Foundations For Learning

Foundation Phase
Numeracy
Lesson plans

Third term

Grade 3

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THIRD 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 750									
	Counting unstructured objects and grouping into different multiplies									
	Counting structured objects, write the number and number name.									
	Counting in 2,3,5,10,20,25,50 and 100 to 750									

Concept Develop ment and Number Sense	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
	Daily oral mental calculations									
	Addition and subtraction of a 1-digit number to a 3-digit number.				Addition and subtraction of 11 to numbers	Addition and subtraction of 10 and 100 to a 3-digit number		Addition and subtraction of two 3-digit numbers		
	Expanded notation of 3-digit numbers Build up and break down 3-digit numbers in various ways.									
		Double and halve 2 digit numbers				Double and halve 3-digit numbers				Double and halve 3-digit numbers.
	Multiplication of 2, 5, 10						Multiplication of 1 and 2-digit numbers			
	Fractions						Money problems			
	Create, copy and describe number patterns, geometric patterns, cultural patterns									
	Time			Data handling			Recognise 3D objects from different positions		Measure around objects	Capacity
	Problem solving. Work with 3 ability groups at their own level. 4 different word problem types done every week during group teaching time.									

THE ASSESSMENT FRAMEWORK

	ACTIVITIES THAT WILL BE USED FOR ASSESSMENT		
	COUNTING	CONCEPT DEVELOPMENT	PROBLEM SOLVING
WEEK 1			
WEEK 2			
WEEK 3	Oral activities dealing with counting to 750 in various multiples as required Practical and oral activities dealing with recognizing number names and symbols to 750	Practical and written activities dealing with ordering fractions, addition and subtraction of 10 and 100 to 3-digit numbers, adding and subtracting a single digit to a 3-digit number. Written and practical activities dealing with expanded notation and breaking down and building up of 3-digit numbers Practical and written activities dealing with time	Oral activities dealing with estimation.
ASSESSMENT TASK 1 COMPLETED			
WEEK 4			
WEEK 5			
WEEK 6		Practical activities dealing doubling and halving of 3-digit numbers. Written activities dealing with expanded notation, adding and subtracting 10 and 100 to 3-digit numbers. Practical activities dealing with collecting and sorting data and drawing a graph.	
ASSESSMENT TASK 2 COMPLETED			
WEEK 7			
WEEK 8		Written activities dealing with addition and subtraction, number patterns, expanded notation and money problems. Practical activities dealing with recognizing 3D objects from different positions.	Oral, practical and written activities dealing with solving problems and explaining solutions.
ASSESSMENT TASK 3 COMPLETED			
WEEK 9			
WEEK 1O			

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

THIRD 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

LO1 AS1, 2</td><td>• Counts forwards and backwards in multiples of 2s
• Counts in multiples of 25</td><td colspan="5">Daily :
• Count in 2s, forwards and backwards from any given number to 750
• Count in 25s to 750
• Count in 10s and 100s starting at any number</td></tr>
<tr><td rowspan="4">NUMBER SENSE AND MENTAL

LO1 AS3, 8
LO2 AS2</td><td rowspan="4">• Knows and reads and writes number name and symbols for 1 to 500
• Is able to add single digit numbers to any 3-digit number, e.g. 134 + 2 =
• Is able to subtract a 3-digit number, e.g. 378 – 100 =
• Uses fractions in the context of time.</td><td colspan="5">Daily:
• Estimate (minutes)
• Multiplication of 2, 5 and 10
• Numerosity of numbers to 100</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>Know and read and write number names and symbols for 1 to 500.

Fractions in the context of time.</td><td>Fractions in the context of time.</td><td>Fractions in the context of time.</td><td>Add and subtract single digit numbers to any 3-digit number, e.g. 134 + 2 =</td><td rowspan="3">Activity for the whole class – make an hour glass out of 500ml plastic bottles.</td></tr>
<tr><td rowspan="2">GROUP TEACHING

LO1 AS8, 11</td><td rowspan="2">• Engages in using expanded notation of 3-digit numbers in various ways
• Uses flard cards to add and subtract 10 and 100 to 3-digit numbers
• Solve problems and explains solutions, using fractions in the context of time, e.g. half past, quarter to, quarter past</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number ranges: Group 1: 1-500; Group 2: 1-300; Group 3: 1-200</td></tr>
<tr><td>Groups 1 and 3 work with teacher, one group at a time.
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Ask 1 addition and 1 subtraction word problem.
Group 1 works on its own.</td></tr>
</table>

WEEK 1: WHOLE CLASS

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

Notes to the teacher:

- Week 1 will be spent doing revision and consolidation of the concepts covered in Term 2.
- Ask the learners to collect two empty 500ml plastic bottles, dry them out completely and to bring them and 1 cup of salt to school for the numeracy activity on Friday.
- THEY MUST BRING THE BOTTLES TO SCHOOL BY THURSDAY AS YOU MUST MAKE SURE THAT ONE OF THE TOPS HAS A HOLE DRILLED IN IT. YOU MUST MAKE SURE THAT YOU HAVE SOME MASKING TAPE.
- The Numeracy time allocation is an hour and forty-five minutes (1h45) 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 (30 minutes per group).
- Ensure that you have all the resources required for every lesson. It would be a good idea to have a container (ice –cream container) with the following in it: 200 counters/beans, 100 unifix blocks, a clock with movable hands, photocopies of coins and and paper money, flard cards. Have enough containers to be shared by 2 or at the most 4 learners when working in groups.
- Start the day using the containers and looking at the clocks telling the time.
- There should be a clock in every classroom. Draw the learners' attention to the time throughout the day.
- There should be large numbercharts (1 – 200; 201 – 400; 401 – 600; 601 – 800; 801 – 1000). If you do not have them, then make them!
- Daily activities indicate activities that should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- 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)

To be done daily:

- Count in 2s, forwards and backwards, from any given number to 750.
- Count in 25s to 750 (use classroom number charts).
- Count in 10s and 100s starting at any number.
- Ask learners to tell the time every day, using the clock in the classroom.

Choose from the following (to make up 10 min).

Each activity should be covered at least once during the week. The more times each activity is done the better.

- Ask the learners to first estimate, then do, the following:
  - how many minutes will it take to walk around the school?
  - how many minutes will it take to walk around the playground?
  - how many minutes will it take to skip 100 times?

  Think up other examples of questions to ask the learners.
- Let learners count in 2s starting at 2. Stop them when they get to 14. Ask the following:
  - How much are 7 twos?
  - How many 2s in 14?
  - If 7 two's are 14, how much are 6 twos?
  - If 7 two's are 14, how much are 14 twos?
  - If 14 two's are 28, how much are 28 twos?
  - If 7 two's are 14, how much are 70 two's?

  Do the same for multiples of 5 and 10.

- Revise the numerosity of 100 by letting every learner tell you a different number fact about a chosen number. There must be no repetition. This makes everyone listen critically.
- Hand out the containers with all the counters etc. and let the learners work in pairs or fours. Let them estimate the number of counters, put the counters into groups of 3s, 4s, 5s, 10s, count them and see how close their estimate is to the actual number of counters.
- Learners should do the following mentally, i.e. no pencils, no counters, etc, using numbers in the number range 1 to 100:
  - take any number and double it then multiply the answer by 2.
  - learners choose a number themselves, multiply by 10 and halve the answer.
  - say a number and learners multiply by 5 and double the answer.

DAY 1 (to take no more than 20 minutes)

- Today you will introduce the half hour. Make sure that the learners all have a clock to work with. Learners have dealt with time for 2 years so it is important to find out what prior knowledge the learners have and the best way to do this is to ask questions. The knowledge you want to make sure learners have is:
  - There are 60 minutes in one hour.
  - It takes five minutes for the long hand to move from one number to the next.
  - When the long hand moves from 12 to 6 it has moved halfway around the clock, i.e. 30 minutes.
  - When the long hand points to the 6, we say half past.
- Use the manual clock and move the long hand from 12 to 6. All learners must move the long hand on their clock, counting the minutes in fives up to 30 minutes.
- Divide the class into 2 teams. Call one learner from each team to come to the board. You will say any 3 digit number and Team A will write the number symbol and Team B will write the number word. They get 2 points for writing it correctly. After 5 numbers Team A writes the number names and Team B writes the number symbols. Once you have called out 10 numbers add up the scores and see which team won.

DAY 2 (to take no more than 20 minutes)

- Revise telling the time using a clock face. Give each learner a sheet of paper with a large circle on it and get the learners to turn it into a clock face by writing the numbers starting with 12, 3, 6, 9 and then fill in 1, 2, 4, 5, 7, 8, 10, 11. Let them shade in half the clock, from 12 to 6. Then ask them to draw in the hands indicating half past ten. Ask if they can tell you another way of saying half past ten and of writing it - we can also say ten thirty and write10:30. Let the learners draw 6 circles in their books, change them into clocks and fill in the following times: half past 1, half past 3, 5.30, half past 7, 9 o'clock, 12.30.

DAY 3 (to take no more than 20 minutes)

- Make sure each group has a container with counters, flard cards etc. and whiteboards/ paper. Call out a number e.g. 45, learners count out 45 counters and group them into groups of 5 (or 2 or 10). Remember to ask questions e.g. how many groups of 5 in 45? If you had 5 more how many groups would you have? How much are 10 groups of 5? and so on.

- Introduce the quarter hour in the same way that you did the half hour. Each quarter hour is 15 minutes. Learners will use their clocks to show the time that you say e.g. quarter past 8, quarter to 10, half past 9, quarter past 11 and so on.
- Let learners draw 6 circles in their class work books and fill in "quarter to and quarter past" as they did with half past.

DAY 4 (to take no more than 20 minutes)

- Throughout the day, let learners look at the clock and tell the time. Always ask questions such as: *how long since we last looked at the clock? What will the time be in half an hour? If we have to stop our work in 10 minutes, what will the time be? etc.*
- Let the learners stand behind their chairs. Start by asking how much 321 plus 100 is. The first learner with the correct answer sits down and may not answer any more. Keep adding or subtracting whole 10s or 100s e.g. 321+100=421, 421+10=431, 471-10=461, 461+200 etc. As learners answer correctly they sit down till there are only a few learners left standing. These learners get a chance to answer first the next time you play this game.

DAY 5 (the whole lesson)

- Today the learners are going to make their own hourglass. If there are not enough bottles for everyone, put the learners into groups of twos, threes or fours. By now the tops should have a hole drilled in them – about the size of a thick nail. It is imperative that the bottles are dry. You only need one top.
- Let the learners work together. Show them how to pour the salt into one bottle. Screw the holed top on the bottle. Take another bottle and tape the open top to the closed bottle with lots of masking/other strong tape. When you turn the bottle over the salt should run through to the other bottle smoothly.
- Now give the learners certain tasks to do – you can let the class help you draw up a list as you write the activities on a worksheet e.g.

Jump on the spot 20 times. Clap your hands 40 times. Run to the tree and back, twice. Measure the teacher's table using hand spans. Count the number of rows of bricks to the top of the door.

Learners will work in pairs and take turns to do the task. As soon as they start the task, they must turn the bottles over and see how quickly they complete the task before all the salt has run through into the empty bottle.

Assessment	**Formal:** 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:

- 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. Some activities learners can do for Independent work have been suggested. However, use the LTSM that you have, or workcards and worksheets that you have made to consolidate concepts already dealt with. Have extra activities, such as a jig-saw puzzle, ready for the quick workers. Work with 2 groups every day for about 25 minutes each and do the same activities with each of the groups.
- 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 number sentences. 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

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

1. Ask the learners to write the numbers in words.

407 four hundred and seven

225 _____

132 _____

359 _____

240 _____

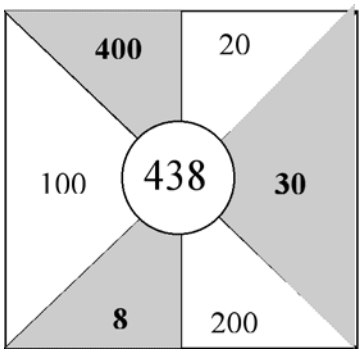
462 _____

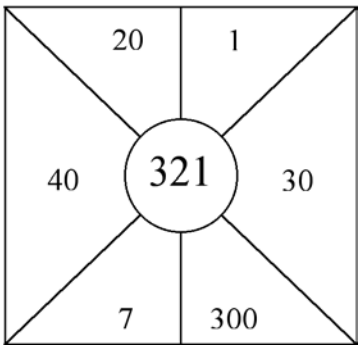
333 _____

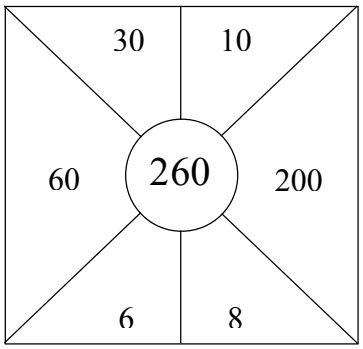
177 _____

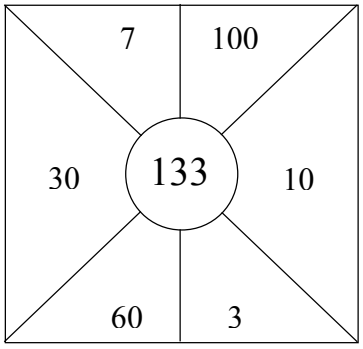
2. Colour in the shapes that make up each number in the circle.

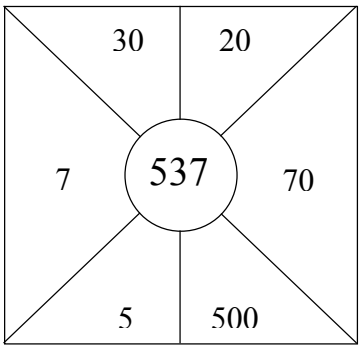
Example:

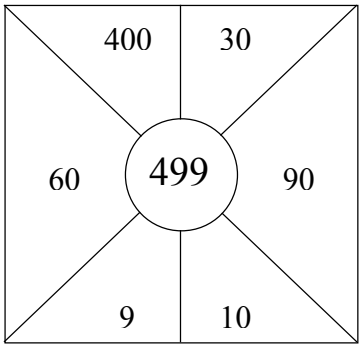


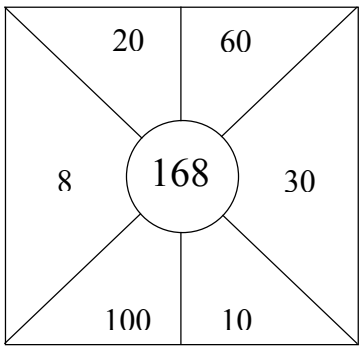


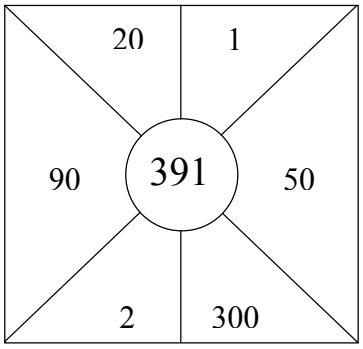












3. Write the numbers for :

Four hundred and fifty-one _____

Three hundred and sixty-three _____

Two hundred and thirty-seven _____

One hundred and nineteen _____

Four hundred and sixty _____

Three hundred and ninety-nine _____

4. Fill in the missing numbers.

674 _____ 694	441 _____ 461
666 _____ 686	705 _____ 725
339 _____359	553 _____ 573
247 _____267	365 _____ 385

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 30 minutes.*

- Count in 5s beginning and ending at any number up to 100, e.g. 0 to 60; 15 to 45; etc. Use a number line or number grid and let learners indicate where they start and stop.
- If this group has more than 10 learners, divide them into 2 groups. Each group has 2 dice – one with 3 digit numbers and one with single digit numbers. Each member of the group has a turn to throw both dice, and then everyone in the group writes the number sentence where they add the single digit to the three digit number. The thrower checks that the answer is correct. Once everyone in the group has had a turn, they arrange their number sentences in order from smallest to biggest. For example, 287+6=292 is bigger than 287+3=290.

- Repeat this activity on Wednesday, but use subtraction rather than addition.
- 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 500. On Monday the word problems will be 1 repeated addition and 1 repeated subtraction, using types 40 and 41 and on Wednesday you will ask 1 addition and 1 subtraction word problem, using types 5 and 10. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip**: By this stage the learners should be able to use number symbols when recording, even if they first draw pictures or count using a number grid. If they are not able to do this then you need to evaluate whether the learner would cope better in Group 2 rather than Group 1.*

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 30 minutes.*

- Count in 5s beginning and ending at any number up to 100, e.g. 0 to 60; 15 to 45; etc. using a number line or number grid if necessary.
- Learners set out their flard cards and do the following:
  - Make the number 580. Which cards did you use? Why did you use 80 and not 8?
  - Make the number 720. Which cards did you use? Show me the new number you will get if you add 100 to 720. Which number did you change? Why did you change the 700?
  - Make the number 177. Which cards did you use? Show me the new number you will get if you take away 20? Which number did you change? Why did you change the 70?
  - Make the number 543. Which cards did you use? Change your number and then tell me what you did e.g. my new number is 593 because I added 50, etc.
- Let each learner choose his/her own number and explore other ways of indicating expanded notation of the numbers e.g.
  - 925= 100+100+100+100+100+100+100+100+100+20+5
  - 925=400+400+100+10+10+5
  - 925=200+200+200+200+100+20+5
- 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 300. On Tuesday the word problems will be 1 repeated addition and 1 repeated subtraction, using types 40 and 41 and on Thursday you will ask 1 addition and 1 subtraction word problem, using types 5 and 10. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

***Tip**: By this stage the learners should be able to use number symbols when recording, even if they first draw pictures or count using a number grid. If they are not able to do this then you need to help them by asking them to verbalise what they did and, as they do so, you record <u>exactly</u> what they say. Often children are able to solve problems but are still insecure with the recording of their thinking. You need to facilitate this by simply recording what they say using number symbols.*

<u>GROUP 3</u>

This group works with the teacher for 25 minutes everyday.

- Count in 5s beginning and ending at any number up to 100, e.g. 0 to 60; 15 to 45; etc. using a number line or number grid if necessary.
- Learners set out their flard cards and do the following:
  - Make the number 580. Which cards did you use? Why did you use 80 and not 8?
  - Make the number 720. Which cards did you use? Show me the new number you will get if you add 100 to 720. Which number did you change? Why did you change the 700?
  - Make the number 177. Which cards did you use? Show me the new number you will get if you take away 20? Which number did you change? Why did you change the 70?
  - Make the number 543. Which cards did you use? Change your number and then tell me what you did e.g. my new number is 593 because I added 50, etc
- 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 200. On Monday and Tuesday the word problems will be 1 repeated addition and 1 repeated subtraction using types 40 and 41 and on Wednesday and Thursday you will ask 2 word problems, using types 5 and 10. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

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

THIRD TERM: WEEK 2

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<tr><td>COUNTING

LO 1 AS 1,2</td><td>• Counts forwards and backwards in multiples of 3s
• Counts in multiples of 25</td><td colspan="5">Daily :
• Count objects in 3s to 750.
• Count from a given number to any number forwards and backwards
• Count in multiples of 25
• Count odd and even numbers from any given number to 500</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL

LO1 AS3
AS8</td><td rowspan="3">• Knows, reads and writes number names and symbols from 1 to 500
• Engages in using expanded notation of 3-digit numbers in various ways.
• Is able to subtract 3-digit numbers, e.g.
378 – 100 =
• Fills in fractions on the numberline: half and quarter
• Uses flard cards to add and subtract 10 and 100 to 3-digit numbers</td><td colspan="5">Daily:
• Adds on numbers using number chart.
• Tell the time throughout the day.
• Knows, reads and writes number names and symbols from 1 to 500.</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>Expanded notation of 3-digit numbers.

Make own numberline and fill in whole numbers.</td><td>Subtract two 3-digit numbers, e.g. 378 – 100

Fill in fractions on the number line: half.</td><td>Add and subtract 10 and 100 to 3-digit numbers.

Fill in fractions on the numberline: quarter.

Doubling and halving.</td><td>Add and subtract 10 and 100 to 3-digit numbers.

