Foundations For Learning

Foundation Phase Numeracy Lesson plans

First term

Grade 2

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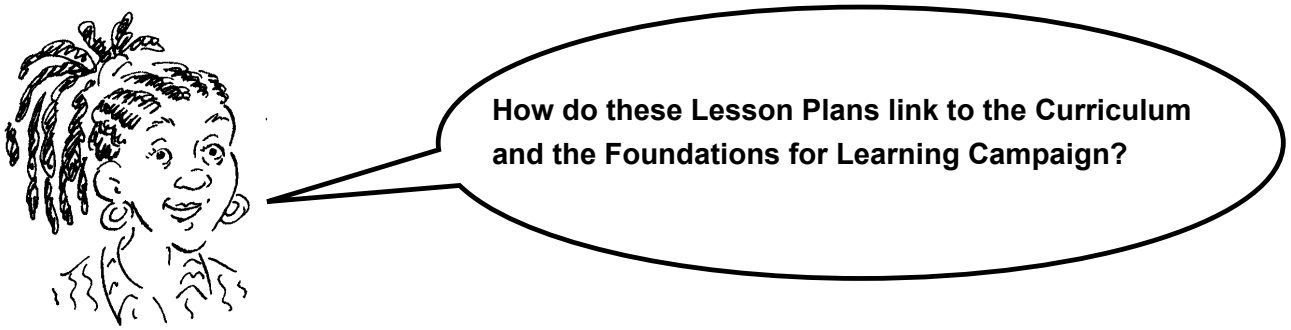
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INTRODUCTION

BACKGROUND

The Foundations for Learning Assessment Framework which was distributed to all schools during 2008 contained "milestones" for each grade. These milestones explain the content (knowledge, concepts and skills) embedded in the Learning Outcomes and Assessment Standards of the NCS, and indicate the expected level of achievement of learners at the end of each term. This document contains **Lesson Plans** based on the milestones.



These **Lesson Plans** have been developed using:

- The NCS Learning Outcomes and Assessment Standards as the starting point
- The Milestones and
- Government Gazette 30880 of 14 March 2008, which outlines the Foundations for Learning Campaign, details the minimum expectations for the teaching of Literacy and Numeracy (Languages and Mathematics) as well as providing timetabling and resourcing suggestions.

The following **table** provides an example of how these three documents are linked for Grade 1 Numeracy:

Learning Outcomes	**Milestones for Numeracy Grades 1- 3**	**Government Gazette: Daily Teacher Activities for Numeracy Grade 1**	**Grade 1 time allocation in Gazette**
LO 1 Numbers, Operations and Relationships LO 2 Patterns, Functions and Algebra LO 3 Space and Shape (Geometry) LO4 Measurement LO 5 Data Handling	All Learning Outcomes covered each term	• Counting with whole class every day, usually at the beginning of the lesson • Oral Mental maths and Number Sense development • Group teaching: - Concept development - Problem solving and investigation • Classroom organisation, supervision of independent work	5 minutes 10 minutes 25 minutes per group :- 10 minutes and 15 minutes 15 minutes



How do I use the time allocated for Numeracy?

The Government Gazette No 30880 provides the following breakdown of the formal teaching allocations for Numeracy and Literacy in the Foundation Phase per day in line with the NCS Policy:

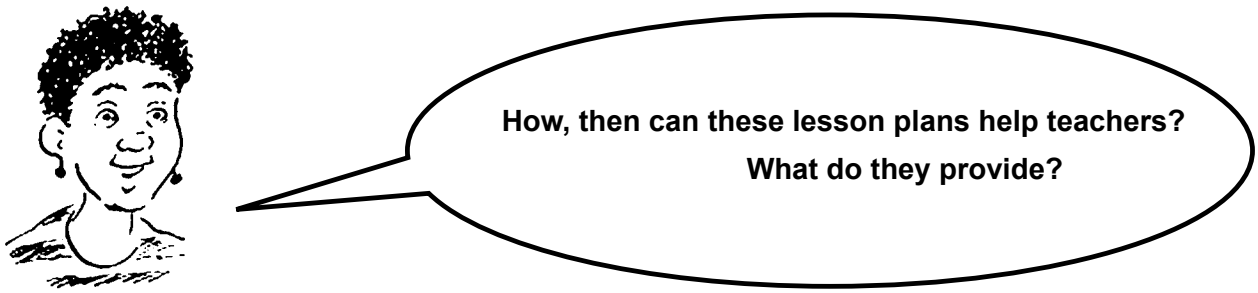
Grade	**Daily total for Numeracy**	**Daily total for Literacy**	**Home Language Literacy**	**First Additional Language Literacy**	Allowance should be made for reading for enjoyment for 30 minutes per day
Grade 1	1 hour 30 minutes	1 hour 50 minutes	1 hour 40 minutes	10 minutes	
Grade 2	1 hour 30 minutes	1 hour 50 minutes	1 hour 30 minutes	20 minutes	
Grade 3	1 hour 45 minutes	2 hours	1 hour 30 minutes	30 minutes	

The Gazette further guides teachers by providing examples of the activities that can be done in each section contained in the Daily Teacher Activities, together with a time allocation.

However in practice:

- Although this is Numeracy time, language development is vital – particularly mathematical language. It is for this reason that basic concepts (colour, shape, size, etc.) - which in the past were always associated with Mathematics – now appear in the Language Learning Area under LO 5: Thinking and Reasoning. Learners need language in order to develop concepts. Nevertheless, these concepts have been included in the Numeracy milestones as they link with many of the Mathematical Assessment Standards e.g. patterns.
- Counting is extremely important in the development of number concepts and learners should count with physical objects (rational counting) and without physical objects (rote counting) ever day.
- Because numeracy concepts need to be developed and consolidated in a variety of contexts, certain activities often go together. For example, counting and patterns are interrelated and learners need to be given the opportunity to develop this understanding through the activities provided.
- While the teacher is working with a group of learners developing new concepts at their level of understanding, the rest of the learners will be working on their own doing consolidation and revision activities of concepts learnt. This means that the independent and written work and the work done with the teacher in the group may not be the same.

- It is unnecessary to "*teach to the clock*" and stick rigidly to the times on a daily basis. On some days for example you may want to spend longer on a counting activity and less time on mental work. On another day you might shorten the written activities in favour of a longer oral session. However over the week you should try to balance the times to cover the allocations.
- Activities can be done in a different order. For example, counting can be linked with the group sessions and may take place after the mental maths time. It is good to also vary the lessons.
- Look for opportunities to integrate, both within Numeracy (Mathematics) and across the other two Learning Programmes (Literacy and Life Skills). A number of the activities can be linked to a theme / context so there are many overlaps with the other Learning Programmes. Integration then takes place naturally.



These Lesson Plans are intended to assist teachers to pace their teaching, give them guidance when planning their assessment tasks and provide suggestions to enrich teaching practice. If you follow these lessons systematically you will cover the curriculum and reach the milestones for Grade 1.

However they are not intended to be prescriptive and teachers are not expected to abandon good practice in order to blindly follow the plans.

The Plans provide:

- **An overview of the term,** together with an **Assessment Overview,** broken into weekly units. The overview covers 10 weeks of work and provides a useful termly checklist. (You might want to compare this with your Work Schedule and your Phase Learning Programme and ask yourself questions such as: *Does your Work Schedule include similar content? Do you reach approximately the same point at the end of each term*? *How does this compare to your Assessment Plan?*) .

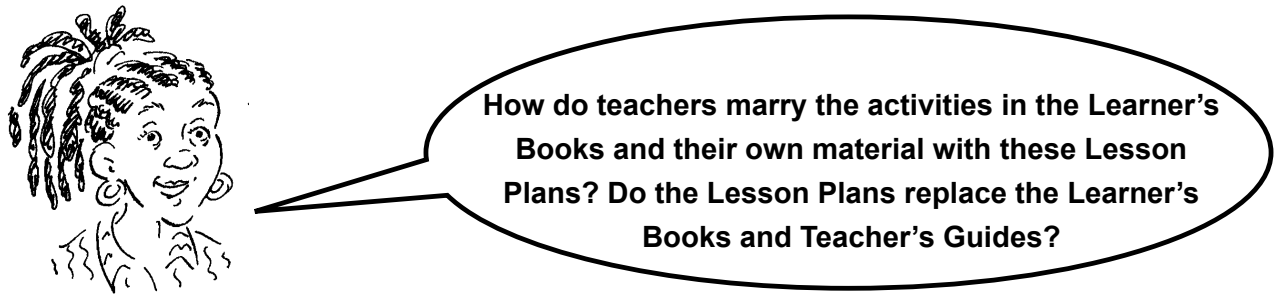
- **An overview for each week** This helps you to see the content covered in the week's lesson plans, to see how it is paced and to make use of specific lesson plans. Learning Outcomes and Assessment Standards have been included. The latter have been numbered as AS1, 2, 3 etc. No sub-bullets are indicated.

- **Individual lesson plans for each week** There are **10 weekly Lesson Plans for each term**. Each week's Plan provides **Daily Activities** for the **different components of Numeracy**, corresponding to the milestones. These are.
  - **Counting**
  - **Mental maths and Number sense development**
  - **Group teaching : concept development and problem solving**

  The lessons for the week are broken down into daily steps providing teachers with a breakdown of content and suggestions for implementation. *However the plans are not prescriptive and allow you to use your own way of presenting the lesson. They are rich in practical ideas drawn from best practice and as such can enrich implementation in the classroom*.

- **Suggestions for the Assessment Tasks** for each term are shown at the end of Week 3 (Assessment Task 1), Week 6 (Assessment Task 2) and Week 9 (Assessment Task 3)

ADAPTING THE LESSON PLANS



Remember: Every class and learner is unique. There can be no "one size fits all". Learners progress at different rates and learn in different ways, and you, as the class teacher, are best able to pace teaching and learning to the needs of your learners. **You can introduce new material in another order as long as you reach all the milestones for Grade 2.** This means that you are free to follow your own sequence as long as it is systematic and thorough.

These Lesson plans should be used together with approved Teacher's Guides, Learner's Books and Work Books. They are not intended to replace the Teacher's Guides and Learner's Books or the material you have developed yourself. The Lesson Plans do not provide actual worksheets, workcards or other material for learners. They may, however, provide examples of the kind of work that can be done

Approved Teacher's Guides should pace the work for the year so that all the Learning Outcomes and Assessment Standards are covered. There will therefore be similarities between the Teacher's Guides and Learner's Books and these Lesson Plans. However the order of content may be presented somewhat differently so you will need to compare and marry the content. **Remember that ultimately you are the decision maker.**


THE NEW CURRICULUM

NUMERACY

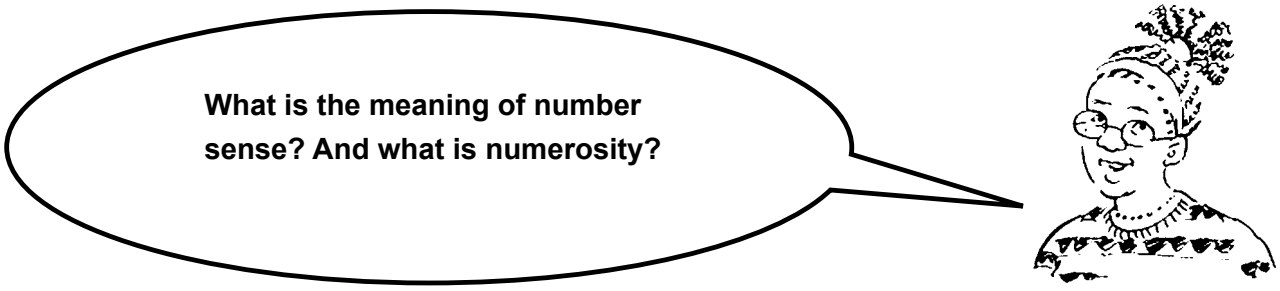
This section explains the key points of each component.

COUNTING

Most learners come to school at the beginning of grade 2 already able to rote count to at least 100. This does not mean, however, that the child understands the value numbers to 100. Rote counting, that is counting without objects, is important in Grade 2 as it teaches the learners the sequence and language of the numbers. Do not limit the learners in their rote counting exercises – let them count as far as they can. At the same time you need to expose your learners to rational counting – that is counting with objects. This counting out of objects is an essential skill and entails co-ordinating a number word with an object to be counted. Learners with eye-hand co-ordination difficulties, or those not able to do one-to-one correspondence easily, might battle at first with counting out objects. Therefore the objects to be counted are very important as a learner can only make sense of counting if he or she finds it sensible to count the objects. In other words, objects that do not belong together naturally can be the cause of counting difficulties early in the year. For example, if your counters are a mixture of shapes and colours, a learner may say there are 4 red counters and 3 blue counters rather than counting 7 counters. This problem should not exist in Grade 2 and your counters need to be mixed, though if a learner has difficulty counting this could be the problem. Counting out should always be in context. It is also a good idea to ask the question “How many” when starting a counting out exercise e.g. how many steps from the table to the door? How many birds are in this picture? How many counters are in this packet? Etc. An essential part of counting is to first estimate and then to count and verify the number.

Remember, the attention span of young learners is very short. Therefore, although counting is done daily, limit the time for this activity. Rather than one long session of counting, spend a few minutes throughout the day counting – count the number of steps to the toilet, how far can you count before everyone is lined up, count the number of boys in the line, and so on. Counting rhymes are wonderful and learners enjoy this type of activity.

MENTAL AND NUMBER SENSE ACTIVITIES



Before starting to teach mathematical concepts, learners in Grade 1 need to follow an **emergent numeracy programme** to develop listening skills, auditory / visual discrimination and memory, gross / fine motor and eye-hand coordination, body image, laterality and figure-ground perception. You may find that there are learners in your Grade 2 class who still need such a programme. Annexure 4 explains these terms and provides examples of activities. You will find learners at different levels

of readiness in your class. Your programme should meet the needs of all the learners i.e. learners who are ready to move on should not be kept at the same level as learners who are still developing these essential skills.

Many teachers are in a hurry for their learners to know facts 'off by heart'. However, knowing facts 'off by heart' is no indication that the learners understand what they are doing, or that they will be able to use these facts in different contexts. It is much, much more important that you design activities which will help your learners develop a **sense of number** because it is this sense of number that learners use when trying to build up an understanding of computational strategies. You cannot teach number sense, you can only help learners acquire it by exposing them to various activities which allow learners to construct knowledge for themselves. Encouraging learners to reflect on what they are doing and then talking about it, helps these learners to develop a sense of number.

Different kinds of knowledge (physical, social and logico-mathematical) form part of one's number sense and so it is important that these are clearly reflected in your teaching programme.

- *Physical* knowledge is the knowledge that the learner acquires from physical objects – so you can see how important it is to use counters and objects and to count out, and not to just rote count!
- *Social* knowledge can only be learnt through interaction with people - and number names and symbols are an example of social knowledge acquired by learners.
- *Logico-mathematical* knowledge refers to the type of knowledge that learners construct for themselves e.g. noticing the pattern of the number names (forty-one follows on forty) goes beyond social knowledge of the number names. The most important aspect of *logico-mathematical* knowledge which the young learner has to construct regarding numbers is **numerosity.** This means to have a feeling for the "how many" of a number – to build up a profile of the number so as to know as much as possible about a number.

Learners pass through three developmental levels – counting all, counting on and breaking up numbers. Again, you cannot teach these levels, you can only support the learners' development by providing appropriate activities. By doing this, mental arithmetic skills will develop naturally as learners start shortening their methods for solving problems – fewer steps will be written down as more calculation is done mentally. Do not neglect geometry and measurement – geometrical activities and word problems with geometrical contexts are very much part of number sense development and problem-solving.

PROBLEM SOLVING



Do I have to teach my learners to solve problems?

There are many different ideas as to what problem solving is and its value for young children. However, one of the focal points of the Mathematics Learning Area is that learners be exposed to problems on a regular basis. It also states that in the Foundation Phase:-

> *"the number concept of the learner is developed through working with physical objects in order 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." (p8)*

But what exactly is a problem? A definition is "*A problem is a task that requires the person solving the problem to use knowledge, understanding and skills that he/she has acquired from other activities and to apply these to the new and unfamiliar situation and come up with a solution".*

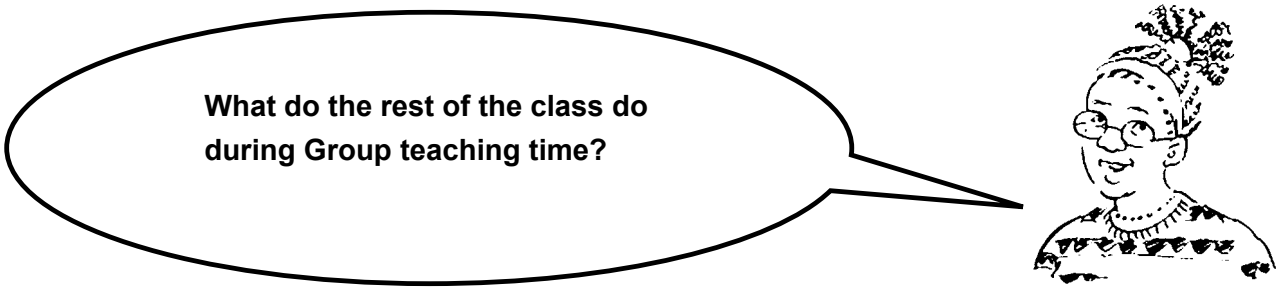
When you read the Assessment Standards you will notice that it is stated that 'learners can perform calculations …**to solve problems**', and '**solves money problems**', and '**solves and explains solutions to practical problems** that involve equal sharing and grouping..' By placing information in context, problem solving becomes a powerful activity and is one of the main vehicles for developing number sense. Therefore you need to constantly challenge learners with realistic, real-life problems without first teaching prerequisite tools or operations. You will never again teach that "the word 'altogether' means you must add, and that 'how many are left' means you must take away"! This means learners should be able to solve problems using all four operations before they even know what they are! In order to fulfill the purpose of word problems, learners should regularly be given problems which are new to them and for which they do not possess routine methods of finding the answer. The objective of giving word problems is to enable your learners to develop new knowledge, take note of how others solve the problem and to reflect on their own thinking.



How do I give my learners sufficient practice in problem solving?

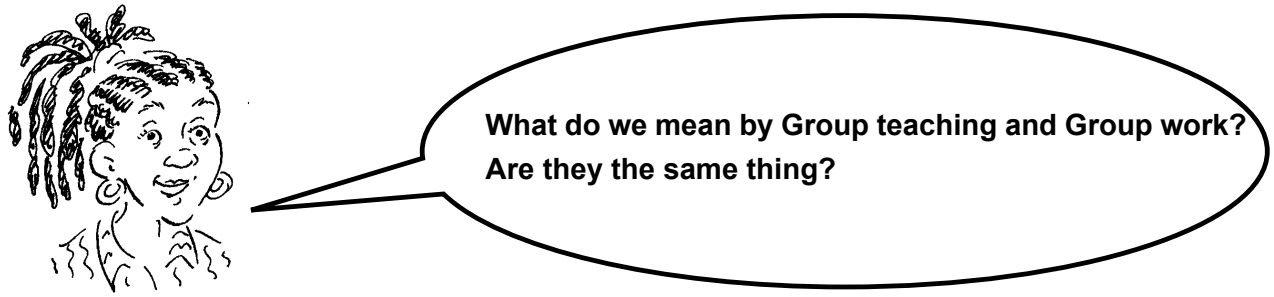
No one can become a proficient problem solver if they are only exposed to problems once a term! Learners need to be exposed to problems as often as possible. The lesson plans give an indication

as to how you can manage this every second day. Care must be taken not to concentrate on one particular type of problem, or problems relating to only one operation. Each problem must be interpreted on its own. Exposing learners to a variety of problems enables them to develop their ability to interpret problems, and this helps to give meaning to the concept of the operations. Annexure 2 provides a list of the different problem types. You will need to adapt the names and the numbers to suit your learners. Use the list as a guide and make up your own problems which suit your context. Although you can ask the whole class the same problem at the same time, most teachers have found that it is more manageable to do problem solving during Group teaching time.



