Province of the
EASTERN CAPE
DEPARTMENT OF EDUCATION

GRADE 3
NUMERACY
PROVINCIAL LESSON PLANS
TERM 4
2009

Table of Contents

NOTE TO SCHOOL MANAGEMENT TEAMS AND TEACHERS IN THE FOUNDATION PHASE

The exemplar Numeracy Lesson Plans for **Grade 3 teachers** were developed by the Provincial Foundation Phase Curriculum Advisors and Foundation Phase teachers. This is intended to support teachers in the Planning, Teaching and Assessment process for Term 4.

We trust that these support materials will provide the necessary clarity and guidance for teachers to manage the NCS implementation process successfully and confidently.

It is the responsibility of the School Management Team to monitor and support teachers in the use of these resources. The teachers are responsible for using these resources to manage the Planning, Teaching and Assessment process successfully in the classroom. These are **exemplars** that are aligned to National Policies and prescripts and teachers are encouraged to use and adapt these lessons to suit the needs and context of the learners and their school.

If schools need more clarity and guidance on the use of these Resource Materials, the District and Provincial Offices can be contacted.

We trust that every school will now be better equipped to improve learner performance in the Foundation Phase.

Yours in Quality Education

Dr T Reddy
CES: Curriculum ECD/Foundation Phase
Head Office
Zwelitsha

ACKNOWLEDGEMENTS

Teachers

NAME	SCHOOL	GRADE/S TAUGHT	DISTRICT
Ms K Torr	President Primary	Grade 1	East London
Ms L Mac Callum	Selborne Primary	Grade 1	East London
Ms N Stoto	Wartburg Primary	Grade 1 & 2	Stutterheim
Ms C Wessels	St Mary's Primary	Grade 1	Grahamstown
Ms G Suttie	Graeme College Primary	Grade 2	Grahamstown
Ms L Knickelbein	Kuswag Primary	Grade 2	East London
Ms L Bell	Selborne Primary	Grade 3	East London
Ms S Putzier	Dale College Primary	Grade 3	King Williamstown
Ms C Jooste	Central Primary	Grade 3	King Williamstown

Introduction

The **Provincial Numeracy Learner Attainment Targets** documents were developed in 2008 by a Provincial Task Team for Grades R – 3. The attainment targets have been developed using the NCS Learning Outcomes and Assessment Standards from the Mathematics Learning Area. These targets indicate the expected level of achievement of learners at the end of each term. The attainment targets have a similar meaning to the 'milestones' in the Foundations for Learning Assessment Framework. The milestones have been infused into the Numeracy Learner Attainment Targets.

Teachers should use the weekly lesson plans in conjunction with the Provincial Numeracy Learner Attainment Targets. The Formal Assessment Tasks referred to as **FAT 1, 2 and 3** are clearly described in Section 3 of the Grade 3 Provincial Numeracy Learner Attainment Targets with the Methods, Forms and Tools for assessment.

The weekly lesson plans have been developed using:

- The Numeracy Learner Attainment Targets as a starting point.
- The NCS Learning Outcomes and Assessment Standards.
- Government Gazette 30880 of 14 March 2008, which outlines the Foundations for Learning Campaign, details the minimum expectations for the teaching of Literacy and Numeracy as well as providing timetabling and resourcing suggestions.
- Foundations for Learning: Foundation Phase Numeracy Lesson Plans.

The weekly lesson plans are intended to assist teachers to pace their teaching, give them guidance when planning their assessment tasks and provide suggestions to enrich teaching practice. If you follow these lessons systematically you will cover the curriculum and reach the milestones for Grade 3.

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

The weekly lesson plans provide:

- The Learning Outcomes and Assessment Standards targeted for every week.
- Weekly lesson plans with recommended number ranges for the fourth term.
- The NCS Learning Outcomes and Assessment Standards from the Mathematics Learning Area.
- A series of activities for the different components of Numeracy.
- Exemplars of the Formal Assessment Tasks for the fourth term. These Tasks are indicated as **FAT 1, 2 and 3**.
- Resources that will be useful to the teacher.
- Space for Reflection and recording of Barriers to Learning on a weekly basis.

The Provincial Weekly Lesson Plans in conjunction with the Provincial Learner Attainment Targets can therefore be used as clearly defined Lesson Plans although the format is different to the one most teachers are used to. It is recommended that the teacher breaks down the weekly plans into daily plans. However the plans are not prescriptive and allow you to use your own way of presenting the lessons.

ADAPTING THE WEEKLY LESSON PLANS

Learners progress at different rates and learn in different ways, and you, as the class teacher, are best able to pace teaching and learning to the needs of the learners. Teachers are free to introduce their own sequence and adapt the number ranges where necessary.

NOTE: FORMAL ASSESSMENT TASKS

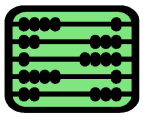
The three Formal Assessment Tasks should be completed by the end of the sixth week because the Progression Promotion Schedules need to be ready for District Offices as from week 7. The Annual National Assessment Tests must be included as the **Written Component of the third Formal Assessment Task for Term 4.**

WEEK 1

WEEK 1	Date Completed
LEARNING OUTCOMES and ASSESSMENT STANDARDS	
LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS	
AS 1: Counts forwards and backwards in : 1.1. multiples of 1,2,5 and 10 in the number range 0-1000. 1.2 twenties, twenty-fives, fifties and hundreds between 0 and at least 1000.	1.1 1.2
AS 3: Knows, reads and writes number symbols and names from 1 to at least 1000.	
AS 4: Orders, describes and compares the following: 4.1 whole numbers to at least 3 digit numbers:	
AS 5: Recognizes the place value of digits in whole numbers to at least 3-digit numbers.	
AS 7: Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary and non-unitary fractions (e.g. ¼, ¾).	
AS 8: Can perform calculations, using appropriate symbols, to solve problems involving: 8.1 addition and subtraction of whole numbers with at least 3 digits 8.2 multiplication of at least whole 2-digit by 1-digit numbers	8.1 8.2
AS 9:Performs mental calculations involving: 9.1 addition and subtraction for numbers to at least 50 9.2 multiplication of whole numbers with solutions to at least 50.	9.1 9.2
AS 10: Uses the following techniques: 10.1 building up and breaking down numbers 10.4 rounding off in tens	10.1 10.4
LO 2: PATTERNS, FUNCTIONS & ALGEBRA	
AS 2: Copies and extends simple number sequences to at least 1000	
AS 3: Creates own patterns	
AS 4: Describes observed patterns	
LO 3: SPACE AND SHAPE	
AS 1: Recognises, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: • Boxes (prisms), balls (spheres) and cylinders • Triangles, squares and rectangles • Circles • Cones and pyramids	
LO 4: MEASUREMENT	
AS1: Reads and writes analogue and digital clock time in terms of hours, half-hours, quarters of an hour and minutes	
LO 5: DATA HANDLING	
AS 3: Draws pictures and constructs pictographs and bar graphs that have a 1-1 correspondence between own data and representation.	

WEEK 1

LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS



AS 1: Counts forwards and backwards

- AS 1.1 Counts forwards and backwards in 1,2,5 &10 from any number between 1 – 1000

  e.g. *680, 690, 700, __, __, __, __, __(forwards in 10's)*
  800, 795, 790, __, __, __, __. __ (backwards in 5's)
  722, 724, 726, __, __, __, __, __ (forwards in 2's)
  709, 708, 707, __, __, __, __, __ (backwards in 1's)

- AS 1.2 Counts forwards and backwards in 20's, 25's, 50's & 100's from any given number between 0 – 1000

  e.g. *780, 760, 740, __, __, __, __, __ (backwards in 20's)*
  725, 700, 675, __, __, __, __, __ (backwards in 25's)
  450, 500, 550, __, __, __, __, __ (forwards in 50's)
  700, 600, 500, __, __, __, __, __ (backwards in 100's)

AS 3: Knows, reads and writes number symbols from 1 to at least 1000 and writes number names from 1 to at least 1000

e.g. *Each learner has a counting chart, the teacher asks them to point to certain numbers or fill in or colour- in certain numbers.*

601	602	603		605	606		608	609	610
611		613	614		616	617		619	620
621	622		624	625	626		628		630
631		633	634			637	638	639	640
	642	643		645	646	647	648	649	
651	652		654	655		657	658		660
661	662		664	665	666		668	669	
671	672		674		676	677		679	680
681		683	684	685		687	688	689	
691	692		694	695	696		698		700

e.g. *Teacher asks the learners to write down given numbers as well as their corresponding number name.*

Number Symbol	Number name
578	
	Seven hundred and twenty-six
497	
	Six hundred and sixty-five
649	

AS 4: Orders, describes and compares the following numbers:

- 4.1 Whole numbers to at least 3-digit numbers - learners describe the position of numbers 0-999 using before, after and between.

  e.g. *What comes after 699?*
  What comes before 599?
  What comes between 598 and 600?

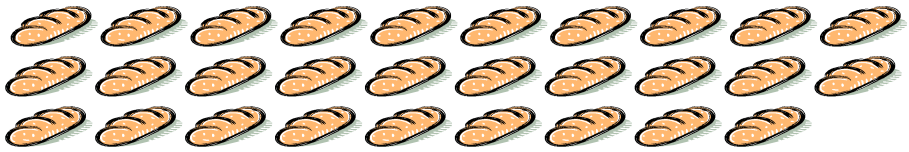
Before		After		Between		
764	765	456	**457**	**677**	678	**679**
	854	279			953	
	423	368			842	
	678	592			647	

AS 5: Learners identify the place value of a given digit in a number in the number range 0 -999. Learners may use flard cards.

e.g. *6*89 *600 or 6 hundreds*
*8*5*7 ☐ or ☐*
*97*2 *☐ or ☐*

AS 7: Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary and non-unitary fractions (eg. ¼, 3/4)

e.g. *Share 29 loaves of bread equally among 3 families.*



AS 8: Can perform calculations, using appropriate symbols, to solve problems involving:

- 8.1 Addition and subtraction of whole numbers with at least 3digits

e.g. *Method 1 for addition*
567 + 322
500 + 300 = 800
60 + 20 = 80
7 + 2 = 9
800 + 80 + 9 = 889

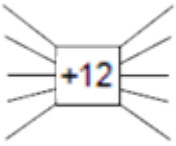
Method for subtraction
776 - 435
776 – 400 = 376
376 – 30 = 346
346 – 5 = 341

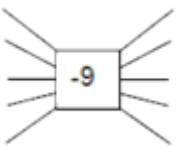
Method 2 for addition
454 + 535
454 = 400 + 50 + 4
+ 535 = 500 + 30 + 5
989 = 900 + 80 + 9

- 8.2 multiplication of at least whole 2-digit by 1-digit numbers
- 8.4 Estimation – must be used by the learners continuously throughout all the LO's.

AS 9: Performs mental calculations involving

- 9.1 Addition and subtraction for numbers to at least 50



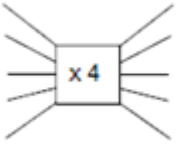


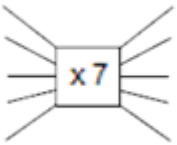
- Ask learners some simple word problems which they can work out in their heads.

  e.g. *Mom has 25 eggs in the cupboard and 13 eggs in the fridge. How many eggs does she have altogether?*

  Sally has 34 birds. If 20 birds fly away then how many birds are left?

- 9.2 Multiplication of whole numbers with solutions to at least 50





- Ask learners some simple word problems which they can work out in their heads.

  e.g. *Mary has 5 dogs. If each dog has 4 puppies then how many animals will there be altogether?*

AS 10: Uses the following techniques:

- 10.1 building up and breaking down numbers

Learners break down numbers in the number range 0 -999 into different combinations. Learners may use a number grid or a number line.

e.g. *653 = 600 + 50 + 3* *or* *300 + 300 + 20 + 30 + 3*
548 = …… *or* *……* *(Breaking down)*
769 = …… *or* *……*

400 + 50 + 9 = 459 *or* *200 + 200 + 30 + 20 + 9 = 459*
700 60 + 8 = ….. *or* *200 + 300 + 30 + 30 + 8 = ……* *(Building up)*
700 + 40 + 6 = ….. *or* *300 + 400 + 20 + 20 + 6 = ..,….*

- 10.3 Number lines – integrate with all number work.

- 10.4 Learners round off any number to the nearest 10 in the number range 0 -999

AS 11: Explains own solutions to problems

AS 12: Checks the solution given to problems by peers

LO 2: PATTERNS, FUNCTIONS & ALGEBRA

AS 2: Copies and extends simple number sequences to at least 1000.

AS 3: Creates own patterns

AS 4: Describes observed patterns

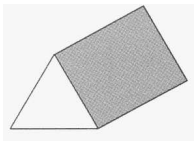
E.g. *Continue the pattern as far as you can go.*

100 + 100 = 200
200 + 200 = 400
300 + 300 = 600
Can you write a different addition pattern for your friends to do?

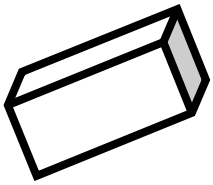
LO 3: SPACE AND SHAPE

AS 1: Recognises, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: boxes, (prisms), balls (spheres) and cylinders, triangles, squares and rectangles, circles, cones and pyramids.

E.g.



3D Shapes

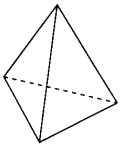


Fill in the missing words:

Cylinders have two ends that are _____ and _____ curved surface.

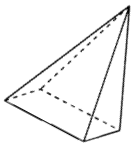
Prisms have _____ that are the same shape. Their sides are _____.

The sides of a pyramid are _____. They meet to make a _____.



Use these words:

point, one, ends, rectangles, circles, triangles



Choose 3D shapes and fill in the table:

Shape	number of faces	number of edges	number of vertices (points)
Prism			
Cylinder			
Pyramid			
Sphere			

AS 5: Recognises and describes 3-D objects from different positions

Small group practical:

Ask the children to make a "camera" from paper, and then ask them to look at the 3-D objects from different positions, and explain what they see.

LO 4: MEASUREMENT

Digital Time Worksheet: Ask the learners to write down the time in words.

15: 00	**21: 27**	**14: 15**	**19: 30**

LO 5: DATA HANDLING

AS 1: Collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher and class (eg. "How many learners walk to school?")

AS 2: Sorts orders and organizes own and supplied data by one or more attribute for a particular reason

AS 3: Draws pictures and constructs pictographs that have 1-1 correspondence between own data and representations

E.g. In groups children sort a packet of jelly beans into colours. They colour the jelly beans, from the worksheet, the correct colours and make a group jelly bean pictograph.

Jelly Bean Graph

Answer the following questions about your graph:

Which colour has the most jellybeans? _____

Which colour has the least jellybeans? _____

How many yellow jelly beans were there? _____

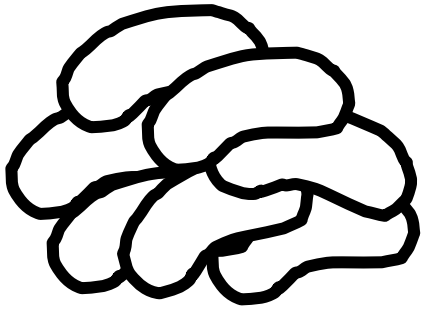
How many more blue jelly beans were there than red? _____

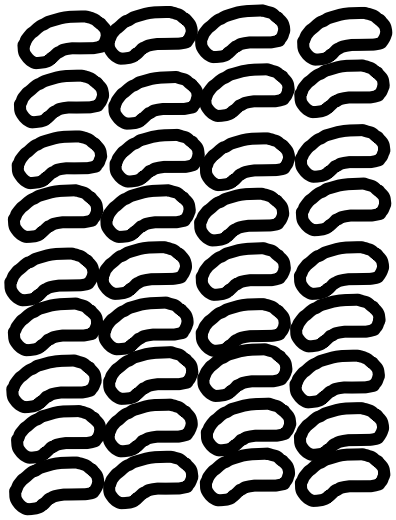
How many jellybeans were there in the pack altogether? _____

Which colour had the second most jellybeans? _____

Which is your favourite jellybean colour? _____

How many of your favourite jellybeans were there? _____

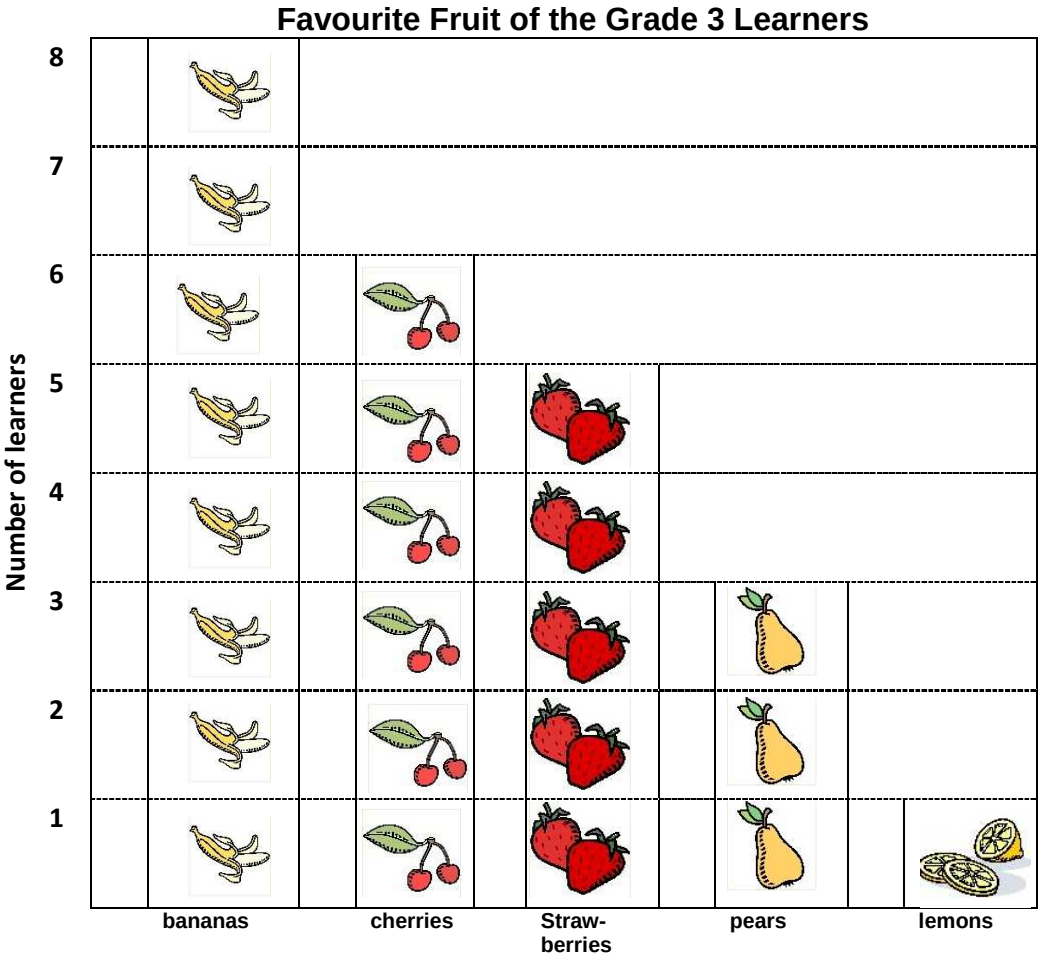




AS 4: Reads, interprets and reports on information in own and peer's representations of data.