Fill in fractions on shapes.</td><td>WHOLE CLASS ACTIVITY

Make a sundial and mark the time every hour.</td></tr>
<tr><td>GROUP TEACHING

LO1 AS8,11</td><td>• Solve problems, and explains solutions, using number charts and counters if needed with numbers up to 300</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 – 600; Group 2 works in 1 – 400; Group 3 works in 1-300.</td><td rowspan="2"></td></tr>
<tr><td>Groups 1 and 3 each work with teacher, one group at a time.
Ask 1 addition and 1 multiplication word problem.
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Ask 1 subtraction and 1 sharing word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with the teacher, one group at a time.
Ask 1 subtraction and 1 sharing word problem.
Group 1 works on its own.</td></tr>
</table>

WEEK 2: WHOLE CLASS

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

Notes to the teacher:

- The Numeracy time allocation is an hour and 45 min. 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 minutes) and group teaching (30 minutes per group).
- 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 as a whole class.
- Counting helps develop an understanding of the four operations i.e. addition, subtraction, multiplication and division.
- Daily activities indicate activities that should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Look at the clock everyday, during the day and draw the learners' attention to the time. Make a note of the time yourself and ask the learners questions about time, e.g. "What is the time?" "How many minutes until break?"' "How many minutes have we been working?" etc.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

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

To be done daily:

- Learners count in multiples of 3s to 100 and in 5s to 750.
- Learners count in 1s from any given number to a final number (determined by you), forwards and backwards.
- Learners count odd and even numbers up to 500.

Choose from the following (to make up 10 min):

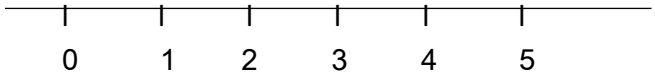
Each activity should be covered at least once during the week. The more times each activity is done the better.

- Tell the time throughout the day.
- Take a different number chart each day, e.g. 401 – 500 and ask the learners to add on and take away according to your instructions e.g. "look at 425, now add on 10 or 12 or 20 etc. or take off 10, 100, 20 etc."
- Look at the same number chart, point to a number and ask what number comes "before, after".
- Let learners use their counters/beans and start counting in 3s/ 5s/ 10s/ 25s while you time 2 minutes.
- Choose a number and give at least 10 learners a chance to tell you different number facts about that number e.g. 425 is 400 plus 20 plus 5, or 425 is 100 plus100 plus 100 plus100 plus 20 plus 5, or 425 is 500 take away 75 and so on.

  ***Tip**: Choose a different 10 learners each day so that everyone gets at least one chance in the week to break up the number.*

DAY 1 (to take no more than 20 minutes)

- Show flash cards with number names and numbers. Learners must write down the number when the name is shown and the name when the number is shown. Do about 5 examples of each.
- Give each learner an A4 size paper and tell them to fold it into 4 (lengthways/landscape) as they are going to make their own number lines. They must cut the paper on each fold so that they have 4 strips. Using their rulers they draw a line in the middle of the strip and mark the line at each centimetre: 0 1 2 3 4 up to 30, writing the numbers under each mark. The 2nd piece of paper will be marked and the numbers from 31 to 60 written under the marks, the 3rd piece will go from 61 to 90 and the 4th piece will go from 91 to 120, e.g.



***Tip** : Make sure the learners keep them safe as they will be using them daily. Tell the learners to write their name on the back of each strip as this makes it easy to identify whose strip it is.*

DAY 2 (to take no more than 20 minutes)

- Ask learners to take out their number lines. Using their rulers, they must find and mark the different numbers: 4 and a half, 12 and a half, 25 and a half, 36 and a half etc.
- Learners use their own number grids (100 to 500) and put a counter on any number they choose. As you call out instructions, they find the answer and put a second counter on the new number. After each instruction, choose a few learners to tell the class their original number, what they did and what the new number is, e.g.
  - Find the number that is 100 *less* than your number. What was your number? (238) What is the new number? (138) How did you get that number? (100 less than 200 is 100)
  - Find the number that is 100 *more* than you number? What is your number? (371) What is the new number? (471) How did you get that number? (100 more than 300 is 400), and so on.

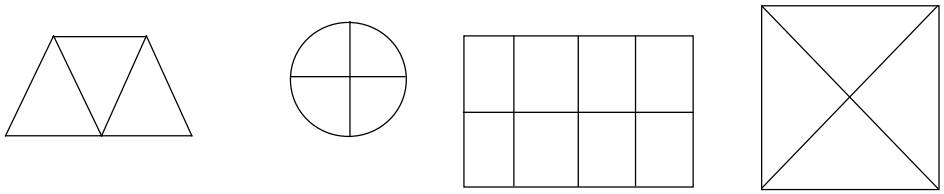
DAY 3 (to take no more than 20 minutes)

- In their groups as they sit, learners add up the ages of all the learners in their group. Then let 2 groups add their ages together, then 3 groups, then 4 groups, and so on till all the learners' ages have been added together. The learners must write the totals down and then write the number name for each total.
- Ask learners to take out their numberlines. They are going to fill in quarters on the numberlines as they did with halves. Let the learners look at the numbers already on the numberline, e.g. 5, $5\frac{1}{2}$, 6. Find halfway between two numbers e.g. 5 and $5\frac{1}{2}$ and then mark 5 and a quarter. Learners must find 15 and a quarter, 32 and a quarter, 77 and a quarter etc.
- Each learner must draw a circle on a blank piece of paper to represent a pizza. They can trace around a plate. Draw a line down the middle so that there are two halves. Learners must draw the following on one half: half a boiled egg, 3 pieces of chicken, 8 small tomatoes,

6 pieces of cheese, 5 small sausages. Write underneath each picture what they have drawn. Now complete the other half, with exactly the same food. Add together: How many eggs? How many pieces of chicken? How many pieces of cheese? How many tomatoes? How many sausages?

DAY 4 (to take no more than 20 minutes)

- Take the learners outside to the teachers' car park. They take a piece of paper and pencil with them. The learners write down the numbers on the number plates of the teachers' cars, e.g. 345, 678, 789, 405 etc. When they get back to the classroom they must write the number name of each number plate.
- Let all the learners stand behind their desks. Let the shortest learner choose a 3-digit number. Each learner adds 100 to the number, says the new number and sits down e.g. 482, 582, 682, etc. Once 10 learners are sitting down, choose a new number and give a new instruction e.g. take away 100, add 50, take away 20, add 200, etc.
- Draw the following shapes on the board



Learners open their classwork books on to a clean page. Divide the page into 4 and copy the shapes drawing one in each square. Ask learners to shade/colour in a third of the first shape, a half of the circle, five eights of the rectangle and a quarter of the square. Discuss what they have done and how many spaces in each shape have not been shaded.

DAY 5 (the whole lesson)

- Today the learners are making their own sundial. Explain to the learners what a sundial/ shadow clock is and when it was used. Discuss how the shadow clock works. A stick is stuck upright into the ground and when the sun shines, casts a shadow. This shadow will slowly move around the stick. In the morning the shadow is long, at noon the shadow is at its shortest and in the evening it is long again. Divide the learners into groups and let them make shadow clocks. Each group will need a nail, a hammer, paper and a block of wood. Glue a sheet of paper onto a block of wood. The children must hammer a nail into the centre of each block of wood. Place these clocks outside in the sun.
- Every hour let the learners draw in the line cast by the nail's shadow.
- Ask the learners how they think people told the time before clocks and watches were invented, e.g. looking at the sun's position in the sky; looking at shadows, etc.

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

WEEK 2: GROUP TEACHING

WEEK 2	GROUP TEACHING COMPONENT (Concept Development and Problem Solving)

Notes to teacher:

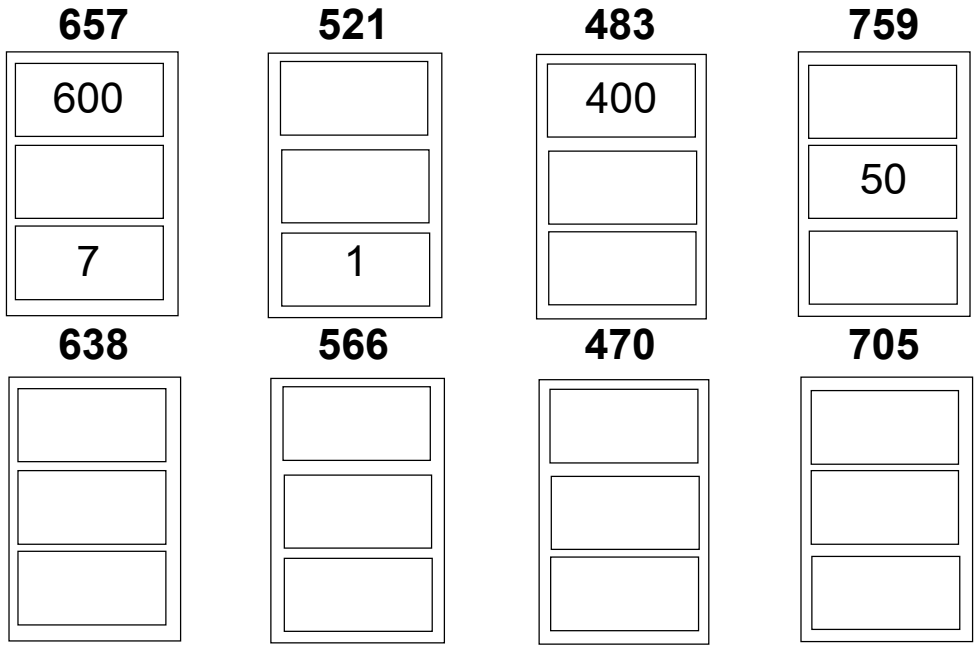
- Although you have established 3 ability groups, remember that they are not static. Learners will move between the groups as their number sense develops and their confidence grows.
- While you are working with a group, the rest of the class will be working independently. You need to provide them with 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.)
- Use these lesson plans as a guide as to what you can do with the group. However, your groups may need other concept development or consolidation. You need to use this time with the small group to develop their understanding of concepts being dealt with, so do not stick rigidly to these plans if your learners need something else.

DAILY ACTIVITIES

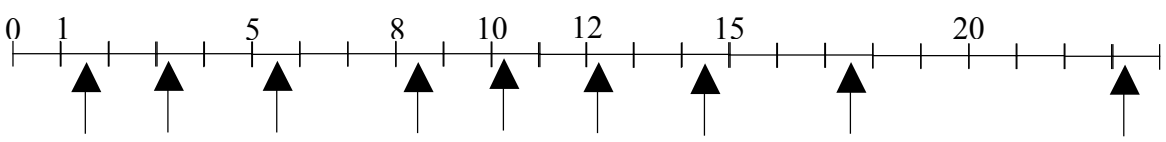
Examples of activities to be done independently. *Work from a Learners' Book, worksheets, workcards, work from the board, etc.*

Examples of Independent work:

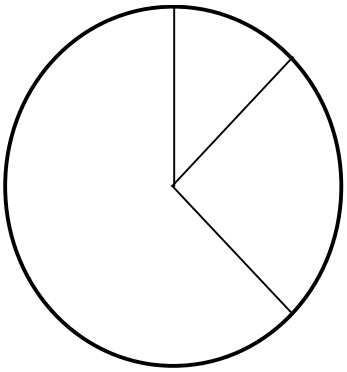
1. Divide a circle into quarters. In one quarter draw: 1 sausage; 2 pieces of chicken; 3 small tomatoes; 4 cubes of cheese. Make a list at the bottom of the page of the number of what has been drawn. Now draw the same in the other 3 quarters. Add up how many sausages, tomatoes, pieces of chicken and cubes of cheese there are altogether.
2. Fill in the missing numbers on each number machine.



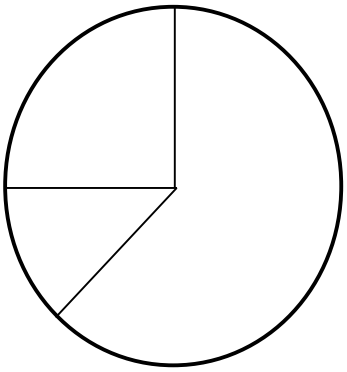
3. Fill in the missing whole numbers on the number line.
   Fill in the halves and quarters where the arrows point on the number line.



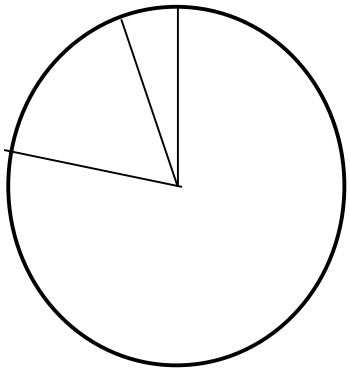
5. Fill in the pie graphs.



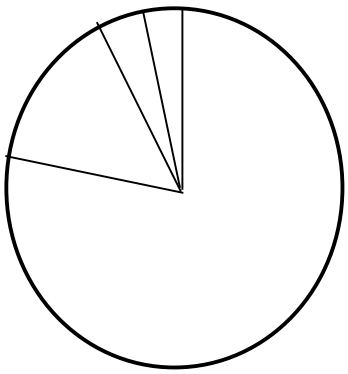
Favourite pets
Five children have pet fish – shade the section green
Ten children have pet mice – shade the section red
25 children have dogs – shade the section yellow



Favourite sweets
12 children eat chocolate bars – shade the section red
30 children eat lolipops – shade the section blue
Eight children eat jelly beans – shade the section yellow



Favourite TV shows
Three children watch the news – shade the section blue
15 children watch music shows – shade the section red
32 children watch cartoons – shade the section green



Favourite sports
Six children play tennis – shade the section yellow
Six children play cricket – shade the section orange
18 children swim – shade the section red
Ten children play soccer – shade the section blue

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 30 minutes.*

- Give learners 1 minute to write down as many multiples of 2 as possible, starting at 136. Then ask them to circle all the numbers that are also multiples of 10.
- Learners set out their flard cards and do the following:
  - Make the number 570. Which cards did you use? Why did you use 70 and not 7?
  - Make the number 620. Which cards did you use? Show me the new number you will get if you add 100 to 620. Which number did you change? Why did you change the 600?
  - Make the number 987. Which cards did you use? Show me the new number you will get if you take away 200? Which number did you change? Why did you not change the 80?
  - Make the number 846. Which cards did you use? Change your number and then tell me what you did, e.g. my new number is 896 because I added 50, etc.
- 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 600. On Monday the word problems will be 1 addition and 1 multiplication, using types 13 and 30 and on Wednesday you will ask 1 subtraction and 1 sharing word problem, using types 18 and 26. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.
  ***Tip**: By this stage the learners should be able to use number symbols when recording, even if they first draw pictures or count using a number grid. If they are not able to do this then you need to evaluate whether the learner would cope better in Group 2 rather than Group 1.*

GROUP 2

*On **Tuesday and Thursday** this group works with the teacher for 30 minutes.*

- Place some cards with pictures of people in front of the learners, e.g. a man on 1 card, 2 women on 1 card, 4 children on 1 card. Let them briefly look at the cards, cover the cards and ask learners to estimate how many hands there are. Once everyone has written down their estimate, uncover the pictures and count the number of people and multiply by 2 to find out the number of hands.
- Ask learners to set out their flard cards and then to use them to show you the numbers that you put onto a blank number board using counters.
  Here is an example:

101									
121									
									150
									200

Learners will find the numbers 100, 30 and 9 to make 139 for the first number and 100 and 70 and 3 to make 173 for the second number. Repeat using other numbers.

- Give the learners paper, writing tools, counters and a number square. The learners must be given two problem solving activities to do each time they work with you. Use the number range 1 to 400. On Tuesday the word problems will be 1 addition and 1 multiplication, using types 13 and 30 and on Thursday you will ask 1 subtraction and 1 sharing word problem, using types 18 and 26. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip**: By this stage the learners should be able to use number symbols when recording, even if they first draw pictures or count using a number grid. If they are not able to do this then you need to evaluate whether the learner would cope better in Group 3 rather than Group 2.*

GROUP 3.

This group works with the teacher for 25 minutes every day.

- Place some cards with pictures of people in front of the learners, e.g. a man on 1 card, 2 women on 1 card, 4 children on 1 card. Let them briefly look at the cards, cover the cards and ask learners to estimate how many hands there are. Once everyone has written down their estimate, uncover the pictures and count the number of people and multiply by 2 to find out the number of hands.
- Let the shortest learner choose a 3-digit number, e.g. 291, and the tallest learner must choose the multiple to count in e.g. 10. Starting anywhere in the group, each learner adds the multiple to the previous number. As learners say the numbers, record it for them to see e.g. 291+10 → 301+10 → 311+10→321, etc. Tell them that as soon as they discover the pattern they must tell you what it is. Repeat using other numbers.

• Give the learners paper, writing tools, counters and a number square. The learners must be given two problem solving activities to do each time they work with you. Use the number range 1 to 300. On Monday and Tuesday the word problems will be 1 addition and 1 multiplication, using types 13 and 30. On Wednesday and Thursday you will ask 1 subtraction and 1 sharing word problem, using types 18 and 26. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking. ***Tip***: *Encourage learners to use number symbols to represent their thinking even if they are not able to record their thinking in full. It is important that the answer is clear e.g. circle the number that is the answer, or underline it. Remember, you are looking for the answer to the problem!*	
Assessment	**Formal:** No formal recorded assessment. **Informal**: Unrecorded assessment of learners' oral responses and ability to solve problems.

THIRD 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>• Counts forwards and backwards in multiples of 2, 3, 5, 10, 20, 25, 50, 100 from 1 to 750
• Counts in multiples of 2, 5, 10, 20, 25, 100 starting at any number up to at least 500 e.g. 224, 244, 264, etc.</td><td colspan="5">Daily :
• Count in various multiples to 750, forwards and backwards
• Count from any given number to any number, forwards and backwards</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL

LO1 AS3
AS8</td><td rowspan="3">• Recognises numerals and number names to 500
• Is able to add single digit numbers to any 3-digit number e.g. 137+5
• Is able to subtract 3-digit numbers e.g. 378-100
• Uses flard cards to add and subtract 10 and 100 and 3-digit numbers
• Fills in fractions ½ and ¼ correctly on a number line
• Uses fractions in the context of time e.g. 15 minutes=quarter of an hour</td><td colspan="5">Daily:
• Read and write number names and symbols from 1 to 500
• Patterns using numbers</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>Use fractions in the context of time.

Add a single digit to a 3-digit number.</td><td>Read and write number names and symbols from 1 to 500.

Fill in fractions on the numberline.</td><td>Subtract
3-digit numbers.

Add a single digit to a 3-digit number.</td><td>Use fractions in the context of time.

Fill in fractions on the numberline.</td><td rowspan="3">WHOLE CLASS ACTIVITY

Number and Time games.</td></tr>
<tr><td rowspan="2">GROUP TEACHING

LO1 AS8,11</td><td rowspan="2">• Solves problems, and explains solutions, using number charts and counters if needed with numbers from 1 – 300, depending on the ability group</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-600; Group 2 works in 1 –400; Group 3 works in 1-300.</td></tr>
<tr><td>Groups 1and 3 work with teacher, one at a time.
Ask 1 subtraction and 1 grouping word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one at a time.
Ask 1 subtraction and 1 grouping word problem.
Group 1 works on its own.</td><td>Group 1 and 3 work with teacher, one at a time.
Ask 1 addition and 1 sharing word problem.
Group 1 works on its own.</td><td>Group 2 and 3 work with teacher, one at a time.
Ask 1 addition and 1 sharing word problem.
Group 1 works on its own.</td></tr>
</table>

WEEK 3: WHOLE CLASS

WEEK 3	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.
- Counting helps develop an understanding of the four operations i.e. addition, subtraction, multiplication and division.
- Daily activities indicate activities that should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Activities for **Assessment Task 1** will be done this week.
- Many different opportunities are provided for assessing learners. Assess in as many ways as possible to ensure that your assessment is valid.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities (to take no more than 10 minutes)

To be done daily:

- Learners count in 3s to 750, starting at any number.
- Counting forwards from a given number in 2s/5s/10s/20s/25s and 50s to 750, counting backwards from a given number to a final number using numbercharts.
  Tip: *This is an activity towards Assessment Task 1 so every day give a few learners an opportunity to count aloud on their own until you have assessed all the learners.*

Choose from the following (to make up 10 min):

Each activity should be covered at least once during the week. The more times each activity is done the better.