Taking two or more groups will take at least half an hour for each group every day, perhaps a bit longer. Learners not busy with the teacher need to be involved in independent written or practical activities. These activities need to be such that learners know what they have to do and be able do it without interrupting the teacher, asking for help. Training learners to get on with work on their own takes considerable time and patience. The learners need to know which tasks they have to do and, possibly, the order in which they have to complete them. The level of difficulty of the tasks should be such that they don't need help from you. If you think your learners will battle with a particular task – wait until you have time to help them or your group sessions will be continually interrupted.

During the first term the tasks have been kept simple, short and quite repetitive. Often learners will be expected to complete 2 or at the most 3 tasks per day, copying numbers from the board and drawing a picture, completing a readiness activity, or doing a dot-to-dot activity. It helps to have some routine initially so that the order of tasks remains the same and learners gain confidence in working through more than one activity independently, rather than having to continually ask the teacher, "*What do I do next?"*



GROUP TEACHING OR GROUP WORK

Learners come to school with very different levels of readiness for formal teaching and learning due to variations in age, sex, ability and attendance at a grade R or pre-school. Some children have special needs that should be identified in the first years of school so that differentiated learning can take

place at an early age. Learners progress in Grade 1 will vary considerably, so the Grade 2 teacher needs to provide for revision and the re-teaching of skills and concepts where necessary. Teaching and working in groups is a powerful tool to cater for all these diverse needs. Group teaching and group work are also ideal for multi-grade and multi-phase classes.

Group teaching means different things to different people. However, it is not just rearranging the desks into groups. You can either:

- teach learners in same ability groups so that they are taught at a pace that is comfortable for them and their learning is scaffolded. The quicker learners can be challenged and extended and the weaker learners can benefit from more time, support and attention in a small group situation. The learners do not all need to be at the same stage of learning and the activities given to the learners can be varied to meet their needs. Those with special needs can be supported in this way.
  To do this you will need to divide the learners into same-ability groups for certain activities. This works very well as it accommodates the range of abilities in a class – specially large classes. Most teachers find that they can comfortably work with 3 or 4 groups in the class
  OR
- teach the whole class the same lesson BUT differentiate the activities by giving DIFFERENT tasks to either individuals or groups of learners; these tasks can either be at the same level or at varying levels of difficulty. This works well for collaborative learning, small classes and where there are not huge differences between the levels of learners.

Many teachers do not differentiate between the learners' ability levels and do group teaching because they think that they will now have to plan three lessons instead of only one! However, group teaching offers great benefits for everyone in the classroom. You deal only with a group of about 10 learners at one time, while the learners learn self-discipline and take responsibility for their own learning. For group teaching to be successful, you will have to be well organized and know exactly what outcome you are expecting for each group that day. The lesson plans will guide you if you have never attempted group teaching before.

Group work

Group work differs from group teaching in that during group work the whole class is engaged in the same activity at the same time. Groups for these lessons are generally randomly chosen and are mixed ability groups. The idea is that each group will work on one aspect related to the main topic and at the end of the lesson they will present their findings to the rest of the class. As each group adds their information, a whole picture of the topic emerges. This type of work is suited to aspects such as measurement and data handling.

RESOURCES

The Government Gazette No 30880 gives a list of recommended resources for Numeracy which schools should endeavour to provide. In addition to exercise books, Learner's Books, Workbooks and basic stationery which most schools already provide, the following are highlighted as being especially important for Grade 2:

- Counters
- Number squares/grids
- Number dice
- Small individual abacus
- Small white boards and pens, or small chalk boards and chalk
- Coloured sticks, beads and threads
- Shapes



FIRST TERM OVERVIEW

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Counting	Whole Class : Daily rote counting to 100									
	Whole class: Daily counting in 1's forwards and backwards, starting at any number					Whole class: Daily counting in 1's forwards and backwards, starting and ending at any number as indicated				
	Counts out objects to 20		Counts out objects to 25		Counts out objects to 30			Counts out objects to 34		
		Counting in 2's to 100	Counting in 5's to 100	Counting in 2's, 5's and 10's to 100	Counting in 2's forwards and backwards to 100	Counting in 5's forwards and backwards to 100	Counting in 2's, 5's and 10'S forwards and backwards to 100	Counting in 2's forwards and backwards starting and ending at any number	Counting in 5's forwards and backwards starting and ending at any number	Counting in 5's forwards and backwards starting and ending at any number
			Orders numbers 1st to 20th			Orders numbers 1st to 30th				Orders numbers to 34th

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Concept Development and Number Sense	Revision of Grade 1 knowledge and skills									
	Develop vocabulary for the concepts being dealt with each week									
	Knows, reads and writes number name and symbol for 1 to 10	Knows, reads and writes number name and symbol for 11 to 25	Knows, reads and writes number name and symbol for 26 to 34							
	Add and subtract 2 single digit numbers		Add and subtract single digit numbers using two operations in the same problem		Add and subtract a single digit number to 10		Add and subtract a single digit number to 10			Add and subtract a single digit number to 10
					Repeated addition of 2	Repeated addition of 5		Repeated addition and subtraction of 2, 5 and 10		
					Recognises and completes given number patterns					
					Doubles and halves numbers to 34					
					Identifies the numerosity of numbers to 34					
					Recognises and identifies 2-D shapes and 3-D objects		Recognises and identifies 2-D shapes and 3-D objects			Recognises and identifies 2-D shapes and 3-D objects

					Estimates to 34
		Problem solving. Introducing group teaching. Work with mixed ability groups	Problem solving. Work with mixed ability groups and establish a group of learners ready to move on more quickly.	Problem solving. Work with 1 better ability group and 2 mixed ability groups. Establish a group needing to consolidate emergent numeracy skills.	Problem solving. Work with 3 ability groups at their own level.

During the first term there will be a focus on developing learners' number skills through participating in a short Readiness programme to establish basic concepts, the teaching of numbers and number names, developing number sense and exposing learners to problem solving. By the end of the term aim for all your learners to be able to:

- Know the numbers, number names and relationship of the numbers 1 to 6
- Recognise the symbols for addition, subtraction and 'is equal to'
- Participate in problem solving activities

NB: Addition and plus use the sign **+** and mean the same thing.

Subtraction, minus and 'take away' use the sign **-** and mean the same thing

'Is equal to' uses the sign **=** and means that what is on the one side of the sign balances with what is on the other side. It DOES NOT mean that the answer is coming!

THE ASSESSMENT FRAMEWORK

	ACTIVITIES THAT WILL BE USED FOR ASSESSMENT		
	COUNTING	CONCEPT DEVELOPMENT	PROBLEM SOLVING
WEEK 1			
WEEK 2			
WEEK 3			
WEEK 4	Oral activity dealing with counting to 100 Practical activity dealing with counting out to 34	Practical activity dealing with number names and number symbols Written activities dealing with writing number sentences with more than one operation Written activity dealing with addition and subtraction of single digit numbers Oral and written activity dealing with ordering numbers	
ASSESSMENT TASK 1 COMPLETED			
WEEK 5			
WEEK 6			
WEEK 7	Practical activity dealing with counting in multiples and number patterns	Written activity dealing with numerosity, number patterns and addition and subtraction of single digits to a whole 10 Oral activity dealing with 2-D shapes and 3-D objects Practical activity dealing with estimation	
ASSESSMENT TASK 2 COMPLETED			
WEEK 8			
WEEK 9		Oral activity dealing with numerosity Practical activities dealing with doubling and halving Practical activities dealing with repeated addition and subtraction of 5 and 10 Written activities dealing with numerosity, number patterns and repeated addition and subtraction	Oral, practical and written activities dealing with solving problems and explaining solutions
ASSESSMENT TASK 3 COMPLETED			
WEEK 1O			

The criteria for the assessment are drawn from the Learning Outcomes, the Assessment Standards and the Milestones

FIRST TERM: WEEK 1

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING

LO 1 AS 1,2,</td><td>• Counts to 100
• Counts to 100 on abacus and number line/number square
• Count backwards and forwards from 1 to 100</td><td colspan="5">Daily :
• Rote count from 1 to 100
• Counting forwards and backwards from 1 to 100 using a number line, abacus, number square
• Count out objects up to 20</td></tr>
<tr><td rowspan="2">NUMBER SENSE AND MENTAL

LO1 AS3,4,8
LO 3 AS 1</td><td rowspan="2">• Revision of Grade 1 knowledge and skills in readiness for Grade 2
• Recognizes and identifies 2-D shapes in pictures
• Knows, reads and writes number names and symbols from 1 to 10 and explores their relationship
• Orders numbers (1st to 10th)
• Is able to add and subtract single digit numbers e.g. 3 + 4 = ?
9-6=?</td><td colspan="5">Daily:
• Revise: Days of the week
• Revise: Months of the year</td></tr>
<tr><td>DAY 1</td><td>DAY 2</td><td>DAY 3</td><td>DAY 4</td><td>DAY 5</td></tr>
<tr><td></td><td>Revise basic shapes: circle and square

Addition and subtraction of single-digit numbers up to 10</td><td>Revise basic shapes: triangle and rectangle

Number, word and picture up to 10

Revise more or less</td><td>Ordinal value – 1st to 10th

Revise more or less

Addition and subtraction of single-digit numbers up to 10</td><td>Ordinal value – 1st to 10th

One-to-one correspondence

Number, word and picture up to 10</td><td>Revise the 4 basic shapes

Addition and subtraction of single-digit numbers up to 10

One-to-one correspondence</td></tr>
<tr><td>GROUP TEACHING

LO1 AS8,11</td><td>• Solves problems, and explains solutions, using concrete objects and drawings using numbers to 10</td><td></td><td>Do 1 or 2 word problems each day</td><td>Do 1 or 2 word problems each day</td><td>Do 1 or 2 word problems each day</td><td>Do 1 or 2 word problems each day</td></tr>
</table>

Week 1 : Whole Class

WEEK 1	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher:

- Week 1 is extended over 8 days - the first two weeks of school- and ends at the end of the actual second week of the term. Teaching must begin on the first day of school. Every learner must go home having learnt something. However, the first three days are disruptive in many schools due to orientation and administration. Therefore week 1 (8 days) will enable you and the learners to settle down as soon as possible so that work can begin.
- The Numeracy time allocation is an hour and a half per day. It would be ideal to have all this time together. The Numeracy time is divided into 3 components viz. Counting (10 minutes), Mental and Number sense (20 to 30 minutes) and group teaching (20 minutes per group). However, for the first term the numeracy time is spread throughout the day, with no more than a one hour session as young learners settling into a new classroom routine are often not able to concentrate for longer than this.
- Ensure that you have all the resources required for every lesson. All other teaching aids must be made or organized before the day commences. It is not good practice to make resources like charts during instruction time. A well organized educator has very little discipline problems and ensures that maximum time is spent with the learners.
- Counting at the beginning of the day helps learners to focus on numbers. Every day you will let your learners do rote counting (to develop the vocabulary of numbers) as well as rational counting (thinking what they are doing) activities. Counting at the beginning of the lesson is done with the whole class every day.
- Daily activities indicate activities that should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Marking the register and talking about the Weather chart and Birthday chart are daily activities involving incidental learning and are usually part of the Literacy Oral component. These activities can also be done during the Numeracy lessons.
- Always ensure that all learners have their writing materials - pencils, crayons, rulers, books etc. before commencing the lesson.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities.(to take no more than 10 minutes)

You can choose to do some or all of these activities per day.

- Learners rote count from 1 to 100.
- Learners rote count forwards and backwards from 1 to 100.
- Learners enjoy number rhymes and songs. This type of activity will be beneficial to your slower learners.
- Rational counting forwards and backwards from 1 to 100 using a number line, abacus, number square etc.Learners use a teacher's number square or individual number squares to count. They point to each number as they count paying attention to the direction i.e. from left to right – then proceed to the second row and begin from the left.
- Learners are given a variety of objects that they can count up to 20.
- Learners can read the numbers and number names from teacher's chart, worksheet in flip file or flashcards.

- Play a quick matching game: Show the learner a flashcard with a number e.g. 2. They must find the correct number name (two) and match it.
- Begin teaching numerosity of numbers as soon possible e.g. the different relationship of number 5 i.e. 2+3=5, 10–5=5, half of 5 is 2½
- Revise the days of the week
- Revise the months of the year

DAY 1 (to take no more than 30 minutes)

- Revise **shape** by getting the learners to observe the different shapes inside the classroom – windows, chalkboard, doors, cupboards, charts desks, floor, books bags, rulers etc. Ask learners questions to show similarities and differences e.g. are all the charts the same or all the desks/books/windows the same?
- Have a chart with the four shapes (circle, square, rectangle and triangle) and their names. Revise this work and gauge learners' knowledge of the shapes. Discuss some the properties of these shapes.
- Learners complete the following activities in their books or on sheets of paper:
  - Learners draw circles and squares either with the use of a template or free hand. Colour the circles and squares. Write the word circle and square under each shape.
  - Learners can be given different sizes of circles and squares (templates) to draw. Learners must create simple pictures with these shapes e.g. a circle can be an orange, clock, the earth, the sun, the square can be a bag, table, desk etc. Use circles or squares to create shape pictures e.g. a cat, a snowman, a dice, a box etc.

  Tip: *Learners must be encouraged to work at their own pace. These are suggested activities. You can design and develop your own activities as well. This would depend on the ability of your learners.*
- Revise **number, word and picture** by doing the following:
  - Get learners to count their fingers.
  - Have a set flashcards with the numbers 1 to 10 and the words one to ten. Get the learners to recognize the numbers and the number names. Play a quick matching game – number and number name.
  - Give the learners 10 counters each. Tell them to divide the counters into two groups. Check which group has more and which group has less. Two learners can put their counters together and play a game e.g. who has more or less?
- Revise **ordinal value of numbers – 1st to 10th** by getting 10 learners to stand in front of the class e.g. Sam, Pam, Bitelo, Tyrone, Vihar, Ashiva etc. Explain to them that these learners took part in a race, and should line up in the order in which they came i.e. Pam came first in the race; Vihar came second and so on. Ask learners to say the words first, second, third, etc. whilst pointing to the respective learners. Ask them who was first, who was last, who was third etc.
- Revise **addition and subtraction of single-digit numbers up to 10.** Give learners a few sums written on a chart, worksheet etc. to complete. They are allowed to use counters to complete their work.

DAY 2 (to take no more than 30 minutes)

- Revise **shape** by having a few objects in a big box e.g. toy car, doll, book, ruler, balls (tennis, cricket), plastic plates, cups, spoons etc. Learners' touch/hold/feel/ the object inside the box. See if the learners are able to identify the object without looking at it.
- Have a chart with the four shapes and their names. Revise this work and gauge learners' knowledge of the shapes. Discuss properties of these shapes.
- Learners complete the following activities in their books or on sheets of paper.
  - Learners draw triangles and rectangles either with the use of a template or free hand. Colour the triangles and rectangle. Write the word triangle and rectangle under each shape.
  - Learners can be given different sizes of triangles and rectangles (templates) to draw. Learners must create simple pictures with these shapes e.g. a kite, a fish, a flower, a book, a house, a boat etc.
- Revise **number, word and picture** by doing the following:
  - Get learners to count 10 windows, counters etc.
  - Learners must draw the correct number of pictures for a given number e.g. have a chart or worksheet with one number written on each row. Numbers do not have to be in consecutive order. Learners would recognize the number and draw the correct number of pictures. This is to establish whether the learners know the value of each number e.g.

6	
9	
5	
10	
8	

  - Revise concepts **more or less** by getting the learners to draw two big circles (the same size) on a sheet of paper. Draw pictures inside the circles to show more or less. One circle has more and the other circle has less. Write the words more or less under the circles.
- Revise **ordinal value of numbers** – 1st to 10th**.** Write the names first to tenth on square pieces of cardboard. Put them in a line on the board (using prestick), but in a random order. Ask learners help you order them correctly.
- Revise addition and subtraction of single-digit numbers up to 10 by using a pack of playing cards and choosing a number e.g. 8. Turn over the top card and ask how many must be added or subtracted to make 8. If you turned over 10, you want the answer "take away 2" but if you turned over a 5 you want the answer "add 3". Once you have the correct answer, learners write the sum in their books i.e. 10–2=8, 5+3=8

DAY 3 (to take no more than 30 minutes)

- Revise concepts **more or less** by completing a few examples either on a worksheet, chart or board. Learners would have to compare two numbers in each example. They can draw pictures to illustrate. Join pictures using concept of one-to-one correspondence and write down which number is more or less. This activity can be extended by saying more or less by how many e.g. 9 is more than 7 by 2

- Revise ordinal value of numbers – 1st to 10th by handing out the cards you used on Day 2. Ask learners with the cards to arrange themselves in the front of the class in the correct order. Do this a few times giving as many learners as possible an opportunity to participate.
  - Give learners a worksheet or draw the following on the board for learners to copy: Draw a number line. Instead of numbers draw different pictures on a number line. Space the pictures properly. Get the learners to write the words first to tenth under the correct pictures.

DAY 4 (to take no more than 30 minutes)

- Revise ordinal value of numbers – 1st to 10th by drawing a number line on the board. Instead of numbers draw different pictures on the number line. Space the pictures properly. Under the number line have a few examples to complete e.g. the pictures on the number line are as follows cat, boat, fish, flower, star, apple, heart, triangle, ball, etc. The activity must be designed so that learners would have to study the position of the pictures on the number line and then complete by filling in the correct word e.g. The apple is sixth. The boat is second. etc. Do the activity orally first, then let learners copy the number line into their books and complete the activity.
- Revise addition and subtraction of single-digit numbers up to 10 by using a pack of playing cards and choosing a number e.g. 7. Turn over the top card and ask how many must be added or subtracted to make 7. If you turned over 10, you want the answer "take away 3" but if you turned over a 5 you want the answer "add 2". Once you have the correct answer, learners write the sum in their books i.e. 10–3=7, 5+2=7

DAY 5 (to take no more than 30 minutes)

- Revise addition and subtraction of single-digit numbers up to 10 by using a pack of playing cards and choosing a number e.g. 10. Turn over the top card and ask how many must be added or subtracted to make 10. If you turned over 10, you want the answer "take away 0" but if you turned over a 5 you want the answer "add 5". Once you have the correct answer, learners write the sum in their books i.e. 10–0=10, 5+5=10
- Revise **shapes** by getting learners to complete an activity that provides evidence of the learners knowledge of 2-D shapes e.g. learners draw the 4 basic shapes and write down one sentence that best describes the shape. Learners can also use all 4 shapes to create pictures. More advanced activities may include sequencing shapes to form patterns.
  Tip: *Paper folding activity: Give the learners a square piece of paper. Tell them to fold the paper in half: what do we get - two rectangles, fold it diagonally - 2 triangles*

ASSESSMENT	**No formal, recorded Assessment** **Informal, unrecorded assessment of:** learners oral responses and ability to participate

Week 1 : Group Teaching

Week 1	GROUP TEACHING COMPONENT (Concept Development and Problem Solving

Notes to teacher:

- Do not be afraid to ask learners to solve a problem. They come to school already being good problem solvers! You are not asking them to write down sums. You are giving them a problem situation and asking them to solve it through talking to each other, using concrete apparatus, drawing pictures and then explaining how they solved the problem and what their solution is.

DAILY ACTIVITIES

- Expose learners to oral word problems every day. Put the learners into random groups of 4. Give each group a pile of counters, a piece of paper and crayons. Give them an oral word problem. Let the group discuss the problem and work out the solution. Encourage them to draw the way in which they came to an answer.

  Ask one of the following each day :

- There were 9 fish in the bowl. 3 died and 2 jumped out. How many fish were left?
- Jack and his three friends each had a bicycle. How many wheels were there?
- Mom bought twelve sweets and gave them to her four children. How many did they each get?
- Granny baked some cakes. She sold 5. Now she has 4 cakes. How many cakes did she bake?
- Dad has 5 blue shirts and 3 red shirts. How many shirts does Dad have?

  TIP: Be careful of including words like altogether and left in your problems. Avoid if you can. Learners become confused when the problems become more involved and include one or more ways of solving.

