. 550, 600, 650, __, __, 800, __, __, __, 1 000,
Space and shape (Geometry)	Position and directions	Follows directions to move around school
		Gives directions to move around school
Measurement	Mass	Estimates, measures, compare orders and records mass using non-standard measures and a balancing scale e.g. blocks, bricks, etc.
		Orders products on which the mass is written in grams

Grade 3 Term 3: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts up to 750 pictures of grouped objects (e.g. grouped into 20s, 25s, 50, or 100s)
		Compares and order numbers up to 750
		Reads and writes number symbols up to 1 00
	Solve Problems	Solves word problems in context involving multiplication up to 75 using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 and explains own solution to problems
	Calculations	Can multiply by 2, 5, 10 to a total of 99 using one of the following • apparatus • drawings • number lines Writes a number sentence using x, =
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting forwards and backwards • in ones between 0 and 750 e.g. 665, 666, 667, __, __, __, 671, __, ___, ___, 675__, __, 678 • in tens between 0 and 750 e.g. 650, 660, 670, __, __, 700, __, __.730, __, __, 760 • in hundreds between 0 and 1 000 e.g. 0, 100, 200, __, __, 500, __, __.800, __, 1 000

Grade 3 Term 3: Exemplar Assessment Task 2

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards and backwards in 2s, 20s, 4s, 3s to 750
		Decompose three-digit numbers up to 750 into hundreds, tens and ones e.g. 648 = 600 + 40 + 8
	Calculations	Can multiply by 3, 4 to a total of 99 using one of the following • apparatus • drawings • number lines • doubling Writes a number sentence using x, =
Patterns, functions and algebra	Number Patterns	Completes number sequences of • counting in twos between 0 & 750 e.g. 750, 749, 748, __, __, 445, __, __, 742. • counting in twenties between 0 & 1000 e.g. 800, 820, 840, 860, __, __, 920, __, __, 980 • counting in fours between 0 & 750 e.g.704, 708, 712 __, __, 724, __, 732, __, __, __, 748 • counting in threes between 0 & 750 e.g. 630,633, 639, 641, __, __,650, __, __,__, 661
	Geometric Patterns	Copies, extends and describes a geometric pattern in which the same shapes occur, but the number of each kind of shape increases or decreases in a regular way
Space and shape (Geometry)	2-D shapes	Recognises and names circles, triangles, squares and rectangles
		Draws circles, squares, rectangles, triangles
Data handling	Data	Constructs a bar graph on blocked paper when given the data.

Grade 3 Term 3: Exemplar Assessment Task 3

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards in 5s, 50s, 25s to 750
	Solve Problems	Solves and explains solutions to problems that involve equal sharing that lead to fractions
	Fractions	Recognises and uses halves,, quarters, eights, thirds, sixths, fifths in familiar contexts
		Recognises fractions in diagrammatic form
		Recognises that 2 halves make a whole
		Writes fractions in form 1 half, 1 third etc
Patterns, functions and algebra	Number Patterns	Completes number sequences • counting in fives between 0 - 750 e.g. 705, 710, 715, __, __, __, 735, __, __, 750 • counting in fifties between 0 - 1000 e.g.1 000, 950, 800, __, __, 650, __, __, __, 450, • counting in twenty-fives between 0 - 1000 e.g.525, 550, 575, __, __, 650, __, __, __, 750
Space and shape (Geometry)	Position	Follows directions to move from place to place on an informal map
Measurement	Time	Tells time on digital clock in hours and minutes
		Uses a calendar to calculate length of time in days or weeks

Grade 3 Term 4: Exemplar Assessment Task 1

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts pictures of grouped objects up to 1 000
		Orders and compares numbers to 999
	Solve Problems	Solves word problems in context that involve grouping or sharing up to 100 with answers that include remainders using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 and explains own solution to problems
	Calculations	Divides numbers to 99 by 2, 4, 5, 10, 3
	Money	Solves money problems involving totals and change in rands or in cents
Patterns, functions and algebra	Number Patterns	Completes number sequences of counting forwards and backwards • in ones between 0 & 1000 e.g. 889, 890, 891,, __, __, __, 895 __, ____, ____, 889__, __, 892 • in tens between 0 & 1000 e.g. 1000, 990, 980 __, __, 950, __, __.920, __, __, 890
Measurement	Time	Uses a clock to calculate length of time passes in hours and minutes

Grade 3 Term 4: Exemplar Assessment Task 2

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards and backwards in 2s, 4s, 3s to 1 000
		Reads and writes number symbols from up to 1 000
	Calculations	Does addition up to 999 using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 Writes a number sentence using +, =
		Does subtraction from any number 999 or fewer using one of the following • building up and breaking down numbers • number lines • doubling and halving • rounding off to 10 Writes a number sentence using -, =
Patterns, functions and algebra	Number Patterns	Completes number sequences of • counting in twos between 0 and 1 000 e.g. 1000, 998, 996, __, __, 990, __, __, 984 • counting in fours between 0 and 1 000 e.g. 840, 844, 852 __, __, 864, __, 872, __, __, __, 894 • counting in threes between 0 and 1 000 e.g. 960,963, 966, 969, 971, __, __,980, __, __,__, 691
Space and shape (Geometry)	Symmetry	Recognises and draw line of symmetry in 2-D geometrical and non geometrical shapes
Data handling	Data	Answers questions about data in pictograph

Grade 3 Term 4: Exemplar Assessment Task 3

Content area	Topic	Criteria
Numbers, operations and relationships	Number Concept	Counts forwards in 5s, 50s, 25s between 0 and 1 000
	Solve Problems	Solves word problems in context involving repeated addition leading to multiplication with answers up to 50 using one of the following • apparatus • drawings • building up and breaking down numbers • number lines • doubling and halving and explains own solution to problems
	Calculations	Can multiply by 3 up to 99 using one of the following • apparatus • drawings • number lines • doubling Writes a number sentence using x, =
Patterns, functions and algebra	Number Patterns	Completes number sequences • counting in fives between 0 - 1000 e.g. 1 000, 995, 990, 985, __, __, __, 965, __, __, 950 • counting in fifties between 0 - 1000 e.g.600, 650, 700, __, __, 850, __, __, __, • counting in twenty-fives between 0 - 1000 e.g.1 000, 975, 950, __, __, 875, __, __, __, 775
Space and shape (Geometry)	3-D	Recognises and names • ball shapes (spheres) • box shapes (prisms) • cylinders • pyramids • cones
		Sorts objects into those with flat and those with curved surfaces
		Identifies the 2-D shapes that make up flat surfaces on 3-D objects mentioned above
Measurement	Capacity/ Volume	Reads volume in litres from pictures of measuring jugs
		Reads volume in millilitres from pictures of measuring jugs