- Pose the following type of questions for learners to answer orally:
  - Tell me two numbers that will equal 50 or 40 or 17 or 150, etc.
  - Think of 3 numbers that will equal 9, 24, 36, 90, 210, 300 etc.
  - Double even and odd numbers
  - Halve even numbers
- Take your number symbols and number flash cards. Shuffle them and flash them at individual learners so that they all get a turn to read the flash card to you.
  Tip**:** *Use this as an activity towards Assessment Task 1.*
- Tell learners that you want to know what number you are clapping - when you clap your hands each clap will count as 25/100/20 etc. Clap a number of times e.g. 4 claps (counted as 25 per clap), and learners say the number (100).
  Tip**:** *Use this activity to assess counting in multiples as part of Assessment Task 1. Remember you need only record those learners who are not able to do it.*

DAY 1 (to take no more than 20 minutes)

- Tell learners to take out their clocks and ask the learners to show you the time that you ask on their clock e.g. half past 9, quarter to 12, etc. Working in pairs, learners take turns to either move the hands on the clock or to read the time.

- Give each learner a worksheet with 6 circles. Learners fill in the numbers to make clock faces. Once they have done this, ask them to draw in the hands to indicate the time that you say e.g. a quarter past 10, half past 2, a quarter to 12 etc.
  Tip: *Use these activities towards Assessment Task 1. You may need to do them everyday this week while you observe and record learners who can and cannot do them.*

DAY 2 (to take no more than 20 minutes)

- Make an empty numberline and put it around the whole class. Mark it at intervals where numbers must be written – you are going to ask the learners to fill in the numbers on the numberline. Mark the first number as 100, then call out the numbers randomly, making sure all the learners have a turn to write a number. Not all the numbers will be filled in today, but the number line will be completed by the end of the week. It will be a good piece of "classroom visible apparatus" for you to have in the classroom that the learners can refer when they need to.
- Let the learners stand behind their chairs. Start by asking how much 321 plus 100 is. The first learner with the correct answer sits down and may not answer any more. Keep adding or subtracting whole 10s or 100s e.g. 321+100=421, 421+10=431, 471-10=461, 461+200 etc. As learners answer correctly they sit down till there are only a few learners left standing. These learners get a chance to answer first the next time you play this game.
  Tip*: Use this towards Assessment Task 1. You will only need to record those learners who are not able to do this.*

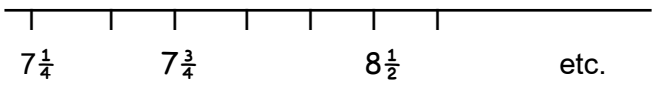
DAY 3 (to take no more than 20 minutes)

- Give each learner a chance to add another number to the number line. Once this has been done, give each learner a turn to find the half way mark between two numbers, mark it in a different colour and write the symbol. Now let them fill in the quarter marks in a different colour.
  Tip: *Use this activity towards Assessment Task 1.*
- Give learners a worksheet to complete (or write the work on the board) which assesses the concepts being developed e.g.

1. Fill in the answers.

256+1=	256-1=
256+2=	256-2=
256+3=	256-3= etc.

2. Fill in the missing numbers on the number line.



3. Complete the table.

397	
	four hundred and sixty one
153	

4. Use your flard cards to help you.

364+100 : 300+100 → 400 + 64 = 464

755+10→

411+50→

638+200→

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

DAY 4 (to take no more than 20 minutes)

- Give each learner a chance to add another number to the number line. Once this has been done, add the half and quarter marks and symbols.
  Tip*: *Use this activity towards Assessment Task 1.
- Tell learners to take out their clocks and ask a few learners to show you a time that you ask on their clock e.g. half past 9, quarter to 12, etc. Working in pairs, learners take turns to either move the hands on the clock or to read the time.
  ***Tip**: Use this towards Assessment Task 1.*

DAY 5 (whole class)

- Set up different working stations where learners will play number games. Put the learners into groups of 6. Have 5 different working stations arranged in the classroom. Each station must have a different number activity. Rotate groups after 15 minutes so that each group gets a turn to play each of the games. Examples of number games:
  1. Snakes and ladders
  2. Bingo
  3. Memory game
  4. Dominoes
  5. Number puzzles.

Assessment	**Formal: Recorded Assessment Task 1:** During the whole class and group teaching activities as indicated, rate the learners against the following milestones, recording specific problems: • Counts forwards and backwards in multiples of 2, 3, 5, 10, 20, 25, 50, 100 from 1 to 750 • Counts in multiples of 2, 5, 10, 20, 25, 100 starting at any number up to at least 500 e.g. 224, 244, 264, etc. • Recognises numerals and number names to 500 • Is able to add single digit numbers to any 3-digit number e.g. 137+5 • Is able to subtract 3-digit numbers e.g. 378-100 • Uses flard cards to add and subtract 10 and 100 and 3-digit numbers • Fills in fractions ½ and ¼ correctly on a number line • Uses fractions in the context of time e.g. 15 minutes=quarter of an hour

WEEK 3: GROUP TEACHING

WEEK 3	GROUP TEACHING COMPONENT (Concept Development and Problem Solving)

Notes to teacher:

- 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 learned. Try to vary the activities e.g. giving a practical activity (counting counters).
- Learners must do the work set. Once they have completed this they may choose any mathematical activity, e.g. jigsaw puzzle.
- Assessment Task 1 will be done this week. Watch/observe learners and assess them.

DAILY ACTIVITIES

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

Independent Work:

1. Write the answer:

471 + 10=	494 – 10 =
393 + 10=	383 – 10 =
228 + 10 =	282 – 10 =
550 + 10 =	450 – 10 =
650 + 10 =	350 – 10 =
148 + 10 =	278 – 10 =

2. Write the answer:

542 + 100 =	455 – 100 =
650 + 100 =	238 – 100 =
221 + 100 =	284 – 100 =
169 + 100 =	504 – 100 =
452 + 100 =	305 – 100 =
321 + 100 =	682 – 100 =

3. Write the number in words:

452 four hundred and fifty-one
163 _____
319 _____
560 _____
299 _____
488 _____
101 _____
299 _____
366 _____
444 _____
527 _____

4. Write these number names in symbols:

Two hundred and twenty-three 223
Four hundred and seventeen _____
One hundred and eight _____
Three hundred and forty-one _____
Eighty-seven _____
Ninety-nine _____
One hundred and eleven _____
Two hundred and two _____
Three hundred and thirty-three _____

5. Read the numbers and write them as the example:

Four hundred and forty-three: 443 = 400 + 40 + 3

Three hundred and twenty-six:

Two hundred and fifty- five:

Five hundred and thirty-nine:

One hundred and ninety-nine:

Two hundred and twenty-eight:

Three hundred and eighty:

Four hundred and sixty-two:

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 30 minutes.*

- Give learners 1 minute to write down as many multiples of 25 as possible, starting at 125. Ask them to circle all the numbers that are also multiples of 10 and underline all the numbers that are multiples of 20.

  ***Tip**: Use this activity as part of Assessment Task 1.*
- Learners set out their flard cards and do the following:
  - Make the number 840. Which cards did you use?
  - Make the number 589. Which cards did you use? Show me the new number you will get if you add 100. Which number did you change? Why did you change the 500?
  - Using this number (689), add 2. What is the new number? Which number changed? Why did the 80 change, as well as the 9?
  - Make the number 891. Which cards did you use? Show me the new number you will get if you take away 200. Which number did you change? Why did you change the 800 and not the 90?
  - Using this number (691), take away 3. What is the new number? Why did both the 90 and the 1 change?
  - Make your own number. Which cards did you use? Change your number and then tell me what you did e.g. my new number is 394 because I added 50, etc.

  ***Tip**: Use this activity as part of Assessment Task 1.*
- 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 600. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 subtraction and 1 grouping, using types 10 and 31. On Wednesday you will ask 1 addition and 1 sharing word problem, using types 5 and 28. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 30 minutes.*

- Give learners 1 minute to write down as many multiples of 25 as possible, starting at 25. Let them circle all the numbers that are also multiples of 10.

  ***Tip**: Use this activity as part of Assessment Task 1.*
- Learners set out their flard cards and do the following:
  - Make the number 840. Which cards did you use?
  - Make the number 589. Which cards did you use? Show me the new number you will get if you add 100. Which number did you change? Why did you change the 500?
  - Using this number (689), add 2. What is the new number? Which number changed? Why did the 80 change, as well as the 9?

- Make the number 891. Which cards did you use? Show me the new number you will get if you take away 200? Which number did you change? Why did you change the 800 and not the 90?
- Using this number (691), take away 3. What is the new number? Why did both the 90 and the 1 change?
- Make your own number. Which cards did you use? Change your number and then tell me what you did e.g. my new number is 394 because I added 50, etc.

***Tip**: Use this activity as part of Assessment Task 1.*

- 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 400. Let each learner tell the group how s/he solved the problem. On Tuesday the word problems will be 1 subtraction and 1 grouping problem, using types 10 and 31. On Thursday you will ask 1 addition and 1 sharing word problem, using types 5 and 28. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

GROUP 3.

This group works with the teacher for 25 minutes every day.

- Give learners 1 minute to write down as many multiples of 20 as possible, starting at 20. Let the learners circle all the numbers that are also multiples of 25.

  ***Tip**: Use this activity as part of Assessment Task 1.*
- Learners set out their flard cards and do the following:
  - Make the number 840. Which cards did you use?
  - Make the number 589. Which cards did you use? Show me the new number you will get if you add 100. Which number did you change? Why did you change the 500?
  - Using this number (689), add 2. What is the new number? Which number changed? Why did the 80 change, as well as the 9?
  - Make the number 891. Which cards did you use? Show me the new number you will get if you take away 200? Which number did you change? Why did you change the 800 and not the 90?
  - Using this number (691), take away 3. What is the new number? Why did both the 90 and the 1 change?
  - Make your own number. Which cards did you use? Change your number and then tell me what you did e.g. my new number is 394 because I added 50, etc.

  ***Tip**: Use this activity as part of Assessment Task 1.*
- 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 300. Let each learner tell the group how s/he solved the problem. On Monday and Tuesday the word problems will be 1 subtraction and 1 grouping, using types 10 and 31. On Wednesday and Thursday, you will ask 1 addition

and 1 sharing word problem, using types 5 and 28. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.	
Assessment	**Formal: Recorded Assessment Task 1:** During the whole class and group teaching activities as indicated, rate the learners against the following milestones, recording specific problems: • Counts forwards and backwards in multiples of 2, 3, 5, 10, 20, 25, 50 100 from 1 to 750. • Counts in multiples of 2, 5, 10, 20, 25, 100 starting at any number up to at least 500 e.g. 224, 244, 264 etc. • Recognises numerals and number names to 500. • Is able to add single digit numbers to any 3-digit number. E.g. 137 + 5. • Is able to subtract 3-digit number , e.g. 378 – 100. • Uses flard cards to add and subtract 10 and 100 and 3-digit numbers. • Fills in fractions half and quarter correctly on a number line. • Uses fraction in the context of time e.g. 15 minutes = quarter of an hour.

SUGGESTED ASSESSMENT TASKS: GRADE 3 NUMERACY THIRD TERM

TASK 2: WEEK 3

COMPONENT	MILESTONES	WKS	TASKS
COUNTING AND MENTAL/NUMBER SENSE	• Counts forwards and backwards in multiples of 2, 3, 5, 10, 20, 25, 50 100 from 1 to 750. • Counts in multiples of 2, 5, 10, 20, 25, 100 starting at any number up to at least 500 e.g. 224, 244, 264 etc. • Recognises numerals and number names to 500. • Is able to add single digit numbers to any 3-digit number. E.g. 137 + 5. • Is able to subtract 3-digit number , e.g. 378 – 100. • Fills in fractions half and quarter correctly on a number line. • Uses fraction in the context of time e.g. 15 minutes = quarter of an hour.	Wk 3	• Use the daily oral activities to assess individual counting • Use the daily practical flash card activity to assess ability to recognise numbers and number names • Use the oral activity on Day 2 to assess learners' ability to add and subtract a single digit to any 3-digit number. • On Days 3 and 4 there is a practical activity to assess the learners' understanding of fractions • Use the daily oral activities and the practical activity on Day 4 to assess the learners' understanding of time.
PROBLEM SOLVING	• Uses flard cards to add and subtract 10 and 100 and 3-digit numbers.	Wk 3	• Use the practical and written activities during the Group Teaching to assess addition, subtraction and multiplication.

THIRD 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>• Counts forwards and backwards in multiples of 2, 3, 5, 10, 20, 25, 50, 100 from 1 to 750
• Counts in multiples of 2 , 5 10, 20, 25, 100 starting at any number up to at least 500, e.g. 224, 244, 264</td><td colspan="5">Daily :
• Count in 10s forwards and backwards to 750
• Count in 20s to 750
• Count in 1s, 2s, 5s, 10s, 20s, 25s and 100s forwards and backwards starting and ending at any number as indicated</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL

LO1 AS3
AS8</td><td rowspan="3">• Orders numbers
• Engages in using expanded notation of 3-digit numbers in various ways
• Is able to add single digit numbers to any 3-digit number, e.g.137 + 7 =
• Uses flard cards to add and subtract 10 and 100 to 3-digit numbers
• Is able to collect, and sort supplied data.</td><td colspan="5">• Numerosity of 3 digit numbers up to 150.
• Counting in fractions.
• Ordering of numbers.
• Patterns using geometric shapes.</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>Counting in multiples of 20s.

Add single digit numbers to any 3-digit numbers, e.g. 137 + 5 =</td><td>Count in multiples of 25 .

Add single digit numbers to any 3-digit numbers, e.g. 137 + 7 =</td><td>Count in multiples of 5s and 10s.

Use expanded notation of 3-digit numbers in various ways</td><td>Count in multiples of 2s and 100s.

Uses expanded notation of 3 digit numbers.</td><td>Dance

Data Collecting
Groups compare data that has been collected.</td></tr>
<tr><td rowspan="2">GROUP TEACHING

LO1 AS8,11</td><td rowspan="2">• Estimates
• Solves problems involving the conversion of minutes to hours and hours to days</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 - 600; Group 2 works in 1-400; Group 3 works in 1-300</td><td rowspan="2"></td></tr>
<tr><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 sharing with a remainder and 1 subtraction word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 sharing with a remainder and 1 subtraction word problem.
Group 1 works on its own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 grouping word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 grouping word problem.
Group 1 works on its own.</td></tr>
</table>

WEEK 4: WHOLE CLASS

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

Notes to the teacher:

- The Numeracy time allocation is an hour and 45 min. 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).
- 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.
- You will be teaching the learners a dance on Friday and incorporating it with Arts and Culture as part of the concept of patterns.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities (to take no more than 15 minutes)

To be done daily:

- Learners must count forwards and backwards in multiples of 2, 3, 50 and 100 from 1 to 750.
- Learners must count in multiples of 5, 10, 20 and 25 starting at any given number up to at least 500.
- On one of the days, make the counting into a game. Split the class into four groups. Start with any number. Choose a learner from the first group to add the chosen multiple to the starting number. Then ask a learner from the second group for the next number, then learners from the third and fourth groups, e.g. start with 11, first learner adds 5 to get 16, next learner adds 5 to get 21, etc. Each group gets a point for a correct answer. The group with the most points after a few rounds wins. Record the win on the class graph.

Choose from the following (to make up 10 min):

Each activity should be covered at least once during the week. The more times each activity is done the better.

- Ordering of numbers. Start with 1st learner and say "You are 51st", then go down the rows and each learner must say the next position. E.g. 52nd, 53rd, 54th until each learner has had a turn.
- Choose another number, e.g. 349th and get the learners to count backwards, i.e. 348th, 347th, 346th, etc.
- Ask learners to write down on their whiteboards or paper 5 different ways to make 100, 120, 145, etc. Give all the learners a chance to show at least one example to a friend.
- Discuss what a pattern is and draw shape patterns on the board. Choose learners to complete the patterns.

DAY 1 (to take no more than 20 minutes)

- Start the lesson with learners in their groups. Tell the time by looking at the classroom clock. Let the learners take out their clocks and move the hands to different times, make their own times and have turns to show the class.
- Using a number chart, point to a number e.g. 137. Make sure that every learner has a number chart and places a counter on the number e.g.137. Ask learners to add 20 and place another counter on the answer. Ask individual learners to tell you the answer. Keep adding 20 to the answers and encourage learners to look for the pattern.
- Each group has a packet of numbers and each packet has the single digit numbers 1 to 9 (about 10 of each number). Learners take turns to shake the packet and take out a number. Write a 3 digit number on the board and the class will add the single digit number they have to the number on the board, writing the number sentence in their books. They will then take the single digit number away from the number on the board, again recording the number sentence in their books.

DAY 2 (to take no more than 20 minutes)

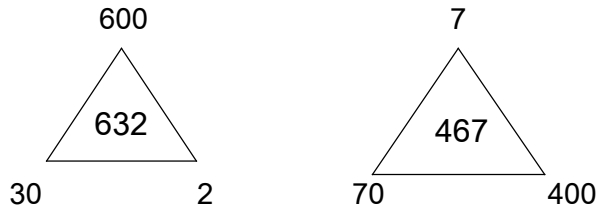
- Look at the time and ask a learner to tell the class what the time is. Ask another learner what the time will be 30 minutes from now, or in a quarter of an hour's time, or in 5 minutes, etc.
- Starting at any number, count in 25s. Get the learners to count with you and make sure that they write down each number as they count. Have a final number in mind, i.e. if you start at 130, finish at 375.
- Using the final number that you finished at, let the learners write down the number sentences with the answers when you add the single digit numbers from 1 to 9 to the 3-digit number.

DAY 3 (to take no more than 20 minutes)

- Take the class outside and sit in a large circle. Starting at any number, give each learner a turn to count up in 10s e.g. 67, 77, 87, 97, 107, until all the learners have participated.
- Choose a 3 digit number and the first learner adds 1 to the number, the next learner adds 2 to the number and so on until 9 has been added to the number. The next learner takes away 1 from the last number said, the next learners takes away 2 and so on until 9 has been taken away. Choose another 3 digit number and continue like this until everyone has had a turn.
- Write a 3-digit number on the board, e.g. 345. Ask the learners to write down 3 different ways in expanded notation to write the number. Choose different learners to show what they wrote.
  E.g. 345 = 300 + 40 + 5
  345 = 100 + 100 + 100 + 20 + 5
  345 = 150 + 150 + 30 + 5

DAY 4 (to take no more than 20 minutes)

- Let learners draw 5 big triangles on a page in their books. Write five 3 digit numbers on the board and learners write these numbers in each of the triangles – a different number in each triangle. Learners now write a number at each of the 3 corners of the triangle which, when added together, will equal the number inside the triangle, e.g.



- Each group has a packet and each packet has the numbers 2, 5 and 10 (about 20 of each number). Learners take turns to shake the packet and take out 2 numbers which they will use to write repeated addition number sentences. If, for example, the learner draws the numbers 2 and 5, he/she will write the repeated addition of 2 five times, and the repeated addition of 5 twice i.e. 2+2+2+2+2=5x2=10 and 5+5=2x5=10. Let learners put their cards back in the packet and take another 2 cards and repeat the activity.
- Give each learner a page out of an old magazine. They must count 100 words and circle them. Let them see how many 100s they have circled by the end of the page.

DAY 5 (the whole lesson)

- Choose two learners to count the number of people in the classroom. Ask the class how many 10s there are in the answer. Think of word problems that help the learners revise multiplications of 10, e.g. How many people there would be in the classroom if there were 8 tens? How many people would be in the classroom if there were 2 tens? etc.
- Each learner now needs to construct an "empty" bar graph. They must start with a blank piece of paper and, using their rulers, draw a line along the bottom of the page a ruler width from the bottom. They keep drawing lines a ruler width apart up the page until they have 7 rows. Then they need to draw columns across the page in the same way i.e. using their rulers as a guide until they have 5 columns. They mark the columns by writing "number of objects" next to the numbers and give their graph a name. Their page should look like this:

Objects in the classroom

Number of objects					
	30				
	25				
	20				
	15				
	10				
	5				

Working in groups of 4, the learners count different items in the classroom, e.g. one learner counts books, one learner counts bags, one learner counts pencils, etc. The learners must fill in the names of the items along the bottom line of the bar graph. Learners record their findings on the graph and then compare the most, least, the same items with other groups.