Assessment	**No formal, recorded Assessment** **Informal, unrecorded assessment of:** learners oral responses and ability to solve problems

FIRST TERM: WEEK 2

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING

LO 1 AS 1,2,</td><td>• Count in 1s up to 100
• Count in 2s up to 100
• Count backwards and forwards from 1 to 100 and count in 2s up to 100</td><td colspan="5">Daily:
• Rote count from 1 to 100
• Rote count in 2,s up to 100
• Count forwards and backwards from 1 to 100 using a number line, abacus, number square
• Count forwards and backwards in 2s up to a 100
• Count out objects up to 20</td></tr>
<tr><td rowspan="2">NUMBER SENSE AND MENTAL

LO 1AS 3,4,8</td><td rowspan="2">• Revision of Grade 1 knowledge and skills in readiness for Grade 2
- Revise colours
• Knows, reads and writes number names and symbols from 10 to 25 and explores their relationship
• Orders numbers (10th to 25th)
• Is able to add and subtract single digit numbers e.g. 3+4=? 9 -6=?</td><td colspan="5">Daily:
• Revise: Days of the week
• Revise: Months of the year
• Revise shapes
• Revise concepts more or less
• one-to-one correspondence</td></tr>
<tr><td>DAY 1
Number, word and picture from 10 to 25

Addition and subtraction of single-digit numbers up to 10</td><td>DAY 2
Ordinal value – 10th to 25th

Addition and subtraction of single-digit numbers up to 10</td><td>DAY 3
Number, word and picture from 10 to 25

Addition and subtraction of single-digit numbers up to 10</td><td>DAY 4
Ordinal value – 10th to 25th

Addition and subtraction of single-digit numbers up to 10</td><td>DAY 5
More and less</td></tr>
<tr><td>GROUP TEACHING

LO1 AS8,11</td><td>• Solves problems, and explains solutions, using concrete objects and drawings using numbers to 10</td><td>Do 1 or 2 word problems each day.</td><td>Do 1 or 2 word problems each day.</td><td>Do 1 or 2 word problems each day.</td><td>Do 1 or 2 word problems each day.</td><td>Do 1 or 2 word problems each day.</td></tr>
</table>

Week 2 : Whole Class

WEEK 2	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher:

- By now you and your learners would have settled down to the new year.
- Your classroom environment should be conducive to teaching and learning. There should be some reference charts, theme charts etc. The national area/corner, library area, science/nature area, storage areas should be fairly organized.
- You must know the learners' names.
- Classroom rules should be negotiated and made known to the learners. School rules should also be made known to the learners.
- Try not to waste time passing out books, worksheets etc. Appoint group leaders or assistants to help you. Teach your learners to use the relay system to give out and collect writing materials. This system is fast and effective. Learners can recite counting rhymes, sing songs or start some of the counting activities during the settling down time. This will prevent discipline problems.
- Ensure that you have all the resources required for every lesson. All other teaching aids must be made or organized before the day commences. It is not good practice to make resources like charts during instruction time. A well organized educator has very little discipline problems and ensures that maximum time is spent with the learners.
- Counting at the beginning of the day helps learners to focus on numbers. Every day you will let your learners do rote counting (to develop the vocabulary of numbers) as well as rational counting (thinking what they are doing) activities. Counting at the beginning of the lesson is done with the whole class every day.
- Always ensure that all learners have their writing materials- pencils, crayons, rulers, books etc. before commencing the lesson.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

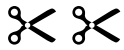
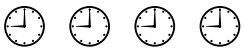
Daily Activities.(to take no more than 10 minutes)

- Mark the register everyday. You can get all the learners to stand. As you call their names they answer and sit. Once everyone is sitting learners count the number of learners that are absent.
- Discuss the weather. Get learners to change the details on the weather chart to reflect the correct details for the day.
- Begin counting activities:
  - Rote count from 1 to 100
  - Rote count in 2s up to 100
  - Count forwards and backwards from 1 to 100 using a number line, abacus or a number square
  - Count forwards and backwards in 2s up to 100 using a number line, abacus or a number square
  - Count out objects up to 20
- Read the names of the days of the week
- Read the names of the months of the year

DAY 1 (to take no more than 30 minutes)

- Revise colours by sorting shapes/buttons/beads/objects into colours. Give learners items to sort into colours in their places. They can work individually or with a partner or in a group.
- Have a reference chart on colours – get the learners to identify the different colours and also read the names of the colours.

  Tip: *You decide on how to do this activity. It would depend on the type and amount of resources you have available to you.*
- Revise number, word and picture by getting the learners to work with numbers 10 to 25. Learners must draw the correct number of pictures for a given number e.g. have a chart or worksheet with one number written on each row or in a block. Numbers do not have to be in consecutive order. Learners would recognize the number and draw the correct number of pictures. They would also write the number name. This is to establish whether the learners know the value of each number. Use the following type of activity:

		two
	6	
		
		nine
	8	

Revise addition and subtraction of single-digit numbers up to 10 by giving learners a few sums either on a chart, worksheet etc. to complete. They are to draw pictures to complete their work. It is a good idea to do the following type of number pattern work at the same time :

1+1=	1-1=	1+2=	
2+1=	2-1=	2+2=	2-2=
3+1=	3-1=	3+2=	3-2=
4+1=	4-1=	4+2=	4-2=

DAY 2 (to take no more than 30 minutes)

- Revise colours by drawing the learners attention to a traffic robot – the colours on the robot and their significance and safety to people. This is a suggestion – you will use something in the context of the learners and their environment. Learners will either draw a robot and reflect the correct colours or they can make a robot out of cardboard.
- Have a reference chart on colours – get the learners to identify the different colours and also read the names of the colours.
- Revise ordinal value of numbers – 10^{th} to $25^{th.}$ Give each learner a piece of paper on which they write the ordinal you tell them e.g. 1^{st}, 2^{nd}, 3^{rd}, ….10^{th}, 11^{th}, 12^{th}, etc. Collect all the pieces of paper and put them in a packet. Let each learner take a piece of paper and then line up in the correct order.

- Revise addition and subtraction of single-digit numbers up to 10 by giving learners a few sums either on a chart, worksheet etc. to complete. They are to draw pictures to complete their work. . It is a good idea to do the following type of number pattern work at the same time :

1+1=	1-1=	2+1=	2-1=
1+2=	2-1=	2+2=	2-2=
1+3=	3-1=	2+3=	3-2=
1+4=	4-1=	2+4=	4-2=

DAY 3 (to take no more than 30 minutes)

- Revise colours by drawing the learners attention to the colours on the South African flag. Discuss the colours and their significance to our country. Learners can either colour in the flag on a worksheet/workbook or draw the flag on a sheet of paper and suspend it on a stick made with rolled paper. Learners can display their flags in the class gallery or take them home.
- Have a reference chart on colours – get the learners to identify the different colours and also read the names of the colours.
- Revise number, word and picture by getting the learners to work with numbers 10 to 25. Give each learner a piece of squared paper. If there is no margin, learners must draw a margin. After they have written the date at the top of the page, learners write the numbers 10 to 25 under each other, each number on the next line. They then colour the correct number of squares e.g. next to where they have written 10 they colour 10 squares.
- Revise addition and subtraction of single-digit numbers up to 10 by giving learners a few sums either on a chart, board, worksheet/workbook etc. to complete. They can use an abacus, number line, counting grid/square or draw pictures to complete their work. This activity can be varied by using the placeholder e.g. 3+☐=7, 9-☐=3, 9=7+☐

DAY 4 (to take no more than 30 minutes)

- Revise colours of the rainbow. Discuss what a rainbow is and why the people of South Africa are called the rainbow nation. Learners can either colour in a picture of a rainbow with the right colours in the right place or learners can be asked to draw a rainbow and colour it in.
- Have a reference chart on colours – get the learners to identify the different colours and also read the names of the colours.
- Revise addition and subtraction of single-digit numbers up to 10 by giving learners a few sums either on a chart, board, worksheet/workbook etc. to complete. They can use an abacus, number line, counting grid/square or draw pictures to complete their work. This activity can be varied by asking learners to write down 2 addition and 2 subtraction sums for 3 numbers e.g. 4.5.9 4+5=9, 5+4=9, 9–4=5, 9–5=4

DAY 5 (to take no more than 30 minutes)

- Revise colours by giving the learners some sequencing according to colour activities. Learners could sequence shapes or pictures according to colour. You could put some activities on a chart, board, design a worksheet or use workbooks to complete these types of activities.
- Give the learners activities dealing with more and less e.g.

Make 3 more			**Make 3 less**	
23			**34**	
27			**18**	
31			**12**	
19			**31**	
30			**22**	

You can also give them number sentences which they must balance e.g.

6+2 = 4+4 4+4 = 10-2 10-2 = 5+3 5+3 = 9-1

ASSESSMENT	**No formal, recorded Assessment** **Informal, unrecorded assessment of:** learners oral responses and ability to participate

Week 2 : Group Teaching

Week 2	**GROUP TEACHNG COMPONENT (Concept Development and Problem Solving**

Notes to teacher:

- Do not be afraid to ask learners to solve a problem. They come to school already being good problem solvers! You are not asking them to write down sums. You are giving them a problem situation and asking them to solve it through talking to each other, using concrete apparatus, drawing pictures and then explaining how they solved the problem and what their solution is.

DAILY ACTIVITIES

- Expose learners to oral word problems every day. Put the learners into random groups of 4. Give each group a pile of counters, a piece of paper and crayons. Give them an oral word problem. Let the group discuss the problem and work out the solution. Encourage them to draw the way in which they came to an answer. You can use the problems from last week by simply changing the numbers in each of the problems, or you can ask your own word problems. You are not looking for number sentences for the problems – you are encouraging the learners to actively engage in solving problems.

  Tip: *Be careful of including words like altogether and left in your problems. Avoid if you can. Learners become confused when the problems become more involved and include one or more ways of solving.*

Assessment	**No formal, recorded Assessment** **Informal, unrecorded assessment of:** learners oral responses and ability to solve problems

FIRST TERM: WEEK 3

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING

LO 1 AS 1,2,</td><td>• Count in 1s up to 100
• Count in 2s up to 100
• Count in 5,s up to 100
• Count backwards and forwards from 1 to 100 and count in 2s up to 100</td><td colspan="5">Daily :
• Rote count from 1 to 100
• Rote count in 2,s up to 100
• Count forwards and backwards in 2s to 100 using a number line, abacus, number square
• Count forwards and backwards in 5s up to a 100
• Count out objects up to 25</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL

LO 1 AS 3,4,8
LO 4 AS 6</td><td rowspan="3">• Revision of Grade 1 knowledge and skills in readiness for Grade 2
- Revise size
• Knows, reads and writes number names and symbols from 25 to 34 and explores their relationship
• Orders numbers (25th to 34th)
• Is able to add and subtract single digit numbers using two operations in one problem. e.g. 3+4–2=?
9–6+5=?</td><td colspan="5">Daily:
• Revise: Days of the week
• Revise: Months of the year
• Revise colours
• Revise number, word and picture from 1 to 24
• Revise ordinal numbers from 1st to 24th</td></tr>
<tr><td>DAY 1</td><td>DAY 2</td><td>DAY 3</td><td>DAY 4</td><td>DAY 5</td></tr>
<tr><td>Revise big and small/ little

Number, word and picture from 25 to 34

Addition and subtraction of single-digit numbers up to 10 using two operations</td><td>Revise the same size

Ordinal value – 25th to 34th

Addition and subtraction of single-digit numbers up to 10 using two operations</td><td>Revise big, bigger than, biggest

Number, word and picture from 25 to 34

Addition and subtraction of single-digit numbers up to 10 using two operations</td><td>Revise small, smaller than, smallest

Ordinal value – 25th to 34th

Addition and subtraction of single-digit numbers up to 10 using two operations</td><td>Revise size

Number, word and picture from 25 to 34</td></tr>
<tr><td>GROUP TEACHING

LO 1 AS8,11</td><td>• Solves problems and explains solutions, using concrete objects, drawings and number square using numbers to 34</td><td colspan="3">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-34; Group 2 works in 1-20; Group 3 works in 1-10</td><td>.</td></tr>
<tr><td></td><td>Group 1 works with the teacher
Do 1 addition and 1 subtraction word problem</td><td>Group 2 works with the teacher
Do 1 addition and 1 subtraction word problem</td><td>Group 3 works with the teacher
Do 1 addition and 1 subtraction word problem</td><td></td></tr>
</table>

Week 3 : Whole Class

WEEK 3	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher:

- You and your learners would be quite settled by now. Ensure that you are consistent in executing the school and classroom rules. This would certainly minimize any discipline problems. If you have diagnosed any form of social issues amongst your learners, ensure that you employ intervention strategies as soon as possible.
- The school and class timetables should be functional.
- You should be communicating with the parents through your learners' communication books. Inform them of the timetable e.g. when are physical education, art and technology lessons etc.
- You should be meeting the parents soon at the first school meeting. Inform them about your plans for the year and procedures regarding their children's homework schedule.
- By now you should have established a system whereby the distribution of books and other resources is effective. Delegate duties to your learners and trust them to carry out your instructions. They need to be developed in order for them to become good organizers and leaders.
- Ensure that you have all the resources required for every lesson. All other teaching aids must be made or organized before the day commences. It is not good practice to make resources like charts during instruction time. A well organized educator has very little discipline problems and ensures that maximum time is spent with the learners.
- Counting at the beginning of the day helps learners to focus on numbers. Every day you will let your learners do rote counting (to develop the vocabulary of numbers) as well as rational counting (thinking what they are doing) activities. Counting at the beginning of the lesson is done with the whole class every day.
- Always ensure that all learners have their writing materials - pencils, crayons, rulers, books etc. before commencing the lesson.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities.(to take no more than 10 minutes)

- Mark the register everyday. You can check that you have the correct number of boys and girls in your class. Once everyone is sitting learners count the number of learners that are absent.
- Discuss the weather. Get learners to change the details on the weather chart to reflect the correct details for the day.
- Do the following counting activities:
  - rote count from 1 to 100
  - count forwards and backwards in 1s; 2s; 5s using a number line, abacus or a number square
  - count out objects up to 25
- Read the names of the days of the week.
- Read the names of the months of the year.

DAY 1 (to take no more than 30 minutes)

- Revise size by getting learners to compare 2 things in the classroom e.g. big table – small table; teacher's chair – learner's chair; big window – small window, big book – small book etc. In the beginning when introducing objects for children to compare ensure that the objects are alike in colour, shape and texture. Later the learners can be introduced to difference in colour, shape and texture. Once learners can distinguish between big and small, they can be introduced to big, bigger, biggest; small, smaller, smallest.

  Tip: *Learners must be encouraged to work at their own pace. These are suggested activities. You can design and develop your own activities as well. This would depend on the ability of your learners.*
- Revise number, word and picture by getting the learners to work with numbers 25 to 34. Make 4 sets of numbers, names and pictures (grouped in 2s or 5s or 10s). Randomly group your learners into 4 groups. Give each group a set of cards and let them find the matching numbers, words and pictures. This is to establish whether the learners know the value of each number.
- Give the learners a simple word problem to solve e.g. *there are 5 birds on the fence and 3 join them. Then 4 fly away. How many birds now on the fence?* Ask a learner to come and write the number sentence on the board (5+3-4=). Repeat this activity a few times.
- Revise addition and subtraction of single-digit numbers up to 10 using two operations by giving learners a few sums either on a chart, worksheet etc. to complete. They are allowed to use counters to complete their work.

DAY 2 (to take no more than 30 minutes)

- Revise size by sorting out shapes into big and small. Learners sort out shapes (templates/ cut-outs) made out of cardboard or masonite.
  - Have a few objects on the table. Ask learners to identify e.g. which is the biggest object? Which is the smallest object? Which two objects are the same?
  - Get 2 children to stand in front of the class. Ask the other learners to identify which learner is big; which learner is small? Compare 3 learners – who is big; who is bigger than; who is the biggest.
  - Have reference charts that the learners could read and refer to.
- Revise ordinal value of numbers – 25^{th} to 34^{th} by getting the learners to write the number and the positional name e.g. 34 thirty fourth and for short 34^{th}. The work can be given to the learners on the board, chart or worksheets/workbooks.

  Tip: *Use different examples every time you give learners this type of activity.*
- Revise addition and subtraction of single-digit numbers up to 10 using two operations in the same problem. Let the learners make up their own sums. Learners can now swap books and mark their partner's book!

DAY 3 (to take no more than 30 minutes)

- Revise size by designing a worksheet with 3 pictures in each block. The pictures must be of 3 different sizes to show big, bigger than, and biggest. The learners must listen to your instructions and complete their work e.g. in the first block there are pictures of 3 boats – you would ask the learners to make a big cross over the biggest boat ; in the second block you would ask the learners to make a cross over the smallest cat etc.

- Revise number, word and picture by getting the learners to work with numbers 25 to 34. Give each learner a piece of squared paper. If there is no margin, learners must draw a margin. After they have written the date at the top of the page, learners write the numbers 25 to 34 under each other, each number on the next line. They then colour the correct number of squares e.g. next to where they have written 25 they colour 25 squares. They can also write the word 'twenty-five'.
- Revise addition and subtraction of single-digit numbers up to 10 using two operations in the same problem by letting learners work in pairs. Give each learner a strip of paper. Learners work together and starting at 10, they add the first number on one strip and take away the first number on the second strip. Repeat using the second numbers and so on. Learners can use counters or a number line or a number block to check their answers.

DAY 4 (to take no more than 30 minutes)

- Revise size by getting learners to draw pictures to illustrate the three different sizes e.g. draw 3 balls – a big ball, a ball bigger than the first one and then draw the biggest ball. You would do similar activities to show small, smaller than and smallest.
- Revise ordinal value of numbers – 25^{th} to $34^{th.}$ Give each learner a piece of paper on which they write the ordinal you tell them e.g. 1^{st}, 2^{nd}, 3^{rd}, ….10^{th}, 11^{th}, 12^{th}, etc. Collect all the pieces of paper and put them in a packet. Let each learner take a piece of paper and then line up in the correct order.
- Revise addition and subtraction of single-digit numbers up to 10 using two operations by letting learners work in pairs. Give each learner a strip of paper. Learners work together and starting at 10, they add the first number on one strip and take away the first number on the second strip. Repeat using the second numbers and so on. Learners can use counters or a number line or a number block to check their answers

DAY 5 (to take no more than 30 minutes)

- Play 'I spy' : I spy with my little eye a number that is 2 more/3 less than 24
  - I am thinking of a number. It is more than 25 but less than 29 and is an even number
  - This number comes between 32 and 34 etc.
- Put a large handful of counters in the middle of each group. Tell learners to count the number of counters in their pile. Watch to see who counts in ones and who counts in a multiple e.g. 2s.
- Take the learners outside and put them into 4 groups. Let the groups line up shortest to tallest. In the front of each group, 8 steps away, place a bucket or a hoop. Give each group 5 bean-bags. The shortest learner in group starts. They have 5 chances to throw the bean-bags into the bucket. Each bean-bag counts 5. If the bag goes in the bucket it is plus and if it falls outside it is minus. All the learners in the group write down the sums for each learner. For example, learner 1 throws 4 bean bags in the bucket and 1 outside. The sum for this learners will be 5+5+5+5-5=15

ASSESSMENT	**Formal :** No formal, recorded Assessment **Informal:** Unrecorded assessment of learners oral responses and ability to participate

Week 3 : Group Teaching

Week 3	**GROUP TEACHNG COMPONENT (Concept Development and Problem Solving**

Notes to teacher:

- **On Tuesday introduce the class to group work. Randomly divide your class into 3 groups, not more than 12 learners in a group. If you have a large class you may need 4 groups. For the first part of the lesson (about 30 minutes) do the counting and number sense activities with the whole class. Then explain the activities they will do while you are busy with a group (cutting and colouring the hands they drew and the written activity). Get up and walk around the class between each group. Have extra activities, such as threading beads, ready for the quick workers. Work with 1 group at a time for about 20 minutes and do the following activities with each of the groups. Work with 1 group on Tuesday, 1 group on Wednesday and 1 group on Thursday.**
- **During this group teaching time you will establish which learners are ready to work more quickly and this will be your first ability group.**
- While you are working with a group, the rest of the class will be working independently. You need to provide them with a variety of activities which reinforce and consolidate concepts already learnt. Try to vary the activities e.g. giving a practical activity (counting counters in counting bags), a written activity (filling in numbers, sequencing, etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)

DAILY ACTIVITIES

Examples of activities to be done independently. *Work from a Learner's Book, worksheets, workcards, etc.*

- Number patterns or other sequencing activity (e.g. pictures, shapes, etc.).
- Fill in the numbers you would use when counting in 1s on a number line or number square/ grid.
- Complete number sentences using 2 operations.
- Complete addition and subtraction number sentences using single digits with complete 10.