AS 5: Reads and interprets data presented in simple tables and lists.

e.g. Give the learners a graph like the following and ask them questions about the graph:



Word sums:

1. Dad bought 647 sweets, and mom bought 148 sweets. How many sweets did they buy altogether?
2. A farmer had 796 sheep. He sold 468 sheep, how many does he have left?
3. Freddy had 592 silkworms. Shane gives him another 563. How many silkworms does Freddy have now?
4. Dad has R458 in his wallet. How much more money does he need, if he wants to buy a radio for R993?

RESOURCES: Counters, abacus, number grid(1000 block), flard cards, flash cards with number symbols and number names, model clocks,2-D shapes, 3-D objects, graphs.

BARRIERS:

REFLECTIONS:

WEEK 2

WEEK 2	Date Completed
LEARNING OUTCOMES and ASSESSMENT STANDARDS	
LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS	
AS 1: Counts forwards and backwards in : 1.1 multiples of 1,2,5 and 10 in the number range 0-1000. 1.2 twenties, twenty-fives, fifties and hundreds between 0 and at least 1000. **FAT 1**	1.1 1.2
AS 3: Knows, reads and writes number symbols and names from 1 to at least 1000. **FAT 1**	
AS 4: Orders, describes and compares the following: 4.1 whole numbers to at least 3 digit numbers: **FAT 1** 4.2 common fractions including halves, quarters and thirds (1/2, ¼, 1/3)	4.1 4.2
AS 5: Recognizes the place value of digits in whole numbers to at least 3-digit numbers. **FAT 1**	
AS 6: Solves money problems involving totals and change in rands and cents, including converting between rands and cents.	
AS 7: Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary and non-unitary fractions (e.g. ¼, ¾). **FAT 1**	
AS 8: Can perform calculations, using appropriate symbols, to solve problems involving: 8.1 addition and subtraction of whole numbers with at least 3 digits 8.2 multiplication of at least whole 2-digit by 1-digit numbers **FAT 1**	8.1 8.2
AS 9:Performs mental calculations involving: 9.1 addition and subtraction for numbers to at least 50 9.2 multiplication of whole numbers with solutions to at least 50. **FAT 1**	9.1 9.2
AS 10: Uses the following techniques: 10.1 building up and breaking down numbers 10.2 doubling and halving 10.4 rounding off in tens **FAT 1(10.1 & 10.4)**	10.1 10.2 10.4
LO 2: PATTERNS, FUNCTIONS & ALGEBRA	
AS 2: Copies and extends simple number sequences to at least 1000 **FAT 1**	
AS 4: Describes observed patterns	
LO 3: SPACE AND SHAPE	
AS 1: Recognises, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: • Boxes (prisms), balls (spheres) and cylinders • Triangles, squares and rectangles • Circles • Cones and pyramids	
LO 4: MEASUREMENT	
AS 5: Estimates, measures, compares and orders three-dimensional objects using non-standard and standard measures: • Length (e.g. desk lengths, metres)	

WEEK 2

LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS

AS 1: Counts forwards and backwards

- AS 1.1 Counts forwards and backwards in 1,2,5 &10 from any number between 1 – 1000

e.g. *708, 718, 728, __, __, __, __, __(forwards in 10's)*
704, 699, 694, __, __, __, __. __ (backwards in 5's)
757, 759, 761, __, __, __, __, __ (forwards in 2's)
609, 608, 607, __, __, __, __, __ (backwards in 1's)

- AS 1.2 Counts forwards and backwards in 20's, 25's, 50's & 100's from any given number between 0 – 1000

e.g. *680, 660,640, __, __, __, __, __ (backwards in 20's)*
525, 550, 575, __, __, __, __, __ (forwards in 25's)
250, 300, 350, __, __, __, __, __ (forwards in 50's)
800, 700, 600, __, __, __, __, __ (backwards in 100's)

FAT 1: Practical in small groups
Learners count forwards and backwards in multiples and intervals of 1,2,5, and 10 on number grid in the number range 0 – 1000.

FAT 1: Written
Learners count on a number line on a worksheet in the number range 0 - 1000.

FAT 1: Practical in small groups
Learners count forwards and backwards 20's, 25's, 50's and 100's in the number range 0 - 1000.

FAT 1: Written
Learners count forwards and backwards in 20's, 25's, 50's and 100's in the number range 0– 1000 on a worksheet.

AS 3: Knows, reads and writes number symbols from 1 to at least 1000 and writes number names from 1 to at least 1000

e.g. Teacher asks the learners to write down given numbers as well as their corresponding number name.

Number	Number name
764	
	Four hundred and sixty-three
539	
	Three hundred and eighty-five
652	

FAT 1 : Practical in small groups/Written
Learners write number names and symbols in the number range 1 -1000.

AS 4: Orders, describes and compares the following numbers:

- 4.1 Whole numbers to at least 3-digit numbers - learners describe the position of numbers 0-999 using before, after and between.

FAT 1: Practical in small groups.
Arrange numbers from **big to small or small to big** with number cards,
e.g. 687, 589, 356, 678.
Discuss before, after, 3 less than, 5 more than,
FAT 1: Written
Learners order numbers from biggest to smallest or smallest to biggest and answer questions about the numbers on a worksheet.

AS 5: Learners identify the place value of a given digit in a number in the number range 0 -999. Learners may use flard cards.

FAT 1 : Practical in small groups
Learners identify the place value of a given digit in a number in the number range 0 - 1000
e.g. **6**59 600 or 6 hundreds
5**6**6 60 or 6 tens

AS 7: Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary and non-unitary fractions (eg. ¼, 3/4)

FAT 1: Practical in small groups/Written
The teacher asks word problems in the number range 0 - 700. Learners use concrete apparatus, drawings or calculations to solve their problems,
e.g. Bheki collects marbles. He has 84 red marbles. He shares these red marbles between 4 of his Friends. How many marbles do each of his Friends get?
e.g. Tobeko must read 664 pages in 3 days. How many pages must he read in one day?
e.g. There are 125 slices of cheese in a packet. How many slices of cheese are there in 5 packets?

HINT: The learners write their drawings or calculations in their class workbooks, on slates or white boards.

FAT 1: Written
Learners solve word problems on a worksheet.

AS 8: Can perform calculations, using appropriate symbols, to solve problems involving:

- 8.1 Addition and subtraction of whole numbers with at least 3digits

FAT1: Practical in small groups/Written
The teacher asks word problems with addition and subtraction sums in the number range 0 - 700. The learners solve the problems using counters, drawings or calculations.
e.g. There are 227 red crayons and 397 blue crayons. How many crayons are there together?
e.g. There are 672 passengers on the aeroplane. There are 438 females on the plane, how many males are there?

HINT: The learners write their drawings or calculations in their class workbooks, on slates or white boards.

FAT 1: Written
Learners do calculations with addition and subtraction on a worksheet.

- 8.2 multiplication of at least whole 2-digit by 1-digit numbers

FAT 1: Practical in small groups/Written

The teacher asks word problems in the number range 0 - 1000. The learners solve the problems using counters, drawing or calculations,

e.g. A large aeroplane has 6 seats in a row. How many seats would there be if there are 54 rows?

HINT: The learners write their drawings or calculations in their class workbooks, on slates or white boards.

FAT 1: Written
Learners solve word problems on a worksheet.

- 8.4 Estimation – must be used by the learners continuously throughout all the LO's.
- Do an **estimation activity.**
  - Give each pair of learners a pile of counters (they can work on their own or in pairs).
  - Start with piles of over 50 counters. Ask them to estimate the number of counters first.
  - Discuss these estimates with the group – if one guess is obviously much too big or too little, see if learners can explain why they think the estimates are far out.
  - Choose one pile of counters for the whole group to estimate.
  - Ask questions such as: *"Is this pile of beans closer to 7 or to 70",*
  - *"If it's closer to 70, is it less than 40 or more than 40"*.
  - If learners still don't have a sense of a 'good guess', put the pile aside and count out say 40 counters from your stock.
  - Compare the pile for estimation with the pile of 40. Is it more or less?
  - Now compare it to a pile of 70. Is it more or less?
  - Narrow it down until learners can make a reasonable estimate of how many counters there are.

- Check the estimates together as a group, counting out the pile of counters to see how accurate the estimates are.
- Counting could be done in twos (2; 4; 6; ….) or fives (5; 10; 15; ...)
- Give learners paper, writing tools, counters

AS 9: Performs mental calculations involving

- 9.1 Addition and subtraction for numbers to at least 50
- 9.2 Multiplication of whole numbers with solutions to at least 50

FAT 1 : Practical in small groups.
The teacher asks addition, subtraction and multiplication sums in the number range 0 – 50.

AS 10: Uses the following techniques:

- 10.1 building up and breaking down numbers

Learners break down numbers in the number range 0 -999 into different combinations. Learners may use a number grid or a number line.

FAT 1 : Practical in small groups/Written
The teacher gives each learner a number between
1 – 1000. The learners break down and build up the given number in 5 different ways.

HINT: The learners write their sums in their class workbooks, on slates or white boards.

- 10.3 Number lines – integrate with all number work.
- 10.4 Learners round off any number to the nearest 10 in the number range 0 -999

FAT 1: Practical in small groups
The teacher gives learners number cards with numbers in the number range 0 - 999. Learners round of the given number to the nearest 10. Learners may use a number line of a number grid.
FAT 1: Written
Learners round numbers of to the nearest 10 in the number range 0 - 999 on a worksheet.

AS 11: Explains own solutions to problems

AS 12: Checks the solution given to problems by peers

LO 2: PATTERNS, FUNCTIONS & ALGEBRA

AS 2: Copies and extends simple number sequences to at least 1000

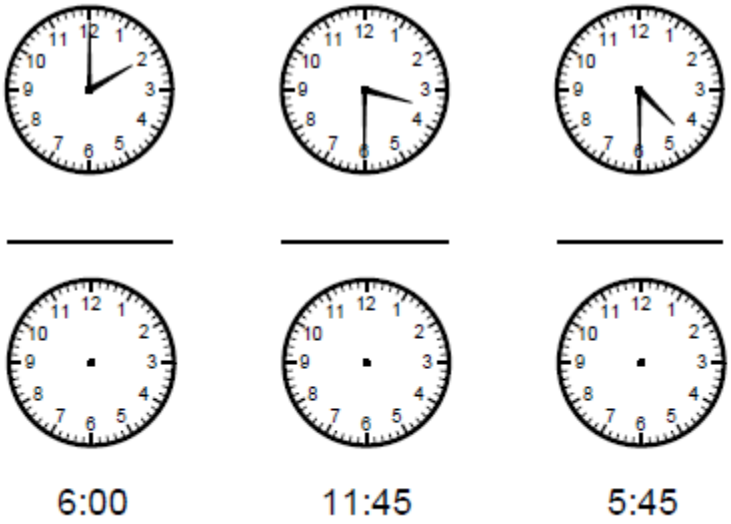
AS 4: Describes observed patterns
Ask learners the following questions. Allow them to use their number cards to help them answer the questions:
- Is the number 548 in the 5s pattern?
- Is 760 in the 5s pattern and the 10s pattern?
- Which of these numbers are in the 5s pattern, but not in the 10s pattern?
- What is the first number bigger than 100 that is in the 2s pattern and the 10s pattern?
- Is 873 in the 2s pattern?
- Which of these numbers are even: 123; 786; 259; 912
- Which of these numbers are odd: 433; 966; 199; 520

FAT 1 : Written
Learners copy and complete a number pattern in the number range 0 –1000 on a worksheet.

LO 4: MEASUREMENT

AS 1: Learners read and write hours, half hours, quarter past, quarter to and minutes on an analogue and digital clock. Learners may use model clocks.

The teacher is advised to have a wall clock in the classroom so that the learners are able to read the time every day. Learners must write the time in digital time, or fill the hands in on the clocks.

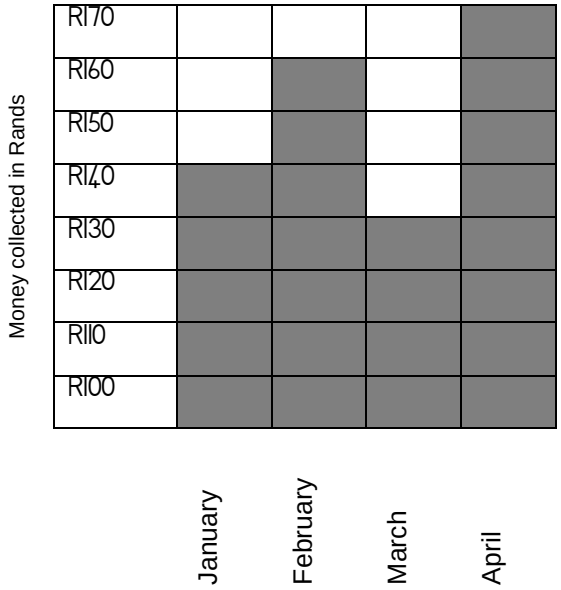


LO 5: DATA HANDLING

AS 3: Learners draw a bar graph to show correspondence between supplied data and representation. Learners use colouring in.

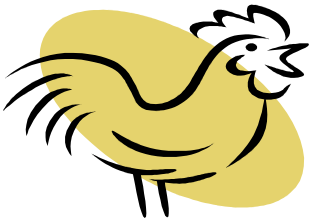
- Learners answer questions about the graph.

e.g. Money collected from a recycling project from January to April.



Word sums:

1. Brad bought 145 balloons and Wesley bought 263. How many balloons did they buy altogether?
2. There are 260 seedlings planted in 20 rows. How many are there in each row?
3. Mom washed 128 pairs of socks. How many pairs did she wash?
4. Farmer Brown has 29 hens. If they each lay 4 eggs then how many eggs does Farmer Brown have?



Resources: Counters, abacus, number grid(1000 block), flard cards, flash cards with number symbols and number names, model clocks,2-D shapes, 3-D objects

Reflections:

Barriers:

Week 3

WEEK 3	Date Completed
LEARNING OUTCOMES and ASSESSMENT STANDARDS	
LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS	
AS 1: Counts forwards and backwards in : the intervals specified in Grade with increased number ranges; Counts forwards and backwards in multiples of 1, 2, 5 and 10 in the number ranges 0 – 1000.	
AS 4: Orders, describes and compares the following numbers: 4.2 common fractions including halves, quarters and thirds. (1/2, ¼, 1/3)	
AS 6: Solves money problems involving totals and change in rands and cents, including converting between rands and cents. 0 – 1000	
AS 8: Can perform calculations, using appropriate symbols, to solve problems involving: 8.1 addition and subtraction of whole numbers with at least 3 digits. 8.2 multiplication of at least whole 2-digit by 1-digit numbers; 8.3 Learners perform multiplication of a two digit by a one digit in the number range 0 – 900. Learners may use a number grid. 8.4 estimation.	8.1 8.2 8.3 8.4
AS 9: Performs mental calculations involving: 9.1 addition and subtraction for numbers to at least 50 9.2 multiplication of whole numbers with solutions to at least 50.	9.1 9.2
AS 10 Uses the following techniques: 10.1 building up and breaking down numbers;	
LO 2: PATTERNS, FUNCTIONS & ALGEBRA	
AS 2: Copies and extends simple number sequences to at least 100	
LO 3: SPACE AND SHAPE	
AS 6 Reads, interprets and draws informal maps of the school environment or of an arrangement of three -dimensional objects and Locates objects on the map.	
LO 4: MEASUREMENT	
AS 1: Reads and writes analogue and digital clock time in terms of hours, half hours, quarters of an hour and minutes.	
AS 2: Compares events in terms of the length of time they take (longer, shorter, faster, slower).	
AS 5: Estimates, measures, compares and orders three-dimensional objects using non-standard and standard measures: • Mass (e.g. packets. kilograms) • Capacity (e.g. bottles, litres) • Length (e.g. desk lengths, metres)	
LO 5: DATA HANDLING	
AS 1: Collects everyday objects (alone and/or as a member of a group or team) in the classroom and school environment according to given criteria or categories.	
AS 4: Draws a picture as a record of collected objects.	

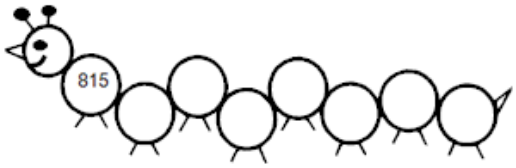
WEEK 3

LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS

AS 1: Counts forwards and backwards in:

- 1.1 Counts forwards and backwards in 1,2,5 &10 from any number between 1 – 1000

Count in tens:
880, 890, 900, …….
710, 720, ..., 740, ..., 760, ..., ... 790.
713, 723, 733, ..., ..., 763.
Count back in 2's:



- 1.2 Counts forwards and backwards in 20's, 25's, 50's & 100's from any given number between 0 – 1000

e.g. 880, 860, 840, …….
850, 825, 800, ……..
900, 850, 800, ……..
900, 800, 700 ……

Number block activity:
- Ask learners to colour over the numbers which they have counted. (Use a different colour for each one).
- Ask learners to count on in twenties from any given number.
- Ask learners to count backwards in twenties, twenty fives, hundreds etc.