- Take the learners outside and teach them a traditional dance.

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

WEEK 4: GROUP TEACHING

WEEK 4	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 (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 Learners' Book, worksheets, work cards, work from the board, etc.*

1. Use a line to join the numbers in order. Start at 401.
   Colour all the even numbers yellow.

473 474 475 476 477 478 479 480 481 482
472 443 444 445 446 447 448 449 450 483
471 442 421 422 423 424 425 426 451 484
470 441 420 407 408 409 410 427 452 485
469 440 419 406 401 402 411 428 453 486
468 439 418 405 404 403 412 429 454 487
467 438 417 416 415 414 413 430 455 488
466 437 436 435 434 433 432 431 456 489
465 464 463 462 461 460 459 458 457 490
500 498 497 496 495 494 493 492 499 491

2. Use a line to join all the numbers in order. Start at 401.
   Colour all the odd numbers blue.

473 474 475 476 477 478 479 480 481 482
472 443 444 445 446 447 448 449 450 483
471 442 421 422 423 424 425 426 451 484
470 441 420 407 408 409 410 427 452 485
469 440 419 406 401 402 411 428 453 486
468 439 418 405 404 403 412 429 454 487
467 438 417 416 415 414 413 430 455 488
466 437 436 435 434 433 432 431 456 489
465 464 463 462 461 460 459 458 457 490
500 498 497 496 495 494 493 492 499 491

3. Fill in the number that comes next.

461 ____ 476 ____ 428 ____ 481 ____

403 ____ 451 ____ 409 ____ 499 ____

Fill in the number that comes next.

467 ___ 409 ____ 500 ____ 489 ____

426 ____ 499 ____ 401 ____ 463 ____

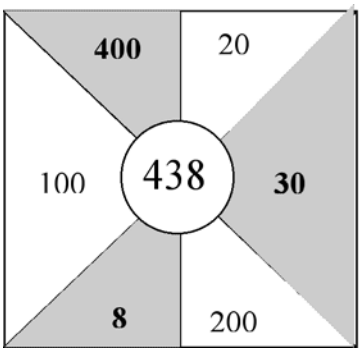
Fill the number that comes in-between.

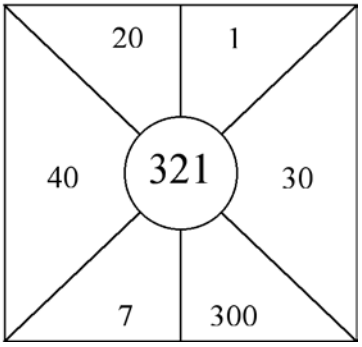
400 ____ 402 476 ____ 478 431 ____ 433

498 ____ 500 484 ____486 420 ____ 422

4. Colour in the shapes that make up each number in the circle.

Example:





Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 30 minutes.*

- Show the learners a large box of Smarties or a bag of stones and let them estimate the number of items in the bag/box, write down their estimation. Then get the learners to count the Smarties/stones, counting up in 5s and 10s. Let them record the amount next to their estimation and then work out the difference between the two numbers.
- If this group has more than 10 learners, divide them into 2 groups. Each group has 2 dice – one with 3 digit numbers and one with single digit numbers. Each member of the group has a turn to throw both dice, and then everyone in the group writes the number sentence where they add the single digit to the three digit number. The thrower checks that the answer is correct. Once everyone in the group has had a turn, they arrange their number sentences in order from smallest to biggest. For example, 287+6=292 is bigger than 287+3=290.
- Repeat this activity on Wednesday, but use subtraction rather than addition.
- Give learners 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 600. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 subtraction and 1 sharing with a remainder using types 10 and 35. On Wednesday you will ask 1 multiplication and 1 grouping word problem, using types 21 and 38. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an

opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 30 minutes.*

- Show the learners a large box of Smarties or a bag of stones and let them estimate the number of items in the bag/box, write down their estimation. Then get the learners to count the Smarties/stones, counting up in 5s and 10s. Let them record the amount next to their estimation and then work out the difference between the two numbers.
- If this group has more than 10 learners, divide them into 2 groups. Each group has 2 dice – one with 3 digit numbers and one with single digit numbers. Each member of the group has a turn to throw both dice, and then everyone in the group writes the number sentence where they add the single digit to the three digit number. The thrower checks that the answer is correct. Once everyone in the group has had a turn, they arrange their number sentences in order from smallest to biggest. For example, 287+6=292 is bigger than 287+3=290.
- Repeat this activity on Thursday, but use subtraction rather than addition.
- Give learners paper, writing tools, counters and a number square. The learners solve problems by talking about them, drawing pictures and so on. Use the number range 1 to 400. Let each learner explain to the group how s/he solved the problem. On Tuesday the word problems will be 1 subtraction and 1 sharing with a remainder using types 10 and 35. On Thursday you will ask 1 multiplication and 1 grouping word problem, using types 21 and 38. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

GROUP 3

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

- Show the learners a large box of Smarties or a bag of stones and let them estimate the number of items in the bag/box, write down their estimation. Then get the learners to count the Smarties/stones, counting up in 5s and 10s. Let them record the amount next to their estimation and then work out the difference between the two numbers.
- Let the learners set out their flard cards. Show them the table you have written and ask them to find the missing card, e.g.

Number	Cards I have	Cards I need
368	300 8	

Repeat this with other numbers.

- 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 300. Let each learner tell the group how s/he

• solved the problem. On Monday and Tuesday the word problems will be 1 subtraction and 1 sharing with a remainder, using types 10 and 35. On Wednesday and Thursday, you will ask 1 multiplication and 1 grouping word problem, using types 21 and 38. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.	
Assessment	**Formal:** No formal recorded assessment. **Informal**: Unrecorded assessment of learners' oral responses and ability to participate.

THIRD 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 AS1,2</td><td>• Counts forwards and backwards in multiples of 2, 3, 5, 10, 20, 25, 50 and 100 from 1 to 750
• Counts in multiples of 2, 5, 10, 20, 25, 100 starting any number up to at least 500, e.g. 224, 244, 264</td><td colspan="5">Daily :
• Count in 20s to 750
• Count in multiples of 2, 3, 5, 10, 20 25, 50 and 100 to 750
• Count in 1s, 2s, 5s, 20s, 25s and 100s forwards and backwards, starting and ending at any number as indicated</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL
LO 1 AS3,8
AS9,10
LO 2 AS 2
LO 3 AS4
LO 5 AS1,2,3</td><td rowspan="3">• Completes addition and subtraction number sentences of 11, using whole tens
• Completes number sentences using addition and subtraction of 10 and 100 to any 3-digit number to 900
• Doubles and halves 3-digit numbers
• Time</td><td colspan="5">Daily
• Fill in missing numbers on the number line
• Recognise and complete number patterns of 10
• Build up concept of numerosity of numbers to 300</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>Complete number sentences using addition and subtraction of 10 and 100 to any 3-digit number up to 900.

Time.</td><td>Complete addition and subtraction number sentences of 11, using whole tens.

Time.</td><td>Complete addition and subtraction number sentences of 11, using whole tens.

Double and halve 3-digit numbers

Time.</td><td>Complete addition and subtraction number sentences of 11, using whole tens.

Revise half past, quarter to/ past.</td><td rowspan="2">WHOLE CLASS ACTIVITY

Data handling, collecting and sorting</td></tr>
<tr><td>GROUP TEACHING

LO 1 AS5,7
AS11,12</td><td>• Solves problems, and explains solutions, using number charts and counters if needed with numbers up to 750
• Solves problems involving the conversion of minutes to hours and hours to days</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-600; Group 2 works in 1-400; Group 3 works in 1-300</td></tr>
<tr><td></td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 sharing where the remainder is a fraction word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 sharing where the remainder is a fraction word problem.
Group 1 works on its own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 2 different types of multiplication word problems.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 2 different types of multiplication word problems.
Group 1 works on its own.</td><td></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.
- Start each day with looking at the clock and telling the time. Look at the clock throughout the day and ask the learners what the time is.
- Daily activities indicate activities that should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Learners will learn about working with numbers and build a solid number knowledge if you present them with a range of similar tasks, but with different contexts and different concrete resources to use. If you do this, you will find that there is less need for rote counting and learners mental agility will improve.
- Ask the learners to bring in different types of bottles for the activity on Day 5.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities (to take no more than 10 minutes)

To be done daily:

- Learners count in 20s to 750.
- Learners count in multiples of 2, 3, 5, 10, 20, 25, 50 and 100 to 750.
- Count in 1s, 2s, 5s, 20s, 25 and 100s forwards and backwards starting and ending at any given number.

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

Each activity should be covered at least once during the week. The more times each activity is done the better.

- Ensure that learners have their clocks with them and ask them to tell you what the time is now, half an hour from now, 15 minutes from now, etc. using the terminology that they have learned.
- Let learners write their own number patterns of 10 starting from any number e.g. 130, 140, 150 or 127, 117, 107, etc. Learners swap their papers and identify the pattern e.g. adding 10 each time.
- Each group has a packet and each packet has the numbers 2, 5 and 10 (about 20 of each number). Learners take turns to shake the packet and take out 2 numbers which they will use to write repeated addition number sentences. If, for example, the learner draws the numbers 2 and 5, he/she will write the repeated addition of 2 five times, and the repeated addition of 5 twice i.e. 2+2+2+2+2=5x2=10 and 5+5=2x5=10. Let learners put their cards back in the packet and take another 2 cards and repeat the activity.
- Play “I spy with my little eye”, e.g.
  - A number which is more than 7 fives but less than 19 twos and is an even number
  - A number which is half of 100 plus two 10s.
  - A number which is more than double 14 but less than half of 60, etc.

DAY 1 (to take no more than 20 minutes)

- Using the clock, count in 5s from 12 back to 12. Tell the time by moving the long hand in 5s e.g. 5 past, 10 past etc. Ask the learners: How many minutes in half an hour? (30) How many minutes would there be in a whole hour? (60)
- Give each learner a small piece of scrap paper. Half the class writes a 3 digit number on their piece of paper and the other half of the class writes a whole 10 or 100 i.e. 10, 20, 20, 300, etc. Take the class outside and let them run around in a demarcated area. When you give the signal (blow your whistle, or clap your hands, beat a drum etc.) each learner finds a partner where one has a 3 digit number and the other a whole 10 or 100. Ask a few pairs how much they make together and then play the game again. Before going back to the classroom collect the pieces of paper to use again.

DAY 2 (to take no more than 20 minutes)

- Learners will work in their groups as they are sitting. Write some number sentences of adding 10 and 100 to three-digit numbers on the board that they must complete. Allow them to use their flard cards if they need them. Use patterns to make it easier for the learners e.g. 134+10=☐ and 134+100=☐ or 134-10=☐ and 134-100=☐. Use your own examples.
- Revise building up numbers using a whole 10 e.g. 19+8→19+1+7→20+7=27. Now introduce learners to adding 11 where they work with the whole 10 first. Learners count out 11 counters and put them into 2 groups – one group of 10 and the other group with a single counter. Write any 2 digit number on the board e.g. 36. Ask the learners what 36 plus 10 is. Learners should be able to answer that 36 plus 10 is 46. Now ask what 36 plus 11 is. Learners use their 11 counters and covering the group of 10 say 36 plus 10 is 46, so 36 plus 11 is 36 plus 10 plus 1 which is 46 plus 1 and this makes 47. Write the number sentence on the board as the learners tell you what they are doing e.g. 36+11→36+10→46+1=47. Do a few examples of adding 11 to a 2 digit number.

DAY 3 (to take no more than 20 minutes)

- Write a 3 digit even number on the board e.g. 126 and ask a learner to write it as expanded notation on the board i.e. 100+20+6. Now ask another learner to double each of the numbers and write them underneath the top row i.e.

  100 + 20 + 6 = 126

  200 + 40 + 12 = 252

  Do a few more examples on the board giving different learners an opportunity to either write the expanded notation or the doubling.
- Revise the multiplication table of 10 and combine it with time. Using the clock, count in 10s from 12 back to 12. Tell the time by moving the long hand in 10s e.g. 10 past, 20 past etc.
- Explain to learners how to convert hours into days. Ask the learners how many times the little hand goes all the way round the clock in a day (twice). See if they can work out that the 12 'morning' hours plus the 12 'evening' hours equal the full 24 hours in a day. Ask learners to work out how many days there are in 48 hours, 72 hours, 36 hours, etc.

DAY 4 (to take no more than 20 minutes)

- Learners will work in their groups as they are sitting. Write some number sentences of adding or subtracting 10 and 100 to/from three-digit numbers on the board that they must complete. Allow them to use their flard cards if they need them. Use patterns to make it easier for the learners e.g. 155+10=☐ and 155+100=☐ or 155-10=☐ and 155-100=☐. Do a few more examples.
- Take the class outside and let them sit around the outside of a hoop or something similar. Tell them that this is a magic machine that can add and subtract 11 very quickly, but that it always uses a whole 10 first. Place the number 58 in the middle of the hoop and the number 11 outside the hoop. Ask the class to help you add the numbers. Let them tell you that in order to add 11, the machine will first add 10 and then add 1 because 11 is 10 plus 1. Have a packet of numbers and let different learners take a number out of the packet, place it in the middle of the hoop and work out the answer when 11 is added. Encourage learners to think about how the magic machine will take 11 away from numbers – first minus 10 then minus 1.

DAY 5 (the whole lesson)

- At the front of the class, display the large collection of bottles – small, big, plastic, glass, etc. – that the learners have brought in during the week. Let learners work in groups of 4 and decide how they want to sort the bottles e.g. all the glass ones together or all the short ones together, etc. They will need to work out a way of recording the number of bottles according to their criteria as no one will be allowed to actually sort the bottles into different piles. Once the group have collected their data they must draw up a bar graph to show the results of the bottle collection according to their criteria. At the end of the lesson, each group will put their graph up on the wall. Discuss the different graphs.

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

WEEK 5: GROUP TEACHING

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

Notes to teacher:

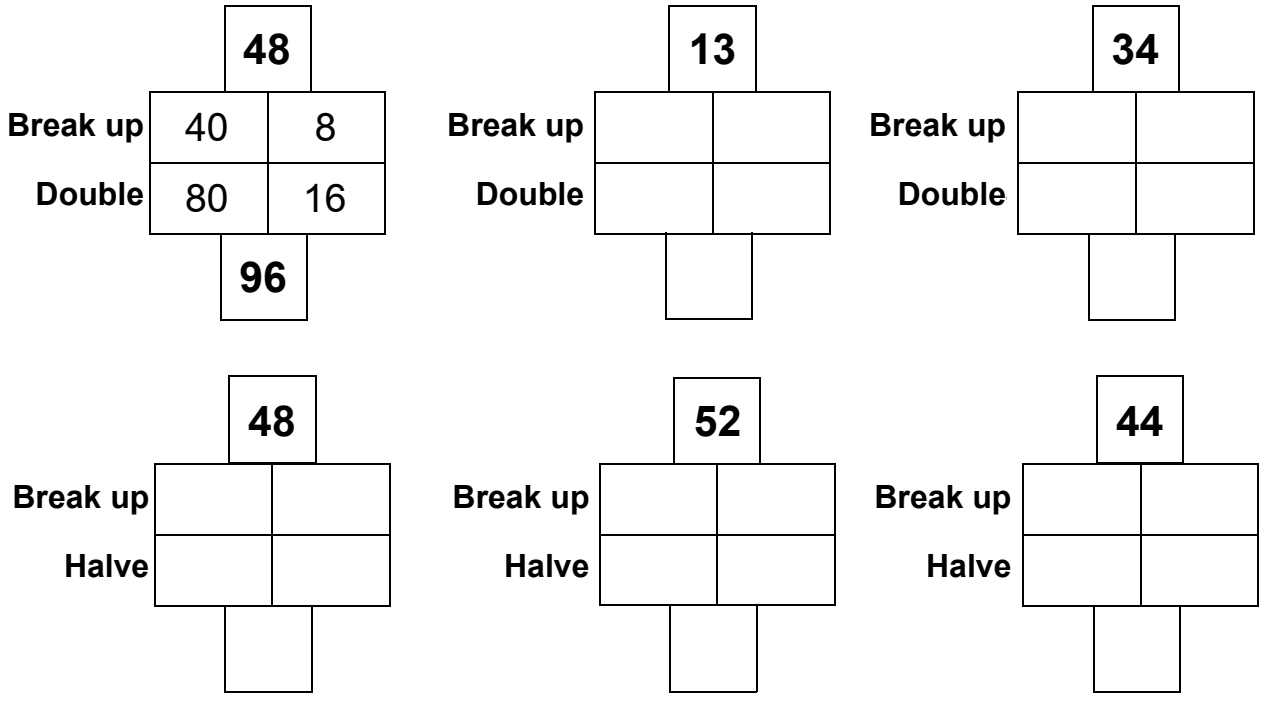
- By now you have established 3 groups. Every day you will work with 2 different groups in a small group situation e.g. sitting on the mat together. During this time you will do activities to develop number concepts at the level of the learners in the group. A number of types of activities are provided 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 learned. 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.)
- 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, etc.*

Independent Worksheet – example

- "Break up and double/halve". Provide learners with the frame and only the top number ("48" in the example). In the first two blocks the top number is broken up (e.g. "40" and "8"). In the next two blocks these numbers are doubled (e.g. "80" and "16") or halved. In the bottom block the doubled (or halved) numbers are added (e.g. "96").



- Complete the following:

10 more	100 more
124 + 10 more =	224 + 100 more =
134 + 10 more =	334 + 100more =
144 + 10 more =	444 + 100 more =
154 + 10 more =	554 + 100 more =
164 + 10 more =	664 + 100 more =

10 less	100 less
10 less than 224 is	100 less than 554 is
10 less than 334 is	100 less than 444 is
10 less than 654 is	100 less than 354 is
10 less than 124 is	100 less than 645 is
10 less then 464 is	100 less than 254 is

- Fill in the missing numbers:

460, 461, 462, _____, _____, _____, _____, _____
300, 400, _____, 600, _____, _____, 800, _____, _____
250, 249, _____, 247, _____, _____, 244, _____, 243, _____
220, _____, 260, _____, 300, _____, 340, _____, _____
810, 820, _____, _____, 850, 860, _____, _____, _____, _____
900, 800, _____, _____, 500, _____, _____, 200, _____
250, 240, _____, _____, 210, _____, 190, _____, 170, _____

-

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 30 minutes.*

- Ask the learners to estimate how many pencils you can count in 1 minute. Let them record their estimates then let them time you while you count pencils. At the end of the minute record the number of pencils you counted and ask who estimated too many, who estimated too few, and who estimated the correct number.
- Ask the learners to work out how many minutes in a quarter of an hour using what they learned about “quarter past” and counting in 5s. Then ask them if they can work out how many minutes in half an hour then in three quarters of an hour. Make sure there are clock faces available for them to use if they need them.
- Ask learners how many hours there in 1 day. They should be able to tell you that there are 24 hours in a day and that a half day is 12 hours. Let them work out how many hours there are in 2 days, 2 and a half days, 4 days; 5 and a half days; 10 days etc.
- Give learners 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 600. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 addition and 1 sharing with a remainder where the remainder is a fraction using types 13 and 24. On Wednesday you will ask 2 multiplication

word problems, using types 21 and 25. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

***Tip**: The context for the word problems should be time. Here are two examples:*

- *The Mathematics period in Grade 4 is 210 minutes long. For how many hours do Grade 4 learners do Mathematics?*
- *I can ride 9 kilometres on my bicycle in 60 minutes. How far can I ride in 180 minutes?*

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 30 minutes*

- Ask the learners to estimate how many numbers you can write in 1 minute. Let them record their estimates then let them time you while you write numbers on the board. At the end of the minute record how many numbers you wrote and ask who estimated too many, who estimated too few, and who estimated the correct number.
- Ask the learners to work out how many minutes in a quarter of an hour using what they learned about "quarter past" and counting in 5s. Then ask them if they can work out how many minutes in half an hour then in three quarters of an hour. Make sure there are clock faces available for them to use if they need them.
- Ask learners how many hours there in 1 day. They should be able to tell you that there are 24 hours in a day and that a half day is 12 hours. Let them work out how many hours there are in 2 days, 3 days, 4 days; 5 days; 10 days etc.
- Give learners 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 400. Let each learner tell the group how s/he solved the problem. On Tuesday the word problems will be 1 addition and 1 sharing with a remainder where the remainder is a fraction using types 13 and 24. On Thursday you will ask 2 multiplication word problems, using types 21 and 25. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip**: The context for the word problems should be time. Here are two examples:*

  - *The Numeracy period in Grade 2 is 90 minutes long. For how many hours do Grade 2 learners do Numeracy?*
  - *I can ride 4 kilometres on my bicycle in 60 minutes. How long will it take me to ride 16 kilometres?*

GROUP 3

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

- Ask the learners to estimate how many books you can count in 1 minute. Let them record their estimates then let them time you while you count books. At the end of the minute record the number of books you counted and ask who estimated too many, who estimated too few, and who estimated the correct number.