Working with the group

GROUP 1

On Tuesday this group works with the teacher for 20 minutes.

- Give each learner some counters and a number line to 40. Ask them to place a counter on the number you say. You will be able to assess who recognizes numbers to 40.
- Make sure each learner has access to paper, writing tools, counters and a number line. Ask them one word problem which they solve by talking about it, drawing pictures and so on. Let each learner tell the group how he or she solved the problem.

GROUP 2

On Wednesday this group works with the teacher for 20 minutes.

- Give each learner some counters and a number line to 40. Ask them to place a counter on the number you say. You will be able to assess who recognizes numbers to 40.
- Make sure each learner has access to paper, writing tools, counters and a number line. Ask them one word problem which they solve by talking about it, drawing pictures and so on. Let each learner tell the group how he or she solved the problem.

GROUP 3

On Thursday this group works with the teacher for 20 minutes.

- Give each learner some counters and a number line to 40. Ask them to place a counter on the number you say. You will be able to assess who recognizes numbers to 40.
- Make sure each learner has access to paper, writing tools, counters and a number line. Ask them one word problem which they solve by talking about it, drawing pictures and so on. Let each learner tell the group how he or she solved the problem.

Assessment	**Formal :** No formal, recorded Assessment **Informal:** Unrecorded assessment of learners oral responses and ability to solve problems

FIRST TERM: WEEK 4

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING
LO 1 AS 1,2,</td><td>• Count in 1s up to 100
• Count in 2s up to 100
• Count in 5,s up to 100
• Count backwards and forwards in 10s up to 100</td><td colspan="5">Daily:
• Rote count in 1s, 2s, 5s and 10s up to 100
• Count forwards and backwards from 10 to 100 using a number line, abacus, number square
• Count forwards and backwards in 10s up to a 100
• Count out objects up to 25</td></tr>
<tr><td rowspan="2">NUMBER SENSE AND MENTAL

LO 1 AS 3,4,8
LO 4 AS 6</td><td rowspan="2">• Revision of Grade 1 knowledge and skills in readiness for Grade 2
- Revise measurement (length and height)
• Knows, reads and writes number names and symbols from 25 to 34 and explores their relationship
• Orders numbers (25th to 34th)
• Is able to add and subtract single digit numbers using two operations in the same problem e.g. 3+4–2=?
9–6+5=?</td><td colspan="5">Daily:
• Revise: Days of the week
• Revise: Months of the year
• Revise size
• Revise number, word and picture from 1 to 24
• Revise ordinal numbers from 1st to 24th</td></tr>
<tr><td>DAY 1

Revise length - long and short

Number, word and picture from 25 to 34

Addition and subtraction of single-digit numbers up to 10 using two operations</td><td>DAY 2

Revise height -tall and short

Revise height – high and low

Ordinal value – 25th to 34th</td><td>DAY 3

Revise length - long, longer than, longest

Revise wide and narrow

Addition and subtraction of single-digit numbers up to 10 using two operations</td><td>DAY 4

Revise length - short, shorter than, shortest

Ordinal value – 25th to 34th

Addition and subtraction of single-digit numbers up to 10 using two operations</td><td>DAY 5

Revise height – tall, taller than. tallest

Revise height – short, shorter than, shortest</td></tr>
<tr><td>GROUP TEACHING

LO1 AS8, 11</td><td>• Solves problems and explains solutions, using concrete objects, drawings and number square using numbers to 34</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-50; Group 2 works in 1-34; Group 3 works in 1-20</td><td>.</td></tr>
<tr><td></td><td>Group 1 works with teacher

Groups 2 and 3 work on their own</td><td>Group 2 works with teacher

Groups 1 and 3 work on their own</td><td>Group 3 works with teacher

Groups 1 and 2 work on their own</td><td></td></tr>
</table>

Week 4 : Whole Class

WEEK 4	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher:

- Well done! By now you would have established a routine in your class. You have a good indication of each learner's ability and the pace at which you are going to work this year. This is very important for good planning.
- If you are experiencing any problems get assistance from your peers, HOD or SMT. If there are any learners in your class that you suspect have serious learning difficulties, intervene as soon as possible – the SMT can then get professional assistance for the learners.
- Please ensure that you are ready for all your lessons. Reflect on your lessons on a daily basis. Action research will help you to become a better teacher.
- Marking the register and talking about the Weather chart and Birthday chart are daily activities involving incidental learning and are usually part of the Literacy Oral component. They are placed here as Numeracy concepts are also being dealt with.
- You should have planned the activities that you are going to use **for Assessment Task 1.** Careful consideration must be given to planning these activities as they are going to form part of your formal assessment.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities.(to take no more than 10 minutes)

These must be done daily:

- Rote count in 1s, 2s, 5s and 10s up to 100
- Count forwards and backwards in 1s; 2s; 5s and 10s using a number line, abacus or a number square. *Tip: This activity forms part of Assessment Task 1. Depending on the number of learners in your class, allow a few learners every day to count by themselves so that you will be able to assess their ability to count to 100.*

Choose from the following (to make up the 10 mins.):

- Count out objects up to 34
- Introduce learners to a calendar and ask questions based on the calendar e.g. how many days are there in the month? How many weeks are there in the month? What is the date of the first Sunday? What day did the month begin etc?

DAY 1 (to take no more than 30 minutes)

- Revise measurement (length) – long and short by getting the learners to compare two strips of paper - one long and one short. They can compare their rulers, pencils, etc. They would place the strips on the desk and tell you which one is long and which one is short. Learners can draw pictures to illustrate the concepts of long and short e.g. draw a picture of a long snake and a short snake, long ribbon and a short ribbon, long ruler and a short ruler. Write the words long and short under each picture.

Tip: *Get them to draw on sheets on paper as these can be displayed in the class gallery. This activity forms part of Assessment Task 1.*

- Revise number, word and picture by getting the learners to work with numbers 25 to 34. Make 4 sets of numbers, names and pictures (grouped in 2s or 5s or 10s). Randomly group your learners into 4 groups. Give each group a set of cards and let them find the matching numbers, words and pictures.

Tip: *Observe one group a day as this activity forms part of Assessment Task 1*

DAY 2 (to take no more than 30 minutes)

- Revise number, word and picture by getting the learners to work with numbers 25 to 34. Make 4 sets of numbers, names and pictures (grouped in 2s or 5s or 10s). Randomly group your learners into 4 groups. Give each group a set of cards and let them find the matching numbers, words and pictures.

  Tip: *Observe one group a day as this activity forms part of Assessment Task 1*

- Revise addition and subtraction of single-digit numbers up to 10 using two operations by letting learners work in groups of three. Give each learner a strip of paper. Learners work together and add the first number on one strip to the first number of the second strip and then take away the first number on the third strip. Repeat using the second numbers and so on. Learners can use counters or a number line or a number block to check their answers. For example :

Strip 1		Strip 2		Strip 3	
3	+	5	-	2	=6
4	+	2	-	5	=1
5	+	4	-	9	=0

Tip: This activity forms part of Assessment Task 1. Do it over two days so that you are able to observe all the learners.

DAY 3 (to take no more than 30 minutes)

- Revise number, word and picture by getting the learners to work with numbers 25 to 34. Make 4 sets of numbers, names and pictures (grouped in 2s or 5s or 10s). Randomly group your learners into 4 groups. Give each group a set of cards and let them find the matching numbers, words and pictures.

  Tip: *Observe one group a day as this activity forms part of Assessment Task 1*

- Revise addition and subtraction of single-digit numbers up to 10 using two operations by letting learners work in groups of three. Give each learner a strip of paper. Learners work together and add the first number on one strip to the first number of the second strip and then take away the first number on the third strip. Repeat using the second numbers and so on. Learners can use counters or a number line or a number block to check their answers. For example :

Strip 1		Strip 2		Strip 3	
3	+	5	-	2	=6
4	+	2	-	5	=1
5	+	4	-	9	=0

Tip: This activity forms part of Assessment Task 1. Do it over two days so that you will be able to observe all the learners.

DAY 4 (to take no more than 30 minutes)

- Revise number, word and picture by getting the learners to work with numbers 25 to 34. Make 4 sets of numbers, names and pictures (grouped in 2s or 5s or 10s). Randomly group your learners into 4 groups. Give each group a set of cards and let them find the matching numbers, words and pictures.

  Tip: *Observe one group a day as this activity forms part of Assessment Task 1*

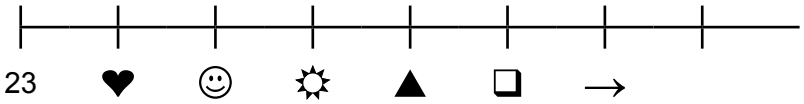
- Provide a worksheet, or write the number sentences on the board for learners to copy, which will allow learners to demonstrate their ability to add and subtract single digit numbers. The following is an example:

2+6=	6-3=
7+3=	9-1=
3+4=	5-5=
2+☐=6	6-☐=5
4+☐=8	7-☐ =7

Tip: *Learners do this work on their own, using counters, number blocks, number lines etc. if they need to. Observe and record which learners still need aids to do these number sentences as this activity forms part of Assessment Task 1.*

DAY 5 (to take no more than 30 minutes)

- Draw a line on the board with evenly spaced sections (like a number line but with no numbers). Put simple pictures at each section



Ask questions such as :

- What is twenty seventh in the line?
- What is twenty fifth in the line?
- Where is the arrow in the line?
- Where is the heart in the line? Etc.

Give each learner a copy of the line. Do this as a whole class where you read the statement, learners give a verbal answer, then write the missing ordinal number e.g.

- The ♥ is ……. (learners write 24th)
- The ☺ is …….. (learners write 25th) and so on.

Tip: *This activity forms part of Assessment Task 1.*

ASSESSMENT	**Formal: Recorded Assessment Task 2:** During the whole class and group teaching activities as indicated, rate the learners against the following milestones, recording specific problems : • Revision of Grade 1 knowledge and skills in readiness for Grade 2 - Revise measurement (length and height) • Counts to 100 on abacus, number line/number square • Knows, reads and writes number names and symbols from 25 to 34 and explores their relationship • Orders numbers (1st to 34th) • Is able to add and subtract single digit numbers e.g. 3 + 4 = ? 9 – 6 = ? • Writes number sentences with more than one operation e.g. 2+4-3=?

Week 4 : Group Teaching

Week 4	GROUP TEACHNG COMPONENT (Concept Development and Problem Solving

Notes to teacher:

- In Week 2 and 3 you started working in groups. In Week 4 you will take the learners you have identified as being ready to move on and work at a quicker pace and work with them at their level. Divide the rest of the class into 2 equal groups. Work with one group every day for about 15 minutes and do the following activities with each of the groups . During the week you will try to identify learners still needing a readiness programme and these learners will be put in one group in Week 5. For the first part of the lesson (about 35 minutes) do the counting and number sense activities with the whole class. Then explain the activities they will do while you are busy with a group. Have extra activities, such as threading beads, ready for the quick workers.
- While you are working with a group, the rest of the class will be working independently. You need to provide them with a variety of activities which reinforce and consolidate concepts already learnt. Try to vary the activities e.g. giving a practical activity (counting counters in counting bags), a written activity (filling in numbers, sequencing, etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)

Examples of activities to be done independently. *Work from a Learner's Book, worksheets, workcards, etc.*

- Number patterns or other sequencing activity (e.g. pictures, shapes, etc.).
- Fill in the numbers you would use when counting in 1s on a number line or number square.
- Complete number sentences using 2 operations (*can form part of Assessment Task 1).*
- Complete addition and subtraction number sentences using single digits with complete 10.(*can form part of Assessment Task 1).*

Working with the group

GROUP 1

On Tuesday this group works with the teacher for 20 minutes.

- Give each learner some counters and a number line to 40. Ask them to place a counter on each number as they count out to 34.
  Tip: *This activity forms part of Assessment Task 1*
- Make sure each learner has access to paper, writing tools, counters and a number line. Ask them one word problem which they solve by talking about it, drawing pictures and so on. Let each learner tell the group how he or she solved the problem.

GROUP 2

On Wednesday this group works with the teacher for 20 minutes.

- Give each learner some counters and a number line to 40. Ask them to place a counter on each number as they count out to 34.
  Tip: *This activity forms part of Assessment Task 1*
- Make sure each learner has access to paper, writing tools, counters and a number line. Ask them one word problem which they solve by talking about it, drawing pictures and so on. Let each learner tell the group how he or she solved the problem.

GROUP 3

On Thursday this group works with the teacher for 20 minutes.

- Give each learner some counters and a number line to 40. Ask them to place a counter on each number as they count out to 34.
  Tip: *This activity forms part of Assessment Task 1*

• Make sure each learner has access to paper, writing tools, counters and a number line. Ask them one word problem which they solve by talking about it, drawing pictures and so on. Let each learner tell the group how he or she solved the problem.	
Assessment	**Formal: Recorded Assessment Task 2:** During the whole class and group teaching activities as indicated, rate the learners against the following milestones, recording specific problems : • Revision of Grade 1 knowledge and skills in readiness for Grade 2 - Revise measurement (length and height) • Counts to 100 on abacus, number line/number square • Knows, reads and writes number names and symbols from 25 to 34 and explores their relationship • Orders numbers (1st to 34th) • Is able to add and subtract single digit numbers e.g. 3+4=? 9–6=? • Writes number sentences with more than one operation e.g. 2+4-3=?

SUGGESTED ASSESSMENT TASKS : GRADE 2 NUMERACY FIRST TERM
TASK 1 : WEEK 4

COMPONENT	MILESTONES	WKS	TASKS
COUNTING AND MENTAL/ NUMBER SENSE	• Revision of Grade 1 knowledge and skills in readiness for Grade 2 - Revise measurement (length and height) • Counts to 100 on abacus, number line/ number square • Knows, reads and writes number names and symbols from 25 to 34 and explores their relationship • Orders numbers (1st to 34th) • Is able to add and subtract single digit numbers e.g. 3+4=? 9–6=? • Writes number sentences with more than one operation e.g. 2+4-3=?	Wk 4	• Use the daily oral counting to assess learners' ability to count to 100. • Use the practical activities on Day 1 to assess knowledge of numbers and number names and understanding of measurement. • Use the written activity on Days 2 and 3 to observe learners' ability to write number sentences containing 2 operations. • Use the written activity on Day 4 to assess if learners can add and subtract single digit numbers. • Use the recorded activity on Day 5 to assess ordering of numbers.
PROBLEM SOLVING	• Revision of Grade 1 knowledge and skills in readiness for Grade 2 - Revise measurement (length and height) • Counts to 100 on abacus, number line/ number square • Knows, reads and writes number names and symbols from 25 to 34 and explores their relationship • Orders numbers (1st to 34th) • Is able to add and subtract single digit numbers e.g. 3+4=? 9–6=? • Writes number sentences with more than one operation e.g. 2+4-3=?	Wk 4	• During Group teaching observe learners ability to count out objects to 34. • Written work done independently during the group teaching time can also be used for assessment purposes.

FIRST TERM: WEEK 5

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING

LO 1 AS 1,2,4</td><td>• Orders numbers (1st – 34th)
• Counts to 100 on abacus and number line/number square
• Counts out objects to 34
• Counting in multiples of 2, 5, and 10 using concrete objects and number square</td><td colspan="5">Daily:
• Counting in 2s forwards and backwards to 100
• Counting in 1s forwards and backwards to 100, starting at any number
• Count out objects to 30
• Order numbers 1st to 20th</td></tr>
<tr><td rowspan="2">NUMBER SENSE AND MENTAL

LO 1 AS 2,8,9
LO 2 AS 2
LO 3 AS 1</td><td rowspan="2">• Writes number sentences with more than one operation e.g. 2+4-3=?
• Completes repeated addition and subtraction of multiples of 2, 5, 10
• Completes given number patterns
• Recognizes patterns in number work
• Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=?
• Recognises and identifies 2-D shapes in pictures and 3-D objects in the environment</td><td colspan="5">Daily:
• Repeated addition of 2
• Recognise number patterns</td></tr>
<tr><td>DAY 1
Position</td><td>DAY 2
Position</td><td>DAY 3
Adds a single digit to 10
Subtracts a single digit from a 2-digit number to leave 10</td><td>DAY 4
Adds a single digit to 10
Subtracts a single digit from a 2-digit number to leave 10</td><td>DAY 5
Recognises and identifies 2-D shapes in pictures and 3-D objects in the environment</td></tr>
<tr><td rowspan="2">GROUP TEACHING

LO 1 AS8, 11</td><td rowspan="2">• Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=?
• Solve problems, and explains solutions, using number charts and counters if needed with numbers up to 34</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-50; Group 2 works in 1-34; Group 3 works in 1-20</td><td rowspan="2">WORK IN RANDOMLY SELECTED GROUPS

Find 2-D shapes in the classroom.

Find 3-D objects outside the classroom.</td></tr>
<tr><td>Groups 1 and 3 work with teacher, one group at a time.,
Ask 1 subtraction and 1 sharing word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 subtraction and 1 sharing word problem
Group 1 works on their own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 2 different types of addition word problems
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 2 different types of addition word problems
Group 1 works on their own.</td></tr>
</table>

Week 5 : Whole Class

WEEK 5	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher:

- Counting at the beginning of the day helps learners focus on numbers. Every day you will let your learners do rote counting (to develop the vocabulary of numbers) as well as rational counting (thinking what they are doing) activities. Counting at the beginning of the lesson is done with the whole class every day.
- Daily activities indicate activities what should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Marking the register and talking about the Weather chart and Birthday chart are daily activities involving incidental learning and are usually part of the Literacy Oral component. They are placed here as Numeracy concepts are also being dealt with.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities.(to take no more than 10 minutes)

These must be done daily:

- Learners rote count in 2s to at least 100 and further if they can. You can let the whole class count together, or just the boys (or girls), or all the 7 year olds, etc. This should be fun for the learners so make sure you use a variety of strategies when doing rote counting.

Choose from the following (to make up the 10 mins.):

- Working in pairs, learners use counters to count in 2s up to 30.
- Point to any number between 1 and 80 on a number square. Ask individual learners to count on in 1s from that number until you clap your hands. Make sequences short so that many learners can have a turn.

DAY 1 (to take no more than 20 minutes)

- Put a pile of books, pencils, rulers, etc. on the table/desk in the middle of the group. Learners count all the objects.
- Learners position the objects according to your instructions e.g. place a book 1st, a pencil 2nd, a ruler 3rd, etc. Learners can repeat the pattern. Ask questions such as “What do you see in 8th position?”.
- Use the pattern made to consolidate and extend understanding of number patterns e.g. How many books in your pattern? Are there the same number of pencils and rulers? What will come next in your pattern?

DAY 2 (to take no more than 20 minutes)

- Put a pile of books, pencils, rulers, etc. on the table/desk in the middle of the group. However, now use 2 of each object e.g. 2 books, 2 pencils, etc. Learners count all the objects in 2s.
- Repeat Day 1 activities but work in 2s.

DAY 3 (to take no more than 20 minutes)

- In their books, learners draw a number line with 11 intervals, only putting a given number e.g. 13, at the first interval. Give instructions such as : Draw a cat 15th. Draw a fish last. What position is the fish?
- When the number line has been completed, learners fill in the position numbers.
- Use the number chart. Point to 10 and ask what number is 8 more. Do this a few times adding different single digits.
- Use a number chart. Point to 17 and ask questions such as "What is 7 less than 17? How many must I take away to leave 10?"

DAY 4 (to take no more than 20 minutes)

- Call out about 8 learners. Count the eyes in 2s. Ask a learner to write the number sentence on the board i.e. 2+2+2+2+2+2+2+2=
- Repeat the activity using ears, feet, elbows, etc. counting in 2s to 50
- Use the number chart. Point to 10 and ask what number is 8 more. Do this a few times adding different single digits.
- Use a number chart. Point to 17 and ask questions such as "What is 7 less than 17? How many must I take away to leave 10?"

DAY 5 (the whole lesson)

- Use any of the activities done during the week for consolidation for about 20 minutes.
- Randomly group the learners into 4 groups. Give each group a shape – circle, square, rectangle and triangle – and ask them to find their shape in the classroom. They must only count the 2-D shapes and NOT any 3-D objects. Give each group a sheet of A4 paper on which to record the shape and the number of these they counted. Once everyone has completed this activity use the information to develop a block graph i.e. how many circles, squares, etc.