801	802	803	804	805	806	807	808	809	810
811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830
831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850
851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870
871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	898	889	900

AS 4: Orders, describes and compares the following numbers:

- 4.2 common fractions including halves, quarters and thirds. (1/2, ¼, 1/3)

Small group practical:

Learners order ½, ¼, 1/3 in an ascending and descen ding order (smallest to biggest and biggest to smallest).
Learners may use physical objects, paper folding or colouring in.

e.g. ½ is bigger/smaller than a ¼
1/3 is bigger/smaller than a ½
Learners compare and describe ½, ¼, 1/3 with a whole or with each other.

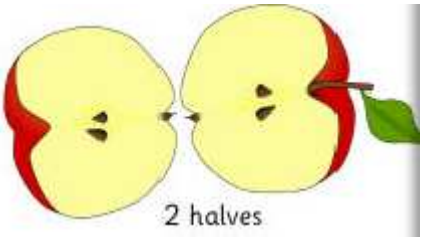
e.g. Which is the biggest ½ or 1/3?
Which is the smallest ¼ or 1/3?
Which is the biggest 1 or ½?

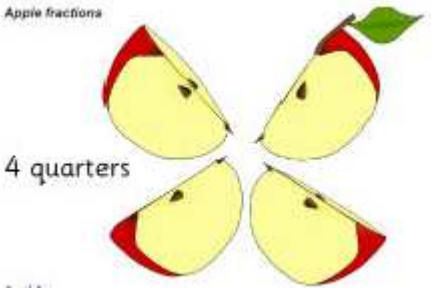
Ask learners questions about objects that they can relate to:

Compare the pieces of an apple. (If possible use real apples)

Which piece of apple is the biggest ¼ or ½?
Which piece of apple is the smallest ¼ or ½?

1 Whole





AS 6: Solves money problems involving totals and change in rands and cents, including converting between rands and cents. In the number range 0 – 1000

- Learners solve money problems in the number range 0 – 1000 using R200, R100, R50, R20, R10, R5, R2, R1, 50c, 20c, 10c, 5c and convert between rands and cents. Learners may use real or play money.

e.g. Learners pack out a given amount such as: R988; R9,86.
Learners calculate using addition and subtraction such as: R899 – R299 = ____
R445 – R150+ 447= ____
Learners solve word problems involving money, such as:
I save R123 a month. How much money can I save in 6 months?
Learners convert rands to cents and vice versa:
799c= R
R895,95 = c
I have R10.22. How many cents do I have?

Written task:

Convert the amounts in cents to rands, and then break them up into which coins would make up these amounts.

235	R2.35	Coins→	R2.00	20c	10c	5c			
319									
420									
475									
560									
582									
605									
694									
747									

AS 8: Can perform calculations, using appropriate symbols, to solve problems involving:

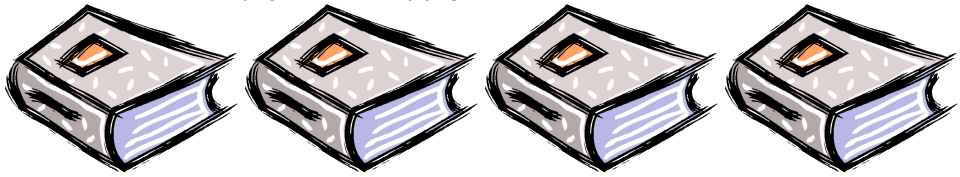
- 8. 1 addition and subtraction of whole numbers with at least 3 digits.

E.g. 754 + 156=
880 – 434=
We have 885 children in the school. If 259 are boys how many girls are there?
Our team scored 258 points on sports day. The other team scored 469 points. By how many points did they win?

- 8.2 multiplication of at least whole 2-digit by 1-digit numbers;

e.g. 7 x 36 = ☐
6 x 26 = ☐
89 x 8 = ☐

A book has 39 pages. How many pages will 9 books have?



39 + 39 + 39 + 39 + 39 +39 +39 + 39 + 39
39 x 9 = ___

- 8.4 Estimation – must be used by the learners continuously throughout all the LO's.

AS 9: Performs mental calculations involving

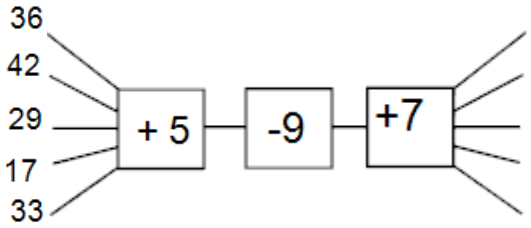
- 9.1 Addition and subtraction for numbers to at least 50

Small group practical:

Teachers use flash cards with the number symbols to represent the number combinations.

e.g. 25 + 25 =
30 – 13 =
27 + 9 =
38 + 6 =
50 – 10 -18 + 6 =

Written task:



There are 44 Gr.3 learners in a class. How many learners will there be if 16 learners are absent?

Mom went to the shop and bought 36 buns. When she got home her children ate 17 buns. She went back to the shop and bought another 19 buns. How many buns does she have now?

- 9.2 Multiplication of whole numbers with solutions to at least 50

e.g. 10 x 5 =
21 x 2 =
13 x 3 =
7 x 4 =
7 x 8 = (double 7 times four)

- *We are going to the zoo on a field trip. There are 3 buses. Each bus has 14 learners in it. How many learners went to the zoo?*
- *There are 14 books on a shelf. There are 4 shelves and they all have the same number of books on them. How many books are there altogether?*

AS 10: Uses the following techniques:

- 10.1 building up and breaking down numbers

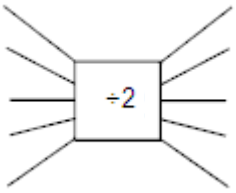
e.g. (778 = 700 + 70 + 8 or
778 = 500 +200 + 30 + 40 + 8)
754 = ☐ + ☐ + ☐ + ☐ + ☐
754 = ☐ + ☐ +☐ + ☐

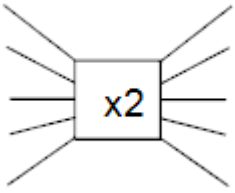
Fill in the missing numbers:
642 = _____ +_____+_____
769= _____ + 60 + _____

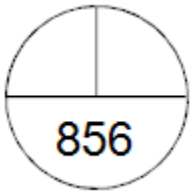
e.g. (700 + 30 + 2 = 732 or
500 + 200 + 30 + 1 + 1 = 732)
☐ + ☐ + ☐ + ☐ = 799
☐ + ☐ + ☐ + ☐ + ☐ = 799

- 10.2 doubling and halving

e.g. *double 421, double 432 (remind the learners that x2 is the same as double)*
halve 687, halve 879







halve 856

- *I have 349 points in my game. If I win I double my points. How many points will I have then?*
- *I have 789 marbles. I share them equally with my brother. How many will each of us get?*

LO 2: PATTERNS, FUNCTIONS & ALGEBRA

AS 2: Copies and extends simple number sequences to at least 100

e.g. 812, 714, 716, ___, ___
811, 821, 831, ___, ___
900, 880, 860, ___, ___
1, 2, 4, 8, 16, ___, ___, ___

LO 3: SPACE AND SHAPE

AS 6: Reads, interprets and draws informal maps of the school environment or of an arrangement of three - dimensional objects and locates objects on the map.

Small group activity:

Send learners out in groups.

- Each group must draw a map of the school and must fill in the names of each teacher.
- Then give them a map of the school and let them answer questions like:
- How many classrooms are there?
- How many teachers are there?
- Colour our classroom with red.
- Colour the office with blue.
- Draw any special features that your school may have e.g. fountain, statue, flagpole etc.

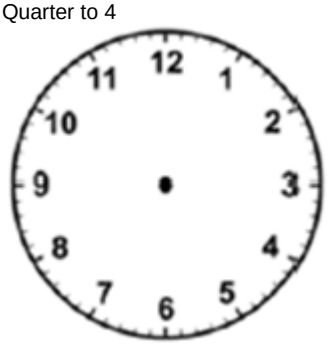
LO 4: MEASUREMENT

AS 1: Reads and writes analogue and digital clock time in terms of hours, half hours, quarters of an hour and minutes.

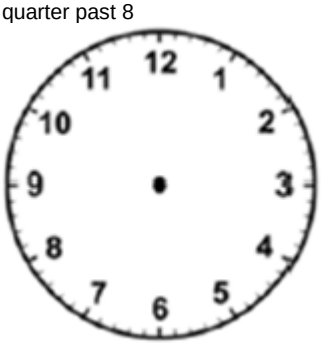
e.g. 14:45 - quarter to 3
09:15 – quarter past 9
17:30 – half past 5

Draw the hands on this clock:

Quarter to 4



quarter past 8



What is the time shown on these clocks?

_____ _____ _____

AS 2: Solves problems involving calculations with and conversions between

- **2.1 Minutes ↔ hours**

  e.g. 3 hours and 15 minutes =
  500 minutes = ___ hours + ___ minutes
  How many minutes are there in 7 hours and 40 minutes?
  How many hours are there in 660 minutes?

- **2.2 Hours ↔days**

  e.g. 5 days and 10 hours = ___ hours
  How many hours are there in 4 days and 12 hours?
  How many days are there in 200 hours?

AS 5: Estimates, measures, compares and orders three-dimensional objects using non-standard and standard measures:

- Mass (e.g. packets. kilograms)
- Capacity (e.g. bottles, litres)
- Length (e.g. desk lengths, metres)

Word sums:

1. There are 236 learners in each team. There are 4 teams. How many learners are there altogether?
2. 156 people boarded the train at the first station. 459 boarded the train at the second station. 204 got off at the third station. How many people were on the train when it got to the fourth station?
3. I have R564. Sipo has R798. How much more money must I save to have the same as Sipo?
4. I have 778 marbles. Bob has 340 more than I do. How many marbles must Bob win to have the same as I have?
5. I have 3 packets of sweets. Each packet has 248 sweets in it. How many sweets are there altogether?

Resources: Counters, abacus, number grid(1000 block), flard cards, flash cards with number symbols and number names, model clocks, 2-D shapes, 3-D objects.

Reflections:

Barriers:

Week 4

WEEK 4	Date Completed
LEARNING OUTCOMES and ASSESSMENT STANDARDS	
LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS	
AS 1: Counts forwards and backwards in : 1.1 the intervals specified in Grade 2 with increased number ranges; Counts forwards and backwards in multiples of 1, 2, 5 and 10 in the number ranges 0 – 1000. **FAT 2**	1.1
AS 1: Counts forwards and backwards in: 1.2 twenties, twenty fives, fifties and hundreds between 0 and at least 1000. **FAT 2**	1.2
AS 4: Orders, describes and compares the following numbers: 4.2 common fractions including halves, quarters and thirds. (1/2, ¼, 1/3) **FAT 2**	
AS 6: Solves money problems involving totals and change in rands and cents, including converting between rands and cents. 0 – 1000 **FAT 2**	
AS 8: Can perform calculations, using appropriate symbols, to solve problems involving: 8.1 addition and subtraction of whole numbers with at least 3 digits. **FAT 2**	8.1
8.2 multiplication of at least whole 2-digit by 1-digit numbers; Learners perform multiplication of a two digit by a one digit in the number range 0 – 900. Learners may use a number grid. **FAT 2**	8.2
8.4 estimation.	8.4
AS 9: Performs mental calculations involving: 9.1 addition and subtraction for numbers to at least 50 **FAT 2**	9.1
9.2 multiplication of whole numbers with solutions to at least 50. **FAT 2**	9.2
AS 10 Uses the following techniques: 10.1 building up and breaking down numbers; **FAT 2**	10.1
10.2 doubling and halving **FAT 2**	10.2
LO 2: PATTERNS, FUNCTIONS & ALGEBRA	
AS 2: Copies and extends simple number sequences to at least 100 **FAT 2**	
LO 3: SPACE AND SHAPE	
AS 6 Reads, interprets and draws informal maps of the school environment or of an arrangement of three -dimensional objects and Locates objects on the map. **FAT 2**	
LO 4: MEASUREMENT	
AS 1: Reads and writes analogue and digital clock time in terms of hours, half hours, quarters of an hour and minutes. **FAT 2**	
AS 2: Compares events in terms of the length of time they take (longer, shorter, faster, slower). **FAT 2**	
AS 5: Estimates, measures, compares and orders three-dimensional objects using non-standard and standard measures: • Mass (e.g. packets. kilograms) • Capacity (e.g. bottles, litres) • Length (e.g. desk lengths, metres) **FAT 2**	

WEEK 4

LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS

AS 1: Counts forwards and backwards

- AS 1.1 Counts forwards and backwards in 1,2,5 &10 from any number between 1 – 1000

- AS 1.2 Counts forwards and backwards in 20's, 25's, 50's & 100's from any given number between 0 – 1000

FAT 2: Practical in small groups
Learners count forwards and backwards in multiples and intervals of 1,2,5, and 10 on number grid in the number range 0 – 1000.

FAT 2: Written
Learners count on a number line on a worksheet in the number range 0 - 1000.

FAT 2: Practical in small groups
Learners count forwards and backwards 20's, 25's, 50's and 100's in the number range 0 - 1000.

FAT 2: Written
Learners count forwards and backwards in 20's, 25's, 50's and 100's in the number range 0– 1000 on a worksheet.

AS 4: Orders, describes and compares the following numbers:

- 4.2 common fractions including halves, quarters and thirds. (1/2, ¼, 1/3)

  E.g. Learners order ½, ¼, 1/3 in an ascending and d escending order (smallest to biggest and biggest to smallest).

  Learners may use physical objects, paper folding or colouring in.

  Learners compare and describe ½, ¼, 1/3 with a whole or with each other.

  Which is the biggest? ½ or 1/3

  Which is the smallest ¼ or 1/3?

  Which is the biggest 1 or ½?

FAT 2: Practical in small groups
The learners fold and colour fractional parts. They order the fractions from the smallest to the biggest and answer questions about the fractions.

AS 6: Solves money problems involving totals and change in rands and cents, including converting between rands and cents.

E.g. Learners solve money problems in the number range R200, R100, R50, R20, R10, R5, R2, R1, 50c, 20c,10c, 5c

Convert between rands and cents.

Learners solve word problems involving money, such as:

I save R123 a month. How much money can I save in 6 months?

FAT 2: Practical and in small groups/Written

Using real or play money. The learners pack out the exact amount to pay for an item costing a given amount, e.g.
R789, R500, R89

Using real or play money. Learners pack out a given amount. They calculate using addition and subtraction.

e.g. R543 + R354 – R302= ___

R873 – R371 = ____

The teacher asks word problems in the number range 0-1 000. Learner may use play money, drawings or calculations to solve the problems.

e.g. During the holidays Jill works at the supermarket. On Tuesday she earns R290, on Wednesday she earns R90,50, on Thursday she earns R110,50 and on Friday she earns R230,50. What is the total amount of money that she earned?

Learners convert rands to cents,

e.g. 899c = R ____ etc.

HINT: The learners write their calculations in their class workbooks, on slates or white boards.

FAT 2: Written

Learners solve word problems on a worksheet.

AS 8: Can perform calculations, using appropriate symbols, to solve problems involving:

- 8.1 Addition and subtraction of whole numbers with at least 3digits

FAT 2: Written
Learners do calculations with addition and subtraction on a worksheet.
Learners solve word problems on a worksheet.

- 8.2 multiplication of at least whole 2-digit by 1-digit numbers

FAT 2: Practical in small groups/Written

The teacher asks word problems in the number range 0 - 1000. The learners solve the problems using counters, drawing or calculations,

e.g. The farmer plants 85 beans in a row. How many bean plants will there be if he plants 9 rows of beans?

HINT: The learners write their drawings or calculations in their class workbooks, on slates or white boards.

FAT 2: Written

Learners multiply a whole 2-digit number by a 1-digit number. Learners solve word problems on a worksheet.

- 8.4 Estimation – must be used by the learners continuously throughout all the LO's.

AS 9: Performs mental calculations involving

- 9.1 Addition and subtraction for numbers to at least 50
- 9.2 Multiplication of whole numbers with solutions to at least 50

FAT 2 : Written
The teacher asks addition, subtraction and multiplication sums in the number range 0 – 50.

AS 10: Uses the following techniques:

- 10.1 building up and breaking down numbers

Learners break down numbers in the number range 0 -999 into different combinations. Learners may use a number grid or a number line.

FAT 2 : Practical in small groups/Written
The teacher gives each learner a number between 1 – 1000. The learners break down and build up the given number in different ways.

HINT: The learners write their sums in their class workbooks, on slates or white boards.

FAT 2 : Written
Learners break down and build up numbers on a worksheet.

- 10.2 doubling and halving

Learners double numbers with answers in the number range 1 - 999. Learners may use a number line, flard cards or a number grid.

Learners halve numbers in the number range 1 - 999. Learners may use a number line, flard cards or a number grid.

FAT 2: Practical in small groups/Written
The learner double numbers with answers in the number range 1 – 999.
Learners halve numbers in the number in the number range 1 – 999.
The learners may use flard cards, the number line or the number grid.

HINT: The learners write their drawings or calculations in their class workbooks, on slates or white boards.

FAT 2: Written
Learners double and halve numbers on a worksheet.

- 10.3 Number lines – integrate with all number work.

AS 11: Explains own solutions to problems

AS 12: Checks the solution given to problems by peers

LO 2: PATTERNS, FUNCTIONS & ALGEBRA

AS 2: Copies and extends simple number sequences to at least 1000

FAT 2 : Written
Learners copy and complete a number pattern in the number range 0 –1000 on a worksheet.

LO 3: SPACE AND SHAPE

AS 6: Reads, interprets and draws informal maps of the school environment or of an arrangement of three -dimensional objects and locates objects on the map.

FAT 2: Written
Learners draw a map showing their school, the streets and buildings around the school. Learners answer questions about the map.