- Ask the learners to work out how many minutes in a quarter of an hour using what they learned about “quarter past” and counting in 5s. Then ask them if they can work out how many minutes in half an hour then in three quarters of an hour. Make sure there are clock faces available for them to use if they need them.
- Ask learners how many hours there in 1 day. They should be able to tell you that there are 24 hours in a day and that a half day is 12 hours. Let them work out how many hours there are in 2 days, 3 days, 4 days; 5 days; 10 days etc.
- Give learners 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 600. Let each learner tell the group how s/he solved the problem. On Monday the word problem will be 1 addition and on Tuesday it will be 1 sharing with a remainder where the remainder is a fraction using types 13 and 24. On Wednesday and Thursday you will ask 2 multiplication word problems, using types 21 and 25. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip**: The context for the word problems should be time. Here are two examples:*
  - *The Numeracy period in Grade 2 is 90 minutes long. For how many hours do Grade 2 learners do Numeracy?*
  - *I can ride 5 kilometres on my bicycle in 60 minutes. How long will it take me to ride 15 kilometres?*

Assessment	**Formal:** Assessments from this week will be included in Week 6: Task 2. **Informal:** Unrecorded assessment of learners’ oral responses and ability to solve problems.

THIRD 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</td><td>• Counts forwards and backwards in multiples of 2, 3, 5, 10, 20, 25, 50 , 100 from 1 to 750
• Counts in multiples of 2, 5, 10, 20, 25,100 starting at any number up to at least 500, e.g. 224, 244, 264, etc.</td><td colspan="5">Daily :
• Count in 10s to 750
• Count in multiples of 2, 3, 5, 10, 20, 25, 50 and 100
• Count in 50s to 750
• Count in 25s forwards and backwards from any given number to 750</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL
LO 1 AS 3,8,9,10
LO 2 AS 2
LO 4 AS5</td><td rowspan="3">• Expanded notation of 3-digit numbers in a variety of ways
• Is able to subtract a three digit number from any 3-digit number, e.g. 137-100 =
• Use flard cards to add and subtract 10 and 100 to any 3-digit number
• Completes number sentences using addition and subtraction of 10 and 100 to any given 3-digit number
• Doubles and halves 3-digit numbers up to 500
• Is able to collect, sort and organize supplied data and then draw a bar graph using the data.</td><td colspan="5">Daily :
• Greater than/ Less than numbers
• Recognition of odd and even numbers up to 750
• Estimate</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>Expanded notation of 3-digit numbers.

Double and halve 3 digit numbers</td><td>Use flard cards to add and subtract 10 and 100 to any 3-digit number.

Double an halve 3 digit numbers</td><td>Subtract a 3 digit number from a 3 digit number.

Completes number sentences using addition and subtraction of 10 and 100 to any given 3 digit number</td><td>Double and halve 3-digit numbers up to 500.

“Make a box’ using subtraction.</td><td rowspan="3">WHOLE CLASS ACTIVITY

Collect, sort and analyse data in order to draw a graph.</td></tr>
<tr><td>GROUP TEACHING

LO 1
AS5,7,8,11,12</td><td>• Solve problems and explains solutions, using number charts and counters if needed with numbers up to 300 and beyond
• Solves problems involving the conversion of minutes to hours and hours to days</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-600; Group 2 works in 1-400; Group 3 works in 1-300.</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 its 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 its own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 grouping with a remainder word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 grouping with a remainder word problem.
Group 1 works on its 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.
- The activities this week are ones that learners are familiar with, but remember, learners must find the activities enjoyable and not boring. It is up to you to monitor this and change or adjust activities when necessary.
- You will continue expanded notation of 3-digit numbers, adding and subtracting, doubling and halving.
- You will need different size and shape cups for the activity on Day 5 and the best way to do this is for every learner to bring their own cup to use. Collect the cups during the week and keep them till Day 5.
- Activities of Assesment Task 2 will be found as part of the everyday teaching and learning activities.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities (to take no more than 10 minutes)

To be done daily:

- Learners count in 10s to 750.
- Learners count in multiples of 2, 3, 5, 10, 20, 25, 50 and 100 in the number range 1 to 1000.
- Learners count in 25s forwards and backwards from any given number up to 750.
- Learners count in 50s to 750.

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

Each activity should be covered at least once during the week. The more times each activity is done the better.

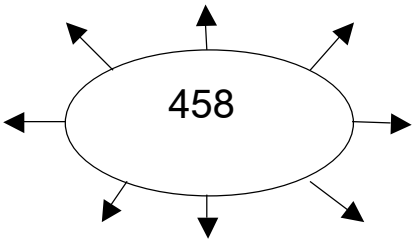
- Ask the learners to find 343 on the number line and ask the following questions:
  - Is 343 smaller or bigger than 340?
  - What comes before 343?
  - What comes after 343?
  - What is ten more than 343?
  - What is ten less then 343?
  - What is 100 more then 343?
  - What is 100 less than 343?
  - Repeat using your own examples.
- Count the even numbers from 346 to 446. Every time learners say a number that is also a multiple of 10 they clap their hands. You can extend this activity according to the level of the learners by using 3 or 4 multiples.
- Use a sorting table to sort numbers by two rules (criteria). Sort these numbers into numbers that are or are not in the 20s pattern; and the numbers that are or are not in the 50s pattern: The numbers are 210, 220, 230, 240, 250, 260, 270, 280, 290 and 300. Learners complete the tables that you have provided for them. Write the unsorted numbers on the board. Here is the answer:

	In the 50s pattern	**NOT in the 50s pattern**
In the 20s pattern	300	220, 240, 260, 280
NOT in the 20s pattern	250	210, 230, 270, 290

- Play games with different multiples. Here are some examples:
  "Work out the secret number. My number is more than 315 and less than 330. It is in the 20s pattern. What is my number?"
  "Work out the secret number. My number is more than 315 and less than 330. It is in the 25s pattern. What is my number?"
  "Work out the secret number. My number is more than 315 and less than 360. It is in the 50s pattern. What is my number?"

DAY 1 (to take no more than 20 minutes)

- The learners will again investigate the composition of numbers through expanded notation but they will work with larger numbers. Draw the following diagram on the board and ask learners to write the number in different ways. They may work in pairs.



- Write out the number in expanded notation:
  907 =_____
  925= _____
  938=_____
  959=_____
  940=_____
  ***Tip**: This activity can be used towards Assessment Task 2.*
- Write out the number correctly:
  2+400+40= 300+3+30=
  50+9+700= 4+60+200=
  ***Tip**: This activity can be used towards Assessment Task 2.*

DAY 2 (to take no more than 20 minutes)

- Learners are to build a 3-digit number in different ways. First, point to a number on the number line (or write the number on the board), e.g. 457. Learners need to write the numbers they will need to make this number i.e. 400 and 50 and 7. Now ask them to expand this number in 3 different ways. Give a few different learners an opportunity to tell the class how they expanded the number.

- ***Tip**: Use this activity towards Assessment Task 2.*
- Learners must look at their classroom carefully. Explain to them that they are going to draw a map of the classroom. They must draw a plan of the classroom and draw the shape of the room, rows of desks, windows, door, teacher's desk, chalkboard etc.

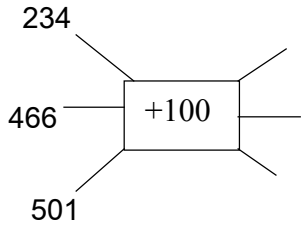
DAY 3 (to take no more than 20 minutes)

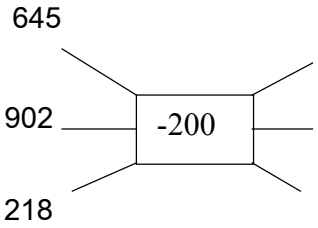
- Divide the class into 4 groups. Draw 4 columns on the board and call 1 learner from each group to stand at their column. Say "How much is 248 plus 10?" and each of the learners writes it down then works it out, writing the answer. Call another 4 learners and give them another number sentence to work out e.g.
  - How much is 398 – 100?
  - How much is 265+200?
  - How much is 499+10?
  - How much is 107 -100? and so on.

  Make sure that all the learners have a chance to write on the board.

  ***Tip:** You can use this activity as part of Assessment Task 2.*
- Give the learners a worksheet to complete. Use the following as an example

Fill in the missing numbers.





Can you double and halve these numbers?

	Double	Half
246	200 + 40 + 6 400 + 80 + 12 400 + 92 492	200 + 40 + 6 100 + 20 + 3 100 + 23 123
422		

Choose a number between 345 and 350. Write 6 number sentences where your number is the answer.

1. 2.
3. 4.
5. 6.

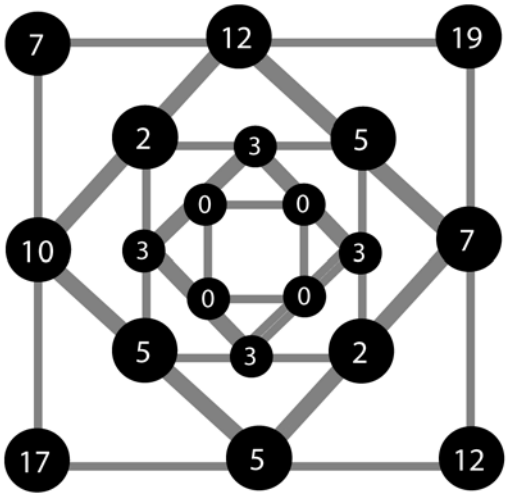
Learners can complete this worksheet during the independent activities while you are busy with your groups.

***Tip**: You can use this as part of Assessment Task 2.*

DAY 4 (to take no more than 20 minutes)

- Put learners into groups of 4 as this will be an easier way to observe and assess. Learners must have their whiteboards/books/piece of paper in front of them. Write a number on the board e.g. 612. Tell learners to:
  - Write this number as expanded notation.
  - Write this number as expanded notation in 3 different ways.
  - Add 30 to the number and write the new number.
  - Add 300 to the number and write the new number.
  - Take 20 away from the number and write the new number.
  - Take 200 away from the number and write the new number.

  ***Tip**: Use this activity as an assessment for Task 2.*
- Ask the learners to draw a large square and write a number between one and 20 on each corner. Put a mark halfway along each side. Find the difference between the two numbers at each corner of the square. Write the answer next to each halfway mark. Now join the four marks to form a diamond inside the square. Make a mark halfway along each side of the diamond. Find the difference between the two numbers at either end. Keep going until you end up with zero, e.g.



DAY 5 (whole lesson with whole class)

- Take the class outside and divide them into groups of 6. Each group will need a container such as a bucket, an ice-cream container, a large bowl, etc. and a basin/bucket of water. Each learner will have their own cup to use. You need to have a few spare cups for those learners who are not able to bring a cup to school, or whose cup breaks. Each learner has a turn to fill the container with water using their cup. They will need to count and record the number of cups they used. Once everyone has had a turn to do this, the group constructs a graph showing the results for each learner. Display all the graphs in the classroom and encourage learners to discuss the similarities and differences in the graphs e.g. only Sipho used as many as 15 cups to fill the bucket – was his cup bigger or smaller than all the others?

  ***Tip**: This is an activity towards Assessment Task 2. You will need to observe the groups and offer support to those who are not able to manage. Your observations as well as the final graphs produced will influence the rating given.*

ASSESSMENT	**Formal: Recorded Formal Assessment Task 2.** During the whole class and group teaching activities as indicated rate the learners against the following milestones, recording specific problems: • Expanded notation of 3-digit numbers in a variety of ways. • Is able to subtract a three digit number from any 3-digit number, e.g. 137-100 =. • Use flard cards to add and subtract 10 and 100 to any 3-digit number. • Completes number sentences using addition and subtraction of 10 and 100 to any given 3-digit number. • Doubles and halves 3-digit numbers up to 500. • Is able to collect, sort and organize supplied data and then draw a bar graph using the data. • Solves problems involving the conversion of minutes to hours and hours to days.

WEEK 6: GROUP TEACHING

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

Notes to teacher:

- 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 (counting counters in counting bags), a written activity (filling in numbers, sequencing, etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)
- Learners must complete the activities set. You will need to walk around the class between taking the two groups and check what is being done, answer questions, encourage learners and so on.
- **Assessment Task 2** will be done this week.

DAILY ACTIVITIES

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

- **Independent Work:**

1. Find 659 on the 600 – 800 number chart and answer these questions.
   - How many 100s in 659?
   - What number comes before 659?
   - What number comes after 659?
   - What is ten less than 659?
   - What is ten more than 659?
   - What is 100 more than 659?
   - What is 100 less than 659?

   Use more examples of your own.

2. Solve the following problems. Show all your working:

371 + 100	**593 + 100**	**453 + 10**	**245 + 10**
471 + 10	**376 + 100**	**179 + 10**	**279 + 100**

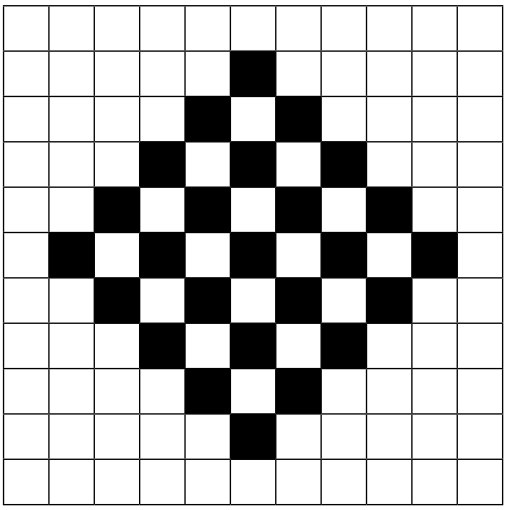
3. Solve these problems:

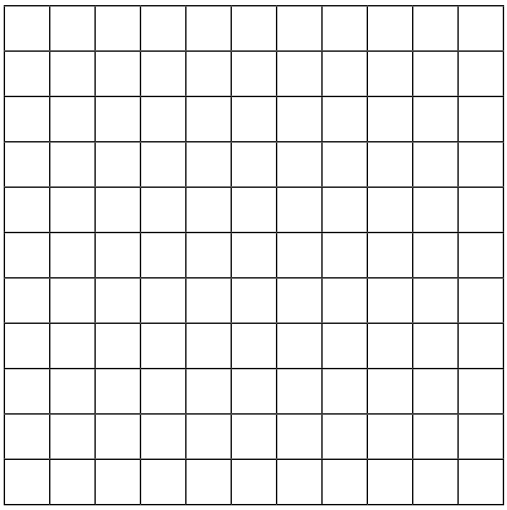
289 – 100 =	499 – 100 =	551 – 100 =	289 – 100 =
399 – 10 =	468 – 10 =	276 - 10 =	126 – 10 =
471 – 100 =	296 – 100 =	372 - 10 =	404 – 100 =

4. Calculate the answers and then double your answer each time:

125 + 24 =	10 x 2 =	20 + 13 + 10 =
131 + 18 =	8 x 2 =	33 + 20 + 10 =
150 + 16 =	20 x 2 =	27 + 13 + 10 =

5. Copy the picture onto the blank grid. Make a pattern using different colours.





(a) How many blocks are there on the grid?
(b) How many dark blocks are there on the grid?
(c) How may light blocks are there are on the grid?
(d) How many dark and light blocks were used altogether?
(e) Double that number.

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 25 minutes.*

- Ask the learners to estimate how many paper clips they can count in half a minute. Let them record their estimates then let them count paper clips while you time them. At the end of the time learners record the number of paper clips they counted. Ask who estimated too many, who estimated too few, and who estimated the correct number.
- Give each learner a month from a calendar. They can each have different months. Ask the following type of questions:
  - How many hours are there from 8 o'clock in the morning on the 17th to 8 o'clock in the morning on the 20th?

- Today is the 10th and you are going to visit Granny in 48 hours time. What date will you visit Granny?
- You are only allowed to watch TV for 2 hours on Saturdays and Sundays. How many hours will you watch TV during the month? Etc.

- Give learners paper, writing tools 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 600. Let each learner tell the group how s/he solved the problem. On Monday the word problems will be 1 subtraction and 1 sharing using types 6 and 22. On Wednesday you will ask 1 addition and 1 grouping with a remainder word problems, using types 3 and 39. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip**: The context for the word problems should be time. Here are two examples:*
  - *Mathematics is taught in Grade 4 for 210 minutes. Language is taught for 5 hours. How much longer is the Language time?*
  - *4 boys want to jump on the trampoline. They pay for 1 hour and take turns to jump. How many minutes did each boy have on the trampoline if they shared the time equally?*

  This is one of the activities that makes up Assessment Task 2.

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 25 minutes*.

- Ask the learners to estimate how many pencils you can count in 1 minute. Let them record their estimates then let them time you while you count pencils. At the end of the minute record the number of pencils you counted and ask who estimated too many, who estimated too few, and who estimated the correct number.
- Give each learner a month from a calendar. They can each have different months. Ask the following type of questions:
  - How many hours are there from 8 o'clock in the morning on the 17th to 8 o'clock in the morning on the 20th?
  - Today is the 10th and you are going to visit Granny in 48 hours time. What date will you visit Granny?
  - You are only allowed to watch TV for 2 hours on Saturdays and Sundays. How many hours will you watch TV during the month? Etc.
- Give learners paper, writing tools 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 400. Let each learner tell the group how s/he solved the problem. On Tuesday the word problems will be 1 addition and 1 sharing using types 6 and 22. On Thursday you will ask 2 multiplication word problems, using types 3 and 39. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

***Tip**: The context for the word problems should be time. Here are two examples:*

- *Mathematics is taught in Grade 4 for 210 minutes. Language is taught for 5 hours. How much longer is the Language time?*
- *4 boys want to jump on the trampoline. They pay for 1 hour and take turns to jump. How many minutes did each boy have on the trampoline if they shared the time equally?*

This is one of the activities that makes up Assessment Task 2.

GROUP 3

*This group works with the teacher **every day** for 25 minutes.*

- Ask the learners to estimate how many pencils you can count in 1 minute. Let them record their estimates then let them time you while you count pencils. At the end of the minute record the number of pencils you counted and ask who estimated too many, who estimated too few, and who estimated the correct number.
- Give each learner a month from a calendar. They can each have different months. Ask the following type of questions:
  - How many hours are there from 8 o'clock in the morning on the 17th to 8 o'clock in the morning on the 20th?
  - Today is the 10th and you are going to visit Granny in 48 hours time. What date will you visit Granny?
  - You are only allowed to watch TV for 2 hours on Saturdays and Sundays. How many hours will you watch TV during the month? Etc.
- Give learners 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 300. Let each learner tell the group how s/he solved the problem. On Monday the word problem will be 1 subtraction problem and on Tuesday the problem will be a sharing one using types 6 and 22. On Wednesday you will ask 1 addition word problem, using types 3 and on Thursday you will ask a grouping with a remainder word problem using type 39. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip**: The context for the word problems should be time. Here are two examples:*

  - Mathematics is taught in Grade 4 for 210 minutes. Language is taught for 5 hours. How much longer is the Language time?
  - 4 boys want to jump on the trampoline. They pay for 1 hour and take turns to jump. How many minutes did each boy have on the trampoline if they shared the time equally?