  Tip: *You need to make sure there are enough shapes for the groups to count e.g. charts, number lines, pictures, etc.*
- Use the same groups and give each group a 3-D object – a ball, a toilet roll inner, a rectangular box and a square box. The groups go outside and identify 3 other objects with the same properties e.g. fence posts, water tower, etc. Once back in the classroom they draw what they have seen.

ASSESSMENT	**Formal :** No formal, recorded Assessment. **Informal :** Unrecorded assessment of learners oral responses and ability to participate.

Week 5 : Group Teaching

Week 5	GROUP TEACHING COMPONENT (Concept Development and Problem Solving)

Notes to teacher:

- By now you have established 3 groups. Every day you will work with 2 different groups in a small group situation e.g. sitting on the mat together. During this time you will do activities to develop number concepts at the level of the learners in the group. A number of types of activities are provided and you should do ALL the types each time you work with that group; but remember, although examples are provided, you should look for your own examples that will suit your learners. You will also give the learners at least 2 different word problems to solve every time you work with them. It is through solving problems and discussing the solutions that learners develop a sense of number, an understanding of the operations and the ability to reflect on their thinking.
- While you are working with a group, the rest of the class will be working independently. You need to provide them with a variety of activities which reinforce and consolidate concepts already learnt. Try to vary the activities e.g. giving a practical activity (e.g. counting counters in counting bags), a written activity (e.g. worksheet, workcard, workbook, copying from board, etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)
- Learners **must do** the work set. Once they have completed this they may choose any mathematical activity e.g. jigsaw puzzle.

DAILY ACTIVITIES

Examples of activities to be done independently. *Work from a Learner's Book, worksheets, workcards, work from the board etc.*

- Repeated addition.
- Number patterns or other sequencing activity (e.g. pictures, shapes, etc.).
- Fill in the numbers you would use when counting in 2s on a number line or number square.
- Complete number sentences using 2 operations.
- Complete addition and subtraction number sentences using single digits with complete 10.

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put 12 objects in groups of 2 in the middle of the group. Let the learners look at the objects then cover them. Ask learners to estimate how many objects there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
  ***Tip:** Note which learners count in ones and who counts in twos. This will inform your planning and indicate whether you have grouped learners correctly.*
- Give each learner some counters and ask them to count out 10. Note who counts in 2s. Throw a dice and learners add on that number to 10. Count how many altogether and learners record the sum using drawings and numbers.
  ***Tip:** Note which learners count all and which learners count on. This will inform your planning and indicate whether you have grouped learners correctly.*

- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 50. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 subtraction and 1 sharing and on Wednesday you will ask 2 different addition problems.

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 20 minutes*.

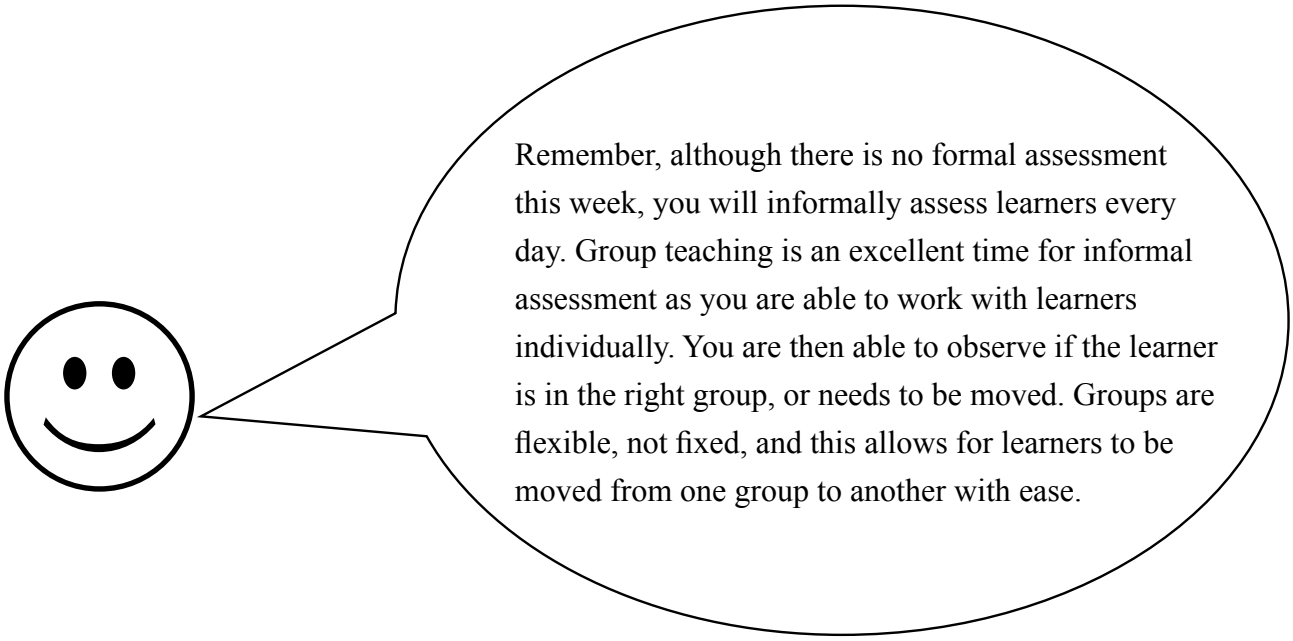
- Do an **estimation activity**. Put 12 objects in groups of 2 in the middle of the group. Let the learners look at the objects then cover them. Ask learners to estimate how many objects there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
  ***Tip:** Note which learners count in ones and who counts in twos. This will inform your planning and indicate whether you have grouped learners correctly..*
- Give each learner some counters and ask them to count out 10. Note who counts in 2s. Throw a dice and learners add on that number to 10. Count how many altogether and learners record the sum using drawings and numbers.
  ***Tip:** Note which learners count all and which learners count on. This will inform your planning and indicate whether you have grouped learners correctly.*
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 34. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 subtraction and 1 sharing and on Wednesday you will ask 2 different addition problems.

GROUP 3

*This group works with the teacher **every day** for 20 minutes.*

- Do an **estimation activity**. Put 6 objects in groups of 2 in the middle of the group. Let the learners look at the objects then cover them. Ask learners to estimate how many objects there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
  ***Tip:** Note which learners count in ones and who counts in twos. This will inform your planning and indicate whether you have grouped learners correctly.*
- Give each learner some counters and ask them to count out 10. Note who counts in 2s. Throw a dice and learners add on that number to 10. Count how many altogether and learners record the sum using drawings and numbers.
  ***Tip:** Note which learners count all and which learners count on. This will inform your planning and indicate whether you have grouped learners correctly.*

• Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about it, drawing pictures and so on. This group will work in the number range 1 to 20. Let each learner tell the group how they solved the problem. On Monday the word problems will be 1 subtraction and 1 sharing and on Wednesday you will ask 2 different addition problems.	
Assessment	**Formal :** No formal, recorded Assessment. **Informal :** Unrecorded assessment of learners oral responses and ability to solve problems.



FIRST TERM: WEEK 6

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING

LO 1 AS 1,2,4</td><td>• Orders numbers (1st – 34th)
• Counts to 100 on abacus and number line/number square
• Counts out objects to 34
• Counting in multiples of 2, 5, and 10 using concrete objects and number square</td><td colspan="5">Daily:
• Counting in 5s forwards and backwards to 100
• Counting in 1s forwards and backwards to 100, starting and ending at any number
• Count out objects to 30
• Order numbers 1st to 30th</td></tr>
<tr><td rowspan="2">NUMBER SENSE AND MENTAL

LO 1 AS4,8,10
LO 2 AS2</td><td rowspan="2">• Writes number sentences with more than one operation e.g. 2+4-3=?
• Completes repeated addition and subtraction of multiples of 2, 5, 10
• Completes given number patterns
• Recognizes patterns in number work
• Doubles and halves numbers 1- 34
• Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30</td><td colspan="5">Daily:
• Repeated addition of 5
• Recognise number patterns
• Build up concept of numerosity of numbers to 20</td></tr>
<tr><td>DAY 1
Number patterns</td><td>DAY 2
Position</td><td>DAY 3
Write number sentences with more than one operation</td><td>DAY 4
Double and half</td><td>DAY 5
Double and half</td></tr>
<tr><td>GROUP TEACHING

LO1 AS8, 11</td><td>• Estimates up to 20 objects
• Doubles and halves numbers 1- 34
• Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=?
• Solve problems, and explains solutions, using number charts and counters if needed with numbers up to 34</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-50; Group 2 works in 1-34; Group 3 works in 1-20</td><td rowspan="2">WHOLE CLASS ACTIVITY

Integrated Art lesson using doubling</td></tr>
<tr><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 grouping word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 grouping word problem
Group 1 works on their own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 subtraction and 1 sharing word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 subtraction and 1 sharing word problem
Group 1 works on their own.</td></tr>
</table>

Week 6 : Whole Class

WEEK 6	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher:

- Counting at the beginning of the day helps learners focus on numbers. Every day you will let your learners do rote counting (to develop the vocabulary of numbers) as well as rational counting (thinking what they are doing) activities. Counting at the beginning of the lesson is done with the whole class every day.
- Daily activities indicate activities what should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Marking the register and talking about the Weather chart and Birthday chart are daily activities involving incidental learning and are usually part of the Literacy Oral component. They are placed here as Numeracy concepts are also being dealt with.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities.(to take no more than 10 minutes)

To be done daily:

- Learners rote count in 5s to at least 100 and further if they can. You can let the whole class count together, or just the boys (or girls), or all the 7 year olds, etc. This should be fun for the learners so make sure you use a variety of strategies when doing rote counting.

Choose from the following (to make up the 10 mins.):

- Working in pairs, learners use counters to count in 5s up to 100.
- Point to any number between 20 and 90 on a number square. Ask individual learners to count on in 1s from that number until you clap your hands. Make sequences short so that many learners can have a turn.

DAY 1 (to take no more than 20 minutes)

- Choose any number up to 20 e.g. 9. Ask learners questions about the number e.g. what is 2 more than 9? What is 2 less than 9? 9 comes between which 2 numbers? Share 9 among 3. Share 9 among 2, etc.
- Make a set of shapes as follows :
  - 16 of each of the following shapes - circle, rectangle, triangle, square. Colour 4 of each shape in each of the colours red, blue, green, yellow e.g. 4 red circles, 4 yellow circles, 4 green circles and 4 blue circles

  Working as a class, give a learner instructions to build a pattern e.g. red circle, blue rectangle, green triangle and yellow square. The shapes are displayed on the board. After the first sequence is up ask another learner to repeat the pattern backwards by placing the shapes underneath the first sequence, this time starting with the yellow square. The third learner will repeat the original pattern (red circle first etc.) and the fourth learner will repeat the second sequence. You will have 4 rows of sequenced, coloured shapes. Ask for a volunteer to move the shapes from 4 rows and make one row of pattern i.e. red, blue, green, yellow, yellow, green, blue, red, red, blue, etc. Paste the whole sequence in a long line as you will use this pattern tomorrow. Make sure you encourage discussion on the patterns developed, teaching vocabulary where necessary.
- Each learner uses crayons to draw their own pattern using the colours and shapes.

DAY 2 (to take no more than 20 minutes)

- Choose any number up to 20. Each learner has a turn to tell you something about the chosen number e.g. if the number chosen is 9, learners can say 5 plus 4 equals 9, or 11 minus 2 equals 9, or 9 is half of 18, or 9 is 3 groups of 3, etc.
- Write the numbers 1st to 16th on small squares of paper. Put these in a packet and call a learner to take a paper out of the packet. The learner reads the number, finds the position of the correct shape on the pattern made the day before and sticks the number under the shape. Repeat with different learners until all the positional numbers are placed under a shape. Ask questions to consolidate.

DAY 3 (to take no more than 20 minutes)

- Choose any number up to 20. Each learner has a turn to tell you something about the chosen number e.g. if the number chosen is 9, learners can say 5 plus 4 equals 9, or 11 minus 2 equals 9, or 9 is half of 18, or 9 is 3 groups of 3, etc.
- Use the number chart. Point to 10 and ask what number is 8 more. Do this a few times adding different single digits.
- Use a number chart. Point to 17 and ask questions such as “What is 7 less than 17? How many must I take away to leave 10?”
- Give the learners very simple oral word problems containing at least 2 operations. Everyone writes the number sentence in their books. Once everyone has written a number sentence ask a volunteer to write the number sentence on the board and explain it. Learners mark their own books.
- ***Tip:*** *Ask problems such as: Sipho has 2 sweets, Nomsa has 4 sweets and Mary has 3 sweets. How many sweets are there?*

DAY 4 (to take no more than 20 minutes)

- Call out about 8 learners. Count the fingers in 5s. Ask a learner to write the number sentence on the board i.e. 5+5+5+5+5+5+5+5=
- Repeat the activity using toes, nails, etc. counting in 5s to 100.
- Use the number chart. Point to 10 and ask what number is 8 more. Do this a few times adding different single digits.
- Use a number chart. Point to 17 and ask questions such as “What is 7 less than 17? How many must I take away to leave 10?”
- Work in pairs at their desks. Each pair has a closed container with counters. Learner 1 takes a handful of counters and lays them out on the table. Both learners count how many there are. Learner 2 now has to take a handful to try to make the same number. They may need to add or put back some counters so that each pile has the same number. Ask if anyone knows what this is called. Accept all reasonable answers until you get the response “double”. Discuss what this means. Play this game a few times. Encourage learners to talk about the numbers e.g. double 4 is 8.

DAY 5 (the whole lesson)

- Use any of the activities done during the week for consolidation for about 20 minutes.
- Revise the meaning of double.
- Give each learner an piece of A3 blank paper. Use A4 if you do not have A3 available. Each learner needs wax crayons, including black. You will also need yellow food colouring, a black paint wash and a few paint brushes.
- Each learner folds their paper in half (wide not narrow). On one half of the paper, each learner draws an outline of own imaginary house using different lines including curves using a black wax crayon. Make sure learners press hard. The house should represent an alien or fairy house – in other words it should not look like an ordinary, conventional house. Fill in outlines of doors, windows, etc. also using a black wax crayon. Refold the page along the middle line. Using a ruler or back of a pencil, learners rub over the outline that they can see through the page, in this way transferring the drawing to the blank half. Open the page.
- Talk about similarities and differences between day and night. Also discuss how the house looks during the day and how it will look at night.
- Colour in both houses the same. Only colour in the house and details such as gardens, trees, etc., but not the sky or the ground. Press hard when colouring. On one half learners draw a sun to indicate the day and on the other they draw the moon and stars to indicate the night. When finished use the yellow for the day house and the black wash for the night house.

Tip: *This art lesson uses the concept of doubling and halving.*

ASSESSMENT	**Formal :** No formal, recorded Assessment . **Informal:** Unrecorded assessment of learners oral responses and ability to participate.

Week 1 : Group Teaching

Week 6	**GROUP TEACHING COMPONENT (Concept Development and Problem Solving**

Notes to teacher:

- By now you have established 3 groups. Every day you will work with 2 different groups in a small group situation e.g. sitting on the mat together. During this time you will do activities to develop number concepts at the level of the learners in the group. A number of types of activities are provided and you should do ALL the types each time you work with that group; but remember, although examples are provided, you should look for your own examples that will suit your learners. You will also give the learners at least 2 different word problems to solve every time you work with them. It is through solving problems and discussing the solutions that learners develop a sense of number, an understanding of the operations and the ability to reflect on their thinking.
- While you are working with a group, the rest of the class will be working independently. You need to provide them with a variety of activities which reinforce and consolidate concepts already learnt. Try to vary the activities e.g. giving a practical activity (e.g. counting counters in counting bags), a written activity (e.g. worksheet, workcard, workbook, copying from board,etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)
- Learners **must do** the work set. Once they have completed this they may choose any mathematical activity e.g. jigsaw puzzle.

DAILY ACTIVITIES

Examples of activities to be done independently. *Work from a Learner's Book, worksheets, workcards, work from the board etc.*

- Repeated addition.
- Number patterns or other sequencing activity (e.g. pictures, shapes, etc.)
- Fill in the numbers you would use when counting in 2s or 5s on a number line or number square.
- Complete number sentences using 2 operations.
- Complete addition and subtraction number sentences using single digits with complete 10.
- Doubling and halving activities.

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put 7 groups of 5 in the middle of the group. You can draw pictures of balloons with 5 dots on each, or shirts with 5 buttons on each etc. to use for this activity. Let the learners look at the objects/pictures then cover them. Ask learners to estimate how many dots/buttons/counters etc. there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
  ***Tip:** Note which learners count in ones and who counts in fives. This will inform your planning and indicate whether you have grouped learners correctly.*
- Give each learner some counters and ask them to count out a complete 10 e.g. 10, 30, 50. Note who counts in 5s. Throw a dice and learners add on that number to the number counted out. Count how many altogether and learners record the sum using drawings and numbers.
  ***Tip:** Note which learners count all and which learners count on. This will inform your planning and indicate whether you have grouped learners correctly.*
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 50. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 addition and 1 grouping and on Wednesday you will ask 1 subtraction and 1 sharing problem. Try to ask problems where learners can double and halve.

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put 4 groups of 5 in the middle of the group. You can draw pictures of balloons with 5 dots on each, or shirts with 5 buttons on each etc. to use for this activity. Let the learners look at the objects/pictures then cover them. Ask learners to estimate how many dots/buttons/counters etc. there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them.

Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?

Tip: *Note which learners count in ones and who counts in fives. This will inform your planning and indicate whether you have grouped learners correctly..*

- Give each learner some counters and ask them to count out 20. Note who counts in 2s. Choose any number between 1 and 9 and learners add on that number to 20. Count how many altogether and learners record the sum using drawings and numbers.

  Tip: *Note which learners count all and which learners count on. This will inform your planning and indicate whether you have grouped learners correctly.*
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 34. Let each learner tell the group how s/he solved the problem. On Tuesday the word problems will be 1 addition and 1 grouping and on Thursday you will ask 1 subtraction and 1 sharing problem. Try to ask problems where learners can double and halve.

GROUP 3

*This group works with the teacher **every day** for 20 minutes.*

- Do an **estimation activity**. Put 2 groups of 5 in the middle of the group. You can draw pictures of balloons with 5 dots on each, or shirts with 5 buttons on each etc. to use for this activity. Let the learners look at the objects/pictures then cover them. Ask learners to estimate how many dots/buttons/counters etc. there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?

  Tip: *Note which learners count in ones and who counts in fives. This will inform your planning and indicate whether you have grouped learners correctly.*
- Give each learner some counters and ask them to count out 10. Note who counts in 5s. Throw a dice and learners add on that number to 10. Count how many altogether and learners record the sum using drawings and numbers.

  Tip: *Note which learners count all and which learners count on. This will inform your planning and indicate whether you have grouped learners correctly.*
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 20. Let each learner tell the group how s/he solved the problem. On Monday and Tuesday the word problems will be 1 addition and 1 grouping and on Wednesday and Thursday you will ask 1 subtraction and 1 sharing problem. Try to ask problems where learners can double and halve.

Assessment	**Formal :** No formal, recorded Assessment **Informal :** Unrecorded assessment of learners oral responses and ability to solve problems.

FIRST TERM: WEEK 7

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING
LO 1 AS 1,2, 4</td><td>• Orders numbers (1st – 34th)
• Counts to 100 on abacus and number line/number square
• Counts out objects to 34
• Counting in multiples of 2, 5, and 10 using concrete objects and number square</td><td colspan="5">Daily:
• Counting in 2s, 5s and 10s forwards and backwards to 100 (ASSESSMENT ACTIVITY).
• Counting in 2s forwards and backwards to 100, starting and ending at any number.
• Count out objects to 30.
• Order numbers 1st to 30th.</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL
LO 1 AS 8,9,10
LO 2 AS 2,4
LO 3 AS 1</td><td rowspan="3">• Completes repeated addition and subtraction of multiples of 2, 5, 10
• Completes given number patterns
• Recognizes patterns in number work
• Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=?
• Doubles and halves numbers 1- 34
• Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30
• Recognises and identifies 2-D shapes in pictures and 3-D objects in the environment</td><td colspan="5">Daily:
• Repeated addition of 5.
• Recognise number patterns.
• Build up concept of numerosity of numbers to 20.</td></tr>
<tr><td>DAY 1</td><td>DAY 2</td><td>DAY 3</td><td>DAY 4</td><td>DAY 5</td></tr>
<tr><td>Number patterns</td><td>Estimation</td><td>ASSESSMENT TASK
2 written activities</td><td>Open frame number sentences to 34</td><td>Recognise 2-D shapes and 3-D objects in pictures and the environment (ASSESSMENT ACTIVITY)</td></tr>
<tr><td>GROUP TEACHING

LO 1AS 8,11</td><td>• Estimates up to 20 objects
• Solve problems, and explains solutions, using number charts and counters if needed with numbers up to 34</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-75; Group 2 works in 1-40; Group 3 works in 1-34</td><td rowspan="2">WHOLE CLASS ACTIVITY</td></tr>
<tr><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 sharing word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 sharing word problem
Group 1 works on their own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 grouping word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 grouping word problem
Group 1 works on their own.</td></tr>
</table>

Week 7 : Whole Class

WEEK 7	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher

- Counting at the beginning of the day helps learners focus on numbers. Every day you will let your learners do rote counting (to develop the vocabulary of numbers) as well as rational counting (thinking what they are doing) activities. Counting at the beginning of the lesson is done with the whole class every day.
- Daily activities indicate activities what should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Marking the register and talking about the Weather chart and Birthday chart are daily activities involving incidental learning and are usually part of the Literacy Oral component. They are placed here as Numeracy concepts are also being dealt with.
- **ASSESSMENT TASK 2 should be done this week.**

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities.(to take no more than 5 minutes)

- Learners rote count in 2, 5s and 10s to at least 100 and further if they can.
- Point to any number between 20 and 90 on a number square. Ask individual learners to count on in 1s from that number until you clap your hands. Make sequences short so that many learners can have a turn.

DAY 1 (to take no more than 25 minutes)

- Give each learner a pile of counters and small, blank pieces of paper. Learners put the counters out in 2s, count them in 2s, write the numbers on the paper (e.g. write 2, 4, 6, 8, etc. one number on each of the pieces of paper) and then arrange the numbers under the groups in sequence.
  Tip: *This is one of the activities for Assessment Task 2. You will be assessing their ability to count in 2s as well as their knowledge of number patterns. Do not limit the number of counters for each learner. Some learners will be able to work with big numbers in the time given, while others may only reach, for example, 20.*

DAY 2 (to take no more than 25 minutes)

- Give each learner a pile of counters and small, blank pieces of paper. Learners put the counters out in 5s, count them in 5s, write the numbers on the paper (e.g. 5, 10, 15, etc.) and arrange the numbers under the groups in sequence.
  Tip: *This is one of the activities for Assessment Task 2. You will be assessing their ability to count in 5s as well as their knowledge of number patterns. Do not limit the number of counters for each learner. Some learners will work with big numbers in the time, while others may only reach 20.*
- Ask learners to estimate how many giant steps from the back of the classroom to the front. Let them discuss their estimations, then choose a few learners to test their estimations. Discuss if the estimations were too many or too few steps.

DAY 3 (to take no more than 25 minutes)

- Give each learner a worksheet with activities to assess numerosity, number patterns and addition and subtraction of single numbers to a whole 10. Here is a suggested example of the work

1. Write 10 different number sentences where the answer is 9

2. What am I counting in?

22	24	26	28	30	32	34	36	38	40

What am I counting in?

20	25	30	35	40	45	50	55	60	65

3. Put the numbers in the correct order starting from the smallest to biggest

50	90	20	80	100	40	60	70	30	10

What am I counting in?

4.

10+1=	10+2=	10+3=	10+4=
19-9=	18-8=	17-7=	16-6=
13=10+ ☐	☐ =10+4	16= ☐ +6	17= ☐ +7
17- ☐ =10	☐ -4=10	☐ =18-8	10= ☐ -5

Tip: If you are not able to Photostat worksheets you can write the work on the board and learners can copy it into their books. Remember this is part of Assessment Task 2

DAY 4 (to take no more than 20 minutes)

- Give each learner a pile of counters and small, blank pieces of paper. Learners put the counters out in 10s, count them in 10s, write the numbers on the paper (e.g. 10, 20, 30, etc.) and arrange the numbers under the groups in sequence.
  Tip: *This is one of the activities for Assessment Task 2. You will be assessing their ability to count in 10s as well as their knowledge of number patterns. Do not limit the number of counters for each learner. Some learners will be able to work with big numbers in the time given, while others may only reach, for example, 20.*
- Ask a simple word problem e.g. There were 6 birds in the tree. Some more came and then there were 15. How many more birds came? Let the learners talk about it and then draw a picture to show their thinking. Ask for a volunteer to write a number sentence on the board showing the problem and answer. You write the following on the board 6+∏=15 if no one has written it. Discuss what it means. Repeat the activity using subtraction e.g. Mom baked 25 cakes. Dad ate some. Now there are only 17 cakes. How many did Dad eat?

DAY 5 (the whole lesson)

- Draw a selection of different sized shapes (circle, square, triangle and rectangle) on the board. Learners count the shapes and record them in a table.
- Have a collection of boxes, balls and cylinders and learners discuss the known properties and names of the objects e.g. a ball is a sphere and is round. Learners discuss whether they will be able to find similar 3-D objects in the environment e.g. the school building is a prism. Take the learners outside and let them identify the objects in their school environment and name the object e.g. a drainpipe is a cylinder, the dirt bin is a cylinder, the sun is a ball.
  Tip: *This activity forms part of Assessment Task 2*

ASSESSMENT	**Formal: Recorded Assessment Task 2:** During the whole class and group teaching activities as indicated rate the learners against the following milestones, recording specific problems : • Counting in multiples of 2, 5, and 10 using concrete objects and number square. • Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30. • Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=? • Recognizes patterns in number work. • Estimates up to 20 objects. • Recognises and identifies 2-D shapes in pictures and 3-D objects in the environment.

Week 7 : Group Teaching

Week 7	GROUP TEACHING COMPONENT (Concept Development and Problem Solving

Notes to teacher:

- By now you have established 3 groups. Every day you will work with 2 different groups in a small group situation e.g. sitting on the mat together. During this time you will do activities to develop number concepts at the level of the learners in the group. A number of types of activities are provided and you should do ALL the types each time you work with that group; but remember, although examples are provided, you should look for your own examples that will suit your learners. You will also give the learners at least 2 different word problems to solve every time you work with them. It is through solving problems and discussing the solutions that learners develop a sense of number, an understanding of the operations and the ability to reflect on their thinking.
- While you are working with a group, the rest of the class will be working independently. You need to provide them with a variety of activities which reinforce and consolidate concepts already learnt. Try to vary the activities e.g. giving a practical activity (e.g. counting counters in counting bags), a written activity (e.g. worksheet, workcard, workbook, copying from board,etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)
- Learners **must do** the work set. Once they have completed this they may choose any mathematical activity e.g. jigsaw puzzle.

DAILY ACTIVITIES

Examples of activities to be done independently. *Work from a Learner's Book, worksheets, workcards, work from the board etc.*

- Repeated addition and subtraction number sentences.
- Number patterns or other sequencing activity (e.g. pictures, shapes, etc.).
- Fill in the numbers you would use when counting in 2s, 5s and 10s on a number line or number square. *Tip : this activity is part of the Assessment Task.*
- Complete number sentences using 2 operations.
- Complete addition and subtraction number sentences using single digits with complete 10.
  Tip: *This activity is part of the Assessment Task.*
- Doubling and halving activities.

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put 7 groups of 10 in the middle of the group. You can draw pictures of balloons with 10 dots on each, or shirts with 10 buttons on each etc. to use for this activity. Let the learners look at the objects/pictures then cover them. Ask learners to estimate how many dots/buttons/counters etc. there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- ***Tip:** This is an assessment activity.*
- Give each learner in the group a turn to add the next number to ten. Start from 10+1, the next learner will do 10+2, etc. ***Tip:** This can be an assessment activity.*
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 75. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 multiplication and 1 sharing and on Wednesday you will ask 1 subtraction and 1 grouping problem. Try to ask problems where learners can double and halve.

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put 4 groups of 10 in the middle of the group. You can draw pictures of balloons with 10 dots on each, or shirts with 10 buttons on each etc. to use for this activity. Let the learners look at the objects/pictures then cover them. Ask learners to estimate how many dots/buttons/counters etc. there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number? ***Tip:** This is an assessment activity.*
- Give each learner in the group a turn to add the next number to ten. Start from 10+1, the next learner will do 10+2, etc. ***Tip:** This can be an assessment activity.*
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 34. Let each learner tell the group how s/he solved the problem. On Tuesday the word problems will be 1 multiplication and 1 sharing and on Thursday you will ask 1 subtraction and 1 grouping problem. Try to ask problems where learners can double and halve.

GROUP 3

*This group works with the teacher **every day** for 20 minutes.*

- Do an **estimation activity**. Put 2 groups of 10 in the middle of the group. You can draw pictures of balloons with 10 dots on each, or shirts with 10 buttons on each etc. to use for this activity. Let the learners look at the objects/pictures then cover them. Ask learners to estimate how many dots/buttons/counters etc. there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- ***Tip:** This is an assessment activity.*

• Give each learner in the group a turn to add the next number to ten. Start from 10+1, the next learner will do 10+2, etc. ***Tip:*** *This can be an assessment activity.* • Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 20. Let each learner tell the group how s/he solved the problem. On Monday and Tuesday the word problems will be 1 multiplication and 1 sharing and on Wednesday and Thursday you will ask 1 subtraction and 1 grouping problem. Try to ask problems where learners can double and halve.	
Assessment	**Formal, recorded Assessment Task 2:** During the whole class and group teaching activities as indicated rate the learners against the following milestones, recording specific problems : • Counting in multiples of 2, 5, and 10 using concrete objects and number square. • Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30. • Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=? • Recognizes patterns in number work. • Estimates up to 20 objects. • Recognises and identifies 2-D shapes in pictures and 3-D objects in the environment.

SUGGESTED ASSESSMENT TASKS : GRADE 2 NUMERACY FIRST TERM

TASK 2 : WEEK 7

COMPONENT	MILESTONES	WKS	TASKS
COUNTING AND MENTAL/NUMBER SENSE	• Counting in multiples of 2, 5, and 10 using concrete objects and number square. • Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30. • Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=? • Recognizes patterns in number work. • Estimates up to 20 objects. • Recognises and identifies 2-D shapes in pictures and 3-D objects in the environment.	Wk 7	• Use the practical activity on Days 1 and 2 to observe learners' ability to count in 2s, 5s and 10s and well as their understanding of number patterns. • Use the recorded activity on Day 3 to assess counting in 2s, 5s and 10s, number patterns and addition and subtraction of a single digit to 10. • Use practical work on Day 5 to assess knowledge of 2-D shapes and 3-D objects.
PROBLEM SOLVING	• Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=? • Recognizes patterns in number work. • Estimates up to 20 objects.	Wk 7	• During Group teaching observe learners ability to estimate and add and subtract a single digit from 10. • Written work done independently during the group teaching time can also be used for assessment purposes.

FIRST TERM: WEEK 8

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING
LO 1 AS 1,2,3</td><td>• Counts to 100 on abacus and number line/number square
• Counts out objects to 34
• Counting in multiples of 2, 5, and 10 using concrete objects and number square</td><td colspan="5">Daily:
• Counting in 1s starting from 70 to 120
• Counting in 2s forwards and backwards to 100, starting and ending at any number
• Count out objects to 34</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL
LO AS
LO AS</td><td rowspan="3">• Completes repeated addition and subtraction of multiples of 2, 5, 10
• Completes given number patterns
• Recognizes patterns in number work
• Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=?
• Doubles and halves numbers 1- 34
• Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30</td><td colspan="5">Daily:
• Repeated addition and subtraction of 2, 5 and 10
• Recognise and complete number patterns
• Build up concept of numerosity of numbers to 34</td></tr>
<tr><td>DAY 1</td><td>DAY 2</td><td>DAY 3</td><td>DAY 4</td><td>DAY 5</td></tr>
<tr><td>Open frame number sentences to 34

Measurement : time</td><td>Open frame number sentences to 34

Measurement: time</td><td>Doubling and halving

Measurement : time</td><td>Before and after as position concepts

Measurement: time</td><td>Measurement : time</td></tr>
<tr><td rowspan="2">GROUP TEACHING

LO
AS</td><td rowspan="2">• Estimates up to 20 objects
• Solve problems, and explains solutions, using number charts and counters if needed with numbers up to 34</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-75; Group 2 works in 1-50; Group 3 works in 1-34</td><td rowspan="2">WHOLE CLASS ACTIVITY

Time activity</td></tr>
<tr><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 subtraction word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 subtraction word problem
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Ask 1 addition and 1 multiplication word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 multiplication word problem
Group 1 works on their own.</td></tr>
</table>

Week 8 : Whole Class

WEEK 8	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher:

- Counting at the beginning of the day helps learners focus on numbers. Every day you will let your learners do rote counting (to develop the vocabulary of numbers) as well as rational counting (thinking what they are doing) activities. Counting at the beginning of the lesson is done with the whole class every day.
- Daily activities indicate activities what should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Marking the register and talking about the Weather chart and Birthday chart are daily activities involving incidental learning and are usually part of the Literacy Oral component. They are placed here as Numeracy concepts are also being dealt with.
- **Measurement : Time has been included this week even though there is no milestone for this in Term 1. Milestones are the minimum requirement therefore enrichment and extension activities should be included. This encourages integration with other Learning Areas.**

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities.(to take no more than 10 minutes)

- Learners rote count from 70 to 120. This takes them over the completed tens and one hundred.
- Learners count in 2s starting at any number. Discuss the two patterns that emerge i.e. if counting starts on an even number, all the numbers will be even, and if counting starts on an odd number all the numbers will be odd.
- Let learners choose any number between 1 and 34. Each learner in the class tells a different number fact about that number.

DAY 1 (to take no more than 20 minutes)

- Give each learner a piece of paper with their date of birth e.g. 8 April 2001. Learners sort themselves into groups according to the year in which they were born. Within each group, learners further group themselves according to the month in which they were born. Learners then sequence themselves from oldest to youngest.
- Put a pile of either 34 or 35 counters in the middle of each group. Learners group these in 2s starting by putting out 2 counters. Discuss why some groups have a counter remaining. Repeat the activity but starting by putting out a single counter (1). Discuss why some groups have a counter remaining. Make sure you use the vocabulary odd, even, odd one out and remainder. Learners can record what they have done e.g. 2+2+2 etc. or 1+2+2+2 etc.
- Ask a simple word problem e.g. There were 12 people in the bus. Some more people got on the bus and then there were 23. How many more people got on the bus? Let the learners talk about it and then draw a picture to show their thinking. Ask for a volunteer to write a number sentence on the board showing the problem and answer. You write the following on the board 12+□=23 if no one has written it. Discuss what it means. Repeat the activity using subtraction e.g. There were 29 people in the bus.

Some people got off the bus at the next stop and then there were 16 left. How many people got off the bus? You want learners to understand 29- □ =16.
Tip Many learners may use addition or subtraction to find the answer e.g. instead of 12+□ =23 *learners may write 23-12= , or instead of 29-* □ *=16 learners may count on from 16 to 29 and say 16+13=29. All of these different ways of working are correct. Provide written activities to consolidate the concept of the place holder being in different places.*

DAY 2 (to take no more than 20 minutes)

- Have an A4 size paper for each month with the name of the month written on and a small calendar for that month e.g. January. Place these randomly around the room. Give each learner a circle on which to draw their face. Once they have done this they find the page with their birthday month and glue the face on to the page. They then write their name and date of birth under the face and circle the correct date on the calendar. Learners help you order the months and display the charts on the wall as a time line.
- Put a pile of either 34 or 35 counters in the middle of each group. Learners group these in 2s starting by putting out 2 counters. Discuss why some groups have a counter remaining. Starting with 34, learners keep putting 2 counters back in the pile while counting backwards e.g. 34, 32, 30, etc. Repeat the activity but starting by putting out a single counter (1). Discuss why some groups have a counter remaining. Make sure you use the vocabulary odd, even, odd one out and remainder. Learners can record what they have done e.g. 2+2+2 etc. or 1+2+2+2 or 34-2-2-2 or 35-2-2-2

DAY 3 (to take no more than 20 minutes)

- Learners draw immediate family members on a piece of paper, write who it is and colour. Learners take the paper home and ask the family members to write their date of birth and age next to their picture.
- Take the learners outside. Tell them a number between 1 and 10 and they must get into groups of that number. After you have done this a few times tell them to get into groups of either double or half the number you call out. Each time ask someone to say what they did e.g. we made groups of 8 because you said half of 16.

DAY 4 (to take no more than 20 minutes)

- Remind learners who have not brought back their papers with the family date of births to bring it back by tomorrow.
- Learners work in pairs, each pair with a pile of counters, They take turns to count out any number between 1 and 20 and the partner has to double the number. Each time the pair record the numbers e.g. double 6 is 12. Repeat the activity, but halving the number and then recording e.g. half of 12 is 6.
- Revise open frame number sentences.

DAY 5 (the whole lesson)

- Learners cut out the pictures of family members and re-order them in a line according to age from oldest to youngest. Discuss. This gets pasted into their book and the picture completed e.g. flowers, sun, etc.

- Ask learners to make groups according to the month of their birthday. Groups line up sequentially according to months of the year. Ask questions such as *Which month comes before February? Which month comes after April? Which month comes between July and September?* Ask learners to order themselves within their group from the 1st to the end of the month. Ask questions such as *Whose birthday is last in the month? What is the date? What date comes before/after that date?*
- Give each learner a small calendar showing all the months of the year. They circle the birthday for each family member. Paste this in their book on the facing page of the family pictures.

ASSESSMENT	**Formal:** No formal recorded Assessment **Informal:** Unrecorded assessment of: learners oral responses and ability to participate

Week 8 : Group Teaching

Week 8	**GROUP TEACHING COMPONENT (Concept Development and Problem Solving**

Notes to teacher:

- By now you have established 3 groups. Every day you will work with 2 different groups in a small group situation e.g. sitting on the mat together. During this time you will do activities to develop number concepts at the level of the learners in the group. A number of types of activities are provided and you should do ALL the types each time you work with that group; but remember, although examples are provided, you should look for your own examples that will suit your learners. You will also give the learners at least 2 different word problems to solve every time you work with them. It is through solving problems and discussing the solutions that learners develop a sense of number, an understanding of the operations and the ability to reflect on their thinking.
- While you are working with a group, the rest of the class will be working independently. You need to provide them with a variety of activities which reinforce and consolidate concepts already learnt. Try to vary the activities e.g. giving a practical activity (e.g. counting counters in counting bags), a written activity (e.g. worksheet, workcard, workbook, copying from board,etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)
- Learners **must do** the work set. Once they have completed this they may choose any mathematical activity e.g. jigsaw puzzle

DAILY ACTIVITIES

Examples of activities to be done independently. *Work from a Learner's Book, worksheets, workcards, work from the board etc.*

- Repeated addition and subtraction number sentences.
- Number patterns or other sequencing activity (e.g. pictures, shapes, etc.).
- Fill in the numbers you would use when counting in 2s, 5s and 10s on a number line or number square.
- Complete number sentences using 2 operations.
- Complete addition and subtraction number sentences using single digits with complete tens using open frame sentences e.g. 10+ ☐ =19 or 17- ☐ =10.
- Doubling and halving activities.

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put any number of counters up to 34 in the middle of the group. Let the learners look at the counters then cover them. Ask learners to estimate how many there are. Give each learner a chance to say how many s/he thinks there are. Uncover the counters and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- Learners count in 2s till you clap your hands e.g. clap at 14. Ask how many 2s in 14? If 7 2s are 14, what are 8 2s? If 7 2s are 14, what are 6 2s? If 6 2s are 12, what are 12 2s? Repeat counting in 5s and 10s.
  ***Tip:** Be guided by the level in the group as to what questions you ask For example, asking 12 2s may be too difficult. If, however, the learners know the answer, try asking 12 4's as that is doubling the 2.*
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 75. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 addition and 1 subtraction and on Wednesday you will ask 1 addition and 1 multiplication problem. Try to ask problems where learners can use the techniques they have developed e.g. doubling and halving.

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put any number of counters up to 34 in the middle of the group. Let the learners look at the counters then cover them. Ask learners to estimate how many counters there are. Give each learner a chance to say how many s/he thinks there are. Uncover the counters and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- Learners count in 2s till you clap your hands e.g. clap at 14. Ask how many 2s in 14? If 7 2s are 14, what are 8 2s? If 7 2s are 14, what are 6 2s? If 6 2s are 12, what are 12 2s?
  ***Tip:** Be guided by the level in the group as to what questions you ask, e.g. asking 12 2s may be too difficult. If, however, the learners know the answer, try asking 12 4s as that is doubling the 2.*
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 50. Let each learner tell the group how s/he solved the problem. On Tuesday the word problems will be 1 addition and 1 subtraction and on Thursday you will ask 1 addition and 1 multiplication problem. Try to ask problems where learners can use the techniques they have developed e.g. doubling and halving

GROUP 3

*This group works with the teacher **every day** for 20 minutes.*

- Do an **estimation activity**. Put any number of counters up to 34 in the middle of the group. Let the learners look at the counters then cover them. Ask learners to estimate how many counters there are. Give each learner a chance to say how many s/he thinks there are. Uncover the counters and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- Give each learner in the group a turn to add the next number to ten. Start from 10 + 1, the next learner will do 10 + 2, etc.
- Learners count in 2s till you clap your hands e.g. clap at 14. Ask how many 2s in 14? If 7 2s are 14, what are 8 2s? If 7 2s are 14, what are 6 2s?
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. This group will work in the number range 1 to 20. Let each learner tell the group how s/he solved the problem. On Monday and Tuesday the word problems will be 1 addition and 1 subtraction and on Wednesday and Thursday you will ask 1 addition and 1 multiplication problem. Encourage learners to use the techniques they have developed

Assessment	**Formal :** No formal, recorded Assessment. **Informal:** Unrecorded assessment of learners' oral responses and ability to participate.

Remember, although it is important to work with small groups of learners, these groups are very flexible and learners can move freely from one group to another, depending on their ability to master the concepts being dealt with. It is also important for you to remember that your reading groups and numeracy groups are usually different e.g. some learners learn to read very quickly yet develop numeracy concepts and skills slowly. This is not an indication of cognitive ability, but simply indicates the developmental stage the learner is at.

FIRST TERM: WEEK 9

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING
LO 1 AS 1,2,3</td><td>• Counts to 100 on abacus and number line/number square
• Counts out objects to 34
• Counting in multiples of 2, 5 and 10 using concrete objects and number square</td><td colspan="5">Daily:
• Counting in 1s starting from 80 to 140
• Counting in 5s forwards and backwards to 100, starting and ending at any number
• Count out objects to 34</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL
LO AS
LO AS</td><td rowspan="3">• Completes repeated addition and subtraction of multiples of 2, 5, 10
• Completes given number patterns
• Doubles and halves numbers 1- 34
• Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30</td><td colspan="5">Daily:
• Repeated addition and subtraction of 2, 5, and 10 (ASSESSMENT ACTIVITY)
• Recognise and complete number patterns
• Build up concept of numerosity of numbers to 34 (ASSESSMENT ACTIVITY)</td></tr>
<tr><td>DAY 1</td><td>DAY 2</td><td>DAY 3</td><td>DAY 4</td><td>DAY 5</td></tr>
<tr><td>Double and halve numbers to 34 (ASSESSMENT ACTIVITY)</td><td>Identifies the numerosity of numbers to 34</td><td>Repeated addition and subtraction of 2, 5 and 10</td><td>Number patterns</td><td>Problem solving activity</td></tr>
<tr><td>GROUP TEACHING

LO
AS</td><td>• Estimates up to 34 objects
• Solve problems, and explains solutions, using number charts and counters if needed with numbers up to 34</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-75; Group 2 works in 1-50; Group 3 works in 1-34</td><td>WHOLE CLASS ACTIVITY

Number game</td></tr>
<tr><td></td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 subtraction word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 subtraction word problem
Group 1 works on their own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 sharing with a remainder word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 sharing with a remainder word problem
Group 1 works on their own.</td><td></td></tr>
</table>

Week 9 : Whole Class

WEEK 9	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher:

- Counting at the beginning of the day helps learners focus on numbers. Every day you will let your learners do rote counting (to develop the vocabulary of numbers) as well as rational counting (thinking what they are doing) activities. Counting at the beginning of the lesson is done with the whole class every day.
- Daily activities indicate activities what should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Marking the register and talking about the Weather chart and Birthday chart are daily activities involving incidental learning and are usually part of the Literacy Oral component. They are placed here as Numeracy concepts are also being dealt with.
- **Activities for ASSESSMENT TASK 3 will be done this week.**

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities.(to take no more than 10 minutes)

- Learners rote count from 80 to 140. This takes them over the completed tens and one hundred.
- Learners count in 5s starting at either 4 or 6. Discuss the patterns that emerge i.e. 4, 9, 14, 19, etc. OR 5, 10, 15, 20, OR 6, 11, 16, 21, etc.
- Let learners choose any number between 1 and 34. Each learner in the class tells a different number fact about that number

  Tip: *Use this as an assessment activity and do it over the whole week to make sure everyone has many opportunities to get it correct.*

DAY 1 (to take no more than 20 minutes)

- Learners work in pairs, each pair with a pile of counters. They take turns to count out any number between 1 and 34 and the partner has to double the number. Each time the pair record the numbers e.g. double 12 is 24. Repeat the activity, but halving the number and then recording e.g. half of 30 is 15.

  Tip: *This activity is an assessment activity. Observe one group each day until you have observed all the learners and recorded their level of understanding.*
- Clap a pattern and learners echo it back. Start with a simple pattern, making it more complicated if the learners can manage.
- Tell the learners that you are going to say a number pattern. As soon as they know what the pattern is they must put up their hand and tell you e.g. 12, 14, 16, OR 45, 47, 49, etc. Do this a few times, then let the first learner to get it correct say their own pattern for others to identify.

DAY 2 (to take no more than 20 minutes)

- Learners work in pairs, each pair with a pile of counters. They take turns to count out any number between 1 and 34 and the partner has to double the number. Each time the pair record the numbers e.g. double 12 is 24. Repeat the activity, but halving the number and then recording e.g. half of 30 is 15.
  Tip: *This activity is an assessment activity. Observe one group each day until you have observed all the learners and recorded their level of understanding*
- Still working in pairs, learners count out 50 counters. They then group them in 10s, count them in 10s and write the repeated addition for the groups of counters i.e. 10+10+10+10+10 = 50. Now ask the learners to put the counters away, one group at a time and write the repeated subtraction for what they are doing i.e. 50-10-10-10-10-10=0.
  Tip: *This activity is an assessment activity. Observe one group each day until you have observed all the learners and recorded their level of understanding.*

DAY 3 (to take no more than 20 minutes)

- Learners work in pairs, each pair with a pile of counters. They take turns to count out any number between 1 and 34 and the partner has to double the number. Each time the pair record the numbers e.g. double 12 is 24. Repeat the activity, but halving the number and then recording e.g. half of 30 is 15.
  Tip: *This activity is an assessment activity. Observe one group each day until you have observed all the learners and recorded their level of understanding*
- Still working in pairs, learners count out 50 counters. They then group them in 5s, count them in 5s and write the repeated addition for the groups of counters i.e. 5+5+5+5+5+5+5+5+5+5= 50. Now ask the learners to put the counters away, one group at a time and write the repeated subtraction for what they are doing i.e. 50-5-5-5-5-5-5-5-5-5-5=0. If there is time do the same with 2's.
  Tip: *This activity is an assessment activity. Observe one group each day until you have observed all the learners and recorded their level of understanding.*

DAY 4 (to take no more than 20 minutes)

- Learners work in pairs, each pair with a pile of counters. They take turns to count out any number between 1 and 34 and the partner has to double the number. Each time the pair record the numbers e.g. double 12 is 24. Repeat the activity, but halving the number and then recording e.g. half of 30 is 15.
  Tip: *This activity is an assessment activity. Observe one group each day until you have observed all the learners and recorded their level of understanding*

- Give each learner a worksheet with activities to assess numerosity, completing number patterns and repeated addition and subtraction of 2, 5, and 10. Here is a suggested example of the work

1. Write 5 different number sentences where the answer is 26.

2. Write 5 different number sentences where the answer is 34.

3. Fill in the answers:

2+2+2 =	22+2+2+2=	32+2+2+2=	42+2+2+2=
18-2-2-2=	28-2-2-2=	38-2-2-2=	48-2-2-2=
45+5+5+□=60	60+5+5+5+5=	25-5-5-5=	90-5-5-□=80
80-10-10-10=	10+□+10=30	40-10-□=20	30+10+10+10=

4. Complete the following pattern

22			28		32				

Complete the following pattern

				40			55		65

Complete the following pattern

61		65	67						

Make up your own pattern counting in 10s.

Tip: *If you are not able to Photostat worksheets you can write the work on the board and learners can copy it into their books. Remember this is part of Assessment Task 2. Explain what learners must do and this can become the written work while you are busy with a group.*

DAY 5 (the whole lesson)

- For this activity you will need 20 hoops (or something similar) and 4 cards with each of the numbers 12, 20, 34, 45 and 50 (4 cards with 12, etc.). Take the learners outside and explain the game as follows
  - Each hoop has a number. When a sum is called out, learners need to find the hoop with the correct answer and stand in it. There is more than one hoop with the answer so everyone will be able to find a place

  Call out sums which have the answer in the hoops e.g. double 10, 40+5, half of 100, etc. Make sure that some of the sums are easy, while others are more difficult. Remember, this is just a game!

ASSESSMENT	**Formal: Recorded Assessment Task 3:** During the whole class activities as indicated rate the learners against the following milestones, recording specific problems : • Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30. • Completes repeated addition and subtraction of multiples of 2, 5, 10. • Completes given number patterns. • Doubles and halves numbers 1- 34.

Week 9 : Group Teaching

Week 9	GROUP TEACHING COMPONENT (Concept Development and Problem Solving

Notes to teacher:

- By now you have established 3 groups. Every day you will work with 2 different groups in a small group situation e.g. sitting on the mat together. During this time you will do activities to develop number concepts at the level of the learners in the group. A number of types of activities are provided and you should do ALL the types each time you work with that group; but remember, although examples are provided, you should look for your own examples that will suit your learners. You will also give the learners at least 2 different word problems to solve every time you work with them. It is through solving problems and discussing the solutions that learners develop a sense of number, an understanding of the operations and the ability to reflect on their thinking.
- While you are working with a group, the rest of the class will be working independently. You need to provide them with a variety of activities which reinforce and consolidate concepts already learnt. Try to vary the activities e.g. giving a practical activity (e.g. counting counters in counting bags), a written activity (e.g. worksheet, workcard, workbook, copying from board,etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)
- Learners **must do** the work set. Once they have completed this they may choose any mathematical activity e.g. jigsaw puzzle
- **During the Group teaching sessions you will assess the learners' ability to solve problems and explain their solutions. You will have contact with each group at least twice this week, so assess on both days if necessary. This forms part of ASSESSMENT TASK 3.**

DAILY ACTIVITIES

Examples of activities to be done independently. *Work from a Learner's Book, worksheets, workcards, work from the board etc.*

- Repeated addition and subtraction number sentences
- Number patterns or other sequencing activity (e.g. pictures, shapes, etc.)
- Fill in the numbers you would use when counting in 2s, 5s and 10s on a number line or number square
- Complete number sentences using 2 operations
- Complete addition and subtraction number sentences using single digits with complete 10 using open frame sentences e.g. 10+∏= 19 or 17-∏=10
- Doubling and halving activities
- Worksheet from Day 4 (ASSESSMENT ACTIVITY)

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put any number of counters up to 34 in the middle of the group. Let the learners look at the counters then cover them. Ask learners to estimate how many there are. Give each learner a chance to say how many s/he thinks there are. Uncover the counters and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- Learners count in 5s till you clap your hands e.g. clap at 25. Ask how many 5s in 25? If 5 5s are 25, what are 6 5s? If 5 5s are 25, what are 7 5s? If 5 5s are 25, what are 10 5s?

- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. Use the number range 1 to 34. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 addition and 1 subtraction and on Wednesday you will ask 1 multiplication and 1 sharing with remainders problem. As this is an Assessment activity, you will only use numbers to 34.

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put any number of counters up to 34 in the middle of the group. Let the learners look at the counters then cover them. Ask learners to estimate how many there are. Give each learner a chance to say how many s/he thinks there are. Uncover the counters and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- Learners count in 5s till you clap your hands e.g. clap at 25. Ask how many 5s in 25? If 5 5s are 25, what are 6 5s? If 5 5s are 25, what are 7 5s? If 5 5s are 25, what are 10 5s?
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. Use the number range 1 to 34. Let each learner tell the group how s/he solved the problem. On Tuesday the word problems will be 1 addition and 1 subtraction and on Thursday you will ask 1 multiplication and 1 sharing with remainders problem. As this is an Assessment activity, you will only use numbers to 34.

GROUP 3

*This group works with the teacher **every day** for 20 minutes.*

- Do an **estimation activity**. Put any number of counters up to 34 in the middle of the group. Let the learners look at the counters then cover them. Ask learners to estimate how many there are. Give each learner a chance to say how many s/he thinks there are. Uncover the counters and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- Learners count in 5s till you clap your hands e.g. clap at 25. Ask how many 5s in 25? If 5 5s are 25, what are 6 5s? If 5 5s are 25, what are 7 5s? If 5 5s are 25, what are 10 5s?
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. Use the number range 1 to 34. Let each learner tell the group how s/he solved the problem. On Monday and Tuesday the word problems will be 1 addition and 1 subtraction and on Wednesday and Thursday you will ask 1 multiplication and 1 sharing with remainders problem. As this is an Assessment activity, you will only use numbers to 34.

Assessment	**Formal: Recorded Assessment Task 3:** During the whole class activities as indicated rate the learners against the following milestones, recording specific problems : • Solve problems, and explains solutions, using number charts and counters if needed with numbers up to 34.

SUGGESTED ASSESSMENT TASKS : GRADE 2 NUMERACY FIRST TERM

TASK 3 : WEEK 9

COMPONENT	MILESTONES	WKS	TASKS
COUNTING AND MENTAL/NUMBER SENSE	• Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30. • Completes repeated addition and subtraction of multiples of 2, 5, 10. • Completes given number patterns. • Doubles and halves numbers 1- 34.	Wk 9	• Use the daily oral to assess learners' understanding of the numerosity of numbers. • Use the practical activity in pairs to assess doubling and halving. • Use the practical activities on Days 2 and 3 to assess repeated addition and subtraction of 5 and 10.. • Use the written activity on Day 4 to assess numerosity and number patterns.
PROBLEM SOLVING	• Solves problems, and explains solutions, using number charts and counters if needed with numbers up to 34.	Wk 9	• Problem solving is assessed during group teaching throughout the week.

FIRST TERM: WEEK 10

<table>
<tr><th>COMPONENT</th><th>MILESTONES</th><th>DAY 1</th><th>DAY 2</th><th>DAY 3</th><th>DAY 4</th><th>DAY 5</th></tr>
<tr><td>COUNTING
LO 1 AS 1,2,</td><td>• Counts to 100 on abacus and number line/number square
• Counts out objects to 34
• Counting in multiples of 2, 5, and 10 using concrete objects and number square</td><td colspan="5">Daily:
• Counting in 1s starting from 90 to 150
• Counting in 5s forwards and backwards to 100, starting and ending at any number
• Count out objects to 34</td></tr>
<tr><td rowspan="2">NUMBER SENSE AND MENTAL
LO 1 AS4,8,9,10
LO 2 AS2
LO 3 AS1</td><td rowspan="2">• Orders numbers (1st-34th)
• Knows, reads and writes number names and symbols from 1 – 34 and explores their relationship
• Completes repeated addition and subtraction of multiples of 2, 5, 10
• Completes given number patterns
• Doubles and halves numbers 1- 34
• Identifies numerosity (profile) of numbers 1 to 34 e.g. 20 is double 10, but 10 less than 30
• Is able to add and subtract single-digit numbers to 10 e.g.10+3=? 17-7=?
• Recognises and identifies 2-D shapes in pictures and 3-D objects in the environment</td><td colspan="5">Daily:
• Orders numbers to 34
• Repeated addition and subtraction of 2, 5, and 10
• Recognise and complete number patterns
• Build up concept of numerosity of numbers to 34</td></tr>
<tr><td>DAY 1
Revise number names and symbols 11 to 19

Number patterns</td><td>DAY 2
Revise number names and symbols 20 - 29

Number patterns</td><td>DAY 3
Revise number names and symbols 30-34

Number patterns</td><td>DAY 4
Recognises 2-D shapes and 3-D objects</td><td>DAY 5
Uses shape to design own pattern</td></tr>
<tr><td rowspan="2">GROUP TEACHING

LO 1 AS8,11,12</td><td rowspan="2">• Estimates up to 34 objects
• Solve problems, and explains solutions, using number charts and counters if needed with numbers up to 34</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-75; Group 2 works in 1-50; Group 3 works in 1-34</td><td rowspan="2">WHOLE CLASS ACTIVITY

Integrated Arts and Culture lesson</td></tr>
<tr><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 subtraction word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 subtraction word problem
Group 1 works on their own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 sharing with a remainder word problem
Group 2 works on their own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 sharing with a remainder word problem
Group 1 works on their own.</td></tr>
</table>

Week 10 : Whole Class

WEEK 10	WHOLE CLASS COMPONENT (Counting and Mental/Number sense)

Notes to the teacher:

- Counting at the beginning of the day helps learners focus on numbers. Every day you will let your learners do rote counting (to develop the vocabulary of numbers) as well as rational counting (thinking what they are doing) activities. Counting at the beginning of the lesson is done with the whole class every day.
- Daily activities indicate activities what should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Marking the register and talking about the Weather chart and Birthday chart are daily activities involving incidental learning and are usually part of the Literacy Oral component. They are placed here as Numeracy concepts are also being dealt with.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities.(to take no more than 10 minutes)

Do be done daily:

- Learners rote count from 90 to 150. This takes them over the completed tens and one hundred.
- Learners count in 5s starting at either 1 or 9. Discuss the patterns that emerge i.e. 1, 6, 11, 16, etc. OR 9, 14, 19, 24, etc.

Choose from the following (to make up the 10 mins.):

- Let learners choose any number between 1 and 34. Each learner in the class tells a different number fact about that number
- Write a set of numbers from 1 to 34 on square pieces of cardboard. Call out 8 learners to the front of the class and give each one a randomly chosen number. Learners must order themselves from the smallest number to the largest. Ask which number is 1st, 2nd, etc. Do this activity a few times giving other learners a chance to participate.

DAY 1 (to take no more than 20 minutes)

- Tell the learners that you are going to say a number pattern. As soon as they know what the pattern is they must put up their hand and tell you e.g. 22, 24, 26, OR 55, 57, 59, etc. Do this a few times, then let the first learner to get it correct say their own pattern for others to identify.
- Play a number version of the game “I spy”. You start by saying *I spy with my little eye a number that is even, is more than 21 and is double 11”* (the answer is 22). Make up your own riddles, or let the learners make up riddles – they are very good at it!
- Show the learners a box/packet/envelope and tell them that inside is the number 10. You want to know what number must be added to give you the number you point to on the number chart i.e. if you point to 15, learners must say “5” is the number to be added to 10. Learners write the sum in their books and the answer as the number name e.g. 10+5=fifteen. Repeat pointing to all the numbers from 11 to 20.

DAY 2 (to take no more than 20 minutes)

- Say a sequence of numbers and learners must clap when they hear a number which is not in the right place, e.g. 1 2 3 4 7 5 or 31 32 33 34 35 36 38 37 10. You can also pause in the series and let the learners tell you what the next number is. Give learners an opportunity to make up their own sequence with numbers out of order.
- Tell the learners to close their eyes and listen to the number of sounds you make. As soon as they know the number they must hold up the same number of fingers. Working with numbers to 20, stamp on the floor, knock on the door, click your fingers, etc. Do the activity again, but this time give each learner a number square and tell the learners to put a counter on the correct number. You can also let learners have a turn to make the sounds.
- Show the learners a box/packet/envelope and tell them that inside is the number 20. You want to know what number must be added to give you the number you point to on the number chart i.e. if you point to 25, learners must say "5" is the number to be added to 20. Learners write the sum in their books and the answer as the number name e.g. 20+5=twenty-five. Repeat pointing to all the numbers from 20 to 29.

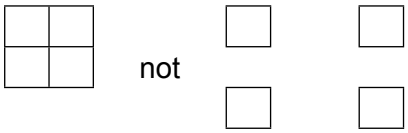
DAY 3 (to take no more than 20 minutes)

- Take the learners outside and make 4 lines. Give the first person in each line a bean-bag and place a hoop (piece of paper, bucket, etc.) 7 steps away. The value of the hoop is10. Each learner has 5 throws. They get two points for each time the bean-bag lands in the hoop. Encourage learners to discuss how many land in the hoop and how many outside e.g. Sipho had 5 throws. 3 landed in the hoop and 2 landed outside, so he has 6 $\longrightarrow$ 2+2+2 . Altogether he has 10+6 $\longrightarrow$ 16 (the hoop has a value of 10 and the 3 throws have a value of 6). Make sure everyone has a turn to throw the bean-bag into the hoop. Learners record the number sentences each time.
- You can vary the game by making the number in the hoop 20, 30, etc and by varying the points per throw.
- Show the learners a box/packet/envelop and tell them that inside is the number 30. You want to know what number must be added to give you the number you point to on the number chart i.e. if you point to 34, learners must say "4" is the number to be added to 30. Learners write the sum in their books and the answer as the number name e.g. 30+4 = thirty-four. Repeat pointing to all the numbers from 30 to 39.

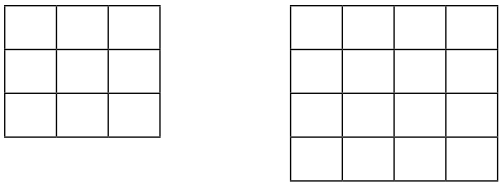
DAY 4 (to take no more than 20 minutes)

- Discuss the 2-D shapes learners are familiar with – square, rectangle, triangle and circle. Discuss the properties of the shapes as well as the similarities and differences. Put a pile of squares (cut from squared paper, or made out of cardboard) in each group of learners and encourage them to use the squares to investigate which numbers could be square numbers.

Ask questions such as *What would a square number have to show? (all sides are equal), How can you discover if a number is a square number? Can 4 be a square number?* Let them take 4 squares, put them touching each other and see if they can arrange them in a square. All sides must touch i.e. there must not be a space in the middle e.g.



Once they have done this and found that each side has 2 counters ask if 5 can be a square number (no). Let the learners investigate which numbers are square numbers and describe the patterns they find. (2x2, 3x3, 4x4, 5x5, etc)



- Give each learner a number square and tell them you are thinking of a number. Ask them to find the number using the following clues:
  - three more than 10
  - two less than 15
  - twelve plus 1
  - twenty take away nine plus two

  Ask what number you are thinking off – 13. Repeat using other numbers. Make up your own clues.

DAY 5 (the whole lesson)

- Use any of the oral activities done during the week as revision.
- Give learners an A4 size paper and let them design their own pattern – for an Easter egg, a pair of pyjamas, some wrapping paper, etc.

ASSESSMENT	**Formal :** No formal, recorded Assessment. **Informal:** Unrecorded assessment of learners' oral responses and ability to participate.

Week 10 : Group Teaching

Week 10	**GROUP TEACHING COMPONENT (Concept Development and Problem Solving**

Notes to teacher:

- By now you have established 3 groups. Every day you will work with 2 different groups in a small group situation e.g. sitting on the mat together. During this time you will do activities to develop number concepts at the level of the learners in the group. A number of types of activities are provided and you should do ALL the types each time you work with that group; but remember, although examples are provided, you should look for your own examples that will suit your learners. You will also give the learners at least 2 different word problems to solve every time you work with them. It is through solving problems and discussing the solutions that learners develop a sense of number, an understanding of the operations and the ability to reflect on their thinking.
- While you are working with a group, the rest of the class will be working independently. You need to provide them with a variety of activities which reinforce and consolidate concepts already learnt. Try to vary the activities e.g. giving a practical activity (e.g. counting counters in counting bags), a written activity (e.g. worksheet, workcard, workbook, copying from board,etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)
- Learners **must do** the work set. Once they have completed this they may choose any mathematical activity e.g. jigsaw puzzle

DAILY ACTIVITIES

Examples of activities to be done independently. *Work from a Learner's Book, worksheets, workcards, work from the board etc.*

- Repeated addition and subtraction number sentences.
- Number patterns or other sequencing activity (e.g. pictures, shapes, etc.).
- Fill in the numbers you would use when counting in 2s, 5s and 10s on a number line or number square.
- Complete number sentences using 2 operations.
- Complete addition and subtraction number sentences using single digits with complete 10 using open frame sentences e.g. 10+∏=19 or 17-∏=10.
- Doubling and halving activities.

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity.** Put 8 groups of 10 in the middle of the group. You can draw pictures of balloons with 10 dots on each, or shirts with 10 buttons on each etc. to use for this activity. Let the learners look at the objects/pictures then cover them. Ask learners to estimate how many dots/buttons/counters etc. there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- Learners count in 5s till you clap your hands e.g. clap at 25. Ask how many 5s in 25? If 5 5s are 25, what are 6 5s? If 5 5s are 25, what are 7 5s? If 5 5s are 25, what are 10 5s?
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. Use the number range 1 to 75. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 addition and 1 subtraction and on Wednesday you will ask 1 multiplication and 1 sharing with remainders problem.

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 20 minutes*.

- Do an **estimation activity**. Put 6 groups of 10 in the middle of the group. You can draw pictures of balloons with 10 dots on each, or shirts with 10 buttons on each etc. to use for this activity. Let the learners look at the objects/pictures then cover them. Ask learners to estimate how many dots/buttons/counters etc. there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- Learners count in 5s till you clap your hands e.g. clap at 25. Ask how many 5s in 25? If 5 5s are 25, what are 6 5s? If 5 5s are 25, what are 7 5s? If 5 5s are 25, what are 10 5s?
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. Use the number range 1 to 50. Let each learner tell the group how s/he solved the problem. On Tuesday the word problems will be 1 addition and 1 subtraction and on Thursday you will ask 1 multiplication and 1 sharing with remainders problem.

GROUP 3

*This group works with the teacher **every day** for 20 minutes.*

- Do an **estimation activity**. Put 5 groups of 10 in the middle of the group. You can draw pictures of balloons with 10 dots on each, or shirts with 10 buttons on each etc. to use for this activity. Let the learners look at the objects/pictures then cover them. Ask learners to estimate how many dots/buttons/counters etc. there are. Give each learner a chance to say how many s/he thinks there are. Uncover the objects and count them. Ask who estimated too many and who estimated too few. Did anyone estimate the correct number?
- Learners count in 5s till you clap your hands e.g. clap at 25. Ask how many 5s in 25? If 5 5s are 25, what are 6 5s? If 5 5s are 25, what are 7 5s? If 5 5s are 25, what are 10 5s?
- Make sure each learner has access to paper, writing tools, counters and a number square. Ask them two different word problems which they solve by talking about them, drawing pictures and so on. Use the number range 1 to 34. Let each learner tell the group how s/he solved the problem. On Monday and Tuesday the word problems will be 1 addition and 1 subtraction and on Wednesday and Thursday you will ask 1 multiplication and 1 sharing with remainders problem.

Assessment	**Formal :** No formal, recorded Assessment. **Informal:** Unrecorded assessment of learners' oral responses and ability to participate.

By now the learners have settled into the routine of your class and you will have been able to identify the different needs of the learners. As the year progresses, you will probably find that the difference in the range of abilities gets greater and greater. This is quite normal – don't worry! Learners develop at vastly different rates during these first years at school. Often their emotional stage doesn't match with their cognitive stage i.e. a learner may have no friends, so is shy to speak, yet you know the learner is able to do all the work. So which group do you put this learner in? The fast group because of cognitive ability, or the middle group because of shyness? You will need to use your professional judgement and do what is best in the circumstances for the learner.

Annexures

Annexure 1: An example of one day's Numeracy lesson

Annexure 2: Quick reference

Annexure 3: Word problem types

Annexure 1 : An exemplar of one day's Numeracy lesson

This is an example of a single day's lesson from a teacher, showing how the different components can integrate with each other.

1. **Oral work**
   At the beginning of each lesson the whole class should be involved in oral work. Oral work is essential for learning number facts and developing the ability to transform numbers. There are many activities that can be done as oral work
   - ***Counting***

   This is probably the most essential skill of all. Learners can count using counters, a bead frame (or abacus), a number square, a number line, skip counting and so on. It does not matter if the counting is not at the level of all the learners – the slower learners will be learning the language of the numbers, while the quicker learners will be reinforcing known facts.
   - ***Doubling and halving***

   Known facts are used to construct new knowledge e.g. if 3+3 is 6, what is 4+3? or 3+4?
   - ***Recognising number patterns***

   This is done by counting, for example, in 2's then 20's then 200's.
   - ***Match the word and symbol***
   - ***Questioning around the counting***

   Other than rote counting, learners should always think about what they are counting and this is best achieved when you ask questions. For example, when counting in 5's, stop during the counting at 25 and ask questions such as *how many 5's in 25? If five 5's are 25, how much are six 5's? If six fives are 30, how much are twelve fives?*

2. **Organising the groups**
   Bring the group you want to work with to the mat and set the other groups activities to complete. These activities must be designed to help learners explore number concepts ***with which they are already familiar***. The activities can be practical, such as counting counters in a counting bag, or written, such as work from the board/worksheet/ learner's book etc.. The activities should require the learners to actually do something and to learn from the doing.

3. **Group teaching on the mat**
   If possible, have the group sit in a circle on a mat so that you can observe each individual. The mat session usually consists of
   - *General number development* such as counting within the range and ability of the group
   - *Specific number concept development activities*, such as doubling and halving, numerosity of numbers, adding and subtracting using a number chart, etc.

   Word problems which are posed to the group to solve. The problems should be relevant and realistic and may be solved in any way the learner wishes. Encourage learners to discuss the problem as well as their solutions. Do not interfere with the learners' thinking.

Annexure 2 : Quick reference

1. Worksheets
   - These are sheets of paper with activities on, and learners do the work on the piece of paper itself.
   - Each worksheet can only be used once.
   - Language must be simple, and as little as possible. Remember, learners are not yet able to read much by themselves.
   - They are used for specific purposes e.g. to colour in a drawing, or do a dot-to-dot activity.
   - They provide practice in essential skills.
   - Learners must write their name and the date on every worksheet.

2. Work cards
   - These usually contain sums which the learner must copy into their book and then write the answer.
   - Cards can be used over and over, year after year. It is a good idea to cover them with plastic to keep them clean.
   - Cards give the learner practice in work they can already do.
   - Make sets of cards about the concept being taught.
   - They need to be colourful and attractive.

3. Dot-to-dot
   - Learners join the dots, always starting with the lowest number and joining the numbers in the correct order till the largest number is reached.
   - It is a self-corrective activity because if the dots are joined correctly, a picture will appear.

4. Dice
   - Use small blocks of wood, or foam rubber, as dice.
   - Write your own numbers or signs to meet the needs of the learners.
   - The learner throws two dice and writes the corresponding sum.
   - Later add a die with signs and the learners use three dice and write the corresponding sum.

5. Number lines
   - These provide practice in counting forwards and backwards as well as the ordinal value.
   - They take many shapes and can start and end at any number.

6. Patterns
   - These provide practice in sequencing.
   - Shapes, size, numbers and so on can all provide practice in recognizing patterns. * * *11**
   - Two or more numbers (shapes etc) are always given so that learners can work out the missing parts of the sequence. e.g. 1,2, ... , ... ,5, ... , ...
   - Patterns also indicate relationships
     5+1=, 6+1=, 7+1= etc 5-1=, 4-1=, 3-1=, etc.

7. Number Sentences
   - Addition: 3+2= 5=3+□ □+2=5 □+□+□=9
   - Subtraction: 7-2= □-2=5 7-□=5 7=9-□

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8. Spider sums
   - These consist of an input number, an operator and an output number.
   - Start by providing the input number and the operator. Learners must find the output number.
   - Once learners are familiar with this, provide the operator and the output number. Learners must find the input number.
   - Then provide the input and output numbers and learners must find the operator.

9. Counting bags
   - Use any container, or bag to keep the counters in.
   - Each container has a different number of objects.
   - Learners take one bag at a time, count the objects and record the number.
   - If learners work in pairs they can check each other's counting.
   - This activity can be extended in a number of ways e.g. estimate the number, then count, count out objects then add 5 count out objects then take away how old you are.

Annexure 3 : Addition and Subtraction Problem Types.

Change

Join

1. Mary has 5 marbles. Jim gave her 8 more. How many marbles does Mary have now?
3. Mary has 5 marbles. How many more marbles does she need to have 13 marbles?
5. Mary had some marbles. Jim gave her 8 more marbles. Now she has 13 marbles. How many marbles did Mary have to start with?

Separate

2. Mary had 13 marbles. She gave 5 marbles to Jim. How marbles does she have left?
4. Mary had 13 marbles. She gave some to Jim. Now she has 8 marbles left. How many marbles did Mary give to Jim?
6. Mary had some marbles. She gave 5 to Jim. Now she has 8 marbles left. How many marbles did Mary have to start with?

Combine

7. Mary has 5 red marbles and 8 blue marbles. How many marbles does she have?
8. Mary has 13 marbles. Five are red and the rest are blue. How many blue marbles does Mary have?

Compare

9. Mary has 13 marbles. Jim has 5 marbles. How many more marbles does Mary have than Jim?
10. Mary has 13 marbles. Jim has 8 marbles. How many fewer marbles does Jim have than Mary?
11. Jim has 5 marbles. Mary has 8 more than Jim. How many marbles does Mary have?
12. Jim has 5 marbles. He has 8 fewer marbles than Mary. How many marbles does Mary have?
13. Mary has 13 marbles. She has 8 more marbles than Jim. How many marbles does Jim have?
14. Mary has 13 marbles. Jim has 8 fewer marbles than Mary. How many marbles does Jim have?

Equalize

15. Mary has 13 marbles. Jim has 5 marbles. How many marbles does Jim have to get to have as many marbles as Mary?
16. Mary has 13 marbles. Jim has 5 marbles. How many marbles does Mary have to lose to have the same number of marbles as Jim?
17. Jim has 5 marbles. If he gets 8 marbles he will have the same number of marbles as Mary. How many marbles does Mary have?
18. Jim has 5 marbles. If Mary loses 8 marbles, she will have the same number of marbles as Jim. How many marbles does Mary have?
19. Mary has 13 marbles. If Jim gets 8 marbles, he will have the same number of marbles as Mary. How many marbles does Jim have?
20. Mary has 13 marbles. If she loses 8 marbles she will have the same number of marbles as Jim. How many marbles does Jim have?

Multiplication and Division Problem Types

Repeated Addition

21. Mother buys 4 bags of apples. Each bag contains 8 apples. How many apples did she buy?
    I fill 10 cups with 200ml cool-drink each. How much cool-drink did I have before filling the cups?

22. Mother buys 32 apples that are packed in 4 bags. If each bag contains the same number of apples, how many apples are in each bag?
    2l of cool-drink is poured into 10 cups so that each cup holds the same amount. How many millilitres of cool-drink is in each cup?

23. Mother buys 32 apples. She wants to pack them into plastic bags, with 8 apples in each bag. How many bags does she need?
    How many cups each holding 200ml can be filled from a 2l bottle of cool-drink?

Rate

24. A man walks at 6km per hour. How far does he walk in 3 hours?
    Tomatoes are sold at R12 per kilogram. If I but 3 kilograms of tomatoes, how much will I have to pay?

25. A man walks at 6km per hour. How long will it take him to walk 18 kilometres?
    The price of tomatoes is R12 per kilogram. If I have R36, how many kilograms can I buy?

26. A man must walk 18 kilometres in 3 hours. How many kilometers per hour must he walk to achieve this?
    I but 3 kilograms of tomatoes for R36. What is the price per kilogram?

Comparison (Times as many as)

27. Mary has 4 marbles. Jim has 3 times as many marbles as Mary. How many marbles does Jim have?
    The length of a car in a photograph is 4cm. If the photograph is enlarged 3 times, what will the length of the car be on the enlargement?

28. Jim has 12 marbles, which is 3 times as many marbles as Mary has. How many marbles does Mary have?
    If a photograph is enlarged 3 times, the length of a car on the enlargement is 12cm. How long is the car in the original photograph?

29. Mary has 4 marbles. Jim has 12 marbles. How many times are Jim's marbles more than Mary's?
    The length of a car on a photograph is 4cm. On the enlargement of the photograph the car is 12cm long. How many times has the photograph been enlarged?

Arrays (Arrangements)

30. A slab of chocolate has 4 pieces along the shorter side and 6 pieces along the longer side. How many pieces does the slab contain?
    A vegetable patch has 12 rows of onion plants, with 6 plants in each row. How many onion plants are there in the patch?

31. A slab of chocolate has 24 pieces. There are 4 pieces along the shorter side of the slab. How many pieces are along the longer side? A vegetable patch has 12 rows of onion plants, with an equal number of plants in each row. If there are a total of 48 plants, how many plants are in each row?

Combinations

32. Mary has 3 skirts of different colours and 4 tops of different colours. All the colours match. In how many different ways can she dress?
33. Mary is on holiday for 12 days. She wants to dress differently on each day. She has 3 different skirts. How many different tops that match with the skirts should she pack?
34. Mary has 4 tops. How many skirts does she need for 12 different outfits?

Sharing – with and without remainders, leading to fractions

35. My brother and I found 5 marbles. We each took the same number. How many did we each take?
36. Mom bought 8 sausages and her 4 children shared them equally. How many sausages did each child eat?
37. Mom bought 10 sausages and her 4 children shared them equally. How many sausages did each child eat?

Grouping – with and without remainders

38. I have 12 apples and put them into 3 baskets. How many apples are in each basket?
39. Mom bought 14 apples. How many packets of 4 apples can she make?

Repeated addition and subtraction.

40. How many wheels do 4 bicycles have?
41. Father has R20. He gives R5 to each of his three children. How much money will he have left?

Annexure 4 : DEFINITIONS OF SOME CORE TERMS FOR SCHOOL READINESS

Word	Definition
1. Perception	Using the senses to acquire information about the surrounding environment or situation
2. Visual perception	Acquiring and interpreting information through the eyes. Accurate visual perception enables the child to read, write and do mathematics.
3. Visual discrimination	The ability to see similarities, differences and details of objects accurately
4. Visual memory	The ability to remember what the eyes have seen and the correct sequence in which things have been perceived
5. Auditory perception	Acquiring and interpreting information through the ears. Accurate auditory perception enables the child to give meaning to what is heard
6. Auditory discrimination	The ability to hear similarities and differences in sounds
7. Auditory memory	The ability to remember what the ears have heard and the correct sequence in which things have been perceived
8. Gross motor movements	Movements of the large muscles of the body e.g. walking, kicking, throwing
9. Fine motor movements	Movements of the small muscles of the body e.g. tasks that involve using the fingers like holding a pencil or tying bows
10. Eye-hand co-ordination	The hands and eyes working together when performing a movement e.g. catching a ball
11. Body image	A complete awareness of one's own body i.e. how it moves and how it functions
12. Laterality	Showing an awareness of each side of the body e.g. which hand is waving
13. Dominance	Preferring to use one hand or side of the body i.e. either right or left dominant
14. Crossing the mid-line	Being able to work across the vertical mid-line of the body e.g. being able to draw a line from one side of the page to the other without changing the tool from one hand to the other
15. Figure-ground perception	Being able to focus attention on a specific object or aspect while ignoring all other stimuli. The object of the attention is therefore in the foreground of the perceptual field while all the rest is in the background e.g. being able to read one word in a sentence
16. Form perception	The ability to recognise forms, shapes, symbols, letters, etc. regardless of position, size, background, etc. e.g. can recognise a circle because of its unique shape
17. Spatial orientation	The ability to understand the space around the body, or the relationship between the object and the observer e.g. the hat is on my head