LO 4: MEASUREMENT

AS 1: Learners read and write hours, half hours, quarter past, quarter to and minutes on an analogue and digital clock. Learners may use model clocks.

FAT 2: Practical and small groups:
Learners read hours, half hours, quarter past and quarter to and minutes on a digital and analogue clock.

AS 2: Solves problems involving calculations with and conversions between:

- 2.1 Minutes ↔ hours

FAT 2: Written
Learners convert minutes to hours and hours to minutes on a worksheet

- 2.2 Hours ↔ days

FAT 2 : Written
Learners convert days and hours into hours and hours into days and hours.
E.g. How many hours are there in 5 days & 18 hours?
How many days are there in 144 hours, 216 hours etc.

AS 5: Estimates, measures, compares and orders three-dimensional objects using non-standard and standard measures:

- Capacity (e.g. bottles, litres)

  Learners estimate and measure the capacity of different containers using litres. Learners may use litre jugs or litre bottles.
  Learners compare the capacity of containers and order them from most to least and least to most.

FAT 2 : Practical in small group
Learners measure and compare the length in metres, the mass in kilograms and the capacity in litres of different objects.

FAT 2 : Written
Learners answer questions about capacity on a worksheet.

Word sums:

1. If you cut two oranges into quarters, how many quarters would you have altogether?
2. How many hours would you spend at school if you started at 09:00 and finished at 15:00?
3. On Monday Jack spent R4,50, on Tuesday he spent R1, 50, on Wednesday he spent R3,50. How much change will he get if he had R20,00 to start with?
4. I have 132 marbles. I win 346 on one day and 244 the next day. How many marbles do I have now?
5. I have 4 horses. If each horse ate 36 bales of hay a month how much hay would they eat in 5 months?

Resources: Counters, abacus, number grid(1000 block), flard cards, flash cards with number symbols and number names, model clocks,2-D shapes, 3-D objects

Reflections:

Barriers:

Week 5

WEEK 5	Date Completed
LEARNING OUTCOMES and ASSESSMENT STANDARDS	
LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS	
AS 1: Counts forwards and backwards: AS 1.1 Counts forwards and backwards in 1,2,5 &10 from any number between 1 - 1000	1.1
AS 1.2 Counts forwards and backwards in 20's, 25's, 50's & 100's from any given number between 0 - 1000	1.2
AS 3: Knows, reads and writes number symbols from 1 to at least 1000 and writes number names from 1 to at least 1000	
AS 4: Orders, describes and compares the following numbers: 4.1 Whole numbers to at least 3-digit numbers	4.1
4.2 Common fractions including halves, quarters and thirds	4.2
AS 7: Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary and non-unitary fractions (eg. ¼, 3/4)	
AS 8: Can perform calculations, using appropriate symbols, to solve problems involving: 8.1 Addition and subtraction of whole numbers with at least 3digits	8.1
8.3 Learners divide a 2-digit number by a 1-digit number.	8.3
8.4 Estimation	8.4
AS 9: Performs mental calculations involving 9.1 Addition and subtraction for numbers to at least 50	9.1
9.2 Multiplication of whole numbers with solutions to at least 50	9.2
AS 10: Uses the following techniques: 10.2 Doubling and halving	10.2
10.3 Number lines	10.3
AS 11: Explains own solutions to problems	
AS 12: Checks the solution given to problems by peers	
LO 2: PATTERNS, FUNCTIONS & ALGEBRA	
AS 2: Copies and extends simple number sequences to at least 1000	
AS 3: Creates own patterns	
AS 4: Describes observed patterns	
LO 3: SPACE AND SHAPE	
AS 1: Recognises, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: boxes, (prisms), balls (spheres) and cylinders, triangles, squares and rectangles, circles, cones and pyramids	
AS 5: Recognises and describes 3-D objects from different positions	
LO 4: MEASUREMENT	
AS 5: Estimates, measures, compares and orders three-dimensional objects using non-standard and standard measures: • Mass (e.g packets, kilograms) • Capacity (e.g bottles, litres) • Length (e.g desk lengths, metres)	
LO 5: DATA HANDLING	
AS 1: Collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher and class(eg. "How many learners walk to school?")	
AS 2: Sorts orders and organizes own and supplied data by one or more attribute for a particular reason	
AS 3: Draws pictures and constructs pictographs that have 1-1 correspondence between own data and representations	
AS 4: Reads, interprets and reports on information in own and peer's representations of data	
AS 5: Reads and interprets data presented in simple tables and lists	

WEEK 5

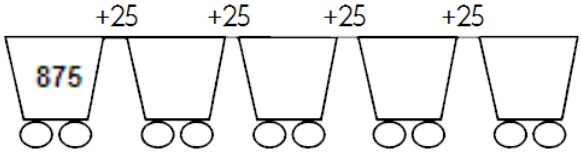
Note to Teachers: The Annual National Assessment Test has to be written between the 2nd and the 6th of November 2009 (Week 5). This Test must be included as the Written Component of the third Formal Assessment Task (FAT 3). Therefore teachers only need to add the Oral/Practical component of FAT 3. The Oral/Practical component of FAT 3 will be done in Week 6.

LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS

AS 1: Counts forwards and backwards

- AS 1.1 Counts forwards and backwards in 1,2,5 &10 from any number between 1 – 1000
- AS 1.2 Counts forwards and backwards in multiples of 20's, 25's, 50's & 100's from any given number between 0 – 1000

Written task:



AS 3: Knows, reads and writes number symbols from 1 to at least 1000 and writes number names from 1 to at least 1000

Written task:

Number name	Number
five hundred and one	501
	802
six hundred and fourteen	
	935
six hundred and fifty nine	
	768
six hundred and seventy six	
	887
six hundred and ninety three	

Small group practical:

Using flashcards with numerals and number names, ask the children to match the numeral with the number name, or give some children numerals, and ask them to find their "partner" who has the number name that matches their numeral. You can also make dominoes which can be used for this exercise.

AS 4: Orders, describes and compares the following numbers:

- 4.1 Whole numbers to at least 3-digit numbers

Small group practical:

- *What comes before 965?*
- *What comes after 867?*
- *What comes in between 926 and 928?*
- *Which is the biggest 843 or 834?*
- *Which is the smallest 949 or 849?*

Number block activity:

701									
721									
741									
761									
781									

Follow the instructions to complete the 800 block.

1. Draw a bus on the number that is **15 more than 701.**

That number is : ☐

2. Draw a car on the number that is **25 more than 721**.

That number is : ☐

3. Draw the train on the number that is **2 more than 761.**

That number is : ☐

4. Draw an aeroplane on the number that is **10 less than 781.**

That number is : ☐

5. Draw a bicycle on the number that is **4 less than 741**.

That number is : ☐

6. Draw an ambulance on the number that is **5 less than 781.**

That number is : ☐

- 4.2 Common fractions including halves, quarters and thirds

  - *Which is the biggest? ¼ or ⅓*
  - *Which is the smallest? ½ or ¼*
  - *Which is the biggest? ¼ or ¾*
  - *Which is the is the biggest 1 or a ⅓ ?*

AS 7: Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary and non-unitary fractions (eg. ¼, 3/4)

Eg. There are 800 learners in a school. ¼ of them play soccer. How many learners play soccer?
¼ of 800 = 800÷4 = 200
200 learners play soccer.

- *Share 47 bottles of cold drink equally among 4 children.*

AS 8: Can perform calculations, using appropriate symbols, to solve problems involving:

- 8.1 Addition and subtraction of whole numbers with at least 3digits

  Eg. 754+156 = ___

  754

  +156

  ___

  990-534 = ___

  990

  -534

  ___

  - *There are 879 children in the school. If 584 are girls, how many are boys?*

    879 – 584 = ___

    879 – 500 = 379 ➔ 379 – 80 = 299 ➔299 – 4 = 295

    There are 295 boys.

- 8.3 Learners divide a 2-digit number by a 1-digit number.

Small group practical:

Teacher uses flashcards and counters to help learners to grasp the concept of division/sharing.

Eg. 54÷9 =☐

96÷4 =☐

25÷5 =☐

There are 95 eggs. I put the eggs in boxes with 5 eggs in every box. How many boxes of eggs will there be?

- 8.4 Estimation – must be used by the learners continuously throughout all the LO's.

AS 9: Performs mental calculations involving

- 9.1 Addition and subtraction for numbers to at least 50
- 9.2 Multiplication of whole numbers with solutions to at least 50

AS 10: Uses the following techniques:

- 10.2 Doubling and halving

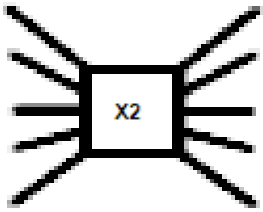
Written activity:

- Halve the numbers in the top row, and write your answers in the bottom row.

IN	324	418	338	844	956	762	494	126	558	942	1000
OUT											

Double these numbers:

Number	Double
479	
397	
250	
285	
500	



- 10.3 Number lines – integrate with all number work.

AS 11: Explains own solutions to problems

AS 12: Checks the solution given to problems by peers

LO 2: PATTERNS, FUNCTIONS & ALGEBRA

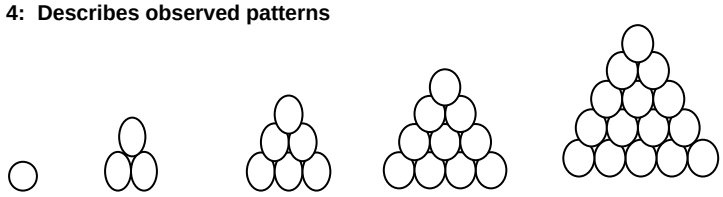
AS 2: Copies and extends simple number sequences to at least 1000

702	**713**	**724**							
964	**960**	**956**							
815	**830**	**845**							
691	**686**	**681**							

734 -10 → ___ -10 → ___ -10 → ___ -10 → ___ -10 → ___

AS 3: Creates own patterns

AS 4: Describes observed patterns

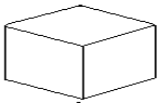
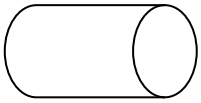
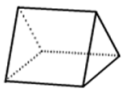


- Count the dots in each triangular pattern.
- How many dots in the bottom row of each group?
- What will the next triangle look like? How many dots will there be in the last triangular group?
- Ask learners to estimate how many circles in the 8th group.
- Learners can use drawings to find the solution to the 8th group.
- How many dots in the first five groups altogether?

LO 3: SPACE AND SHAPE

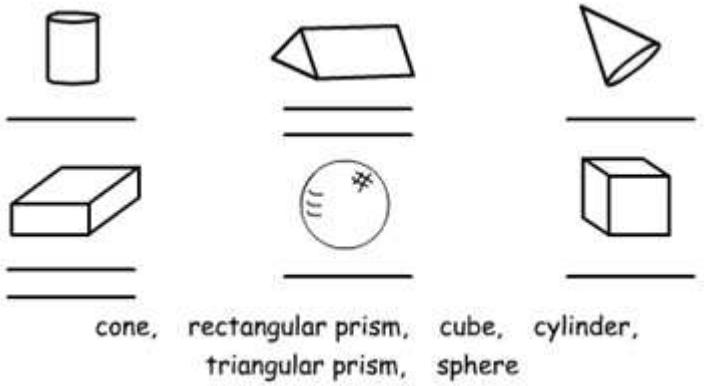
AS 1: Recognises, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: boxes, (prisms), balls (spheres) and cylinders, triangles, squares and rectangles, circles, cones and pyramids

Written activity:

Picture	Name	Number of sides	Flat or curved faces
			**Flat faces**
			
	**Triangular prism**		

AS 5: Recognises and describes 3-D objects from different positions
Small group practical:

Ask the children to make a "camera" from paper, and then ask them to look at the 3-D objects from different positions, and explain what they see.



LO 4: MEASUREMENT

AS 5: Estimates, measures, compares and orders three-dimensional objects using non-standard and standard measures:

- **Mass (e.g packets, kilograms)**
- **Capacity (e.g bottles, litres)**
- **Length (e.g desk lengths, metres)**

Activity:

Learners are going to make a metre strip. Give each learner some centimetre grid paper. Make sure the squares on the grid are exactly 1 cm by 1 cm. What things can they find that are about 1 cm in length? Then learners can cut a strip of 10 squares from the grid – that should be exactly 10 cm in length. Then they find something that is exactly the length of the strip (10 cm long). You can tell them that there is a name given to 10 centimetres. It is a **decimetre**. This is not measurement often used, so it is not necessary for learners to know the name. Now learners cut out 10 of these 10 cm strips from their grid. They colour them different colours and join them together carefully with cellotape, end to end. The tricky part of this is that the strips shouldn't overlap when they are stuck together. Learners will need to work in pairs to help each other with joining the strips. When they have done this, discuss the length they have made. They have made a metre. One learner can stick his or her metre strip up in the front of the classroom, with the one end touching the floor. Help him or her to place it vertically and not at a slant. Compare this length to a metre stick if you have one.

Ask learners to work in groups of 6-8 learners. Ask them to find out:
- Are any of them less than a metre tall?
- Is anyone exactly one metre tall?
- How tall are they? They can put two of their metre strips together and measure their heights against this. Learners can describe their heights as 'one and a half metres', or 'one and a little bit', or 'one and a quarter metres'. They don't need to read their heights in centimetres.

Then they can measure how 'wide' they are! This measurement is with arms outstretched, from the tips of their fingers on one hand, to the tips of fingers on the other hand, stretched out horizontally. Using these two measurements of their height and 'arm span', they should decide what kind of 'shape' they make – a square, a tall rectangle or a wide rectangle?

Learners can use their metre strips for this activity or they can use a tape measure. If learners are all using their own metre strips, you should also show them a tape measure and measure their metre strips against the tape measure. When working with a tape measure or with a ruler, make sure learners start their measurements from the point marked '0' and not before that. Working in pairs and using a thick wax crayon, learners trace their partner's outline onto a large piece of paper and then cut out the outline. Now they must measure parts of this cut-out. Can they find something on the outline that is 1 cm long (e.g. across a finger), something that is 10 cm long and then something that is 1 metre long, or about 1 metre long.

Let learners work on their own to choose which is the best measurement for each of the following questions. When they have finished choosing an answer they can measure to see how accurate their answer is.

Write down the best answer for each question.

1. The length of your hand is
A. about 1 metre long
B. about half a long ruler
C. about half a short ruler
D. about one short ruler long
2. The length of your finger is
A. about as long as a short ruler
B. about as long as a long ruler

C. about half of one of the 10 cm strips
3. The length of your foot is
A. between 1 and 2 of the 10 cm strips you made in class
B. about 2 cm
C. about 1 metre

LO 5: DATA HANDLING

AS 1: Collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher and class (eg. "How many learners walk to school?")

AS 2: Sorts orders and organizes own and supplied data by one or more attribute for a particular reason

AS 3: Draws pictures and constructs pictographs that have 1-1 correspondence between own data and representations

AS 4: Reads, interprets and reports on information in own and peer's representations of data

AS 5: Reads and interprets data presented in simple tables and lists

- How many toys does Sara have?
- How many more toys does Lily have than Sam?
- How many toys do the children have altogether?
- Who has half as many toys as Lily**?**

Word sums:

1. An orchard has 123 rows of fruit trees with 8 trees in each row. How many trees in the orchard?
2. Beacon Bay library has 1002 books. If Gonubie library buys another 243 books, they would have the same amount as Beacon Bay. How many books doe the Gonubie library have at the moment?
3. Spar bought 554 apples at the market. If they pack 4 apples per packet, how many packets do they need?
4. Xolani earned R728 during the holidays. Jane earned R159 more. How much money did Jane earn in the holidays?
5. Mom catches a taxi to work. It leaves at 7.30 a.m. The trip takes 45 minutes. What time does mom get to work?

Resources: Counters, abacus, number grid(1000 block), flard cards, flash cards with number symbols and number names, model clocks,2-D shapes, 3-D objects, graphs

Reflections:

Barriers:

Week 6

WEEK 6	Date Completed
LEARNING OUTCOMES and ASSESSMENT STANDARDS	
LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS	
AS 1: Counts forwards and backwards: AS 1.1 Counts forwards and backwards in 1,2,5 &10 from any number between 1 – 1000	1.1
AS 1.2 Counts forwards and backwards in 20's, 25's, 50's & 100's from any given number between 0 - 1000	1.2
AS 3: Knows, reads and writes number symbols from 1 to at least 1000 and writes number names from 1 to at least 1000	
AS 4: Orders, describes and compares the following numbers: 4.1 Whole numbers to at least 3-digit numbers	4.1
4.2 Common fractions including halves, quarters and thirds	4.2
AS 7: Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary and non-unitary fractions (eg. ¼, 3/4) **FAT 3 – PRACTICAL IN SMALL GROUPS**	
AS 8: Can perform calculations, using appropriate symbols, to solve problems involving: 8.1 Addition and subtraction of whole numbers with at least 3digits **FAT 3 – PRACTICAL IN SMALL GROUPS**	8.1
8.3 Learners divide a 2-digit number by a 1-digit number. **FAT 3 – PRACTICAL IN SMALL GROUPS**	8.2
8.4 Estimation	8.4
AS 9: Performs mental calculations involving 9.1 Addition and subtraction for numbers to at least 50	9.1
9.2 Multiplication of whole numbers with solutions to at least 50	9.2
AS 10: Uses the following techniques: 10.2 Doubling and halving	10.2
10.3 Number lines	10.3
AS 11: Explains own solutions to problems	
AS 12: Checks the solution given to problems by peers	
LO 2: PATTERNS, FUNCTIONS & ALGEBRA	
AS 2: Copies and extends simple number sequences to at least 1000	
AS 3: Creates own patterns **FAT 3 – PRACTICAL IN SMALL GROUPS**	
AS 4: Describes observed patterns **FAT 3 – PRACTICAL IN SMALL GROUPS**	
LO 3: SPACE AND SHAPE	
AS 1: Recognises, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: boxes, (prisms), balls (spheres) and cylinders, triangles, squares and rectangles, circles, cones and pyramids	
AS 3: Learner's observe, create and describe a given 3-D object.	
AS 5: Recognises and describes 3-D objects from different positions	
LO 4: MEASUREMENT	
AS 3: Learners identify and indicate religious and historical events on calendars	
LO 5: DATA HANDLING	
AS 1: Collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher and class(eg. "How many learners walk to school?") **FAT 3 – PRACTICAL IN SMALL GROUPS**	
AS 2: Sorts orders and organizes own and supplied data by one or more attribute for a particular reason **FAT 3 – PRACTICAL IN SMALL GROUPS**	
AS 3: Draws pictures and constructs pictographs that have 1-1 correspondence between own data and representations	
AS 4: Reads, interprets and reports on information in own and peer's representations of data **FAT 3 – PRACTICAL IN SMALL GROUPS**	
AS 5: Reads and interprets data presented in simple tables and lists	

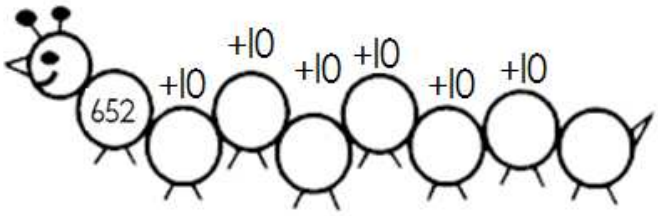
WEEK 6

LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS

AS 1: Counts forwards and backwards

- AS 1.1 Counts forwards and backwards in 1,2,5 &10 from any number between 1 – 1000

Written task:



FAT 3: Practical in small groups
Learners count forwards and backwards in multiples and intervals of 1,2,5, and 10 on number grid in the number range 0 – 1000.