  This is one of the activities that makes up Assessment Task 2.

Assessment	**Formal: Recorded Formal Assessment Task 2.** During the whole class and group teaching activities as indicated rate the learners against the following milestones, recording specific problems: • Expanded notation of 3-digit numbers in a variety of ways. • Is able to subtract a three digit number from any 3-digit number, e.g. 137-100 =. • Use flard cards to add and subtract 10 and 100 to any 3-digit number. • Completes number sentences using addition and subtraction of 10 and 100 to any given 3-digit number. • Doubles and halves 3-digit numbers up to 500. • Is able to collect, sort and organize supplied data and then draw a bar graph using the data. • Solves problems involving the conversion of minutes to hours and hours to days.

SUGGESTED ASSESSMENT TASKS: GRADE 3 NUMERACY THIRD TERM

TASK 2: WEEK 6

COMPONENT	MILESTONES	WKS	TASKS
COUNTING AND MENTAL/NUMBER SENSE	• Expanded notation of 3-digit numbers in a variety of ways. • Is able to subtract a three digit number from any 3-digit number, e.g. 137-100 =. • Completes number sentences using addition and subtraction of 10 and 100 to any given 3-digit number. • Doubles and halves 3-digit numbers up to 500. • Is able to collect, sort and organize supplied data and then draw a bar graph using the data.	Wk 6	• The written and practical activities on Days 1, 2 and 4 can be used for assessing learners' understanding of expanded notation and place value. • Use the game on Day 3 to assess learners' ability to add and subtract 10 and 100 to a 3-digit number. • Use the written activity on Day 3 to assess addition, subtraction, doubling and halving.
PROBLEM SOLVING	• Use flard cards to add and subtract 10 and 100 to any 3-digit number. • Solves problems involving the conversion of minutes to hours and hours to days.	Wk 6	• Use the practical work with flard cards during Group Teaching to assess addition and subtraction of two 3-digit numbers. • Use any of the word problems during the week to assess understanding of time.

THIRD 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 AS1</td><td>• Counts in 10s to 750
• Counts in multiples of 2, 5, 10, 20, 25, 50 and 100 starting at any number up to at least 750</td><td colspan="5">Daily :
• Count in multiples 2,3 5, 10, 20, 25, 50 and 100
• Count in 10s to 750
• Count in 1s, 2s, 5s, 10s, 20s, 25s, and 100s forwards and backwards, starting and ending at any number as indicated</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL
LO 1 AS3,8,10
LO 2 AS2
LO 4 AS5
LO 5 AS1,2,3</td><td rowspan="3">• Engages in using expanded notation of 3-digit numbers in a variety of ways e.g. 235=200+30+5 or 235=100+100+30+5 or 235=100+50+50+20+15
• Recognises the equivalence of multiplication to complete number sentences e.g. 2x5=5x2
• Recognises 3-dimensional objects from different positions</td><td colspan="5">Daily :
• Double and halve 3-digit numbers up to 500
• Identify number patterns
• Numerosity of 150</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>Recognises the equivalence of multiplication to complete number sentences e.g. 2x5=5x2

Money.</td><td>Expanded notation of 3-digit numbers in a variety of ways.

Money.</td><td>Recognises the equivalence of multiplication to complete number sentences e.g. 2x5=5x2

Recognise and look at 3-dimensional objects from three different positions.</td><td>Expanded notation of 3-digit numbers in a variety of ways.

Money.</td><td>WHOLE CLASS ACTIVITY

“Cake and candy” sale</td></tr>
<tr><td rowspan="2">GROUP TEACHING
LO 1 AS7,11, AS12</td><td rowspan="2">• Solves division problems through sharing and grouping with remainders

• Solves money problems where rands are converted to cents</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-600; Group 2 works in 1-500; Group 3 works in 1-300</td><td rowspan="2"></td></tr>
<tr><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 subtraction and 1 grouping with a remainder word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 subtraction and 1 grouping with a remainder word problem.
Group 1 works on its own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 2 different types of division word problems.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 2 different types of division word problems.
Group 1 works on its 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 that should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- Continue to encourage learners to look and the time at the beginning of each lesson throughout the day.
- It is important that the learners work with money and the real cost of things and not unrealistic prices. **Tell the learners that they will be having a "cake and candy" sale on the Friday and they will need to bring something to school on the Friday to sell. Make sure they advertise the "cake and candy" sale throughout the week to the other classes**. Although the concept of money was introduced in Term 2, it is important to keep developing concepts throughout the year using other contexts and numbers.
- Posters for the "cake and candy" sale are in the Day 5 lessons. However, you may decide to use some Literacy time during the week to design and make these posters.
- Observing shapes from different angles was introduced in Grade 2 and will continue to be developed in Grade 3. Many people find this difficult so make sure the lessons are fun!

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities (to take no more than 10 minutes)

To be done daily:

- Learners count in multiples of 2, 3, 5, 10, 25, 50 and 100.
- Learners count in 10s to 750.
- Learners count in 1s, 2s, 5s, 10s, 20s, 25s and 100s forwards and backwards, starting and ending at any number as indicated.

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

Each activity should be covered at least once during the week. The more times each activity is done the better.

- Double and halve 3-digit numbers up to 500. Give a number e.g. 200, double it = 400; halve it = 100. Use your own examples.
- Call 4 learners to the board. Say a number e.g. 5, and they must write the number which is double i.e. 10. Call another 4 learners and they must write the number which is double i.e. 20. Carry on in this way and see how far learners are able to go. Repeat the activity over the week using other numbers.
- Tell learners you are going to count in a pattern, but clap in place of some of the numbers. They must identify the pattern as well as fill in the missing numbers. Count:
  92; 94; clap; clap; clap; 102; 104; clap; clap; clap.
  265; 270; 275; clap; clap; clap; clap; 300.
- 400; 390; 380; clap; clap; clap; 340; 330; clap; clap; 30
- Give each pair of learners a pile of objects and ask them to count the counters into groups of 10. Then let the group count the number of counters in the group, in 2 groups and so on till all the counters have been counted.

***Tip**: You can use toothpicks and elastic bands, buttons/beads and wool to thread them on, stones in a packet, etc. The objects do not have to be the same for all groups.*

DAY 1 (to take no more than 20 minutes)

- Give each group an A4 piece of paper and let them draw a number out of a packet. They write this number at the top of the paper and then see how many different ways they can write the value of the number in 2 minutes. Display the papers on the walls and tell the class that they can add to any of the papers during the week.
  ***Tip**: Remind the class every day to add to the papers on the wall. Learners can do this when they have time e.g. if they have finished all the set work and are waiting for the next instruction.*
- On the chalk board write 5 x 2 = 10. Ask the learners in what other way this can be written so that it still means the same thing. As learners give ideas, record them on the board. You should end up with something like this:
  - 5x2 = 2+2+2+2+2
  - 5x2 = 1+1+1+1+1+1+1+1+1+1
  - 5x2 = 5+5
  - 5x2 = 2x5
  - 5x2 = 4+4+2 and so on.

  Encourage the learners to think about the meaning of each of the number sentences. Ask them if they can work out why each one still equals 10. They should be able to explain that 5x2=2+2+2+2+2=5+5=2x5. Do more examples of multiplying by 2, i.e. 3 x 2; 4 x 2; 6 x 2; etc. and let the learners write out the answer in their books in the same way as above.
  ***Tip:** You have asked different types of word problems throughout the year and it is there that learners have built up their own knowledge of number. Many learners will know intuitively that 2x5 is the same as 5x2. This lesson simply formalizes the knowledge many learners already have.*
- Help children to investigate what the school spends money on. Discuss the need for money. Use the following type of questions to help the discussion:
  - Does the school need money?
  - If it does, why does it need money?
  - What is an expense? What expenses does a school have? (Let them list all the expenses a school has e.g. books, lights, water, stationery, petrol for the school bus, etc.)
  - How does the school earn (or find) money to meet its expenses?
  - How can the school save money? Divide the children into groups and ask them to come up with ideas for how the class can raise money to buy equipment for the classroom. (These ideas could be used when the class organizes a fund-raiser.)

DAY 2 (to take no more than 20 minutes)

- Give learners 5 minutes to write on the papers displayed on the wall in Day 1.
- Put examples of paper coins and notes in the containers with the counters etc. in the middle of each group. Discuss what the South African coins and notes look like and ask what

pictures are on the money. You might have to let the learners make more money as they may have lost the money they had made in Term 2. Do a quick quiz on money e.g. What animal is on the R10 note?. Working in groups of 4 if possible, ask learners to find out what coins are needed to make R8.75. They must find out how many different ways they can make R8.75 with their coins. E.g. R8.55 = R2 + R2 + R2 + R2 + 20c + 20c + 10c +5c, etc.

DAY 3 (to take no more than 20 minutes)

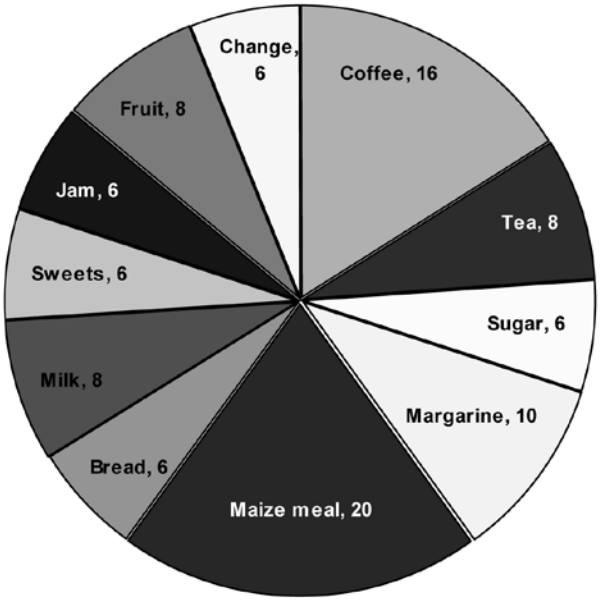
- On the chalk board write 3 x 5 = 15. Ask the learners in what other way this can be written so that it still means the same thing. Ask learners give ideas, record them on the board. You should end up with something like this:
  - 3x5 = 5+5+5
  - 3x5 = 3+3+3+3+3
  - 3x5 = 5x3
  - 3x5 = 4+4+4+3 and so on.

  Encourage the learners to think about the meaning of each of the number sentences. Ask them if they can work out why each one still equals 15. They should be able to explain that 3x5=5+5+5=3+3+3+3+3=5x3. Do more examples of multiplying by 5, i.e. 4x5; 6x5;10x5 etc. and let the learners write out the answer in their books in the same way as above.
- Today learners will explore and investigate 3-dimensional shapes from different angles. Working in pairs, ask them to take an object from your box of 3-D objects (toothpaste boxes, cereal boxes, balls, jelly boxes, toilet roll centres, etc). Tell them to look at their shape from different angles – from the right side, from the left side, from the top and from the bottom – each time drawing what they see. For example, a toothpaste box from different positions will look like this:

  If there is time, take the learners outside. Let them lie underneath a tree and look up. Let them observe the view for a few minutes and then let them return to the classroom and draw the tree the way in which they saw it when they were lying down and looking up.

DAY 4 (to take no more than 20 minutes)

- Show the learners an example of a pie graph. Ask them to suggest a reason why it's called a pie graph and use the idea of a pie cut into different-sized slices to explain the graph. Let the learners make their own pie graphs showing what they would buy at the supermarket if they had R100 and how much they would save (i.e. have left over). Give them some prices to help them get started e.g. sugar (R6 for 250 g); rice (R4 for 100 g); margarine (R8 for 500 g); maize meal (R10 for 5 kg); tea (R8 for 50 teabags); coffee (R16 for 250 g); bread (R6 for a loaf); milk (R8 for 1 litre); sweets; juice; fruit; etc. Below is an example of how R100 might be spent. Each slice is in proportion to the price of that particular item. "Change" could be termed "Savings". Before starting, encourage learners to put things together that are the same amount and to decide how much of each thing they will spend as it will make it easier to draw a pie chart.



Tip: *Remind learners that they need to bring something for their "cake and candy" sale tomorrow. It can be 1 banana, or a packet of biscuits, or something similar. What is brought will depend on the context of your school.*

DAY 5 (whole lesson with whole class)

- Learners will have their own class "cake and candy" sale. Let them create posters and signs to advertise their sale. Put these up around the school.
  Tip*: You may already have done this during the Literacy periods during the week.*
- You will need to help learners decide what to sell and how to price their goods. The prices must be realistic. If at all possible, get a few parents or grandparents to help you with the "cake and candy" sale.
- Set out some tables in a pre-arranged space with the goods for sale on them. Learners will be the sales-people. You will need to organize the day carefully.
- Once the sale has finished, let the learners count up the money they got. Discuss how this money will be used e.g. to buy pencils, given to a charity, etc.

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

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 learned. 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.)
- You may find that it is better to use one of the sessions for concept development and the other for problem solving. The solving of problems is not dependent on the learners knowing a particular method or certain numbers, etc. The focus is on the decision making process, which leads to the development of knowledge, as well as on the discussion and reflection that must occur.

DAILY ACTIVITIES

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

Independent Work:

1. How many 10c coins make up:

20c _____ 50c_____

70c _____ 90c _____

R1 _____ R1.50 _____

2. How many 5c coins make up:

10c _____ 20c _____

50c _____ 70c _____

90c _____ R1 _____

3. How many different ways can you make up:

50c _____

77c _____

82c _____

99c _____

R1 _____

4. Solve these problems:

How many R5 coins make R10? _____

How many R2 coins make R10? _____

How many R5 coins make R20? _____

How many R5 coins make R50? _____

How many R10 notes make R50? _____
How many R20 notes make R100? _____
How many R10 notes make R100? _____

5. Revise any of the concepts already developed.

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 30 minutes*.

- The learners will need their cut out money (use counters to represent R2 and R5) and blank paper/whiteboards/books.
- Ask the learners to make up certain amounts of money using the most coins possible e.g. R7.70. Let each learner explain how he/she did this and compare his/her way with the rest of the group. Ask them to count how many coins they used. Discuss who used the most and least coins to make up the given amounts. Repeat using different examples. Now ask the learners to make up a given amount using the least/most possible number of coins.
- Give learners paper, writing tools, 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 600. On Monday the word problems will be 1 subtraction and 1 grouping with a remainder using types 6 and 22. On Wednesday you will ask 2 division word problems, using types 23 and 39. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip**: The context for the word problems should be money. Here are two examples:*
  - *Thandi has two 50c coins in her pocket. She spends 65c. How much change will she get?*
  - *The tuck shop had some bananas for sale. They sold them in packets of 4. If they had 105 packets for sale, how many bananas were sold?*
  - *Each packet of bananas cost 28c. If 70 packets were sold, how much money did the shop get?*
  - *The tuck shop paid R10 for all the bananas. How much profit did they make?*

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 30 minutes*.

- The learners will need their cut out money (use counters to represent R2 and R5) and blank paper/whiteboards/books.
- Ask the learners to make up certain amounts of money using the most coins possible e.g. R5,50. Let each learner explain how he/she did this and compare his/her way with the rest of the group. Ask them to count how many coins they used. Discuss who used the most and least coins to make up the given amounts. Repeat using different examples.
- Give learners paper, writing tools, 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 500. On Monday the word problems will be 1 subtraction and 1 grouping with a remainder using types 6 and 22. On Wednesday you will ask 2 division word problems, using types 23 and 39. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

***Tip**: The context for the word problems should be money. Here are two examples:*

- *Thandi has two 50c coins in her pocket. She spends 65c. How much change will she get?*
- *The tuck shop had some bananas for sale. They sold them in packets of 4. If they had 60 packets for sale, how many bananas were sold?*
- *The tuck shop bought 143 apples and sold them in packets of 3. How many packets did they have for sale?*

GROUP 3

*This group works with the teacher **every day** for 30 minutes.*

- The learners will need their cut out money (use counters to represent R2 and R5) and blank paper/whiteboards/books.
- Ask the learners to make up certain amounts of money using the most coins possible e.g. R3.10. Let each learner explain how he/she did this and compare his/her way with the rest of the group. Ask them to count how many coins they used. Discuss who used the most and least coins to make up the given amounts. Repeat using different examples. Now ask the learners to make up a given amount using the least/most possible number of coins.
- Give learners paper, writing tools, 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 300. On Monday the word problems will be 1 subtraction and 1 grouping with a remainder using types 6 and 22. On Wednesday you will ask 2 division word problems, using types 23 and 39. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip**: The context for the word problems should be money. Here are two examples:*

  - *Thandi has a 20c coin and a 50c coin in her pocket. She spends 55c. How much change will she get?*
  - *The tuck shop had some bananas for sale. They sold them in packets of 2. If they had 105 packets for sale, how many bananas were sold?*
  - *Each packet of bananas cost 28c. If 20 packets were sold, how much money did the shop get?*

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

THIRD TERM: WEEK 8

<table>
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• Count in multiples of 2, 3, 5, 10, 25, 50 and 100
• Count in 10s to 750
• Count in 1s, 2s, 5s, 10s, 20s, 25s and 100s forwards and backwards, starting and ending at any number as indicated</td></tr>
<tr><td rowspan="2">NUMBER SENSE AND MENTAL
LO 1 AS 5, 6, 8, 9, 10

LO 2 AS 2, 3, 4

LO 3 AS 3, 5</td><td rowspan="2">• Engages in using expanded notation of 3-digit numbers in a variety of ways e.g. 235=200+30+5 or 235=100+100+30+5 or 235=100+50+50+20+15
• Recognises the equivalence of multiplication to complete number sentences e.g. 2x5=5x2
• Doubles and halves 3 digit numbers to 500
• Solves money problems where rands are converted to cents</td><td colspan="5">Daily :
• Identify number patterns
• Numerosity of numbers to 150</td></tr>
<tr><td>DAY 1

2, 5, 10 multiplication tables.

Recognises the equivalence of multiplication to complete number sentences e.g. 2x5=5x2</td><td>DAY 2

Double and halve 3-digit numbers up to 500

Expanded notation of 3-digit numbers in various ways</td><td>DAY 3

Money problems</td><td>DAY 4

Double and halve 3-digit numbers to 500

Recognise 3-dimensional objects from different positions</td><td>DAY 5

Construct 3-dimensional objects and draw them.</td></tr>
<tr><td rowspan="2">GROUP TEACHING

LO 1 AS 6, 7, 8, 10, 11, 12</td><td rowspan="2">• Solves division problems through sharing and grouping with remainders
• Solves problems and explains solutions with numbers up to 750</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-600; Group 2 works in 1-400; Group 3 works in 1-300.</td><td rowspan="2">WHOLE CLASS ACTIVITY

Draw a view from the top looking down e.g. “bird’s eye-view”</td></tr>
<tr><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 sharing and 1 grouping with a remainder word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 sharing and 1 grouping with a remainder word problem.
Group 1 works on its own.</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 its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 subtraction and 1 addition word problem.
Group 1 works on its 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 that should be done every day. The specific concepts being developed are indicated every day e.g. Day 1.
- **Activities for Assessment Task 3** will be found as part of the everyday teaching and learning activities.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities (to take no more than 10 minutes)

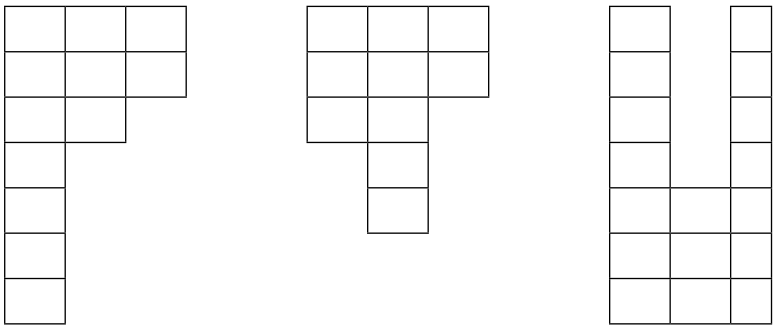
To be done daily:

- Learners count in multiples of 2, 3, 5, 10, 25, 50 and 100.
- Learners count in 10s to 750.
- Learners count in 1s, 2s, 5s, 10s, 20s, 25s and 100s forwards and backward, starting and ending at any given number as indicated, e.g. 35 to 89; 99 to 121; 263 to 287; 303 to 333; 361 to 499; 526 to 600; 712 to 750; 901 to 934; 971 to 1000

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

Each activity should be covered at least once during the week. The more times each activity is done the better.

- Give each learner a piece of squared paper which you have prepared e.g.



The learners must first paste the paper in their books, then estimate how many squares there are and write the number down in their books. Next they count the number of squares and write this number down. Then indicate the difference between the two answers, e.g.
Estimation: 40
Actual number: 85
Difference: 85 – 40 = 45

***Tip**: Use paper with small squares, the type used in exercise books. You can cut many small shapes out of one page.*

- Write a row of numbers and missing numbers on the chalk board. Let the learners have turns to come up and fill in the missing numbers.
- Play "I spy with my little eye", e.g.
  - A number which is more than 9 fives but less than 25 twos and is an even number
  - A number which is half of 500 plus two 50s.
  - A number which is more than double 31 but less than half of 128, etc.

DAY 1 (to take no more than 20 minutes)

- Learners must write down the multiplication table of 2 from 1x2 to 20x2. Ask questions such as *A duck has two legs, how many legs will 8 ducks have*? Once you have established the answer, learners must mark the answer in their multiplication table, i.e. 8x2=16. Then ask the question: *One spider has 8 legs. How many legs do two spiders have?* Establish the answer and write it on the board i.e. 2x8=16. Then ask learners to find the number sentence in their multiplication table that could indicate the same thing. Learners should be able to tell you that 8x2 is the same as 2x8. Let learners record 2x8=16 next to 8x2=16. Keep working in this way - asking questions, establishing the answer, marking the answer, writing the equivalent number sentence next to the one already written in the multiplication table. Some examples of other questions are:
  - A butterfly has two wings, how many wings will 9 butterflies have? One box has 9 apples. How many apples are there in 2 boxes?
  - A duck has two legs. How many legs will 10 ducks have? A caterpillar has 10 legs, how many legs will 2 caterpillars have? etc.

  Tip: This is an assessment activity. Observe learners carefully, recording only those learners who are not able to do it.

DAY 2 (to take no more than 20 minutes)

- Draw the following grid on the board and give one to each learner. Learners must paste the grid in their books or let them draw the grid in their books. Do it one line at a time, writing in the number as well as the 'cards I have'. Learners write this in their books and complete the grid. An example of the grid is as follows:

Number	Cards I have	Cards I need
127	7	100 20
658	600 8	50
703	3	700

- *Tip: This activity can be used as an activity towards Assessment Task 3*.

DAY 3 (to take no more than 20 minutes)

- Let learners work in groups of 4. Read some word problems dealing with money and allow the learners to discuss and solve the problems. Some learners may need their 'money' to help them. Some examples of what you can ask are:
  - Sipho has three 50c coins. He spends R1.15. How much change will he receive?
  - Jack gets paid R5 to help Dad wash his car. How many times did Jack help Dad if he got R75?
  - Mom gives Granny R250 to share equally between the 20 grandchildren. How much did each one get?
  - Thandi wants to buy a hot dog for R8.00, a fruit juice for R4.50 and a chocolate for R2.75.
    (a) How much money does she need?
    (b) What are the least number of coins Thandi can pay with?
    (c) How many other ways can she pay?

  ***Tip**: This is part of Assessment Task 3.*

DAY 4 (to take no more than 20 minutes)

- Ask the learners to write a 3-digit number as expanded notation e.g. 200 40 6.
  Underneath each number they must write the number that is half of each number, e.g.
  200 40 6 = 246
  100 20 3 = 123
  Take the another number e.g. 200 40 2 but this time double each number and write the correct number under each number e.g. 400 80 4 = 484
  Do a few more examples of your own, one with halving and one with doubling.
- Give the learners a worksheet to complete. Use this as an example:

Double these numbers. First write them as expanded notation.
324: 300+20+4=324 411: 400+10+1=411
double 600+40+8=648 double 800+20+2=822
Halve these numbers. Show how you did it.
484 108

Tip: This activity can be used as an assessment for Task 3.

DAY 5 (whole lesson with the whole class)

- Put the learners into groups of 4. Have a box with 3-D objects such as: a handbag, a cereal box, a shoe, a book, a piece of chalk, a ball, a purse, etc. Each learner takes one object.
- Learners look at their own object from different angles – from the right side, the left side, the top and the bottom. They can help each other to view the object from underneath by holding the object above the other learner's head while they are lying down. Each time they need to draw what they see.
- Once each learner in the group has 4 different views, they make a collage of their objects.
  Tip: This activity can be used as an activity for Assessment Task 3 as it is an indication of what learners can see when viewing objects from different positions.

ASSESSMENT	**Formal: Recorded Assessment Task 3:** During the whole class and group teaching activities as indicated rate the learners against the following milestones, recording specific problems. • Expanded notation of 3-digit numbers. • Recognises the equivalence of multiplication to complete number sentences e.g. 2x5=5x2 • Solve division problems through sharing and grouping with remainders. • Double and halve 3-digit numbers to 500 • Recognise 3-dimensional objects from different positions. • Solve money problems where rands are converted to cents. • Solve problems and explain solutions, using number charts if needed, with numbers up to 750.

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 (counting counters in counting bags), a written activity (filling in numbers, sequencing, etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.).
- Learners must complete ALL the work that you have set for the lesson.
- **Activities for Assessment Task 3** will be found as part of the everyday teaching and learning activities.

DAILY ACTIVITIES

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

1. Double these numbers:

27 _____ 126_____ 220_____
11 _____ 135 _____ 450 _____
40 _____ 140 _____ 250_____

2. Halve these numbers:

40 _____ 120 _____ 220_____
66 _____ 240 _____ 360 _____
88 _____ 300 _____ 420 _____

3. Calculate the sum and double your answer:

125 + 14 = 17 x 2 = 123 + 13 + 10 =
131 + 18 = 34 x 2 = 133 + 20 + 10 =
150 + 16 = 16 x 2 = 127 + 13 + 10 =

4. Double each number in the list and expand them e.g.:

112	→	**224**	→	200	20	4

124, 152, 107, 225, 109, 302, 116, 253

5. Halve these numbers and expand them:

124, 164, 262, 462, 146, 286, 118, 364

6. Double the numbers as you count:

2 4 8 … … … … …

3 6 12 … … … …

14 28 … … … … …

21 … … … … …

44 … … … …

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 30 minutes*.

- Give each learner a handful of coins and ask them to estimate how much money they have. Then let them count how much money they have and tell you the difference between their estimated amount and the actual amount.
- Give learners paper, writing tools, 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 600. On Monday the word problems will be 1 sharing and 1 grouping with a remainder using types 35 and 37. On Wednesday you will ask 1 addition and 1 subtraction word problem, using types 14 and 17. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip:** Your focus is on problem solving this week, so you need to allow as much time as possible for this activity. If you need to leave out the estimating activity then do so. Use the time with your group to assess their ability to solve problems and give sensible solutions. This forms part of Assessment Task 3.*

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 25 minutes*.

- Give each learner a handful of coins and ask them to estimate how much money they have. Then let them count how much money they have and tell you the difference between their estimated amount and the actual amount.
- Give learners paper, writing tools, 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 400. On Tuesday the word problems will be 1 sharing and 1 grouping with a remainder using types 35 and 37. On Thursday you will ask 1 addition and 1 subtraction word problem, using types 14 and 17. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip:** Your focus is on problem solving this week, so you need to allow as much time as possible for this activity. If you need to leave out the estimating activity then do so. Use the time with your group to assess their ability to solve problems and give sensible solutions. This forms part of Assessment Task 3.*

GROUP 3

*This group works with the teacher **every day** for 25 minutes.*

- Give each learner a handful of coins and ask them to estimate how much money they have. Then let them count how much money they have and tell you the difference between their estimated amount and the actual amount.
- Give learners paper, writing tools, 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 300. On Monday and Tuesday the word problems will be 1 sharing and 1 grouping with a remainder using types 35 and 37. On Wednesday and Thursday you will ask 1 addition and 1 subtraction word problem, using types 14 and 17. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

  ***Tip:** Your focus is on problem solving this week, so you need to allow as much time as possible for this activity. If you need to leave out the estimating activity then do so. Use the time with your group to assess their ability to solve problems and give sensible solutions. This forms part of Assessment Task 3.*

Assessment	**Formal: Recorded Assessment Task 3: During the whole class and group teaching activities as indicated rather learners agains the following milestone, recording specific problems.** • Expanded notation of 3-digit numbers. • Recognises the equivalence of multiplication to complete number sentences e.g. 2x5=5x2 • Solve division problems through sharing and grouping with remainders. • Double and halve 3-digit numbers to 500. • Recognise 3-dimensional objects from different positions. • Solve money problems where rands are converted to cents. • Solve problems and explains solutions, using number charts if needed, with numbers up to 750.

SUGGESTED ASSESSMENT TASKS: GRADE 3 NUMERACY THIRD TERM

TASK 3: WEEK 8

COMPONENT	MILESTONES	WKS	TASKS
COUNTING AND MENTAL/NUMBER SENSE	• Recognises the pattern of counting in 10 and 100s starting at any number, e.g. 5, 105, 205, 305 etc • Counts in multiples of 2, 3, 5, 10, 20 , 50, 100 to 1000 • Decomposes 3-digit numbers • Solves problems using grouping and sharing where the remainder is a fraction • Solves problems, and explains solutions, using number charts and counters if needed with numbers up to 200	Wk 8	• Use the activities on Day 1, 2 and 4 and the written work on Day 3 to observe learners' understanding of grouping in 10s.
PROBLEM SOLVING	• Decomposes 3-digit numbers • Solves problems using grouping and sharing where the remainder is a fraction • Solves problems, and explains solutions, using number charts and counters if needed with numbers up to 200	Wk 8	• Written work done independently during the group teaching time can also be used for assessment purposes. • Problem solving is assessed during group teaching throughout the week.

THIRD 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</td><td>• Counts forwards and backwards in multiples of 2, 3, 5, 10, 20, 25, 50 and 100 up 1000
• Counts in 10s to 1000</td><td colspan="5">Daily :
• Count in multiples of 2, 3, 5, 10, 20, 25, 50 and 100 to 1000
• Count in 10s to 1000
• Count in 1s, 2s, 5s, 10s, 20s, 25s and 100s forwards and backwards, starting and ending at any number as indicated</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL
LO 1 AS 4, 5, 7, 8, 9, 10

LO 2 AS 2

LO 4 AS 6

LO 5 AS 1, 2, 3, 4</td><td rowspan="3">• Recognises and orders numerals and number names up to 750
• Is able to add a single digit to any 3 digit number
• Is able to add and subtract a 3 digit number from a 3 digit number
• Recognises the equivalence of multiplication to complete number sentences e.g. 2x5=5x2
• Start rounding off to the nearest 10
• Investigates the distances around objects using string
• Numerosity to 500</td><td colspan="5">Daily :
• Recognise and order numerals and number names up to 750
• Numerosity of numbers to 500</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>Multiplication table of 3.

Add a single digit to 3 digit numbers

Start rounding off to 10.</td><td>Multiplication table of 3.

Round off to 10.</td><td>Recognises the equivalence of multiplication to complete number sentences e.g. 2x5=5x2

Round off to 10.</td><td>Add and subtract two 3 digit numbers

Round off to 10.</td><td rowspan="3">WHOLE CLASS ACTIVITY

Investigate the distances around objects using string. Make own bar graph to compare measurements.</td></tr>
<tr><td>GROUP TEACHING

LO 1 AS 5, 7, 8, 10, 11, 12</td><td>• Uses flard cards to develop expanded notation of numbers up to 1000
• Solves problems and explains solutions using number charts if needed with numbers up to 750</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-600; Group 2 works in 1-400; Group 3 works in 1-300</td></tr>
<tr><td></td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 grouping with a remainder word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 addition and 1 grouping with a remainder word problem.
Group 1 works on its own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 sharing where the remainder is a fraction word problem.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 1 multiplication and 1 sharing where the remainder is a fraction word problem.
Group 1 works on its own.</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.
- The activities this week are ones that learners are familiar with, but remember, learners must find the activities enjoyable and not boring. It is up to you to monitor this and change or adjust activities when necessary.
- You will continue expanded notation of 3-digit numbers, adding and subtracting, doubling and halving.
- Weeks 9 and 10 lessons are the beginning of 4th term work.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

Daily Activities (to take no more than 10 minutes)

To be done daily: (Choose a few for each day of the week)

- Counting in multiples of 2, 3, 5, 10, 20 50 and 100 to 1000.
- Count in 10s to 1000.
- Count in 100s to 1000.
- Count in 1s, 2s, 5s, 10s, 20s, 25s and 100s forwards and backwards, starting and ending at any number as indicated.

Choose from the following to make up the 10 minutes:

Each activity should be covered at least once during the week. The more times each activity is done the better.

- Recognise and order numerals and number names up to 750.
- Count the odd numbers from 347 to 445. Every time learners say a number that is also a multiple of 5 they clap their hands. You can extend this activity according to the level of the learners by using 3 or 4 multiples e.g. clap if the number is a multiple of 5, stamp if the number is a multiple of 3.
- Use a sorting table to sort numbers by two rules (criteria). Sort these numbers into numbers that are or are not in the 20s pattern; and the numbers that are or are not in the 50s pattern: The numbers are 210, 220, 230, 240, 250, 260, 270, 280, 290 and 300. Learners complete the tables that you have provided for them. Write the unsorted numbers on the board. Here is the answer:

	In the 50s pattern	**NOT in the 50s pattern**
In the 20s pattern	300	220, 240, 260, 280
NOT in the 20s pattern	250	210, 230, 270, 290

- Each group has a packet and each packet has the numbers 2, 5 and 10 (about 20 of each number). Learners take turns to shake the packet and take out 2 numbers which they will use to write repeated addition number sentences. If, for example, the learner draws the numbers 2 and 5, he/she will write the repeated addition of 2 five times, and the repeated addition of 5 twice i.e. 2+2+2+2+2=5x2=10 and 5+5=2x5=10. Let learners put their cards back in the packet and take another 2 cards and repeat the activity.

- Each learner takes a handful of counters. They put them into groups of 3 then count in threes to find the total. Once each learner has count his/her own counters, they count the number in the whole group, counting in 3s.

DAY 1 (to take no more than 20 minutes)

- Learners write as many multiples of 3 as possible in 5 minutes, writing the complete number sentence each time i.e. 1x3=3, 2x3=6 and so on. After 5 minutes stop the learners and let them each count how many they were able to do. Now let them work with a partner and, after checking the answers with each other, see if the two of them are able to complete a few more. Go through each of the multiples with the class so that they can check their answers. Record on the board those multiples that no one got correct, or were not able to do. Discuss how the answers could be found e.g. I don't know what 7x3 is, so how can I work it out? I know 3x3 is 9, so 6x3 is 18. Therefore 7x3 is 1 more than 6x3, that is 18 plus another 3 which is 21.
- Introduce the class to rounding off as a strategy for adding and subtracting quickly. Let learners count in 10s, then point to a number on the number grid and ask which 10 is the closest e.g. point to 9 – the closest 10 is 10, point to 32 and the closest 10 is 30 and so on. You are only using rounding off to the nearest 10 at this stage.
- Let everyone stand behind their chairs. Starting with 1, the first learner says 1, the second says 2, the next learner says 3 and so on till 9, then start again with the 10th learner saying 1, the 11th learner saying 2 and so on until all the learners have a single digit number. Ask all the 1s to put up their hands, then the 2s etc. to check that the learners know what their number is. Write a 3 digit number on the board, e.g. 387. Now let each learner add their number to the previous number. This is what it will be like:
  387 plus**1** is 388→plus **2** is 390→plus **3** is 393→plus **4** is 397→plus **5** is 402 →plus **6** is 408→plus **7** is 415→plus **8** is 423→plus **9** is 432→plus **1** is 433→plus **2** is 435 and so on.

DAY 2 (to take no more than 20 minutes)

- Learners need their crayons/ coloured pens for today. Learners must open their class work books on to a clean page. On top of the page write: **Our Spring Garden**. Give the following instructions:
  - Draw a long wavy line across the middle of the page.
  - Draw a tree and three yellow flowers on the left side of the page. Ask the learners how many groups of three (one). They write under the tree: 1 x 3 = 3
  - Next to the tree draw another group of three yellow flowers. Ask the learners how many groups there are now (two). How many in each group? Three. They write next to the flowers: 2 x 3 = 6.
  - On the right hand side of the page draw three trees. Draw a group of three pink flowers under each tree. How many groups do we have? (three) How many pink flowers do we have? (nine) The learners write 3 x 3 = 9.
  - In the middle of the page draw four groups of three blue flowers. They write 4 x 3 = 12.
  - On the left side near the bottom draw five groups of red flowers. They write 5 x 3 = 15.

- On the right side near the bottom draw six groups of three purple flowers. The learners write 6 x 3 = 18.
- At the bottom of the page draw 10 groups of grass. Each group has three tufts. They write 10 x 3 = 10.
- On the grass across the page draw seven groups of insects. They write 7 x 3 = 21.
- In the sky draw eight groups of bees, birds, butterflies, three in each group. They write 8 x 3 = 24.
- In the nine trees draw three apples in each tree. They write 9 x 3 = 27.

DAY 3 (to take no more than 30 minutes)

- On the chalk board write 5 x 3 = 15. Ask the learners in what other way this can be written so that it still means the same thing. As learners give ideas, record them on the board. You should end up with something like this:
  - 5x3 = 3+3+3+3+3
  - 5x3 = 5+5+5
  - 5x3 = 3x5
  - 5x3 = 6+6+3 and so on.

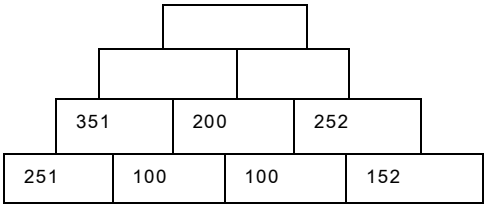
  Encourage the learners to think about the meaning of each of the number sentences. Ask them if they can work out why each one still equals 15. They should be able to explain that 5x3=3+3+3+3+3=5+5+5=3x5. Do more examples of multiplying by 3, i.e. 3 x 3; 4 x 3; 6 x 3; etc. and let the learners write out the answer in their books in the same way as above.
- Let learners count in 10s, asking questions such as how many 10s in 30? How much are 5 10s? etc. Point to a number on the number grid and ask which 10 is the closest e.g. point to 57 – the closest 10 is 60, point to 54 and the closest 10 is 50 and so on. You are only using rounding off to the nearest 10 at this stage.

DAY 4 (to take no more than 20 minutes)

- Give all the learners a small piece of paper. Ask half the class to write any number except a whole 10. The other half the class will write whole10s. You will need to tell each of these learners which number to write so that the numbers are all different. When everyone is ready, ask the learners with the whole10s to stand in order starting at 10. Now give each of the learners with other numbers a chance to stand in front of the learner holding the 10 nearest to their number. For example, a learner with the number 49 will stand in front of the learner with the number 50. Do it one by one so that everyone can check that the rounding if is correct.
- Give learners a worksheet, which has different activities to add and subtract a whole 100, to do. An example of such a worksheet is:

Complete the following.

268+100→☐+100→☐+100→☐+100=☐
987-100→☐-100→☐-100→☐-100=☐



DAY 5 (the whole lesson)

- Let the learners work in pairs. Today the learners are going to investigate distances around objects using string. Give each pair different lengths of string and a list of objects that they must measure. The learners must make their own bar graphs to compare measurements

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

WEEK 9: GROUP TEACHING

Week 9	GROUP TEACHNG 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 (counting counters in counting bags), a written activity (filling in numbers, sequencing, etc.) and a fun activity (dot-to-dot pictures, puzzles, etc.)
- You will be starting to teach the 4th term's work during this week.