- AS 1.2 Counts forwards and backwards in 20's, 25's, 50's & 100's from any given number between 0 – 1000

Written task:
E.g. Fill in your own starting number.

FAT 3: Practical in small groups
Learners count forwards and backwards 20's, 25's, 50's and 100's in the number range 0 - 1000.

+	2	3	4	5	10	20	25	50	100
805	807								
837									
869									
884									

-	2	3	4	5	10	20	25	50	100
999	997								
873									
958									
912									

AS 3: Knows, reads and writes number symbols from 1 to at least 1000 and writes number names from 1 to at least 1000

FAT 3 – Practical in small groups
Learners read and write number names and symbols in the number range 1-1000

AS 4: Orders, describes and compares the following numbers:

- 4.1 Whole numbers to at least 3-digit numbers

Written task:

- Arrange these numbers from biggest to smallest.

837	623	973	682	780	847	674	959

- 4.2 Common fractions including halves, quarters and thirds

Which is the biggest? ¼ or ⅓
Which is the smallest? ½ or ¼
Which is the biggest? ¼ or ¾
Which is the is the biggest 1 or a ⅓ ?

Ordering the Parts

Draw each fraction then use the drawings to help you put the fractions in order from smallest to largest.

1. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{1}$, $\frac{1}{4}$

_____ , _____ , _____ , _____

AS 7: Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary and non-unitary fractions (eg. ¼, 3/4)

FAT 3: Practical in small groups/Written
The teacher asks word problems in the number range 0 - 1000. Learners use concrete apparatus, drawings or calculations to solve their problems. e.g.
- Share 795 pieces of sausage equally amongst 6 families. How many sausages will each family get?
- There are 954 hats. The factory workers pack them equally into 9 boxes. How many hats will there be in every box?
- There are 20 learners in a class. How many learner is 13 classes, 24 classes, 36 classes, and 42 classes?

HINT: The learners write their drawings or calculations in their class workbooks, on slates or white boards.

AS 8: Can perform calculations, using appropriate symbols, to solve problems involving:

- 8.1 Addition and subtraction of whole numbers with at least 3digits

FAT 3: Practical in small groups/ Written
The teacher asks word problems with addition and subtraction sums in the number range 0-1000. The learners solve the problems using counters, drawings or calculations.
e.g. In the party shop there are 169 red balloons, 457 green balloons and 27 blue balloons. How many balloons are there altogether? The shopkeeper sells 78 red balloons, 124 green balloons and 12 blue balloons. How many balloons did she sell? How many balloons are left?
HINT: The learners write their drawings or calculations in their class workbooks, on slates or white boards.

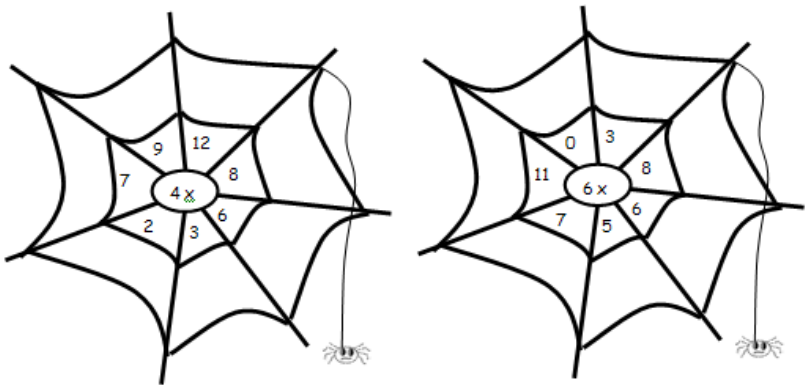
- 8.3 Learners divide a 2-digit number by a 1-digit number.

Practical in small groups/Written
The learners divide a two-digit number by a one-digit number. The teacher asks word problems with division in the number range 0 - 99. The learners solve the problems using counters, drawings or calculations. e.g. 99÷9=□; 45÷5=□; 75÷3=□etc.
e.g. Bheki collects marbles. He has 84 red marbles. He shares his red marbles among 4 of his friends. How many marbles do each of his friends get?
HINT: The learners write their drawings or calculations in their class workbooks, on slates or white boards.

- 8.4 Estimation – must be used by the learners continuously throughout all the LO's.

AS 9: Performs mental calculations involving:

- 9.1 Addition and subtraction for numbers to at least 50
- 9.2 Multiplication of whole numbers with solutions to at least 50



AS 10: Uses the following techniques:

- 10.2 Doubling and halving

Doubling									
317	317	439	439	185	185	461	461	340	340
262	262	258	258	152	152	484	484	323	323

Halving									
920		841		783		679		937	
862		958		614		996		785	

- 10.3 Number lines – integrate with all number work.

AS 11: Explains own solutions to problems

AS 12: Checks the solution given to problems by peers

LO 2: PATTERNS, FUNCTIONS & ALGEBRA

AS 2: Copies and extends simple number sequences to at least 1000

AS 3: Creates own patterns

FAT 3: **Practical in small groups/Written**
Learners create their own number patterns in the number range 0 – 1000. Learners may use a number line or a number grid.

AS 4: Describes observed patterns

E.g. Continue the pattern as far as you can go.

400 + 100 = 500
400+ 200 = 600
400 + 300 = 700

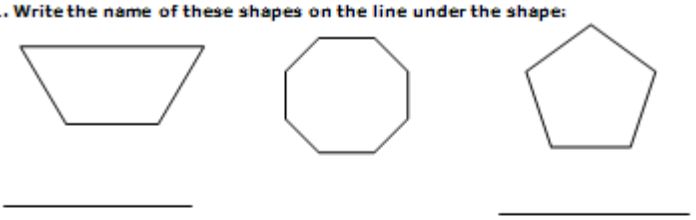
Can you write a different addition pattern for your friends to do?

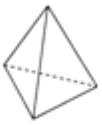
FAT 3: **Practical in small groups**.
Learners describe their own/given number patterns in the number range 0 - 1000.

LO 3: SPACE AND SHAPE

AS 1: Recognises, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: boxes, (prisms), balls (spheres) and cylinders, triangles, squares and rectangles, circles, cones and pyramids

1. Write the name of these shapes on the line under the shape:





2. Describe this shape.

3. What shape am I? I am three-dimensional. I have 6 faces and 8 vertices. All my faces are rectangles. I can be stacked.

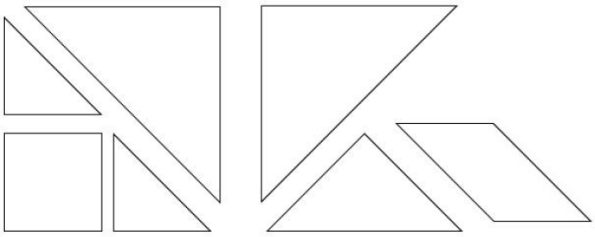
I am a _____

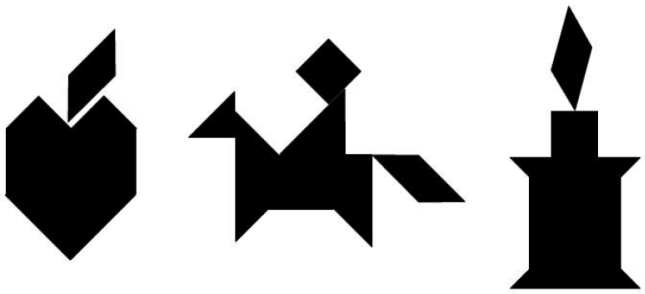
FAT 3: Practical in small groups/Written
Learners recognise, identify and name 2D-shapes and 3D-objects.

AS 3: Learner's observe, create and describe a given 3-D object. Learners may use grid paper, building blocks, waste material, cut-out 2-D shapes, tangrams.

Small group practical:

Each child, or in pairs, children get a set of tangrams, and they must try to make these pictures, or any picture given by the teacher, using only these shapes.





AS 5: Recognises and describes 3-D objects from different positions

LO 4: MEASUREMENT

AS 3: Learners identify and indicate religious and historical events on calendars

Written task:

- Each learner has a calendar.
- Learners must brainstorm the religious holidays (eg. Christmas, Easter, Ramadan, Yom Kippur etc.) and public holidays with historical importance (eg. Heritage Day, Youth Day, Freedom Day etc.)
- They can then colour these in on their calendars.
- Discuss with the learners that some of these days are always celebrated on the same day, and that some change from year to year.

LO 5: DATA HANDLING

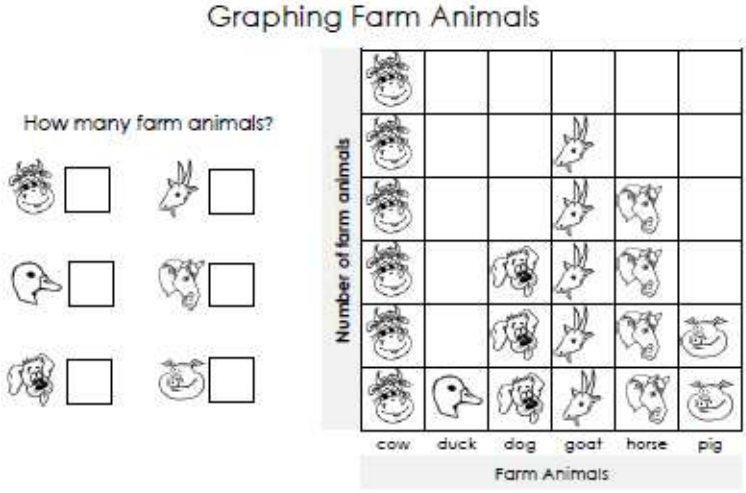
AS 1: Collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher and class (eg. "How many learners walk to school?")

FAT 3: Practical in small group
Learners collect data to determine the number of learners in the different grades in their school.

AS 2: Sorts orders and organizes own and supplied data by one or more attribute for a particular reason

FAT 3: Practical in small groups
The learners sort the number of learners according to grades.

AS 3: Draws pictures and constructs pictographs that have 1-1 correspondence between own data and representations



AS 4: Reads, interprets and reports on information in own and peer's representations of data

FAT 3: Practical in small groups
Learners talk about their representations.

AS 5: Reads and interprets data presented in simple tables and lists

Small group practical:

Learners can set their own questions about the above graph, and then discuss the answers in their groups.

Word sums:

1. An athlete can run at a speed of 15 km per hour. How long will it take him to run a distance of 135 km?
2. Mr Tokweni has 875 drawing pins. He uses 5 drawing pins for every picture he puts up on the board. How many pictures can he put up?
3. There are 1000 men at a rugby match. There are 279 less women at the same match. How many women are there at the match?
4. Checker sold 164 ice-creams over the week-end. Spar sold 589 more ice-creams. How many ice-creams did spar sell?
5. An orchard has 123 rows of fruit trees with 8 trees in each row. How many trees in the orchard?

Resources: Counters, abacus, number grid(1000 block), flard cards, flash cards with number symbols and number names, model clocks,2-D shapes, 3-D objects.

Reflections:

Barriers

Week 7 & 8

WEEK 7 & 8

LEARNING OUTCOME 1: NUMBERS, OPERATIONS AND RELATIONSHIPS

Exemplars of activities

Activity 1: Number bonds

The teacher uses flash cards and revises number bonds on a daily basis.

Activity 2: Money

Show the following table and let the learners tell you what should be in the blank spaces:

- *Muhle and Thandi each want to buy a roll and juice from the Tuck Shop. Juice and a roll costs R4. How much will it cost the two of them to buy a roll and juice for the following number of days?*

No of days	1	2	4	5	10	11
Cost	R8					

Activity 3: Practical

- Make 4 sets of cards with random numbers from 1 to 1000.
  - Divide the class into 4 groups and give each group one set of cards.
  - When you say "GO!" the leader hands out the cards to the group and they arrange themselves in ascending order.
  - The first group in the correct order is the winner. Once you have played this a few times, ask the class to get into one long number line – in the correct order.
- Working with a group of 8 learners at a time, tell them a 3-digit number. They take turns to decompose the number orally.

Activity 4: Addition and subtraction from number charts

Before the lesson, prepare some number charts . Also, do the activities yourself and find out how many different ways there are of answering each question.

- Ask the pupils to go into pairs and hand out a chart to each pair.
- Now ask them to investigate questions such as: How many ways can I move from '21' to '34' on the chart?
- Go round the class, listening to their reasoning and making notes. Different pairs may give different answers, for example: 'I will go down 1 and along 3' or 'I will go along 3 and down 1'.
- Next, ask your pupils to each make up five similar questions, moving from one square to any other, and ask their partner to solve each of these in at least two ways.
- Finally, you could extend this work by asking the pupils to agree with their partner, 'what is happening to the tens and units with each move?' e.g. moving from 19 to 47 is going down 3 rows, (adding 30), and moving left 2 columns (removing 2). This is the same as adding 28.

Activity 5: Fractions

- Arrange pupils into groups of four. Give each group four strips of paper of equal length (see **Fraction strips**).
- In each group, ask one pupil to fold a strip into 2 equal parts; another into 4, and another into 8.
- One person in the group should not fold their strip.
- Using the strips, can the groups agree:
  - How many halves (1/2) make a whole?
  - How many quarters (1/4) make a half (1/2)?
  - How many eighths (1/8) make a quarter (1/4)?

    Then you could ask them to try some more difficult equivalent fractions, e.g.
  - How many eighths (1/8) are there in a half (1/2)?

FRACTION STRIPS

Some fraction strips are shown below. These can be made from any paper by folding and/or measuring.

1								
1/2								
1/4								
1/8								

Fractions

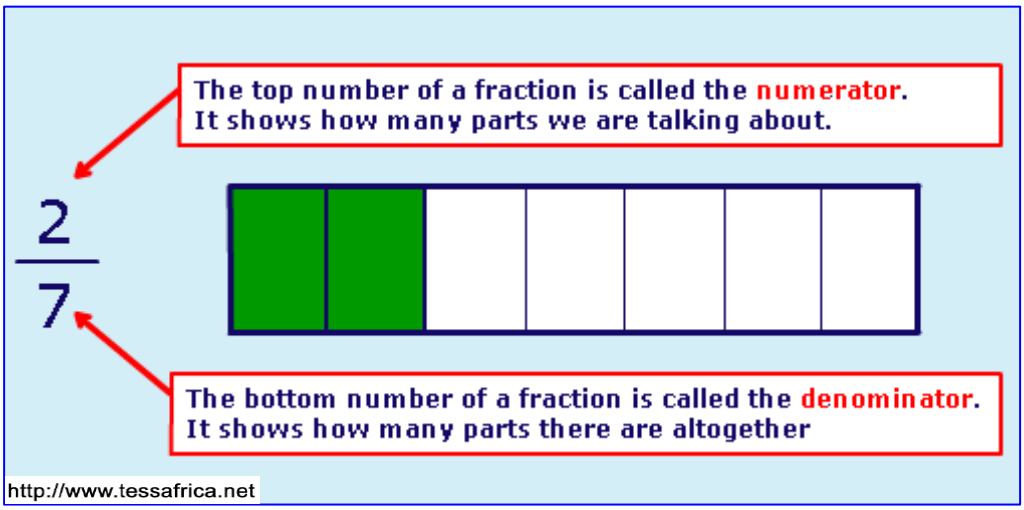
Background information / subject knowledge for teacher

What is a fraction?

A fraction is a part of a whole. There are two numbers to every fraction:

Equivalent fractions

Equivalent fractions are fractions that look different but show exactly the same amount:
You can make equivalent fractions by multiplying or dividing the numerator and denominator by the same number:



Activity 6: Money

Learners role play shopping. They need to budget according to the available amount i.e. R200 and draw up a shopping list.
e.g.

- x 2,5 kg sugar @ R15 per 2.5 kg
- 5 x 1 kg salt @ R4 per kg
- 5 x 1 litre milk @ R6 per litre
- 2 boxes washing powder @ R39,99 per box

How much did these cost and how much was the change?

Activity 7: Multiplication tables

Let the learners copy the table below and fill in the rows:

	1	2	3	4	5	6	7	8	9	10	11
x 1											
x 2											
x 3											
x 4											
x 5											
x 6											
x 7											
x 8											
x 9											
x 10											

Activity 8: Place value

Learners identify the place value of a given digit in a number:
e.g.

- 8**7**9 (70 or 7 tens)
- 73**6** (6 or 6 ones/units)

Activity 9: Multiplication

- 65 x 3
- 95 x 5
- 4 x 67, etc

Activity 10: Division without a remainder

- 95 ÷5
- 87 ÷ 3
- 92 ÷ 4
- 100 ÷ 8, etc.

Activity 11: Division with a remainder

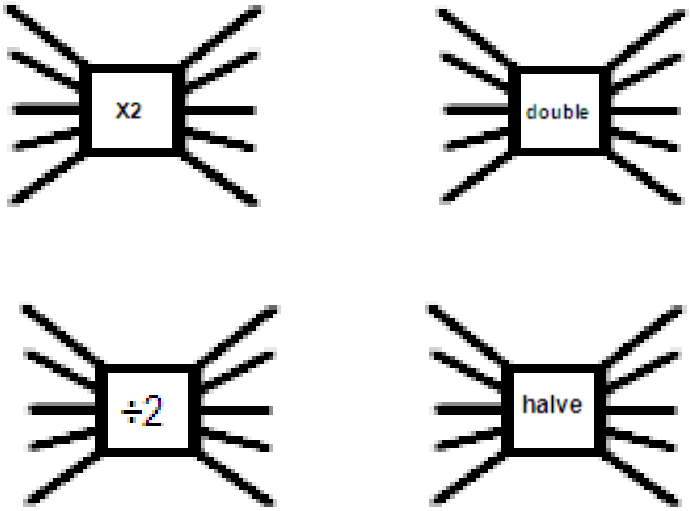
- 95 ÷ 2
- 85 ÷ 3
- 57 ÷ 4
- 87 ÷ 5

Activity 12: Rounding off in tens

Learners round off any number to the nearest 10 in the number range 0-500.
. e.g.

- 574 ≈ 470
- 763 ≈ __
- 985 ≈ __
- 616 ≈ __
- 899 ≈ __

Activity 13: Doubling and halving



Activity 14: Breaking down and building up:

Learners break down numbers:.
e.g.

- 897 = 800 + __ + 7
- 935 = __ + 30 + 5

Learners build up numbers:

- 600 + ____ + ____ = 698
- ____ + ___ + 4 = 913
- 800 + ___ + ___ + ___ = 871

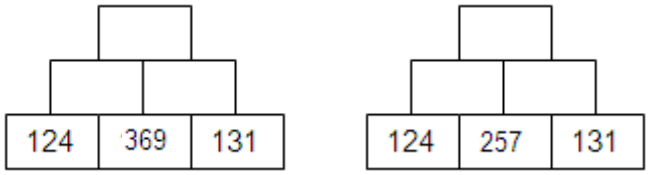
Activity 15: Equal sharing and grouping

- There are 25 rows with chairs. Each row has 9 chairs. How many chairs are there altogether?
- I want to divide 165 apples equally amongst 5 children. How many apples will each child get?
- Father plants 425 plants in 20 rows. How many plants will there be in each row?
- Share 39 apples amongst 3 children.
  Answer: Each child will get ..... and ..... thirds.

Activity 16: Addition and subtraction

- 312 + 123 -101
- 500 – 124 + 325
- 459 + 378
- 913 – 457, etc

Activity 17: Pyramids



Activity 18: Number symbols and names

- Write the number name for: 568, 804, 990
- Write the number symbol for: eight hundred and fifty-four, etc.

Activity 19: Ordering of numbers

- Arrange in **ascending** order:
  869, 839, 309, 789
- Arrange in **descending** order:
  285, 926, 591, 732

Learners describe the position of numbers using before, after, between.

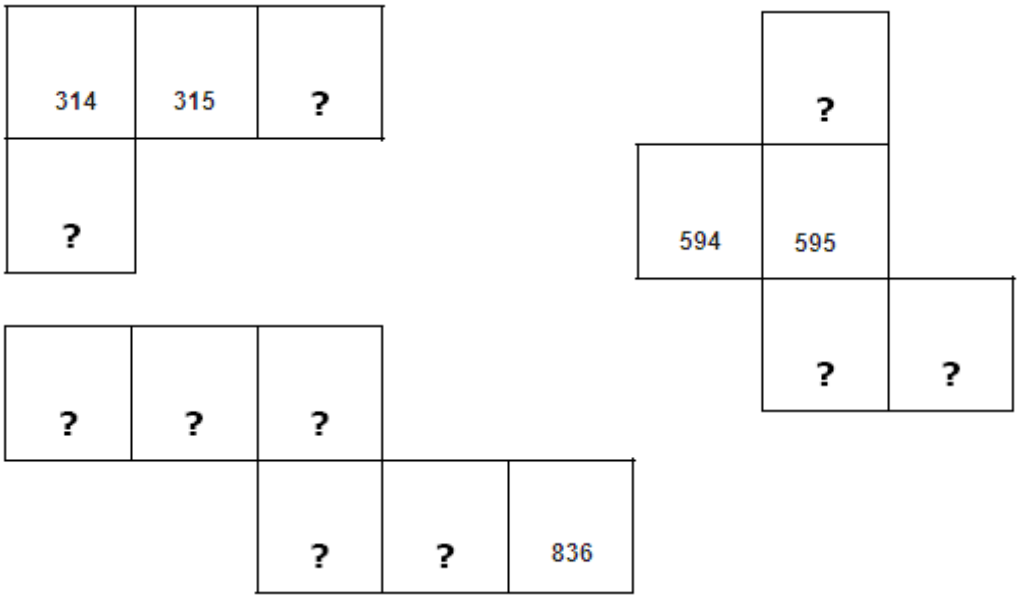
- What number comes before 935?
- What number comes in between 856 and 858
- What number is 2 less than 761, 3 more than 589, etc.,

LEARNING OUTCOME 2: PATTERNS, FUNCTIONS AND ALGEBRA

Activity 1: Patterns in number charts

Partial number squares

- Ask pupils to fill in the missing numbers.
- Ask them to explain how they did this.
- See if pupils can create and solve their own 'missing number' puzzles



Activity2: Exploring the multiples of 9

Stand by the chalkboard and ask pupils to be totally silent. Ask them to watch carefully.

- Write the first five multiples of 9 on the blackboard.
- Pause. Ask them to look at what is happening to the numbers.
- Ask a pupil to complete the pattern to 10 x 9, under the heading 'tens' and 'units'.
- Ask the class to share anything they notice, recording and accepting everything without commenting.
- Carry on, but stop after 13 x 9, skip some and then write 17 x 9 = ? Now, watch carefully while they try to make sense of what is going on. You may have to prompt them to see the pattern in tens and units.
- Finally ask pairs of pupils to investigate other multiples (it is best to start with single digit numbers, 1–9). Can they work out together the pattern for tens and units?

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	17	18
X9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	?	?

Note: The units decrease by one and the tens increase by one. (except between 10 x and 11 x).

When the digits are added the sum is 9 (except 11 x).

Activity 3: Multiples of 9 on the 100-chart

- Give each learner a 100-chart and ask them to colour in the multiples of 9.
- Ask them to explain to their partner the pattern they see.

"Square Numbers"

The concept of 'square numbers' can be very abstract. Drawing squares, or making squares with counters can help pupils begin to gain a visual understanding. What numbers of counters do we need to make square shapes (i.e. those with equal numbers of counters in each row, and as many rows as columns)?
You need to plan your lessons to ensure that all pupils are participating.
Ask your pupils to work in pairs.

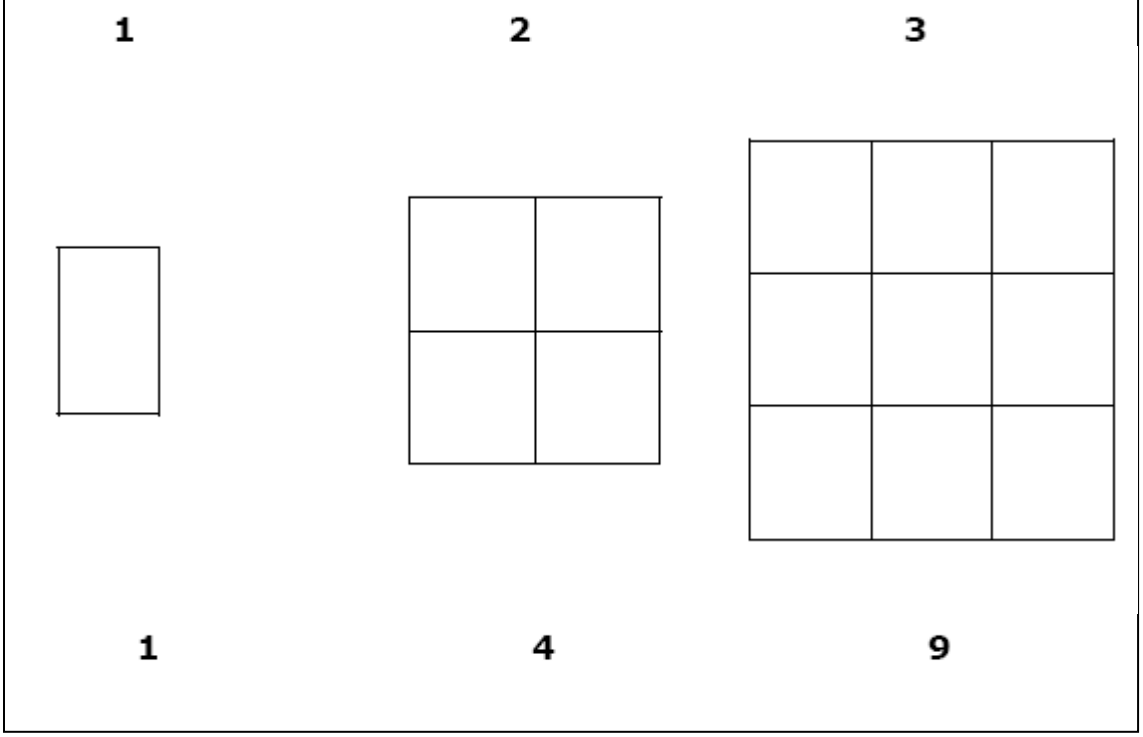
Case Study 1: Drawing square numbers

Mrs Baale in South Africa wanted her pupils to do some investigations in pairs with only some guidance from her. She was keen to see if the pupils could investigate square numbers for themselves.
She began the lesson by asking pupils to work in pairs.
She drew a square on the board; then she drew a larger square, made up of four smaller squares .
She asked the pupils to draw as many other squares like these as they could in five minutes.
She told the class that these numbers were called 'square numbers'.
Mrs Baale asked the class if they could make more square numbers, and to note the number of little squares needed to make each big square.
By allowing the pupils to work mainly unaided, Mrs Baale felt they would gain confidence and find enjoyment in the lesson.

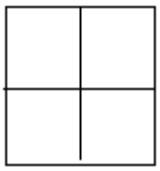
Activity 4: Drawing "square numbers".

- Encourage each pupil to participate by asking the pairs to choose first one member to be the scribe (the one to draw) and the other the recorder, and then to swap these tasks. In this way, you can make sure each pupil is participating.
- You could also give your pupils objects (seeds or small stones) as counters.
- Ask pairs of pupils to find 'square numbers' (those with equal numbers of counters in each row, and as many rows as columns).

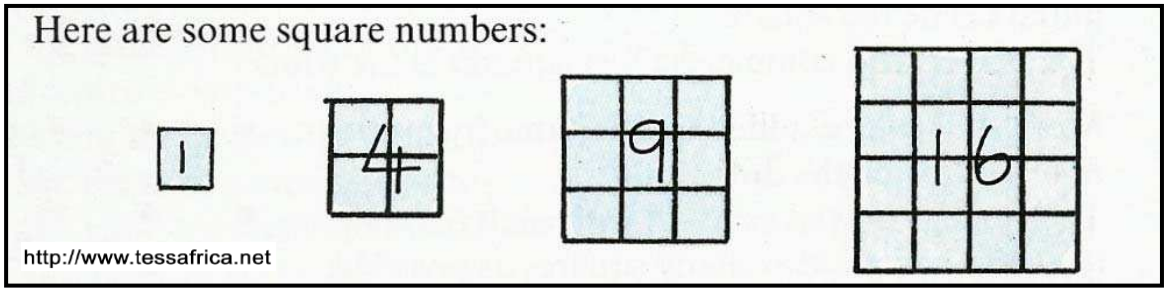
Teacher resource for planning or adapting to use with pupils



- First draw a square on the chalkboard labelling the sides 2 cm and divide it as shown into 1 cm squares.



- The first recorder has to count the 1 cm squares and write down the number.
- The first scribe has to draw a 3 cm square and divide it similarly into 1 cm squares and the recorder will count and record these small squares.
- This activity continues with a 4 cm square, a 5 cm square, a 6 cm square.



- Ask the pairs to draw other square numbers to a hundred.
- The pairs take turns to draw and count/record the numbers.

Activity 5 : Number patterns

Give learners a worksheet where they:

- Complete addition and subtraction sums of two 3-digit numbers, where both numbers are whole hundreds. e.g. 800 + 100 = ■, 300 + 200 = ■, 700 = 200 + ■, 900 - 500 = ■, 800 - 300 = ■, 500 = 700 - ■ Etc.
- Complete the sums and identify the pattern e.g.
  * 6 - 2 =, 16 - 2 =, 26 - 2 =, 36 - 2 =, 136 – 2 = etc. (pattern: taking 2 away from a number ending with 6 always gives a number ending with 4), etc.
- Give learners a worksheet where they must complete and extend the pattern e.g.
  - 25 + 5 = 26 + 5 = 27 + 5 = _ + 5 = _ + 5 =
  - 27 + 4 = 37 + 4 = _ + 4 = _ + 4 = 67 + 5 =
  - 72 - 3 = 62 - 3 = 52 - 3 = _ - 3 = _ - 3 = etc.

Activity 6 More number patterns:

Give learners a worksheet and ask them to complete the following number patterns:

- 1, 2, 4, 8, ___, ___, ___, ____, ____, 512
- 1, 2, 4, 7, ___, ___, ___, 29, ___
- 1, 1, 2, 3, ___, ___, 13, ___, 34
- 600, 625, 650, ___, ___, ___, ___, ___
- 950, 900, 850, ___, ___, ___, ___, ___
- 301, 312, 323, ___, ___, ___, ___, ___
- 705, 709, 713, ___, ___, ___, ___, ___ etc.

LO3: SPACE AND SHAPE

Using feely bags

Teacher resource for planning or adapting to use with pupils

Feely bags or boxes, which can easily be made by you or your pupils (see below) can be used across the curriculum to help develop your pupils' observations and language skills. In mathematics, it is good way to help pupils explore the properties of shapes and objects. In science, you might explore the textures of materials. Using a feely bag or box is a great motivator for pupils as the involvement in the game, the need to listen carefully and the desire to guess the right answer excites and interests them.

Suggestions for objects for shapes activities

You may use a selection of cubes (dice, blocks), rectangular prisms(boxes, wooden blocks), triangular prisms (wooden wedges, fancy chocolate boxes), spheres (balls), pyramids (wooden or plastic), cylinders (toilet rolls, pens, dowel sticks), cones (party hats, ice cream cones). You may also like to include one or two irregular or semi-irregular objects (stones, shells, leaves) to provoke discussion. All of these could be collected locally to help to link mathematics to the local environment.

Making a feely bag
For this you could use a paper bag that you cannot see through or you could sew a bag out of fabric about 30 cm by 30 cm with an opening at one end. The top of the bag needs to be able to be closed and opened to put in the objects and to allow the pupil to put in their hand to feel the object but ensure that no one else sees what is in the bag. You could use an elastic band or a drawstring to keep the top closed.

Making a feely box
Any medium-sized cardboard box will do for a feely box. You have to cut a hand-sized opening in one side of the box. This is so that a pupil can put a hand into the box and pick up something to feel. Some people cut two holes so that a pupil can put two hands into the box to feel for something. You need to keep the opening away from the rest of the class so they cannot see what is in the box.

How to play the game

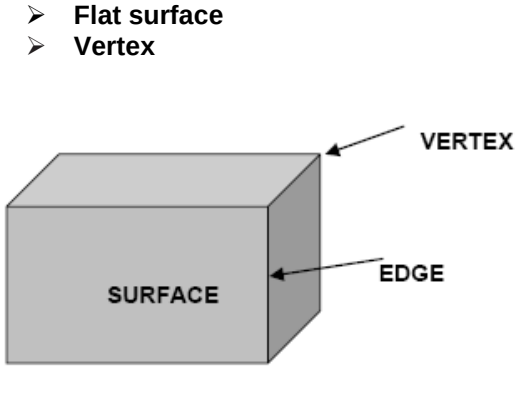
The idea of the game is to hide some interesting, different things (which are familiar to your pupils) in the feely bag/box. You could use regular shaped bowls or pots, tools, or even tins of food.

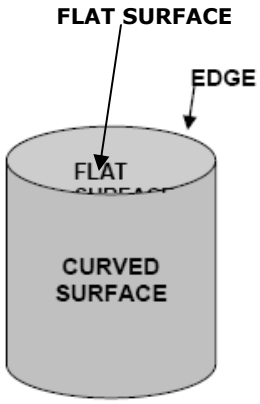
- A pupil comes to the front and feels for something in the feely bag/box. He/she doesn't take the object out or show it to the other pupils.
- Instead, the pupil then thinks very carefully of ways to describe the thing, without mentioning its name. He/she uses the sense of touch to list and describe observations. At the same time, the pupil has to be quite scientific/mathematical. He/she has to consider the properties the object is made of. He/she also has to think carefully about the shape, size and form of the item.
- Each time the pupil makes an observation, another pupil in the class is given a chance to try to work out what the object is.
- While this is happening, the teacher can act as a scribe (or secretary) and record the observations and the inferences on the board, or on a large sheet of paper. They list the main points only.
- This carries on until someone actually works out what the item is. Then the item can be pulled out of the box and is shown to the rest of the class.
- It is important that a little time is spent discussing the accuracy of the observations – mathematical language skills, the effectiveness of the descriptions, communication skills and the quality of the inferences.

http://www.tessafrica.net

Here are a few words for geometry:

- **Curved surface**
- **Edge**
- **Surface**
- **Flat surface**
- **Vertex**





http://www.tessafrica.net

Practical ways from sheet to cube

Key Focus Question:
How can you help pupils 'see' and mentally transform geometric shapes?

Introduction
Imagine you have to draw a shape on a piece of paper, which can be cut out and folded into a cube. On the paper you will draw the six squares that will fold up to make the six sides of the cube. Can you imagine the shape you would draw on the paper to make the cube? It is not easy to do, as this imaginary exercise requires two important mathematical skills – mental visualisation (being able to 'see' with your mind's eye a two-dimensional [2D] or three-dimensional [3D] mathematical image) and mental transformation (being able to 'manipulate' or change that image in some way).

This section explores practical ways to develop these skills in your pupils as they make nets. (A net is a 2D representation of a 3D shape, with dotted lines to represent folds, and solid lines to represent cuts.) Manipulating a real object will help your pupils visualise the transformations of this object and relate their understanding of shape to their own life.

As your pupils work it is important that they feel that they are doing the investigation, that they are solving the problem. As a teacher, you need to be able to stand back and watch your pupils taking over the central stage.
At first, this is often difficult to do, but if you can find a way to set up your classroom that gives pupils the space to think, talk and explore, many of them will surprise you with their imagination and understanding.

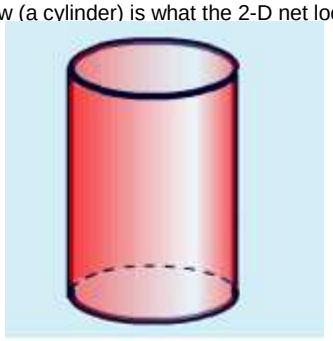
Case Study 1: Investigating a net for a tin

Mrs Sawula in South Africa was doing work on shape. First, she took her class out into the local environment to look at all the different shapes they could find.
The next day, she wanted to start her lesson on nets by having her pupils discover a simple net for themselves.
Mrs Sawula asked them to think how they could make a paper plan of some of the shapes they had seen. She listened to some of these ideas. Then, having asked her pupils to bring in a tin (she collected a few herself for those who forgot or couldn't bring one in), she asked them this question to discuss in pairs: 'Your tin can was made from a flat piece of tin. Imagine your piece of paper is a piece of tin to be made into a can – what shape would have to be cut from the paper? Can you use the can to help you draw this shape on your paper?'
She gave the pupils time to try and solve this puzzle. Mrs Sawula enjoyed watching her pupils working and did not interfere unless she saw they were stuck.
She was pleased at how many were able to produce the net.

Net of a tin (a cylinder)
Teacher resource for planning or adapting to use with pupils
A net is a flat or 2D shape that can be folded to make a 3-D object.
Below is the net of a tin, known as a cylinder.

A 2-D net

The 3D object below (a cylinder) is what the 2-D net looks like when it has been folded.



A 3D object (a cylinder)

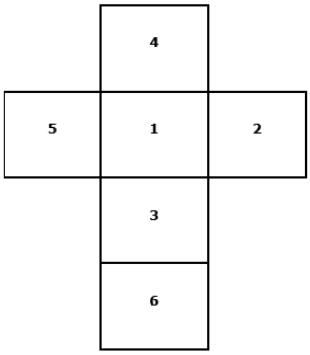
http://www.tessafrica.net

Dice facts

Subject knowledge for teacher
A dice is a cube, each face marked with a number between one and six.
The sum of the two numbers on the opposite faces is always 7, so the opposite pairs are:
1 and 6
2 and 5
3 and 4

Numbered dice net:

This is an example of a correct solution:



http://www.tessafrica.net

Key Activity: Making dice nets

Before the lesson, collect up or make several dice to show your class.
Ask pupils in pairs to look at a dice, and look carefully at the numbers – they should be able to identify that each side has a number between 1 and 6; you may have to prompt them to see that opposite sides add to 7. Allow them time to check if this rule is followed on all their dice.

Now give each pair two sets of empty 5 x 5 square grid papers. Ask them to design different nets for a dice:
a cube net with numbers written on the squares so that they obey the rules above. When they think they have solved the problem, they may cut out the nets and check that they have 'correct' dice.

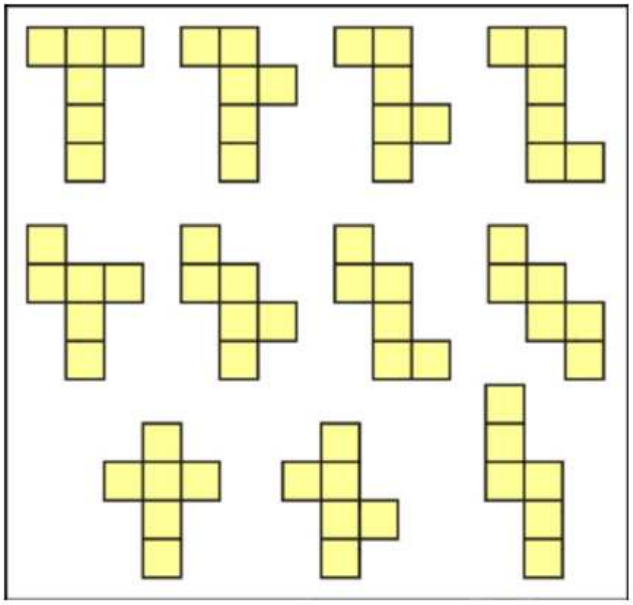
After the pairs have solved this problem, they could mark dice numbers on some of the other 11 cube nets that they identified. Ask each pair to make a poster to display the different numbering patterns for each net.
You could extend this activity by asking your class to make a board game about shape and use their own dice to play it.

Activity : Which nets will fold to make a cube?

Make sure pupils understand what a cube is, then ask pairs of pupils to find as many different nets for a cube as they can. They should first draw each net, then cut it out and check that it makes a cube, before trying to draw a different net.
(You may want to show one or more examples such as those below to get them started.)

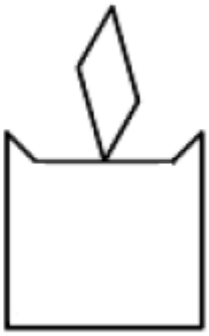
Again, do not interfere or talk too much during this lesson; make space for the pupils to talk through their ideas and to enjoy the activity. Listen carefully to them and identify how they are able to solve their own problems.
Display the finished cubes and, if there is time, allow them to decorate them to celebrate what they have achieved.
Discuss how many different nets they have found. Ask them to make a wall chart of the 11 possibilities of a net for a cube.

11 nets for a cube



http://www.tessafrica.net

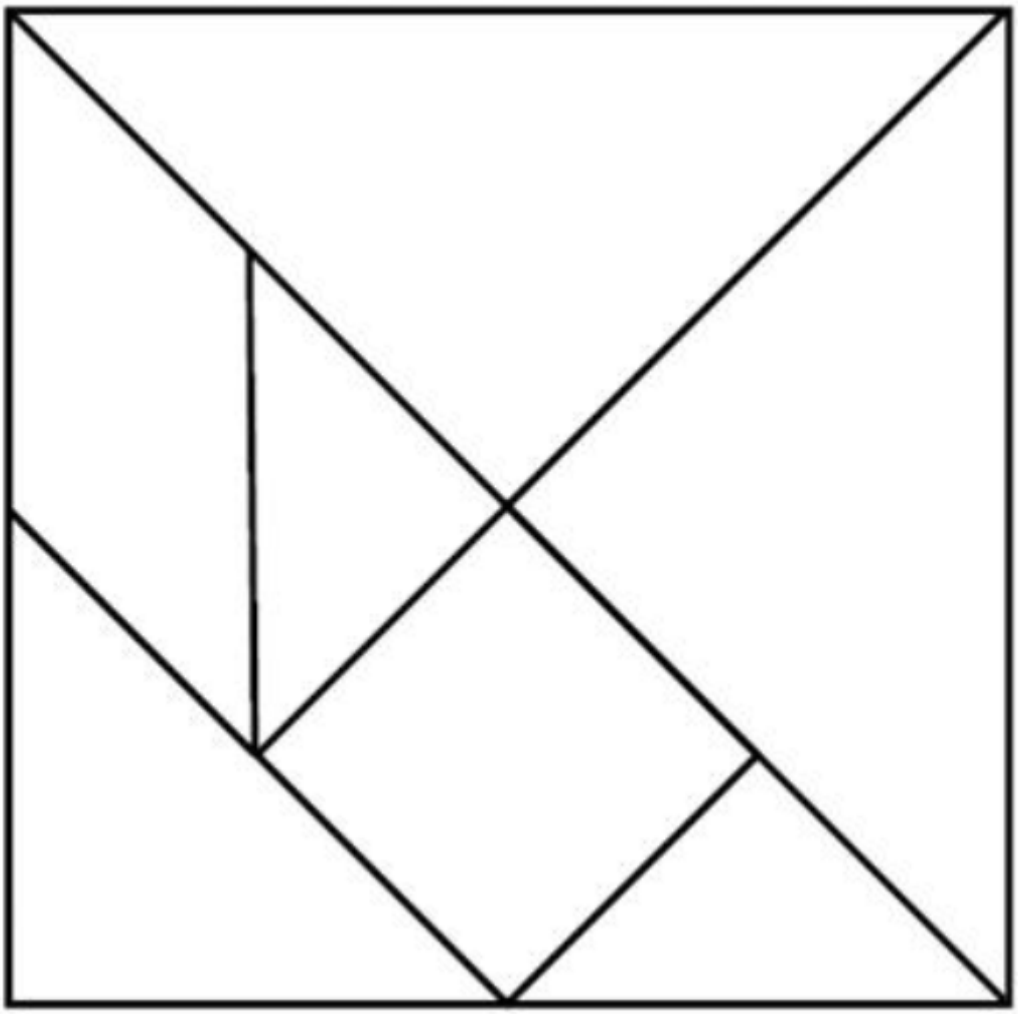
Activity: Christmas Tangrams



Tangram Solutions:

www.tangrams.ca

Tangram Template



LO 4: MEASUREMENT.

Measuring heartbeats

Activity 1: Measuring heart rates after exercise

Before the lesson, make sure you can measure your heart rate at your neck and wrist. Practise showing your family and friends how to do this before you try it with your class!

- Show your pupils how to feel the pulse at the neck and wrist, and make sure every pupil can feel the heartbeat in at least one of these two locations using the middle finger.
- Begin the lesson by telling your pupils that they are going to do an experiment. During the experiment they must sit completely still, and in absolute silence.
- Using your watch (or any clock that shows seconds), ask pupils to find their pulses, and then count how many beats they feel during one minute. Ask them to write down their heart rates but not to talk.
- Next, try some moderate exercise (e.g. walking for two minutes) and ask them to take their pulses again.
- Wait a minute and ask them to take their pulses again.
- Record the results
- They could then do other exercises, for example skipping or running, and then measure their heartbeats again and record their results.
- Ask all pupils to list on the board their resting heartbeats after walking and after skipping.
- Discuss with them the different results they have for each activity: for example, why were their pulses higher after skipping rather than walking?

Heart rate

Background information / subject knowledge for teachers

Heart rate is a term used to describe the frequency of the cardiac cycle. It is considered one of the four vital signs. Usually it is calculated as the number of contractions (heartbeats) of the heart in one minute and expressed as 'beats per minute' (bpm).

When resting, the adult human heart beats at about 70 bpm (males) and 75 bpm (females), but this varies. However, the reference range is nominally between 60 bpm (if less, termed bradycardia) and 100 bpm (if greater, termed tachycardia). Resting heart rates can be significantly lower in athletes. The infant/neonatal rate of heartbeat is around 130–150 bpm, the toddler's about 100–130 bpm, the older child's about 90–110 bpm, and the adolescent's about 80–100 bpm.

The body can increase the heart rate in response to a wide variety of conditions in order to increase the cardiac output (the amount of blood ejected by the heart per unit time). Exercise, environmental stressors or psychological stress can cause the heart rate to increase above the resting rate.

Measuring heart rate

http://www.tessafrica.net

Measuring the pulse at the neck and wrist

The pulse rate (which in most people is identical to the heart rate) can be measured at any point on the body where an artery is close to the surface. Such places are wrist (radial artery), neck (carotid artery), elbow (brachial artery), and groin (femoral artery). The pulse can also be felt directly over the heart. (Remember, never use your thumb to measure your pulse rate, because thumbs have a pulse rate of their own.)

It is also possible to measure heart rate acoustically, by listening to the sounds the heart makes while beating. These sounds can be listened to using a stethoscope.

Time

Subject knowledge for the teacher:

Units of time

Time

- 1 minute = 60 seconds
- 1 hour = 60 minutes
- 1 day = 24 hours
- 1 week = 7 days
- 1 fortnight = 14 days
- 1 year = 12 months = 52 weeks = 365 days
  leap year = 366 days

Activity 2: Converting time

Examples of questions:

- How many minutes in 8 hours?
- How many minutes in 10½ hours
- How many minutes in 6¼ hours?
- 240 minutes = ____ hours
- 330 minutes = ____ hours
- Complete the following table:

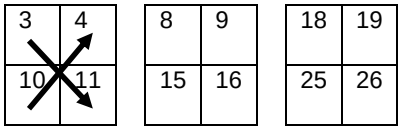
Days	1	2	4	6	8	10	18
Hours	24						

Activity 3: Calendars

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

- Use the above calendar and answer the following questions:
  - What day is it today?
  - Find the day on your calendar and colour it red.
  - What day will the 8th of December fall on? Colour this day yellow.
  - Christmas Day is on the _____ of December. Circle this day in blue.
  - Boxing Day is on the _____ of December. Circle this day in green.
  - The 1st of December falls on a _____.
  - What will the date be if it is 3 weeks later?
  - Schools close on the ____ of December.
  - What do you notice about the numbers in each column? *(They differ by 7)*
  - Put a box around any four numbers on the calendar, for example:



  - Find relationships among the numbers. Add the diagonal numbers in each box. Look at your answers. What do you notice?
  - There are ____ days in December.
  - There are ____ Sundays in December.
  - There are ____ school days in December.

Activity 4: 24 - hour time

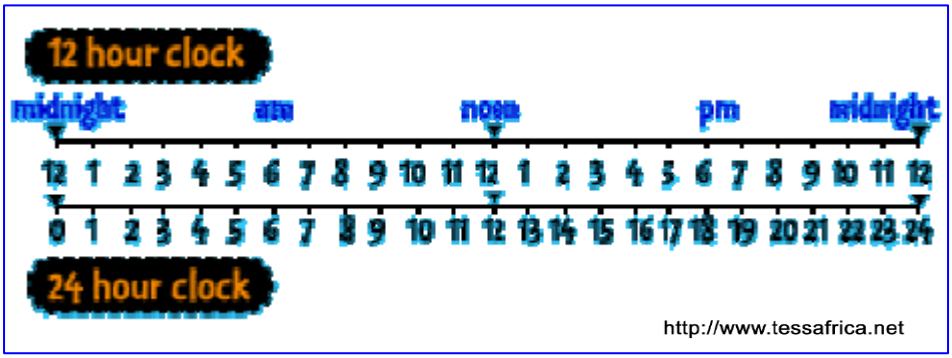
Write these times using the 24-hour clock:

- 8 o' clock at night.
- 8 o' clock in the morning.
- 11 o' clock at night
- 11 o'clock in the morning
- 5 o' clock in the afternoon
- 5o' clock in the morning
- 1 o' clock at night
- 1 o'clock in the afternoon

Note to teachers:

- We say: 12 midday is 12 hundred hours. We write: 12:00
- We say: 12 midnight is 24 hundred hours. we write: 24:00

The 24-hour clock
Subject knowledge for teachers



Remember:

- a.m. is morning time (it comes from the Latin *ante meridium*,meaning 'before midday');
- p.m. is afternoon and evening time (it comes from the Latin *post meridium*, meaning 'after midday');
- the 24-hour clock always uses four digits.

e.g.

- 6.15 am ➔ 06:15 (morning) and
- 6.15 pm ➔ 18:15 (afternoon/evening)

Note: 06:15 and 18:15 are examples of 24-hour clock time.

Months of the year

Here is a way to remember how many days there are in each month.

- Start by counting January on the first knuckle of your left hand and February as the gap between the knuckles.

- All the 'knuckle' months have 31 days.
- **February has 28 days (29 in a leap year).**
- All the other months (April, June, September and November) have 30 days.

Mass

Activity 2: Comparing weight

You will need five simple balances to carry out this activity and five sets of common objects e.g. stones, balls, tins, bottle tops etc. that could be used with the balances. These can be collected from around the school.

- Write instructions for your pupils on the board and show the class what you want them to do using any two objects.
- Give two objects to two pupils and ask them to estimate which object is heavier.
- Now ask a pupil to test their idea out by putting the objects on the pan of the balance.
- Ask them which is the heaviest object, and why they think so.
- Organise your pupils into five groups, giving each group a set of objects and a balance. Ask pupils to find which object is heavier by estimating its weight and then by using the balance.
- Ask them to fill in a table of their results to share with the class to see if everyone agrees.

- You could challenge older or more able pupils to see if they can order their objects from heaviest to lightest before testing.

Note to teachers:
You may want to bring bags of sugar, rice or other local products sold in bags to class, to show their weight is recorded in grams or kilograms and for pupils to feel the actual weights. You could make some mock ones by filling plastic bags with sand or stones to the correct weight. If you can, borrow a pair of scales to do this.

Activity 3: Weighing in kilograms

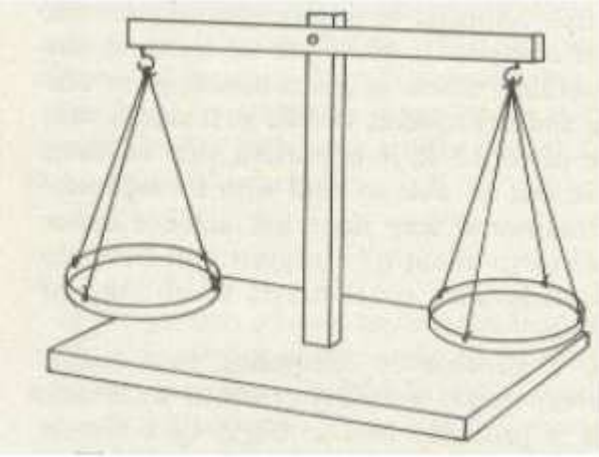
Before the lesson, collect a number of objects that have their weights shown or make up your own– butter or packet foods and other goods. e.g. butter, sugar, washing powder, etc.
Ask groups to write down the name of the product, and its weight– ensure that they include the correct units (kilograms).
Pupils could arrange and rearrange the packages by weight from highest to lowest or lowest to highest or sort into groups.

Homemade balance

Estimation is an important skill in both mathematics and science. Simple balances (which can be made with very modest resources) allow pupils to approach measuring and estimating weight through practical investigation.

SIMPLE BALANCE

These are simple balances you could make to help pupils compare weights.
To make a simple balance you need some string, two plastic pots or lids, two sticks and a base. Fix the sticks as shown in the diagram – so the cross stick is able to move freely. Cut six equal lengths of string – 3 each to attach the plastic pots or lids to either end of the stick as shown in the diagram. Place the objects to be compared in the pots or lids – one in each pot or lid.



http://www.tessafrica.net

Using homemade standard units

Teachers can make bean bags weighing 1kg, ½kg, 2kg and 3kg (using different coloured cloth for each weight). Ask some of the parents to help sew several sets for the class.
Demonstrate the weighing of objects in kilograms using the improvised weights and a simple balance, and then ask pupils to weigh objects to the nearest kilogram, and record their results in a table.

LO 5: DATA HANDLING

Tally chart

Teacher resource for planning or adapting to use with pupils

Making tally marks is a useful way to quickly count things in different categories. It involves making a mark or placing a store for each item counted in the particular group. The chart below shows a chart started for siblings in a class of 56 Grade 3 pupils. Each bundle of marks ~~𝍸~~ represents five children.

Name	Brothers	Sisters
Mdingi	II	III
Nofamu	~~𝍸~~	I

Activity 1:Temperature

Alice and Mary are having an argument. Alice says that it is hotter this week than it was last week. Mary thinks it was hotter last week.
Here are the temperatures for the two weeks.

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Week 1	22 °C	21 °C	19 °C	23 °C	23 °C	23 °C	22 °C
Week 2	18 °C	19 °C	23 °C	25 °C	26 °C	24 °C	22 °C

a) Draw the temperature for both weeks on the same bar graph, using different colours for each week.
b) Which week showed the highest temperature?
c) Which week showed the lowest temperature?

Activity 2: Rainfall

- Ask the learners to represent Mopani's rainfall on a bar graph.
- Ask them questions about their graphs
  e.g.
  - Which month had the highest/lowest rainfall?
  - What is the difference between the rainfall in January and the rainfall in June?
  - What was the Mopani's total rainfall in 2007? etc.

Mopani's rainfall in mm in 2007

Month	Average rainfall (mm)
January	123
February	97
March	84
April	52
May	17
June	9
July	6
August	6
September	28
October	73
November	120
December	110

Word problems

1. Mom baked 171 cakes. She sold 90 of them. Then she baked some more and now has 195 cakes for sale. How many more cakes did she bake?
2. A builder orders 950 bricks. When he starts building he fi nds that he uses 150 bricks for one wall. How many walls can he build with the bricks he ordered?
3. Mrs Smith and her 3 friends ordered 11 pizzas. They shared them equally. How much pizza did each person get?
4. The teacher buys 25 packets of crayons. There are 12 crayons in each pack. How many crayons does she have?
5. Thembeka eats 7 sweets every day. She has 56 sweets. For how many days does she have sweets?
6. Sarah has 50 Rand for travelling to work. She spends 11 Rand each day on a taxi. One day, she doesn't have enough money for the taxi. How many days has she travelled to work? On the day her money runs out, how much extra does she need for the taxi that day?

Rubrics
and
Recording Sheet

Rubrics for Formal Assessment Tasks Grade 3 Term 4				
Assessment Standard	**1**	**2**	**3**	**4**
LO 1 AS 1.1 Counts forwards and backwards in the intervals specified in Grade 2 with increased number ranges;	Unable to count forwards and backwards in ones, twos, fives and tens from 0 – 1 000.	Counts forwards and backwards in ones, twos, fives and tens from 0 – 1 000. Makes errors and relies on prompting from the teacher.	Counts forwards and backwards in ones, twos, fives and tens from 0 to 1 000. Makes a careless mistake, but corrects it.	Counts forwards and backwards in ones, two, fives and tens from 0 – 1 000 accurately and confidently.
LO 1 AS 1.2 Counts forwards and backwards in 20s, 25s, 50s and 100s between 0 and at least 1 000.	Unable to count forwards and backwards in 20s, 25s, 50s and 100s between 0 and 1 000	Counts forwards and backwards in 20s, 25s, 50s and 100s between 0 and 1 000 Makes errors and relies on prompting from the teacher.	Counts forwards and backwards in 20s, 25s, 50s and 100s between 0 and 1 000 Makes a careless mistake, but self-corrects it.	Counts forwards and backwards in 20s, 25s, 50s and 100s between 0 and 1 000 accurately and confidently.
LO 1 AS 3 Knows, reads and writes number symbols and names from 1 to at least 1 000.	Any 2 correct.	Any 4 correct.	Any 6-8 correct.	All 10 correct.
LO 1 AS 4.1 Orders, describes and compares the following numbers whole numbers to at least 3 digit numbers:	Unable to order numbers 0 – 1 000 from smallest to biggest. Unable to compare numbers using more, less and between.	Need support to order numbers 0 – 1 000 from smallest to biggest. Need support to compare numbers using more, less and between.	Orders numbers 0 – 1 000 from smallest to biggest. Makes a careless mistake, but corrects it. Compares numbers using more, less and between correctly. Makes a careless mistake, but corrects it.	Orders numbers 0 – 1 000 from smallest to biggest accurately. Compares numbers accurately using more, less and between.
LO 1 AS 4.2 Orders, describes and compares the following numbers common fractions including halves, quarters and thirds. (½;¼;⅓)	Unable to order fractions from smallest to biggest.	Need support to order fractions smallest to biggest.	Orders the fractions from smallest to biggest. Makes a careless mistake, but corrects it.	Orders fractions from smallest to biggest accurately.
LO 1 AS 5 Recognizes the place value of digits in whole numbers to at least 3-digit numbers.	One correct.	Any 2 - 4 correct.	Any 5 - 7 correct	All 8 correct.
LO 1 AS 6 Solves money problems involving totals and change in rands and cents, including converting between rands and cents.	Unable to pack out a given amount. Unable to calculate the total amount of money. Confuses addition and subtraction. Unable to write a number sentence and calculate the answers to the money word problems.	Able to pack out some of the given amounts. Relies on assistance from the teacher or peers. Able to do some addition and subtraction calculations with money. Sometimes confuses addition and subtraction. Writes some of the numbers sentences and calculates some of the answers to the money word problems. Relies on concrete apparatus and prompting from	Able to pack out the given amounts. Sometimes make a careless mistake, but corrects it. Able to do the addition and subtraction calculations with money. Sometimes make a careless mistake, but corrects it. Writes the numbers sentences and calculates the answers to the money word problems. Relies on concrete apparatus.	Able to pack out all the given amounts accurately and with ease. Able to do all the addition and subtraction calculations with money. Seldom relies on concrete apparatus. Writes the numbers sentences and calculates the answers to the money word problems accurately and with ease. Seldom relies on

Rubrics for Formal Assessment Tasks Grade 3 Term 4				
Assessment Standard	**1**	**2**	**3**	**4**
		the teacher.	Sometimes make a careless mistake, but corrects it.	concrete apparatus.
LO 1 AS 7 Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary and non-unitary fractions.	Unable to solve and explain the answers to the word problems. Needs support from the teacher.	Able to solve and explain some of the answers to the word problems. Relies on concrete apparatus and prompting from the teacher.	Able to solve and explain the answers to the word problems. Makes a careless mistake, but corrects it.	Solves and explains the answers to the word problems accurately and with ease.
LO 1 AS 8.1 Can perform calculations, using appropriate symbols, to solve problems involving addition and subtraction of whole numbers with at least 3 digits	Unable to calculate the answers to the addition and subtraction sums. Unable to calculate the answers to the word problems.	Able to calculate the answers to addition and subtraction sums. Able to solve some of the word problems. Relies on concrete apparatus and prompting from the teacher.	Able to calculate the answers to the addition and subtractions sums. Makes a careless mistake, but corrects it. Able to solve the word problems. Makes a careless mistake, but corrects it.	Calculates the answers to the addition and subtraction sums accurately and with ease. Solves the word problems accurately and with ease.
LO 1 AS 8.2 Can perform calculations, using appropriate symbols, to solve problems involving multiplication of at least whole 2-digit by 1-digit numbers;	Unable to calculate the answers to the multiplication sums. Unable to calculate the answers to the word problems.	Able to calculate the answers to the multiplication sums. Able to solve some of the word problems. Relies on concrete apparatus and prompting from the teacher.	Able to calculate the answers to the multiplication sums. Able to solve the word problems. Makes a careless mistake, but corrects it.	Calculates the answers to the multiplication sums accurately and with ease. Solves the word problems accurately and with ease.
LO 1 AS 8.3 Can perform calculations, using appropriate symbols, to solve problems involving division of at least whole 2-digit by 1-digit numbers	Unable to calculate the answers to the division sums. Unable to calculate the answers to the word problems.	Able to calculate the answers to the division sums. Able to solve some of the word problems. Relies on concrete apparatus and prompting from the teacher.	Able to calculate the answers to the division sums. Able to solve the word problems. Makes a careless mistake, but corrects it.	Calculates the answers to the division sums accurately and with ease. Solves the word problems accurately and with ease.
LO 1 AS 9.1 Performs mental calculations involving addition and subtraction for numbers to at least 50	Any 1 - 5 correct.	Any 6 - 13 correct.	Any 14 - 19 correct.	All 20 correct
LO 1 AS 9.2 Performs mental calculations involving multiplication of whole numbers with solutions to at least 50.	Any 1 - 5 correct.	Any 6 - 13 correct	Any 14 - 19 correct.	All 20 correct
LO 1 AS 10.1 Uses the following techniques building up and breaking down numbers;	Unable to build up and break down numbers 1 -999. Unable to write a number sentence.	Can build up and break down numbers to 999 using limited combinations. Needs prompting from the teacher to write the number sentences.	Can build up and break down numbers to 999 using a variety of combinations. Writes the number sentences correctly. Makes a careless mistake, but corrects it.	Able to build up and break down num-bers to 999 using a variety of combinations. Writes number sentences confidently and with ease.

Rubrics for Formal Assessment Tasks Grade 3 Term 4				
Assessment Standard	**1**	**2**	**3**	**4**
LO 1 AS 10.2 Uses the following techniques: doubling and halving;	Unable to double numbers with answers to 999 and halve numbers to 999.	Uses concrete apparatus e.g. flard cards, number grid or the number line to double numbers with answers to 999 and halve numbers to 999. Relies on support and prompting from the teacher.	Can double numbers with answers to 999 and halve number to 999. Seldom relies on flard cards, the number grid or the number line. Makes a careless mistake, but corrects it.	Can double numbers with answers to 999 and halve number to 999 accurately and with ease.
LO 1 AS 10.4 Uses the following techniques: rounding off in tens	One correct.	Any 2 - 4 correct.	Any 5 - 7 correct	All 8 correct.
LO 2 AS 2 Copies and extends simple number sequences to at least 1000	Unable to copy and complete a number pattern in the number range 0 – 1 000.	Can copy, but find it difficult to determine and complete the number pattern in the number range 0 – 1 000.	Can copy, determine and complete the number pattern in the number range 0 – 1 000. Sometimes make careless mistake, but corrects it.	Can copy, determine and complete the number pattern accurately and with ease in the number range 0 – 1 000.
LO 2 AS 3 Creates own patterns	Unable to create their own patterns.	Relies on prior knowledge to create own number patterns. Do not experiment with different number patterns. Needs semi-concrete apparatus (number line or number grid)	Can create a variety of number patterns. Experiment with new patterns, but makes a careless mistake, but corrects it. Seldom relies on semi-concrete apparatus	Can create a variety of number patterns accurately and with ease. Experiment with new patterns.
LO 2 AS 4 Describes observed patterns	Unable to describe a given number patterns.	Needs support and prompting from the teacher to describe a given number patterns.	Able to describe the given number patterns. Makes a careless mistake, but corrects it.	Able to describe all of the given number patterns confidently and with ease.
LO 3 AS 1 Recognises, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: • Boxes (prisms), balls (spheres) and cylinders • Triangles, squares and rectangles • Circles • Cones and pyramids	Any 5 or less correct	Any 6 - 11 correct	Any 12 - 17 correct	All 18 correct
LO 3 AS 6 AS 6: Reads, interprets and draws informal maps of the school environment or of an arrangement of three-dimensional objects and locates objects on the map	Unable to draw a map of the classroom. Unable to answer questions about the map.	Needs support and prompting from the teacher to draw a map of the classroom and answer questions about the map.	Able to draw a map of the classroom and answer most questions about the map.	Able to draw an accurate map of the classroom and answer all questions about the map with confidence.
LO 4 AS 1 Reads and writes analogue and digital clock time in terms of hours, half-hours,	Unable to read and write time on a digital and an analogue clock.	Able to read some of the hours and minutes on a digital and an analogue clock. Needs	Able to read the hours and minutes on a digital and an analogue clock. Makes a careless	Able to read the hours and minutes on a digital and an analogue clock with accuracy and with

Rubrics for Formal Assessment Tasks Grade 3 Term 4				
Assessment Standard	**1**	**2**	**3**	**4**
quarters of an hour and minutes		prompting from the teacher.	mistake, but corrects it.	ease.
LO 4 AS 2.1 AS 2: Solves problems involving calculations with and conversions between: 2.1 Minutes ◄► hours	Unable to solve problems and answer questions involving conversions between minutes and hours.	Able to solve some of the problems and answer some of the questions involving conversions between minutes and hours. Needs prompting from the teacher.	Able to solve problems and answer questions involving conversions between minutes and hours. Makes a careless mistake, but corrects it.	Able to solve problems and answer questions involving conversions between minutes and hours accurately and with ease.
LO 4 AS 2.2 Solves problems involving calculations with and conversions between hours to days	Unable to solve problems and answer questions involving conversions between hours and days.	Able to solve some of the problems and answer some of the questions involving conversions between hours and days. Needs prompting from the teacher.	Able to solve problems and answer questions involving conversions between hours and days. Makes a careless mistake, but corrects it.	Able to solve problems and answer questions involving conversions between hours and days accurately and with ease.
LO 4 AS 5 Estimates, measures, compares and orders three-dimensional objects using non-standard and standard measures: • Mass (e.g packets, kilograms) • Capacity (e.g bottles, litres) **6** Length (e.g desk lengths, metres)	Unable to estimate measure and compare the length, mass and capacity of different objects using meters, kg and liters. Unable to answer questions about their findings.	Able to estimate, measure and compare some of the objects using meters, kg and liters. Able to answer some of the questions about their findings.	Able to estimate measure and compare the objects using meters, kg and liters. Able to answer most of the questions about their findings.	Able to estimate measure and compare the objects accurately and with ease. Able to answer the questions about their findings.
LO 5 AS 1 Collects data (alone and/or as a member of a group or team) in the classroom and school environment to answer questions posed by the teacher and class (e.g 'How many learners walk to school?) **LO 5 AS 2** Sorts, orders and organises own and supplied data by one or more attributes for a particular reason	Unable to collect and sort information to determine the number of learners in the different grades. Needs support from the teacher.	Collects information but needs support from the teacher to sort the information according to grades.	Collects and sorts information according to learners in different grades. Makes a careless mistake, but self-corrects it.	Collects and sorts information according to the learners in different grades accurately and with ease.
LO 5 AS 3 Draws pictures and constructs pictographs and bar graphs that have a 1-1 correspondence between own data and representation	Unable to construct a pictograph to show their representations on a graph.	Needs support from the teacher to construct a pictograph to show their representations on a graph.	Able to construct a pictograph to show their representations on a graph. Makes a careless mistake.	Able to construct a pictograph to show their representations on a graph accurately.
LO 5 AS 4 Reads, interprets and reports on information in own and peer's representations of data	Unable to read, interpret and report on own or peer's representations.	Able to read, interpret and report on some of own or peer's representations. Use limited explanations. Needs prompting from the teacher.	Able to read, interpret and report on own or peer's representations.	Able to read, interpret and report on own or peer's representations. Can make conclusions and predictions.

Rubrics for Formal Assessment Tasks Grade 3 Term 4				
Assessment Standard	**1**	**2**	**3**	**4**
LO 5 AS 5 ✎ Reads and interprets data presented in simple tables and lists	Unable to interpret the pictographs to answer the questions.	Able to answer some of the questions correctly. Needs support from the teacher.	Able to answer the questions correctly, Makes a careless mistake.	Able to answer all the questions accurately and with ease.

PROVINCE OF THE EASTERN CAPE
DEPARTMENT OF EDUCATION
NUMERACY RECORDING SHEET FOR FORMAL ASSESSMENT TASKS

YEAR _____

NAME OF SCHOOL _____

CLASS TEACHER _____

GRADE 3

TERM 4

NAME		FAT'S	LO 1 Numbers, Operartions & Relationships																	LO 2 Patterns, Functions & Algebra				LO 3 Space & Shape				LO 4 Measurement					LO 5 Data Handling				ANNUAL NATIONAL TEST	Code for FAT	FINAL CODE	COMMENTS
			AS 1.1	AS 1.2	AS 3	AS 4.1	AS 4.2	AS 5	AS 6	AS 7	AS 8.1	AS 8.2	AS 8.3	AS 9.1	AS 9.2	AS 10.1	AS 10.2	AS 10.4	CODE	AS 2	AS 3	AS 4	CODE	AS 6	AS 2.1	AS 2.2	CODE	AS 1	AS 2.1	AS 2.2	AS 5	CODE	AS 1	AS 2	AS 4	CODE				
1		1																																				
		2																																				
		3																																				
2		1																																				
		2																																				
		3																																				
3		1																																				
		2																																				
		3																																				
4		1																																				
		2																																				
		3																																				
5		1																																				
		2																																				
		3																																				
6		1																																				
		2																																				
		3																																				
7		1																																				
		2																																				
		3																																				
8		1																																				
		2																																				
		3																																				

TEACHER _____ DATE _____ GRADE HEAD _____ DATE _____