DAILY ACTIVITIES

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

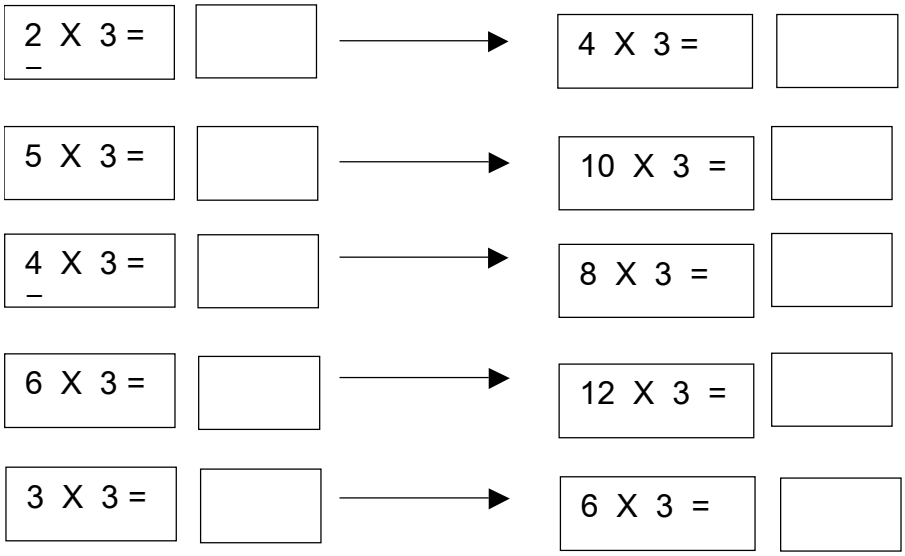
Independent work:

- Matching a position, a number and the correct spelling:

Position	Number	Spelling
3rd	7	Twentieth
50th	5	Eleventh
6th	4	First
30th	9	Fifth
1st	40	Eighth
9th	1	Thirtieth
5th	50	Second
10th	20	Sixth
11th	6	Ninth
2nd	8	Third
7th	30	Tenth
20th	3	Fourth
8th	11	Seventh
40th	10	Fiftieth
4th	2	Fortieth

Let the learners copy this table into their classwork books. They must then join, by means of a neat line, the number, its position and the spelling of the word.

- Fill in the answers. Can you find the pattern?



- Complete addition and subtraction number sentences, including open frame number sentences.
- Pyramids to complete through doubling and halving.
- Spider diagrams - 3 digit numbers + and – a 3 digit number.
- Create own patterns.

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 30 minutes*.

- Teach the group how to play "I have…Who has…" Give each learner a card. On the card is writen a number and after the number a problem. The number on a card is the answer to a problem on another card. For example:
  I have '100'. Who has '5 less than 100'? The learner to answer is the one is holding a card that says '95'.
  I have '95'. Who has '10 more than 95'? The learner to answer is the one who has a card that says '105'.
  I have '105'. Who has '100 less than 105'? The learner to answer is the one who has a card that says '5'.
  I have '5'. Who has '5 multiplied by 5'? The next learner should say '25'.
  I have '25'. Who has '25 doubled'? The next learner should say '50'.
  I have '50'. Who has '20 more than 50'? The next learner should say '70'.
  I have '70'. Who has '70 multiplied by 2'? The next learner should say '140'.
  ***Tip**: This is a wonderful game to play as all the learners are involved in thinking all the time!*
- Let learners put out their flard cards. Ask them to make different 3 digit numbers. Remember to insist on the learners making the number, expanding the number (breaking it down) then building it up again. Make 3 digit numbers then ask learners to add and take away whole 100s, whole 10s and single digit numbers. Each time ask which number changed e.g.

Make the number 578. Add 300. What is the new number? Which number changed? Why did the 500 change? Take away 50. Which number changed? Why did the 60 change? Add 7. Which number changed? Why did both the 20 and the 8 change?

- Make sure each learner has access to paper, writing tools, 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 600. On Monday the word problems will be 1 addition and 1 grouping with a remainder using types 3 and 37. On Wednesday you will ask 1 multiplication and 1 sharing where the remainder is a fraction word problem, using types 23 and 35. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

GROUP 2

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

- Teach the group how to play "I have…Who has…" Give each learner a card. On the card is writen a number and after the number a problem. The number on a card is the answer to a problem on another card. For example:
  I have '100'. Who has '5 less than 100'? The learner to answer is the one is holding a card that says '95'.
  I have '95'. Who has '10 more than 95'? The learner to answer is the one who has a card that says '105'.
  I have '105'. Who has '100 less than 105'? The learner to answer is the one who has a card that says '5'.
  I have '5'. Who has '5 multiplied by 5'? The next learner should say '25'.
  I have '25'. Who has '25 doubled'? The next learner should say '50'.
  I have '50'. Who has '20 more than 50'? The next learner should say '70'.
  I have '70'. Who has '70 multiplied by 2'? The next learner should say '140'.
  ***Tip**: This is a wonderful game to play as all the learners are involved in thinking all the time!*
- Let learners pack out their flard cards. Ask them to make different 3 digit numbers. Remember to insist on the learners making the number, expanding the number (breaking it down) then building it up again. Make 3 digit numbers then ask learners to add and take away whole 100s, whole 10s and single digit numbers. Each time ask which number changed e.g.
  - Make the number 274. Add 300. What is the new number? Which number changed? Why did the 200 change? Take away 30. Which number changed? Why did the 70 change? Add 7. Which number changed? Why did both the 40 and the 4 change?
- Make sure each learner has access to paper, writing tools, 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 400. On Tuesday the word problems will be 1 addition and 1 grouping with a remainder using types 3 and 37. On Thursday you will ask 1 multiplication and 1 sharing where the remainder is a fraction word problem, using types 23 and 35.

- Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

GROUP 3

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

- Teach the group how to play "I have…Who has…" Give each learner a card. On the card is writen a number and after the number a problem. The number on a card is the answer to a problem on another card. For example:
  I have '100'. Who has '5 less than 100'? The learner to answer is the one is holding a card that says '95'.
  I have '95'. Who has '10 more than 95'? The learner to answer is the one who has a card that says '105'.
  I have '105'. Who has '100 less than 105'? The learner to answer is the one who has a card that says '5'.
  I have '5'. Who has '5 multiplied by 5'? The next learner should say '25'.
  I have '25'. Who has '25 doubled'? The next learner should say '50'.
  I have '50'. Who has '20 more than 50'? The next learner should say '70'.
  I have '70'. Who has '70 multiplied by 2'? The next learner should say '140'.
  ***Tip**: This is a wonderful game to play as all the learners are involved in thinking all the time!*
- Let learners pack out their flard cards. Ask them to make different 3 digit numbers. Remember to insist on the learners making the number, expanding the number (breaking it down) then building it up again. Make 3 digit numbers then ask learners to add and take away whole 100s and whole 10s. Each time ask which number changed e.g.
  - Make the number 261. Add 200. What is the new number? Which number changed? Why did the 200 change? Take away 20. Which number changed? Why did the 60 change? Repeat with other 3 digit numbers.
- Make sure each learner has access to paper, writing tools, 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 300. On Monday the word problem will be 1 addition and on Tuesday ask 1 grouping with a remainder word problem using types 3 and 37. On Wednesday you will ask 1 multiplication problem and on Thursday ask 1 sharing where the remainder is a fraction word problem, using types 23 and 35. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

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

THIRD 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 forwards and backwards in multiples of 2, 3, 5, 10, 20, 25, 50 and 100 up to 1000.
• Counts in 10s up to 1000.</td><td colspan="5">Daily :
• Counting in multiples of 2, 3, 5, 10, 20, 25 50 and 100 to 1000.
• Count in 10s to 1000.
• Count in 1s, 2s, 3s ,5s, 10s, 20s, 25s and 100s forwards and backwards startingand ending at any number as indicated.</td></tr>
<tr><td rowspan="3">NUMBER SENSE AND MENTAL
LO 1 AS 3, 4, 8, 9, 10

LO 2 AS 2, 3

LO 3 AS 3

LO 4 AS 5</td><td rowspan="3">• Recognises and orders numerals and orders number names up to 1000.
• Estimates, measures and compares capacity using non-standard and standard measures.
• Multiplication of 2, 3, 5, 10
• Rounding off to 10.</td><td colspan="5">Daily :
• Recognises and orders numerals and number names up to 1000.
• Numerosity of numbers to 200.</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 names and symbols

Revision of number facts</td><td>Multiplication of 5

Doubling and halving</td><td>Rounding off to the nearest 10</td><td>Capacity</td><td rowspan="3">WHOLE CLASS ACTIVITY

Box construction (Integrated with Technology)</td></tr>
<tr><td>GROUP TEACHING

LO 1 AS 5, 7, 8, 10, 11, 12</td><td>• Uses flard cards to develop expanded notation of numbers up to 1000.
• Solve problems, and explains solutions, using number charts and counters if needed with numbers up to 750.</td><td colspan="4">Ask each group the same problems. They can be solved using counters, drawings, etc.
Number range: Group 1 works in 1-600; Group 2 works in 1-400; Group 3 works in 1-300</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 its 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 its own.</td><td>Groups 1 and 3 work with teacher, one group at a time.
Ask 2 word problems using multiplication.
Group 2 works on its own.</td><td>Groups 2 and 3 work with teacher, one group at a time.
Ask 2 word problems using multiplication.
Group 1 works on its own.</td></tr>
</table>

THIRD TERM: WHOLE CLASS

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

Notes to the teacher:

- This week is introducing work that will be continued in the second week of the 4th Term. You cannot wait until the last term to introduce new work because it is usually a short term.
- Although there are many counting activities, you should not do them all every day. Counting is important, but you need to e selective as to what you do with your class.
- The final lesson of the term is a practical lesson where Mathematics and Technology are integrated.
- During the week ask the learners to bring empty cereal/washing powder boxes, empty toilet rolls, empty egg boxes etc to school.

DAILY ACTIVITIES

COUNTING AND MENTAL/NUMBER SENSE

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

To be done daily:

- Count in multiples of 2, 3, 5, 10, 20, 25, 50 and 100 to 1000 using structured objects e.g. pictures of eyes, matchsticks in bundles of 20, etc.
- Count in 1s, 2s, 3s, 5s, 10s, 20s, 25s and 100s forwards and backwards starting and ending at any given number, pointing to a number line or number grid as the numbers are said.

Choose from the following to make up 10 minutes:

Each activity should be covered at least once during the week. The more times each activity is done the better.

- Give each learner some counters. Tell them to pretend they have already have 100 counters in their pocket, so they will count on from 100. Once they have counted, they record the number name and the expanded notation of the number e.g. one hundred and fifty two, 100+50+2
- Using the 100 number grid, ask the children to count in tens forwards and backwards; double numbers; halve numbers; do multiplication and division calculations. The 100 number grid is there merely to assist those who have difficulty working out calculations mentally.
- Half fill a large container with counters. Let the class count and record the number on the board. The next day add some more and count. Record under the previous day's number. Continue daily and soon the learners will be dealing with totals in the 1000s and more.
- Call out a number between1 to 200. The learners must use two or three numbers to equal the number you call out e.g. 120 = 100 + 20; 60 + 60; 80 + 40; etc.

DAY 1 (to take no more than 20 minutes)

- Use your own ideas to revise the ordering of numbers from 1 to 1000.
- Let the learners play *I have, who has…….*? Give each learner a card. On the card write down a number and after the number a problem. The answer on one card has to be the number on another card. E.g. – 10. I have 10. Who has 5 less than me? The child to answer is the one who has 5.

I have 5. Who has 5 times 3? The next learner should say 15.
I have 15. Who has double 15?
I have 30. Who has 30 plus 15?
I have 45. Who has 45 times 2?

Tip: *You can use the same cards every day as learners will get different cards each time. Make sure learners work out the answers in their heads – do not allow them to use pencils and paper during the game!*

DAY 2 (to take no more than 20 minutes)

- Revision of doubling and halving. Start the lesson by asking the learners to:
  - Double different numbers – 30, 24, 60, 33 etc
  - Halve different numbers – 40, 80, 28, 36 etc. Learners must write their answers on a a blank piece of paper/whiteboard/slate and hold it up to show you.
- Learners write the as many multiples of 5 as possible in 5 minutes, writing the complete number sentence each time i.e. 1x5=5, 2x5=10 and so on. After 5 minutes stop the learners and let them each count how many they were able to do. Now let them work with a partner and, after checking the answers with each other, see if the two of them are able to complete a few more. Go through each of the multiples with the class so that they can check their answers. Record on the board those multiples that no one got correct, or were not able to do. Discuss how the answers could be found e.g. I don't know what 7x5 is, so how can I work it out? I know 3x5 is 15, so 6x5 is 30. Therefore 7x5 is 1 more than 6x5, that is 30 plus another 5 which is 35.

DAY 3 (to take no more than 20 minutes)

- Revision of rounding off to the nearest 10. Learners must work with their number charts. Call out different numbers and ask the learners to write down the number to the nearest 10. They must use their number charts as a guideline. By looking at the all the numbers that end with 5, when you call out a number, they must decide if it is on the left or right of 5 and write down the nearest 10, e.g. 17 – round of to 20; 12 – round of to 10; 38 – round off to 40; 65 – round off to 70.
- Give all the learners a small piece of paper. Ask half the class to write any number except a whole 10. The other half the class will write whole10s. You will need to tell each of these learners which number to write so that the numbers are all different. When everyone is ready, ask the learners with the whole10s to stand in order starting at 10. Now give each of the learners with other numbers a chance to stand in front of the learner holding the 10 nearest to their number. For example, a learner with the number 49 will stand in front of the learner with the number 50. Do it one by one so that everyone can check that the rounding if is correct.

DAY 4 (to take no more than 20 minutes)

- You must have different containers, ranging from yogurt cups to buckets. If the containers have lines for measuring, show the learners how to read the measurements. The containers

must be level. This will be a practical lesson on **capacity.** The learners can work individually, in pairs or in groups.Begin with two one litre containers of different shapes. Fill A with water or sand. Ask the learners if the same amount of water/sand will fill container B. Some learners will say no. Ask the learner to demonstrate and show the rest of the class what happens.

- Ask the learners what the word **capacity** means. Put up a flash card on the chalk board with **capacity** on it. When we find out how much a container holds, we discover its capacity.
- Let the learners take any two empty containers and fill them with sand/water. Which container has the most? Which container has the least? Do the same with other containers.
- The second part of the lesson will be the introduction of a **litre.** Show the class different-shaped litre containers and ask them what they or their parents buy in litres.Ask the learners to estimate how many litres of petrol there are in motor car's petrol tank; how many litres of water in a swimming pool or a rainwater tank and how many litres it takes to fill a bath. They must do their own research and bring the estimates to school. Explain to the class that there are 100ml in a litre, a half litre is 500ml and a quarter-litre is 250ml. Tell the learners that a tablespoon is 15ml and a teaspoon 5ml.
- A brain teaser: When running half-marathon of 21km, a runner gets a drink every 3km. If he drinks 125ml every 3km, how much has he had after 21km? How much does the runner drink after 42km, 56km and 88km.

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DAY 5 (the whole lesson)

- Set up about 6 different activity stations. This number will depend on the size of your class.
- Put the learners into groups and tell them what they are to do at each activity station. Here are some ideas for you:
    - Make a bridge for the car to go under
    - Build a tower as tall as a ruler
    - Make a ladder to reach the window
    - Build a garage for a car – the doors must open and close
    - Make steps up to the door of a house
    - Make model tree that can stand
    - Make a pair of glasses that fit you
    - Make a windmill that turns when you blow it.

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

THIRD TERM: GROUP TEACHING

Week 10	GROUP TEACHNG COMPONENT (Concept Development and Problem Solving)

Notes to teacher:

- 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.)
- Your group teaching session will be built around the problem solving you have planned. 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.
- Solving problems is therefore the starting point, not the end point, of concept development.
- Even though this is the final week of the term, learners need to maintain their routine.

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

- Fill in the missing numbers.

460, 461, 462, ____, ____, ____, ____, ____

22, ____, 26, 28, _____, _____, 34, 36, ____

300, 400, _____, 600, 700, ____, ____, ____

250, 249, _____, 247, _____, _____, 244, 243, ____

81, 83, ____, 87, 89, _____, _____, 95, ____, ____

- Complete the number sentences

60 + _____ = 100	200 + 40 +2 =
80 + _____ = 100	300 + 10 + 50 =
700 + _____ = 1000	700 + 30 + 0 =
400 + _____ = 1000	400 + 20 + 30 =
500 + _____ = 1000	200 + 50 + 4 =

- Do these problems in you your exercise book. Write your answers down.

1. There are ten bottles on the table. Each bottle holds 250ml of juice. Four bottles are empty. How many milliliters are left? _____

2. Susie, Jane and Paul each drink 250ml of milk at breakfast, luch and supper. How many litres of milk do they each drink altogether ina day?_____

3. A calf drinks three litres of milk every day.

How many litres does he drink in one week? _____

How many litres does he dring in two weeks? _____

Working with the group

GROUP 1

*On **Monday** and **Wednesday** this group works with the teacher for 30 minutes.*

- Working in pairs, each learner takes 2 handfuls of beans. They first estimate the number, then count.

- Ask learners to group the beans/counters in threes and then ask questions such as: how many groups are there? If there was 1 more group, how many counters would there be? Etc.
- Ask the learners to write down the numbers when counting in 3s, starting at 0, then 1, then 2, then 3 and then 4. Once they have 5 numbers in a row they must start the next row. Ask them what pattern they observe. i.e.

Adding 3 each time						*Adding 4 each time*					
0	3	6	9	12	15	0	4	8	12	16	
1	4	7	10			1	5	9	13		
2											
3						2					
4						3					
						4					

  Repeat this activity, but count in 4s then 5s. Discuss the pattern that appears and why this should be so.
- 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 600. On Monday the word problems will be 1 addition and 1 subtraction using types 6 and 13. On Wednesday you will ask 2 multiplication word problems, using types 24 and 36. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution

GROUP 2

*On **Tuesday** and **Thursday** this group works with the teacher for 30 minutes*.

- Working in pairs, each learner takes 2 handfuls of beans. They first estimate the number, then count.
- Ask learners to group the beans/counters in threes and then ask questions such as: how many groups are there? If there was 1 more group, how many counters would there be? Etc.
- Ask the learners to write down the numbers when counting in 3s, starting at 0, then 1, then 2, then 3 and then 4. Once they have 5 numbers in a row they must start the next row. Ask them what pattern they observe. i.e.

Adding 3 each time						*Adding 4 each time*					
0	3	6	9	12	15	0	4	8	12	16	
1	4	7	10			1	5	9	13		
2											
3						2					
4						3					
						4					

  Repeat this activity, but count in 4s then 5s. Discuss the pattern that appears and why this should be so.

- 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 400. On Tuesday the word problems will be 1 addition and 1 subtraction using types 6 and 13. On Thursday you will ask 2 multiplication word problems, using types 24 and 36. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution

GROUP 3

*This group works with the teacher **every day** for 30 minutes*

- Let learners pack out their flard cards. Ask them to make different 3 digit numbers. Remember to insist on the learners making the number, expanding the number (breaking it down) then building it up again. Make 3 digit numbers then ask learners to add and take away whole 100s and whole 10s. Each time ask which number changed e.g.
  - Make the number 261. Add 200. What is the new number? Which number changed? Why did the 200 change? Take away 20. Which number changed? Why did the 60 change? Repeat with other 3 digit numbers.
- Make sure each learner has access to paper, writing tools, 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 300. On Monday the word problem will be 1 addition and on Tuesday ask 1 subtraction word problem using types 6 and 13. On Wednesday you will ask 1 multiplication problem and on Thursday ask 1 sharing where the remainder is a fraction word problem, using types 23 and 35. Learners must discuss the problem, record how they found their solution and then tell the group how they reached a solution. It is important that learners are given an opportunity to verbalise their thinking while others listen critically to identify similarities and differences in their own thinking.

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

Notes: