Province of the
EASTERN CAPE
DEPARTMENT OF EDUCATION

GRADE 2
NUMERACY
PROVINCIAL LESSON PLANS
TERM 4
2009

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NOTE TO SCHOOL MANAGEMENT TEAMS AND TEACHERS IN THE FOUNDATION PHASE

The exemplar Numeracy Lesson Plans for **Grade 2 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: ECD/Foundation Phase
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Zwelitsha

ACKNOWLEDGEMENTS

Teachers

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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
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Ms G Suttie	Graeme College Primary	Grade 2	Grahamstown
Ms L Knickelbein	Kuswag Primary	Grade 2	East London
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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 2 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 2.

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 LEARNING OUTCOMES AND ASSESSMENT STANDARDS	Date completed
LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS	
AS 1: Counts to at least 100 everyday objects reliably.	
AS 2: Counts forwards and backwards 2.1 ones from any number between 1 - 200 2.2 tens from any multiple of 10 between 0 - 200 2.3 fives from any multiple of 5 between 0 - 200 2.4 twos from any multiple of 2 between 0 – 200	 2.1 2.2 2.3 2.4
AS 3: Knows and reads number symbols from 1 to at least 100 and writes number names from 1 to at least 100	
AS 4: Orders, describes and compares the following numbers: 4.1 Whole numbers to at least 2-digit numbers 4.2 Common fractions including halves and quarters (½. ¼)	 4.1 4.2
AS 5: Recognizes the place value of digits whole numbers to at least 2-digit numbers	
AS 6: Solves money problems involving totals and change in rands and cents.	
AS 7: Solves, explains solutions to practical problems that include equal sharing and grouping and that lead to solutions that also include unitary fractions (eg ¼)	
AS 8: Can perform calculations, using appropriate symbols, to solve problems involving: 8.1 Addition and subtraction of whole numbers with at least 2 digits 8.2 Multiplication of whole 1-digit numbers by 1-digit numbers with solutions to at least 50 8.3 Estimation.	 8.1 8.2 8.3
AS 9: Performs mental calculations involving: 9.1 Addition and subtraction for numbers to at least 20 9.2 Multiplication of whole numbers with solutions to at least 20	 9.1 9.2
AS 10: Uses the following techniques: 10.1 Building up and breaking down numbers 10.2 Doubling and halving 10.3 Using concrete apparatus 10.4 Number lines	 10.1 10.2 10.3 10.4
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 200	
LO 3: SPACE AND SHAPE	
AS 1: Recognizes, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: Boxes (prisms) and balls (spheres), cylinders; triangles and rectangles, circles	
AS 4: Recognises symmetry in two-dimensional shapes and three-dimensional objects.	
AS 5: Recognises 3D objects from different positions.	
AS 6: Positions self within the classroom or 3D objects in relation to each other	
LO 4: MEASUREMENT	
AS 1: Reads and writes analogue and digital clock time in terms of hours and minutes	
AS 2: Compares events in terms of the length of time they take (longer, shorter, faster, slower).	
AS 3: Calculates elapsed time in: 3.1 hours and minutes using clock 3.2 days, weeks and months using calendars	 3.1 3.2
AS 6: Estimates, measures, compares and orders 3D objects using non standard measures: Mass (bricks, sand bags), capacity (spoons, cups), length (hand spans, footsteps).	

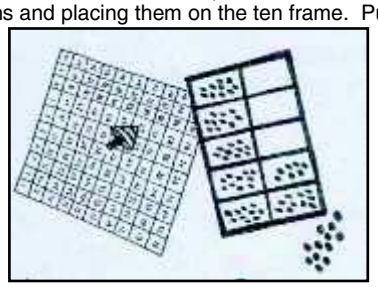
WEEK 1

LO 1: NUMBERS, OPERATIONS AND RELATIONSHIPS

AS 1

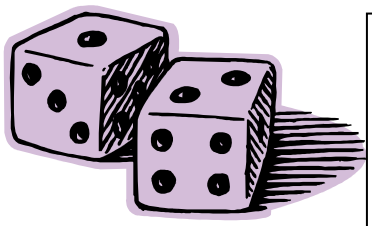
- Learners count physical objects using one-to-one correspondence in the number range 0 – 100

- Game: Spin and Show
  Learners use a toy top to "spin" a number and then represent it by counting out beans and then representing it on the "ten frame".
  Place the top in the center of the hundreds board and spin. Wait for it to stop and then read the number. Create that number by counting out the beans and placing them on the ten frame. Put 10 beans in each square.



AS 2.1

- Learners count forwards and backwards in ones in the number range 0 – 200. The learners may use counters, an abacus, number grid or number line.
  eg. 124, 125, 126,…. …., 179, 178, 177, … …,
  Learners count in 1's from any given number. Begin at 154, count on to 200 and then back to 164.
- Choose a learner. Say, "*I want you to count in ones, starting at 137. Stop when you get to 160.*" Encourage the other learners to listen closely and verify the counting. Repeat for other 2- or 3- digit starting and finishing numbers. (Choose numbers that ensure each learner says at least 20 numbers.) Now call on individuals to count back in ones. Again, the starting and finishing numbers you say should be 2- or 3-digit numbers.



The Golden Number.

- Small group activity: Teacher chooses "The Golden Number" eg. 189 and the starting number eg. 117. Learner A throws the dice, gets 5, and counts on eg 117, 118, 119, 120, 121. He/she passes the dice on to Learner B. The dice is thrown again and that number is counted on. The dice keeps going around the small group until the golden number is reached. Learners check one another that the counting is correct! Once the Golden Number is reached, the dice is thrown again and counting backwards in 1's begins.

- Variation: Count in 2's, 5's, 10's – extension: 4's and 3's

AS 2.2

- Learners count forwards and backwards in tens in the number range 0 – 200. The learners may use counters, an abacus, number grid or number line.
  eg. 110, 120, 130, …., ….
  200, 190, 180, 170, …., ….
- Let the learners count using a number grid. Find the number 106. Count on in 10's. Stop at 186. Now count back in 10's and stop at 126.

100				104	105				
110		112				116			
			123	124		126	127	128	
130	131	132	133	134	135		137	138	
140		142	143	144		146			149
150				154	155				159
	161				165	166			
170		172					177	178	
	181	182	183	184	185	186	187	189	
		192	193			096	197	198	

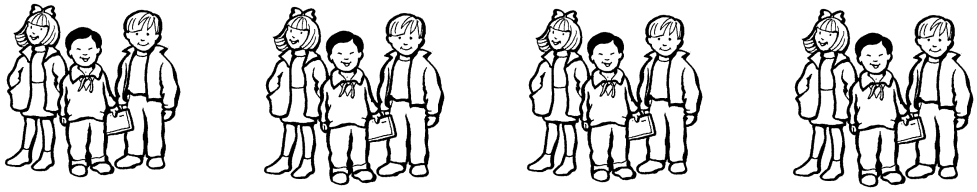
AS 2.3

- Learners count forwards and backwards in fives in the number range 0 – 160. The learners may use counters, an abacus, number grid or number line.
  e.g. 95, 100, 105, … … 160, 155, 150, …. ….

AS 2.4

- Learners count forwards and backwards in twos in the number range 0 – 160. The learners may use counters, an abacus, number grid or number line.
  e.g. 118, 120, 122, … … 160, 158, 156, ...

- Let the learners count using their body parts. Twelve children stand in the front of the class. They count the eyes, ears, hands and legs of these children in 2's.



AS 3

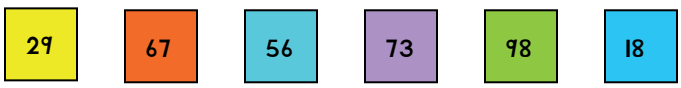
- Learners read any number symbol in the number range 1 – 160. The learners read the symbols on number cards, a number grid or a number line.
  eg. 114 151
- Learners learn the number names and symbols while counting from a number grid or abacus.
- Using a 100-grid, the teacher says: "Find 142 on the grid:

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210

  - Which number comes before 142?
  - Which number comes after 142?
  - What number is 1 more than 142?
  - What number is l less than 142?
  - What number is 10 greater than 142?
  - What number is 10 less than 142?
  - 142 is in between which two numbers?
  - What are the next 5 consecutive numbers after 142?
  - What number is half of 142?
- Learners write any number name in the number range 0-100 .
  eg. 47 forty-seven
- Bean bag activity:
  - Use a couple of bean bags.
  - Place a number or number name under each bean bag.
  - Throw another bean bag and if it lands on one of the bean bags, read its number or number name.
  - The numbers can also be added together and the person with the highest total wins.

AS 4.1

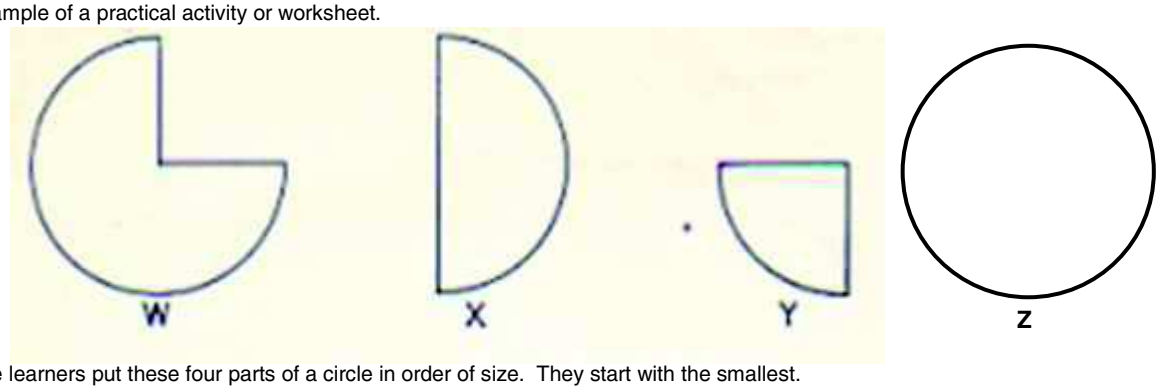
- Orders, describes and compares the following numbers:
- Learners order whole number 0 – 99 in ascending (smallest to biggest.) / descending order (biggest to smallest). Learners may use a number grid or a number line.



- Every learner in the class is given a random number. Teacher chooses six random numbers to come to the front of the class eg. 29, 67, 56, 73, 98 and 18. These learners sequence themselves from the smallest number to the biggest. Given clues based on a number already in position, e.g. "double 35 join the line." The learner with 70 comes forward and takes his place. 5 more than John come (John is the one holding 70 – the one holding 75 then comes forward, 3 less than 67, half of Oyama's number…….the learner holding 32 joins the line **.**

AS 4.2

- Learners order and describe ½ and a ¼ in ascending order (smallest to biggest) or descending order (biggest to smallest). Learners may use concrete objects, pictures or the number line.
- Example of a practical activity or worksheet.



The learners put these four parts of a circle in order of size. They start with the smallest.
Write these fractions in order of size, starting with the smallest.

¾ ½ ¼ 1 whole

AS 5

- Learners identify the place value of a given digit in a number in the number range 0 – 99. Learners may use flard cards.
  - e.g. **9**2 is 90 or 9 tens 9**2** is |2| or |__2__| ones
- Ask them to pack out the following numbers with flard cards:
  - number 63. Now change it to 43;
  - number 92 and to change it to 22;
  - number 78, then say plus 2 (the learners add the 2 to the 78 to show that it can make 80), plus 4, minus 10, etc.;

AS 6

- Learners solve money problems in the number range 0 – 99 using R1, R2, R5, R10, R20, R50, 5c, 10c, 20c, 50c. Learners may use play or real money. e.g. Learners pack out a given amount such as R12,25, R57,62
- Learners calculate addition and subtraction sums: R65.00 – R22.00 + R38.00 = ☐

Fill in the missing coins to make eg. R94
R50 + R20 + R20 + ___ + ___ = R94,00
R50 + R10 + R__ + R10 + R__ + R5 + ___ + ___ = R94,00

- Learners work in small groups and make use of play-money.
  - counting out the required amount of money (coins and notes*):* Each learner in the group gets a chance to give an instruction e.g. Count out R4,30 and use as few coins as you can.
  - (Answer: R2; R2; 20c; 10c)
  - Calculating the total amount: Each learner contributes two coins or notes. The group sorts them according to type, arrange them from the biggest to the smallest and calculates the total.
  - e.g. R5 + R5 + R2 + 50c + 50c + 20c + 10c + 10c + 5c + 5c
  - Calculating change: The learners work in pairs in their group. They buy imaginary objects from a friend and receive the correct change e.g. "John, I buy your pencil for R1,80. Here is R2. Please give me the change.
- Cake Sale

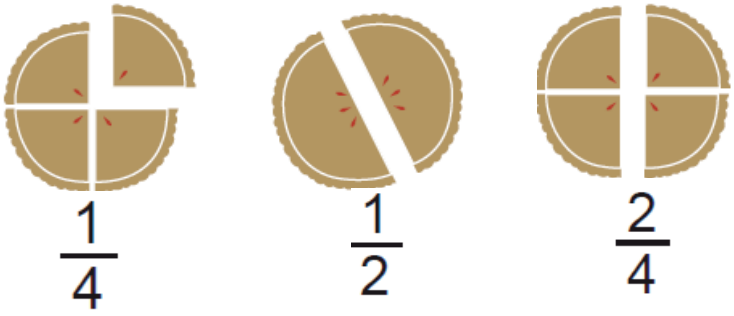
Price List (per slice)

-	Fruit cake	R3,00
-	Chocolate cake	R2,00
-	Carrot cake	R1,50
-	Plain cake	60

- There are 4 different cakes at the cake sale and you buy one slice of each cake. How much do you pay altogether?
- If you paid with a R10,00 note, how much change would you receive?
- What coins would you use to pay for one slice of the fruit cake and 1 slice of the carrot cake?
- If all the slices of chocolate cake were sold for a total of R12,00, into how many slices was the cake cut?

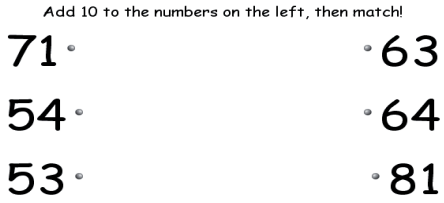
AS 7

- Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary fractions (e.g. ¼)
- Each learner receives a copy of the following "pies." They discuss the picture and then match the matching fraction to the correct pie slices.



AS 8.1

- Learners perform addition and subtraction with 2-digit numbers in the number range 0 – 99. Learners may use a number square or a number line.
  e.g.: Worksheet/card – change the "add 10 " to e.g. “add 34”



- Provide interlocking cubes in trains of 10, and extra cubes for the following activity.

  e.g. Write | 50 - 36 = | on the board.

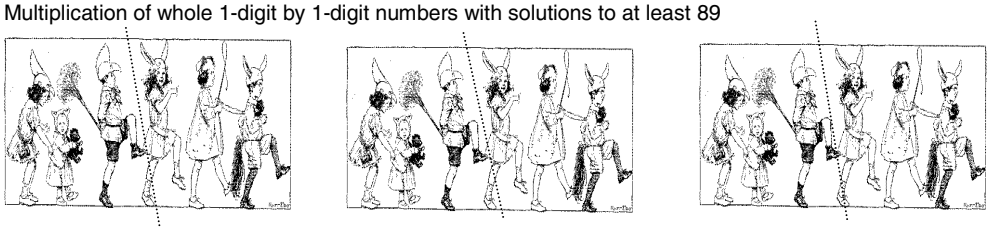
  - Ask, What are some different ways you could work out the answer?
  - Encourage them to use cubes to help with the explanations if they are struggling.
  - They might think and write:

    1. 50 – 30 ➔ 20 – 6 ➔ 14
       Count back 3 tens and then count back 6 ones, or
    2. 36 + **4** ➔40 + **10** ➔50, or
    3. 50 – 35 ➔ 15, so 50 – 36 ➔15 - 1➔14

  - Invite the learners to explain their different calculations/explanations.
- Game: What’s the difference? (4 players)
  Prepare a 100-square grid on a sheet of card, or use a Snakes and Ladders board. Each player throws two dice and records the score, then throws the dice again and records the second score. She then works out the difference between the two scores, and this represents the number of squares she may move. For example: if the first throw is 6 and 1 (total 7) and the second throw is 5 and 3 (total 8), the difference between the two totals is 1, and the player moves one place. Other players then take turns, and the first to reach 100 is the winner. Variations are many; for example, the difference might be doubled.

AS 8.2

- Multiplication of whole 1-digit by 1-digit numbers with solutions to at least 89

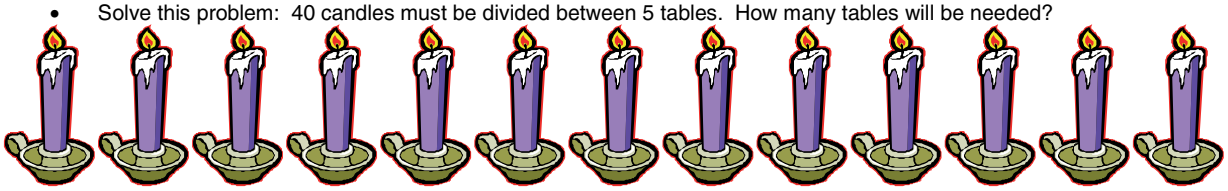


6 + 6 + 6 ➔ 3 groups of 6 ➔ 3 x 6 = 18 (6 must be added 3 times)

- By counting the children on the cards above, learners will come to realize that the number of children can just as well be thought of as 6+6+6 or as 3+3+3+3+3+3.
- This observation leads to the realization that 6 x 3 = 3 x 6 (The commutative law)

- When learners realize that 6X3 = 3X6, they will have not only learnt an important pattern, but they will also have halved the number of number facts that they need to remember.

- Solve this problem: 40 candles must be divided between 5 tables. How many tables will be needed?



- They work individually but sit in pairs.
- They solve the problem, draw their different ways of solving the problem and write a number sentence to determine the answer.
- They compare their answers and their ways of solving the problems with their partner and the other pairs.

AS 8.3

- Learners estimate the answer to addition, subtraction and multiplication problems. Learners compare the calculated answer. Estimation should be used by the learners continuously throughout all the LO's
- *Estimation is a vital skill for learners to learn. They should be encouraged ideally to make an estimate of the answer they expect before doing any calculation. In this way, if they have gone wrong they will know they have to rethink their strategy.*
- A fun activity to do with learners is to have a weekly estimation challenge. The idea is to create a spot in the classroom where you set out an estimating activity once a week. This can be run as a competition and you allow each learner to submit an answer in your ESTIMATION BOX. Every week you draw five answers out of the box and award points/awards to the person whose estimation is the closest to the answer. Every week you change the question.

e.g.

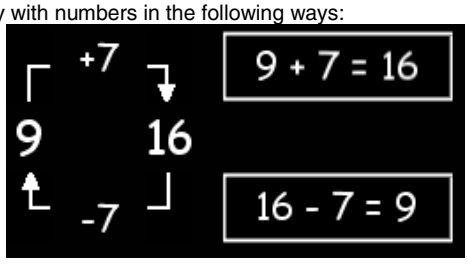
How many beans in the bottle?
You may use beans, popcorn, sweets, pencils, etc. Now allow the winner of the previous week's challenge to count the objects for that week.

AS 9.1

- Learners perform mental calculations involving addition and subtraction in the number range 0 – 20. Teachers use flashcards with the number symbols to represent the number combinations.
- Learners explore number 1 - 20.

- Write numbers 6, 7, 8, 9, 10 and 11 on the target.
- Say: Suppose you hit the target with 2 darts, add the two numbers and that will be your total score.
- Now ask: Could you score 14 with 2 darts?
- Could you score 14 in more than one way?
- Encourage learners to give all possible ways of scoring 14. (8 and 6, 7 and 7)
- Repeat the exercise with scores of e.g. 15 and 16 etc.

- Learners can play with numbers in the following ways:



AS 9.2

- Learners perform mental calculations with multiplication with answers to at least 20. The teacher uses flash cards with number symbols to represent the multiplication calculations.

- Write on the board.
  ___X___ = ___

2	5	10

Say: Choose numbers from the box to fill the first two spaces. The answer can equal or be less than 20. The same number may be used twice. Ask learners to give the numbers they chose and explain their thinking.

- Solve the following problem:
  There are four groups of choir singers with seven learners in each group. How many learners belong to the choir?

AS 10.1

- Learners break down and build up numbers in the number range 0-99 and may use a number grid and a number line.
  e.g. 99 = 80 + 10 + 9 OR 99 = 90 + 5 + 4 OR 99 = 90 + 9
- Learners build up numbers in the number range 0 – 99. Learners may use counters, drawings, number grid or a number line.
  e.g. 60 + 30 + 5 + 2 + 2 = 99
- Work card: building up numbers. Use only 60, 50, 40, 30, 20, 10, 5, 4, 3, 2 and 1 to make your number below. You may use the same number more than once. Can you make 5 different sums?
  e.g. Make **78** using the numbers above:
  - 50 + 20 + 4 + 4 ➔ 78
  - 40 + 30 + 5 + 3 ➔78
  - 60 + 10 + 2+ 2 + 2 + 2 ➔78
  - 30 + 30 + 5 + 5 + 5 + 2 + 1 ➔78

AS 10.2

- Learners double numbers with answers in the number range 0 - 99. Learners may use concrete apparatus, drawings, number lines, number grid, abacus or flard cards.
- Learners halve numbers without a remainder (even numbers) in the number range 0 - 99. Learners may use concrete apparatus, drawings, number lines, number grid, abacus or flard cards.

Double		Halve	
17		64	
46		72	
38		90	
55		46	
29		28	

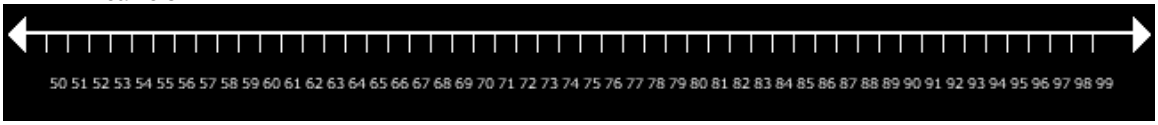
- Learners halve numbers with a remainder (odd numbers) in the number range 0 - 99. Learners may use concrete apparatus, drawings, number lines, number grid, abacus or flard cards.
  e.g. halve 85; halve 29
- Solve the following: Sally had 66cm of spaghetti. Erin's was half that length. How long was Erin's piece of spaghetti?

AS 10.3

- Learners use concrete apparatus when counting, building up, breaking down, doubling and halving numbers.

AS 10.4

- Number line: - A similar activity to the one done in AS 4.1 can be done on the number line instead of using the learners.



AS 11

- Learners explain solution to problems in the number range 0 – 99
- 35 children are going to a party. Four children can fit in a car. How many cars will be needed?

AS 12

- Learners check each other's solutions to problems in the number range 0 – 99

LO 2: PATTERNS, FUNCTIONS AND ALGEBRA

AS 2

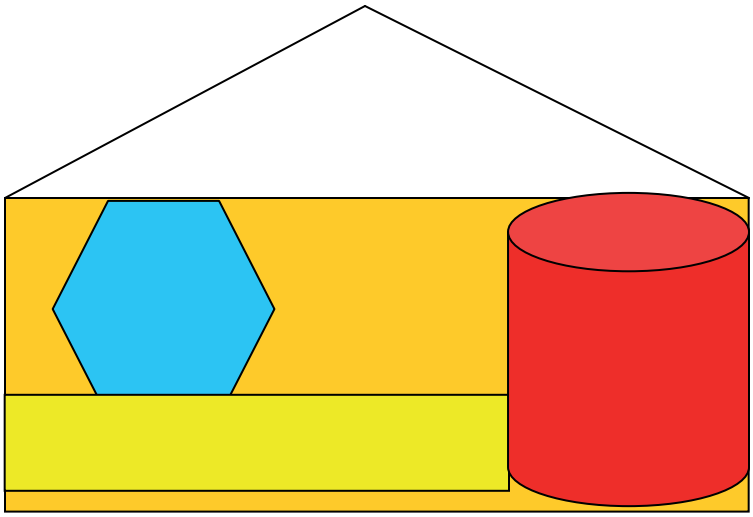
- Copies and extends simple number sequences to at least 160
- Give learners a worksheet which they have to complete

104	105	106					
55	60	65					
9	19	29					
2	7	12	17				
31	33	35					

LO 3: SPACE AND SHAPE

AS 1

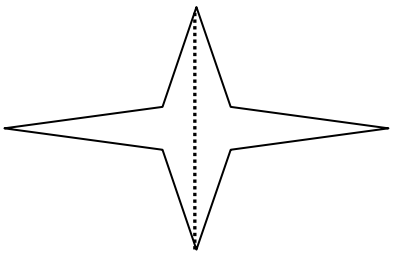
- Learners recognise, identify and name 2D-shapes and 3D -objects in the environment and in pictures. eg. 3D objects: boxes, balls, cylinders 2D-shapes: triangles, squares, rectangles, circle.



- Learners make a house for their dolls or a garage for their cars using old boxes.

AS 4

- Recognises symmetry in two-dimensional shapes and three-dimensional objects.

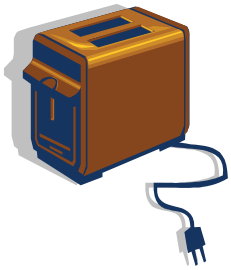


AS 5

- Learners recognise and describe 3D objects from different positions eg. from the top, from the side, from the bottom

Activity:
Learners make their own camera (use old cereal boxes) and look at the following pictures/real objects through the camera whilst standing up. They identify what shapes they can see from the top, side and the bottom.



AS 6

- Learners position themselves and use vocabulary to explain position of self in comparison with other 3D objects. eg on, above, behind, in front of, under, next to, in between




- Learners look at the picture and discuss what position the boy is in relation to the house.

LO 4: MEASUREMENT

AS 1

- Reads and writes analogue and digital clock time in terms of hours and minutes




- Practical exercise: Learners can use stop watches.
  Ask: How long does it take you to count from 1 – 100 on the number grid.
  How many hops can you do in one minute?

AS 2

- Learners answer questions about the order of days of the week and the months of the year. Learners may use a calendar.

OCTOBER.

• Sunday	1	8
• Monday	2	9
• Tuesday	3	10
• Wednesday	4	11
• Thursday	5	12
• Friday	6	13
• Saturday	7	14

Note:
There are seven days in a week.
** Sunday is the first day of the week.

- Write down the name of the second day of the week.
- What dates do we find Tuesday; and Friday?
- Write down the names of the school days of the week.
- Name the days of the week when we do not go to school.
- What are the dates of the 3rd week in October.
- How many days are there in October?

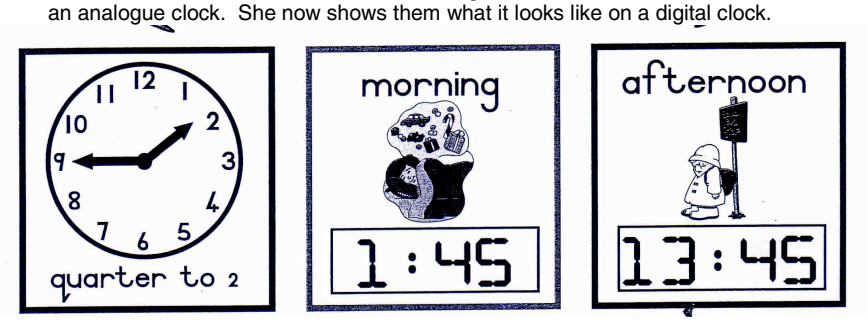
- Today is Tuesday. Now complete:
  - Yesterday was ……
  - Tomorrow will be …….
  - The day before yesterday was ……..
  - The day after tomorrow will be ……
  - From today to next Tuesday will be …… days?

AS 3.1

- Calculates elapsed time in: hours and minutes using clocks
- Learners answer the following questions and show on a small clock or fill in on a worksheet:
  - How many minutes is it from 3 o'clock to ten past three?
  - How many minutes is it from half past 4 to ten minutes past five?
  - How many minutes is it from 2 o'clock to twenty-five to three?



- Learners answer questions:
  - How long is it from 2 o'clock to 5 o' clock
  - It is now half-past 8. What time was it 2 hours ago?
  - What time will it be 2 hours after 4 o' clock?
- The teacher introduces the learners to the digital clock. She asks a learner to show her what 12 o ´clock looks like on an analogue clock. She now shows them what it looks like on a digital clock.



The abbreviation A.M. and P.M. come from Latin. The abbreviation a.m. stands for ante meridiem and means "before midday," and p.m. stand for post meridiem and means "after midday." The military uses the 24-hour clock, with 1:00 A.M. being 0100 hours (which is read as oh-one hundred hours). Noon is 1200 hours (twelve hundred hours). After noon, everything really changes, since you keep counting from 12 rather than start all over at 1 again. So 1:00 P.M. is 1300 hours (thirteen hundred hours), and midnight is 2400 hours (twenty-four hundred hours). Likewise, 3:00 A.M. is 0300 hours (oh-three hundred hours), while 3:00 P.M. is 1500 hours (fifteen hundred hours).

AS 3.2 (Integrate with AS 2)

- Calculates elapsed time in: days, weeks and months using calendars.

AS 6

- Learners measure and compare the length, mass and capacity of different objects. Learners arrange the objects from the longest to shortest, shortest to longest, heaviest to lightest, lightest to heaviest, most to least and least to most.

- Draw round your hand and cut the shape out.
  - Measure your hand in cubes, matches, number rods or 5c coins.
  - Record your finding on a grid.
  - Compare your finding to that of your friends.

RESOURCES:

Counters (beads, sticks, beans, stones, blocks,), abacus, number grid, number line, flash cards with numbers/symbols, flash cards with number names, toy top, bean bags, Snakes and Ladders board, 200 number block, worksheets, real or play money, mat books, pencils, crayons, flash cards with bonds, flash cards with mental maths + and - , flash cards with x, set of cards with sums, bottles with beans, 2D shapes (triangles, squares, rectangles, circles), 3D objects (boxes, balls, cylinders, spheres), calendar, analogue and digital clocks, dice.

BARRIERS

REFLECTIONS

WEEK 2

WEEK 2 LEARNING OUTCOMES AND ASSESSMENT STANDARDS	Date completed
LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS	
AS 1: Counts to at least 100 everyday objects reliably.	
AS 2: Counts forwards and backwards 2.1 ones from any number between 1 – 200 **(FAT 1)** 2.2 tens from any multiple of 10 between 0 – 200 **(FAT 1)** 2.3 fives from any multiple of 5 between 0 – 200 **(FAT 1)** 2.4 twos from any multiple of 2 between 0 – 200 **(FAT 1)**	 2.1 2.2 2.3 2.4
AS 3: Knows and reads number symbols from 1 to at least 100 and writes number names from 1 to at least 100	
AS 4: Orders, describes and compares the following numbers: 4.1 Whole numbers to at least 2-digit numbers **(FAT 1)**	
AS 5: Recognizes the place value of digits whole numbers to at least 2-digit numbers	
AS 6: Solves money problems involving totals and change in rands and cents.	
AS 7: Solves, explains solutions to practical problems that include equal sharing and grouping and that lead to solutions that also include unitary fractions (eg ¼)	
AS 8: Can perform calculations, using appropriate symbols, to solve problems involving: 8.1 Addition and subtraction of whole numbers with at least 2 digits **(FAT 1)** 8.2 Multiplication of whole 1-digit numbers by 1-digit numbers with solutions to at least 50 8.3 Estimation.	 8.1 8.2 8.3
AS 9: Performs mental calculations involving: 9.1 Addition and subtraction for numbers to at least 20 **(FAT 1)** 9.2 Multiplication of whole numbers with solutions to at least 20 **(FAT 1)**	 9.1 9.2
AS 10: Uses the following techniques: 10.1 Building up and breaking down numbers **(FAT 1)** 10.2 Doubling and halving 10.3 Using concrete apparatus 10.4 Number lines	 10.1 10.2 10.3 10.4
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 200 **(FAT 1)**	
AS 3: Creates own patterns	
LO 3: SPACE AND SHAPE	
AS 1: Recognizes, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: Boxes (prisms) and balls (spheres), cylinders; triangles and rectangles, circles **(FAT 1)**	
AS 4: Recognises symmetry in two-dimensional shapes and three-dimensional objects **(FAT 1)**	
LO 4: MEASUREMENT	
AS 1: Reads and writes analogue and digital clock time in terms of hours and minutes	
AS 2: Compares events in terms of the length of time they take (longer, shorter, faster, slower).	
AS 3: Calculates elapsed time in: 3.1 hours and minutes using clock 3.2 days, weeks and months using calendars	 3.1 3.2
AS 6: Estimates, measures, compares and orders 3D objects using non standard measures: Mass (bricks, sand bags), capacity (spoons, cups), length (hand spans, footsteps).	

WEEK 2

LO 1: NUMBERS, OPERATIONS AND RELATIONSHIPS

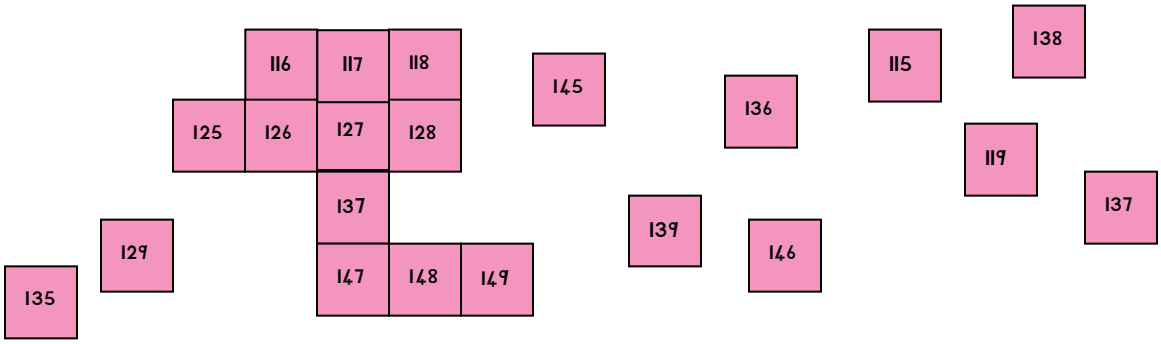
AS 1

- Learners count physical objects using one-to-one correspondence in the number range 0 – 100
- Count out beads, sticks, beans, stones, blocks to at least 100.
- Game: Spotty Dragons.
  You need: A baseboard, 100 counters, a 1-6 dice.

- Each player plays on their own dragon on the baseboard. They take turns to throw the die, putting counters on their dragon according to the number thrown. The game is over when all the counters have been used up, and the winner is the player whose dragon has the most "spots". Learners check one another whilst counting the "spots" on each dragon. (Make sure the dragons on the baseboard are large enough to take the counters.)

AS 2.1

- Learners count forwards and backwards in ones in the number range 0 – 180. The learners may use counters, an abacus, number grid or number line. e.g. 138, 139, 140, …., ….., 143
- Learners count in 1's from any given number. Begin at 137, count on to 180. Begin at 175, count back to 151.
- The teacher makes different 100-square jigsaws by copying number grids and cutting them into different sections as the example in the picture below. In small groups, each learner receives a "puzzle jigsaw." The learner starts with the large piece of puzzle (picture below) and completes the puzzle by adding all the individual number pieces. They then count to check if they have put the pieces into the correct place.



- Learners count forwards and backwards on a number grid. Point to the numbers whilst counting.
  Put your finger on 103. Point with your finger as you count from 103 to 143. Put your finger on 176. Point with your finger as you count backwards to 119 etc.

FAT 1: Practical in small groups - Rubric
The teacher circles any number on the number grid in the number range 0 – 200. The learners count forwards and backwards in ones from the given number.

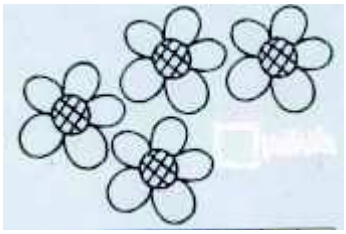
AS 2.2

- Learners count forwards and backwards in tens from any multiple of 10 in the number range 0 – 180. The learners may use counters, an abacus, number grid or number line.
  e.g. 90, 100, 110, …., …, and backwards 180, 170, 160, …., ….,
- Count in 10's using 10c coins (use play or real money)

FAT 1: Practical in small groups - Rubric
The teacher circles a number on the number grid which is a multiple of 10. The learners count forwards and backwards in tens from the given number in the number range 0 – 200 .

AS 2.3

- Learners count forwards and backwards in fives in the number range 0 – 180. The learners may use counters, an abacus, number grid or number line.
  e.g. 95, ….; …., 110, …. 120 and backwards 155, 150, 145, ….; …..
- Each learner receives a different number. They count on or backwards from their number in 5's etc.
  Learners may write symbols in their mat books.
  e.g. 145, 150, 155…… to 180
- The teacher gets the learners to make a large flower with 5 petals. They cut their flowers out and use them for counting in 5's. This activity works very well in a small group.



After they have counted each petal, the teacher may ask:

If 1 flower has 5 petals, how many will 2/5/8 flowers have?
How many 5's in 20? How many 5's in 40? How do you know?
Learners need to explain how they got their answers.

FAT 1: Oral/ Practical in small groups- Rubric
The teacher circles a number on the number grid which is a multiple of 5. The learners count forwards and backwards in fives from the given number in the number range 0 – 200.

AS 2.4

- Learners count forwards and backwards in twos in the number range 0 – 180. The learners may use counters, an abacus, number grid or number line.
- e.g. 114, 116, 118, … … and backwards e.g. 172, 170, 168, …., ….,
- Hand out a few cards with numbers (multiples of 2) to the learners in a small group. Call out a number, e.g. 128. The child who has this card, puts it down on the mat. Then ask who has the next multiple of two. The child puts down the 130. Build up the number line.

FAT 1: Oral/Practical in small groups-Rubric
The teacher circles a number on the number grid which is a multiple of 2. The learners count forwards and backwards in twos from the given number in the number range 0 – 200 .

AS 3

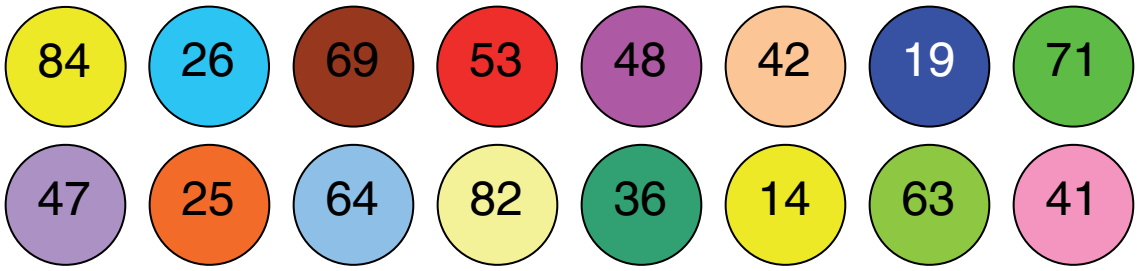
- Learners read any number symbol in the number range 1 - 200
- Learners learn the number names and symbols while counting from a number grid or abacus. Teacher says: "Find 99."
- Learners each have a set of cards with number names and symbols. They match the symbol to the name. e.g.

75	seventy-five

- Learners write any number name in the number range 0 – 99. e.g. 43 forty-three
- Learners copy a symbol or number name from the blackboard and then write the number name or symbol, without any assistance from the teacher, or copying from other sources.

AS 4.1

- Learners order whole numbers 0 – 99 in ascending order (smallest to biggest). Learners may use a number grid or a number line. e.g. (23, 54, 18, 12)
- Learners order whole numbers 0 – 99 in descending order (biggest to smallest). Learners may use a number grid or a number line. e.g. (43, 54, 68, 22)
- The teacher cuts out different coloured circles and sticks or writes different numbers on the back. She uses all the numbers from 0 – 99. These circles are laid out, number facing down, on the carpet. Each learner selects 8 circles. The learners are put into pairs. They turn the circles over and read the numbers. They then arrange them from biggest to smallest or visa versa. The learners check one another to see if they are correct.



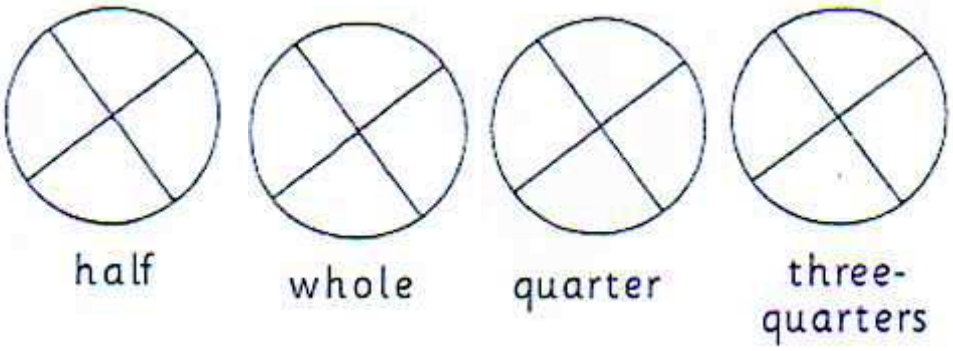
- Extension: The learners can choose two or three numbers and add them together. They need to show their calculations on paper or explain verbally. They can also choose their biggest number and take one of their other numbers away from it.
- Learners describe the position of the numbers 0 – 99 using before, after, between. Learners may use a number grid or a number line.
  e.g. What comes before 81? What comes after 58? What comes between 61 and 67

	Next number	5 more	10 less	Before	Half of	+ 30
65	66	70	55	64	32½	95
78						
62						
own number						

- Learners compare numbers 0 – 99 using more than, less than, bigger than, smaller than, biggest, smallest. Learners may use a number grid or a number line. e.g. 1 more than 56; 2 more than 44; 1 less than 66; 2 less than 42. Which is the biggest 69 or 44; which is the smallest 56 or 65; which numbers are between 45 and 51 ?

FAT 1: Oral/Practical in small groups- Rubric
The teacher gives learners number cards in the number range 0 – 99. e.g. 60, 98, 43, and 56. The learners order the numbers from the biggest to the smallest and the smallest to the biggest. The teacher asks questions about a given number eg. what comes before, after, between, what is bigger, smaller, 1 more, 1 less, 2 more, 2 less etc. in the number range

AS 4.2
- Learners order and describe ½ and a ¼ in ascending order (smallest to biggest) or descending order (biggest to smallest). Learners may use concrete objects, pictures or a number line.
- Individual activity:
  Learners trace the shapes onto paper and cut them out. They copy the following shapes and colour in the correct parts of the shape. They then order them from the smallest to the biggest.



AS 5
- Learners identify the place value of a given digit in a number in the number range 0 – 99.
  - Learners may use flard cards. e.g. (**6**8 is 60 or 6 tens); (4**9** is 9 or 9 ones)
  - Use flard cards: Expand the number and describe it e.g. 73 = 70 + 3
  - Which number can I build with 90 and 5?
- Ask the learners to pack out the following numbers with the flard cards:
  - number 34. Now change it to 74;
  - number 56. Now change it to 86;
  - number 65, then say count on 4 (or plus 4). The learners change the 5 to a 9 to show the answer, 69, then tell them to add 20. They change the 60 to an 80 to make 89. Then tell them to take away the 9 etc;
- Make the number below and break it down, using the numbers in the blocks below. They can tick the block once they have used the number. The same number can be used twice.

89 = _____+ _____+ _____

89 = _____ + _____+ _____+ _____

89 = _____ +_____ +_____ +_____

89 = _____+ _____

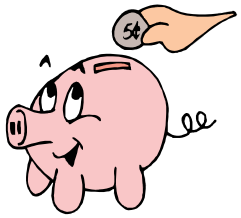
1	2	10	5	40
30	7	3	25	8
9	20	50	70	4
6	5	60	80	10

AS 6

- Learners solve money problems in the number range 0 – 99 using R1, R2, R5, R10, R20, R50, 5c, 10c, 20c, 50c. Learners may use play or real money**.**
- e.g. Learners pack out a given amount such as R4,50 R23,65.
  Learners calculate addition and subtraction sums:
- Learners solve word problems. I want to buy a bag for R64. I have R23. How much do I still need?

Using play money or real money, challenge the learners to make 3 different ways of making R4,86.

eg. They pack/cut out: R2 + R2 + 50c + 20c + 10c + 5c + 1c
R2 + R1 + R1 + 50c + 10c + 10c+ 10c + 10c (4c change)
R2 + R1 + 50c + 50c + 50c + 20c + 5c + 5c +2c + 2c + 2c

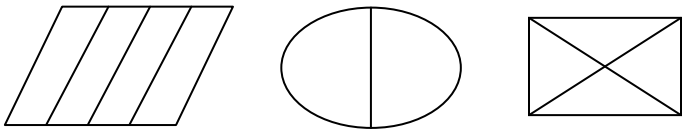


- Jack has twenty 10c coins. Sipho has eight 50c coins and Mihle has eleven 10c and four 5c coins.
  Who has the most coins? Who has the most money?
  Sipho spends half of his money. How much does he have left?
  Mihle uses most of his coins and has 10c left. How much did he spend?

e.g. Workcard: *Draw your coins to show your answers.*
There are ……. two cent coins in 40c?
There are ……. one cent coins in R1,00?
There are ……. ten cent coins in 80c?
There are ……. twenty cent coins in R1,00?
There are ……. fifty cent coins in R5,00?
There are …….R2,00 coins in R14,00?

AS 7

- Learners solve and explain practical problems involving equal sharing and grouping where the remainder is a fraction (1/4) in the number range 0 – 99. Learners may use concrete apparatus or drawings.
- Practical sum: Mandy took a whole pear from the kitchen table. At breakfast, she ate a quarter of it. How much has she left to eat at breaktime?
- Solve this problem: Share 69 chocolate bars amongst 4 children.
- The teacher asks the learners to copy the following shapes and colour in a ¼ of each shape;



AS 8.1

- Learners perform addition and subtraction with 2-digit numbers in the number range 0 - 99. Learners may use a number grid, flard cards or a number line.
  e.g. ☐ + 33 = 66
  88 - ☐ = 54
- Provide interlocking cubes in trains of 10, and extra cubes for the following activity.

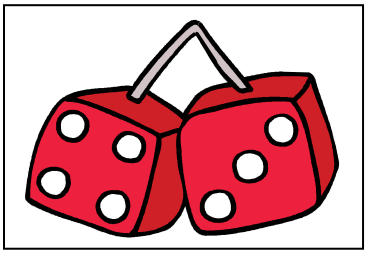
  Write | 62 - 41 | on the board.

  Ask: How could you solve this problem? Learners respond in their mat books. Encourage them to use cubes to help with the explanations if they are struggling.
  They might think and write: 62 – 40 → 22; 22 – 1 →21
  Invite the learners to explain their different calculations/explanations.

FAT 1 : Written-Rubric
Learners write the answers to addition and subtraction sums with two digit numbers in the number range 0 - 99, e.g. 28 + 56, 45 + 35 + 21, 89 - 34, 78 – 31 - 34 WRITTEN - RUBRIC
FAT 1: Practical in small groups/Written -Rubric
The teacher asks word problems with addition and subtraction sums with one or two digit numbers plus or minus a one digit number in the number range 0 - 99. The learners solve the problems using counters, drawings or calculations, e.g. The bus stops at the bus stop with some passengers on board. At the next stop 16 people get off and 23 get on. There are now 57 people on the bus. How many passengers were on the bus when it left the first stop? HINT: The learners do their drawings or calculations in their class workbooks, on slates or white boards.

- Game: (for 2 or more players)
  Make your own die for this game. Write different numbers from below 50 on them e.g. 25, 32, 18, 46, 29, 37. Use the second dice, write 17, 45, 28, 41, 23, 34
  The learners take turns rolling the dice and adding together the two numbers they rolled. They colour in the total on their hundred grid. E.g. If they add 28 + 46, the total is74. They will colour 74 on the grid.
  This game can also be used for subtraction where they learn to take the small number from the big number. The teacher will then make additional die, this time using numbers greater then 50 and less than 99.

0	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	32	33	34	35	36	37	38	39	40
	41	42	43	44	45	46	47	48	49	50
	51	52	53	54	55	56	57	58	59	60
	61	62	63	64	65	66	67	68	69	70
	71	72	73	74	75	76	77	78	79	80
	81	82	83	84	85	86	87	88	89	90
	91	92	93	94	95	96	97	98	99	100



AS 8.2

- Learners count forwards and backwards in multiples of 3,4,6,7,8 and 9 in the number range 0 – 50 (in preparation for multiplication

AS 8.3

- Learners estimate the answer to addition, subtraction and multiplication problems. Learners compare the calculated answer. Estimation should be used by the learners continuously throughout al the LO's.
- Give each learner a flashcard with a addition, subtraction or multiplication problem problem on, eg. 44 + 23
  75 – 26, 12 x 6. The learners look at the sum for a few seconds and then write their estimated answer down. The teacher says pencils down and the learners bring their card and answer to the blackboard.
  The class/group discuss the answer and then each child calculates the answer to see if the learner had estimated correctly.
- Answer the multiplication questions.

Jeff has three bags of gumballs. There are six gumballs in each bag. How many gumballs does Jeff have?
_____ X _____ = _____

AS 9.1

- Learners perform mental calculations involving addition & subtraction in the number range 0 – 20. Teachers use flashcards with the number symbols to represent the number combinations. eg. 12 + 4 – 1 = __; 15 – 9 = __
- Bonds of 12 and 13

- Addition and subtraction of single-digit numbers in the number range 0 – 20 with more than one operation.
- Workcard: Complete the table.

Number	+ 4	- 3	+ 2	-5	+ 10	- 4	- 2
9							
5							
7							
13							

- Activities can be varied by the placeholder
  e.g. 3 + ☐ = 11; 11 - ☐ = 7; 11 = 8 + ☐
  This can be done in the form of a game. Teacher says: "I am thinking of 7" . 3+; 5+;
  "Now I'm thinking of 9"…….+4 + 2, etc
  "Now I'm thinking of 8"…….+1 + 3 + 0, etc
  Use this same technique with minus.
- Each child receives a set of sums as well as a set of answers on cards. The teacher says ready, go and the child matches the question to the correct answer. The first one to finish correctly, is the winner
  e.g. 15 – 4 = ➔ 11 and 9 + 3 – 1 = ➔ 11

FAT 1: Practical in small groups-Rubric
Mental maths: Addition and subtraction to 20. The teacher shows flash cards with number combinations to the learners. Each learner answers at least 20 sums.

AS 9.2

- Learners perform mental calculations with multiplication with answers to at least 20. The teacher uses flash cards with number symbols to represent the multiplication calculations.
  e.g. 5 x 2 = 2 x 8 =
- The teacher flash cards with repetitive addition and the learners perform mental calculations
  eg. 2+2+2+2 + 2 = 3 + 3 + 3 + 3 =

- Game: Snap
  Learners play snap with sets of cards with calculations on some cards and the answers on others. Two learners play at a time. If the learner puts down a card (4 x3) and the other learner puts down the correct answer (12) they shout Snap. The first learner to shout out Snap, takes the cards. The learners count the cards at the end to determine the winner.

FAT 1: Oral/Practical in small groups -Rubric Mental maths: Multiplication of whole numbers with answers to at least 20. The teacher shows flash cards with multiplication sums to the learners. Each learner answers at least 10 sums.

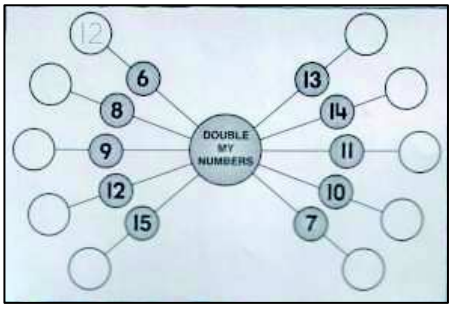
AS 10.1

- Learners break down and build up numbers in the number range 0-99 and may use a number grid and a number line.
  eg. 79 = 60 + 10 + 9 or 79 = 70 + 1 + 3 + 5
  Learners build up numbers in the number range 0 – 99.
  Learners may use counters, drawings, number grid or a number line.
  eg. 50 + 20 + 5 + 2 = 77
- Learners do a worksheet as follow:
  You can break down 67 as…
  67 = 60 + 7 or
  67 = 40 + 20 + 5 + 1 + 1
  67 = 20 + 20+ 20 + 4 +2 +1
  67 = 50 + 10 + 7

FAT 1: Practical in small groups/ Written -Rubric The teacher gives each learner a number between 1 and 99. The learners break down the number in 5 different ways.

AS 10.2

- Learners double numbers with answers in the number range 0 - 99. Learners may use concrete apparatus, drawings, number lines, number grid, abacus or flard cards. eg. double 34; double 47.
- Example of an Activity Card/Worksheet



- Learners halve numbers without a remainder (even numbers) in the number range 0 - 99. Learners may use concrete apparatus, drawings, number lines, number grid, abacus or flard cards.
  eg. halve 46 , 28, 86, etc.
- Learners halve numbers with a remainder (odd numbers) in the number range 0 - 99. Learners may use concrete apparatus, drawings, number lines, number grid, abacus or flard cards.

e.g. halve 27
27 is 20 + 7
10 + 3½

halve 19
19 is 10 + 9
5 + 4½

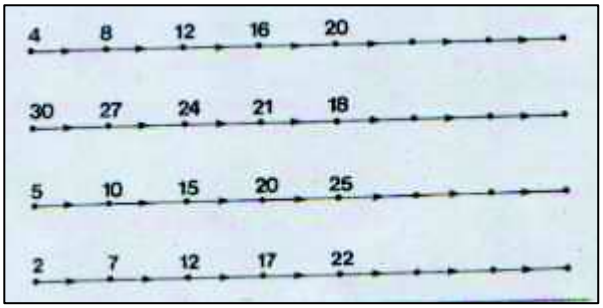
- It is important that learners know what half of : 1; 3; 5; 7; 9 is. When you show them on the board, they soon recognize a pattern and then are able to work out what half of 11 ; 13; 15; 17 and 19 are.
- Learners use flard cards and build up a number e.g. 63. They now break down the number and halve the tens and then try to halve the ones. They will have to use counters/sweets/viennas, etc to help them.
  e.g. 60 + 3 ➔ half of 60 is 30 ➔ half of 3 is 1 ½ ➔ 30 + 1 ½ = 31½

AS 10.3

- Learners use concrete apparatus when counting, building up, breaking down, doubling and halving numbers. See 10.1 and 10.2

AS 10.4

- Number line: Integrate with all number work
  Complete the following number lines:



AS 11

- Learners explain solution to problems in the number range 0 –99

AS 12

- Learners check each other's solutions to problems in the number range 0 – 99.

LO 2: PATTERNS, FUNCTIONS AND ALGEBRA

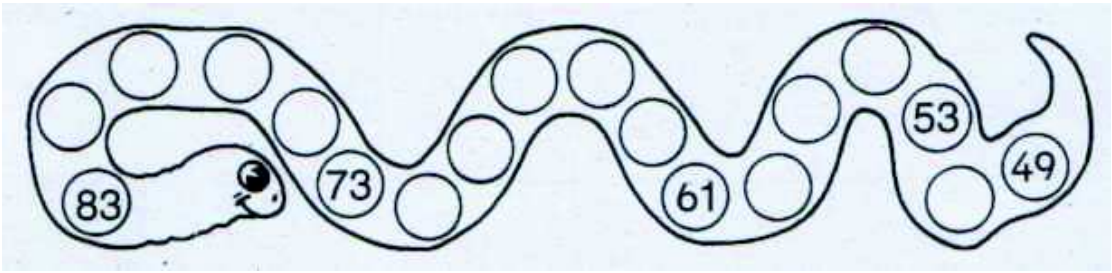
AS 2

- Copies and extends simple number sequences to at least 180
- Give learners a worksheet which they have to complete
  eg. 104; 106; 108; …. …. ….. 95; 100; … … …
  97, 98, ____, ____, ____, ____, ____, ____, 105
  128, 123, 118, ____, ____, ____, ____, ____
  145, 155, ____, ____, 185, ____

FAT 1: Written-Rubric Learners copy and complete a number pattern in the number range 0 – 200 on a worksheet.

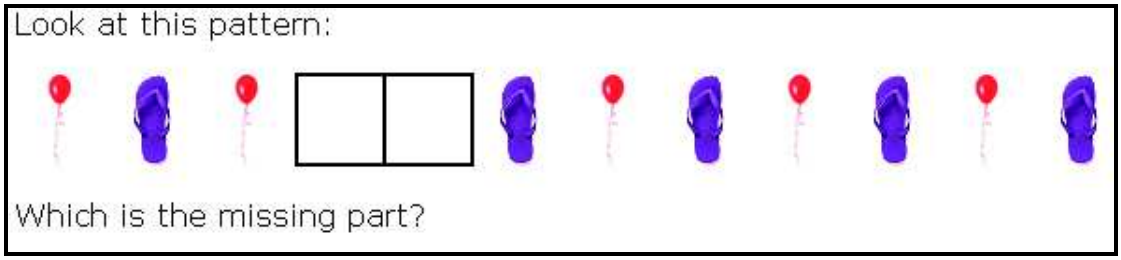
AS 3

- Learners create their own number patterns in the number range 0 – 180. Learners may use a number grid or a number line.



NB: They discuss the pattern with their peers.

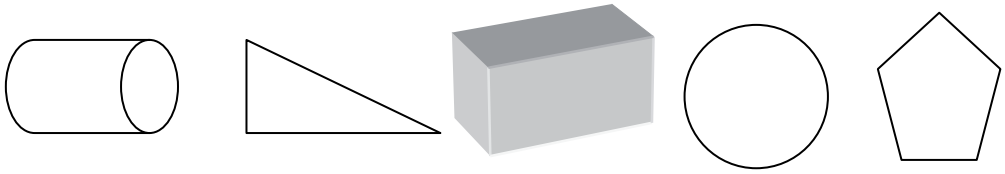
- Creates own patterns. Explain it to a friend



LO 3: SPACE AND SHAPE

AS 1

- Learners recognise, identify and name 2-dimensional shapes and 3- dimensional objects in the classroom and on pictures.
  Worksheet:
  Write the name of the shape under the correct shape. Choose from the following:
  pyramid, triangular prism, circle, cylinder, triangle, hexagon, pentagon, sphere, cuboid, square

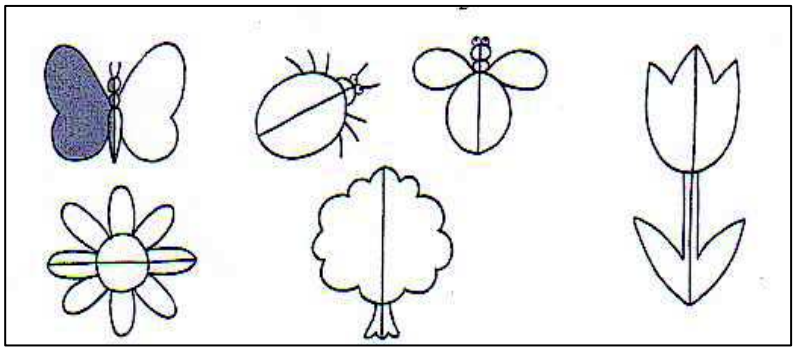


FAT 1: Practical in small groups/Written-Rubric

Learners identify 3-D objects. It can either be on a picture or the teacher can have 3-D objects available.

AS 4

- Learners recognise symmetry in 3-D shapes.
- This worksheet can also be integrated with halving. Learners colour half of each shape:



FAT 1: Written-Rubric

Learners draw lines of symmetry on pictures of different objects.

LO 4: MEASUREMENT

AS 1

- Learners read hours and minutes on an analogue and digital clock. Learners may use model clocks.
- Worksheet or workcard:
  Learners fill the following times on the clock.

AS 2

- Learners answer questions about the order of days of the week and the months of the year. Learners may use a calendar (incidental). eg. What day is it today / What is the date / What day will it be tomorrow?

Which month comes just after September?

- ○ December
- ○ August
- ○ November
- ◉ October

AS 3.1

- Learners calculate elapsed time in minutes. Learners may use model clocks. eg. Start at 8 o'clock. What will the time be when 5 minutes have passed/when 15 minutes have passed/when 35 minutes have passed?

It started raining at 6:00 A.M. and didn't stop until 12:00 P.M. How long did it rain?

☐ hours ☐ minutes

Desmond went sailing with his parents. They got on the boat at 1:00 P.M. The boat returned to shore at 7:00 P.M. How long were Desmond and his parents on the boat?

☐ hours ☐ minutes

AS 3.2

- Learners calculate elapsed time in months. Learners may use a calendar.
- Teacher asks learners: If today is the 14 October, how many months and days are there to our school play on the 5 November? How many months from January to September?

What time is shown?

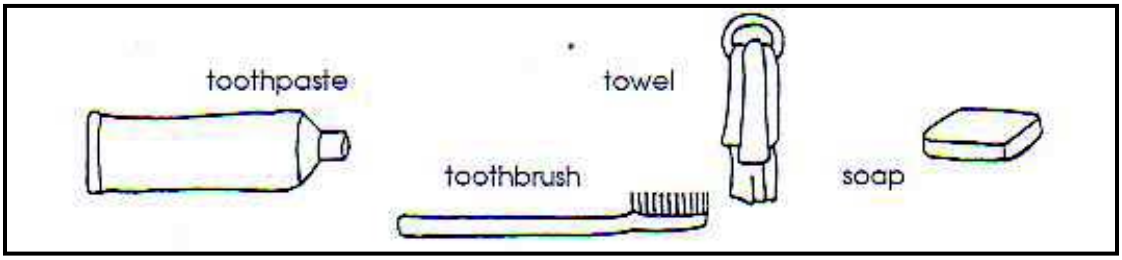
- ○ one o'clock
- ○ twelve o'clock
- ○ three o'clock
- ○ four o'clock

What time is shown?

- ○ 8:30
- ○ 7:30
- ○ 9:30
- ○ 6:30

AS 6

- Learners measure and compare the length, mass and capacity of different objects. Learners arrange the objects from the longest to shortest, shortest to longest, heaviest to lightest, lightest to heaviest, most to least and least to most.
- An example of a workcard:
  Look at the pictures and estimate:
  The _____ is the shortest.
  The _____ is the longest.
  The _____ and _____ have the same lengths.



RESOURCES:

Counters (beads, sticks, beans, stones, blocks,), abacus, number grid, number line, flash cards with numbers/symbols, flash cards with number names, practical activity sheet, 100 number block, worksheets, cards with numbers (multiples of 2), real or play money, mat books, pencils, crayons, flash cards with bonds, flash cards with mental maths + and - ,flash cards with repetitive addition, flash cards with x, set of cards with sums and set of cards with the answer to the sums (snap cards), chocolate, sausages, sweets, or pictures of chocolates and sausages sweets, 2D shapes (triangles, squares, rectangles, circles), 3D objects (boxes, balls, cylinders, spheres), calendar, analogue clocks, games, dice, pack of cards, pictures

REFLECTIONS:

BARRIERS:

WEEK 3

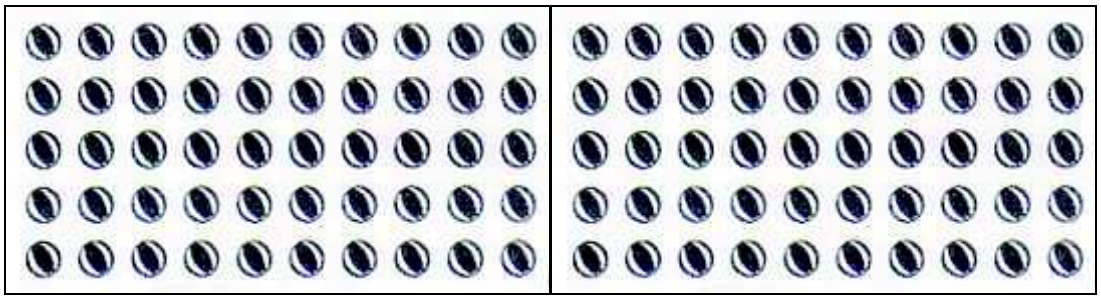
WEEK 3 LEARNING OUTCOMES AND ASSESSMENT STANDARDS	Date completed
LO 1: NUMBERS, OPERATIONS & RELATIONSHIPS	
AS 1: Counts to at least 100 everyday objects reliably.	
AS 2: Counts forwards and backwards	
2.1 ones from any number between 1 - 200	2.1
2.2 tens from any multiple of 10 between 0 - 200	2.2
2.3 fives from any multiple of 5 between 0 - 200	2.3
2.4 twos from any multiple of 2 between 0 – 200	2.4
AS 3: Knows and reads number symbols from 1 to at least 100 and writes number names from 1 to at least 100	
AS 4: Orders, describes and compares the following numbers:	
4.1 Whole numbers to at least 2-digit numbers	4.1
4.2 Common fractions including halves and quarters (½, ¼)	4.2
AS 5: Recognizes the place value of digits whole numbers to at least 2-digit numbers	
AS 6: Solves money problems involving totals and change in rands and cents.	
AS 7: Solves, explains solutions to practical problems that include equal sharing and grouping and that lead to solutions that also include unitary fractions (e.g. ¼)	
AS 8: Can perform calculations, using appropriate symbols, to solve problems involving:	
8.1 Addition and subtraction of whole numbers with at least 2 digits	8.1
8.2 Multiplication of whole 1-digit numbers by 1-digit numbers with solutions to at least 50	8.2
8.3 Estimation.	8.3
AS 9: Performs mental calculations involving:	
9.1 Addition and subtraction for numbers to at least 20	9.1
9.2 Multiplication of whole numbers with solutions to at least 20	9.2
AS 10: Uses the following techniques:	
10.1 Building up and breaking down numbers	10.1
10.2 Doubling and halving	10.2
10.3 Using concrete apparatus	10.3
10.4 Number lines	10.4
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 200	
AS 3: Creates own patterns	
AS 4: Describes observed patterns	
LO 3: SPACE AND SHAPE	
AS 1: Recognizes, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures including: Boxes (prisms) and balls (spheres), cylinders; triangles and rectangles, circles	
AS 4: Recognises symmetry in two-dimensional shapes and three-dimensional objects.	
AS 5: Recognises 3D objects from different positions	
AS 6: Positions self within the classroom or 3D objects in relation to each other	
LO 4: MEASUREMENT	
AS 1: Reads and writes analogue and digital clock time in terms of hours and minutes	
AS 3: Calculates elapsed time in:	
3.1 hours and minutes using clock	3.1
3.2 days, weeks and months using calendars	3.2
AS 6: Estimates, measures, compares and orders 3D objects using non standard measures: Mass (bricks, sand bags), capacity (spoons, cups), length (hand spans, footsteps).	
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	
AS 2: Sorts physical objects according to one attribute chosen by the teacher	
AS 3: Gives reasons for collections being grouped in particular way	
AS 4: Draws pictures and constructs pictographs that have a 1-1 correspondence between own data and representations	
AS 5: Describes own or peer's collection of objects, explains how it was sorted and answers questions about it	

WEEK 3

LO 1: NUMBERS, OPERATIONS AND RELATIONSHIPS

AS 1

- Learners count physical objects using one-to-one correspondence in the number range 0 –100
- Give a card to the learners with a number of objects on. They count the objects and see whether they get the same answer as the teacher or their peers.



AS 2.1

- Learners count forwards and backwards in ones in the number range 0 – 200. The learners may use counters, an abacus, number grid or number line.
  eg. 173, 174, 175, …. …., 152, 151, 150, … …,
- Small group activity: Use an abacus.
  Each learner receives a different number. They make the number on the abacus then they count on or backwards from that number in 1's.

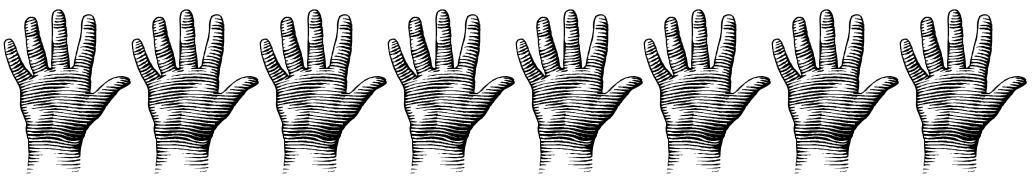
133, 134, 135, 136, 137, ..., ...,
186, 185, 184, 183, 182, 181, 180, 179, ..., etc

AS 2.2

- Learners count forwards and backwards in tens in the number range 0 – 200. The learners may use counters, an abacus, number grid or number line.
  eg. 120, 130, 140,… …,
  200, 190, 180,… ….
- Let the learners count using an empty number grid.
  - Find the number 60. Write the number in.
  - Now count on in 10's. Stop at 170. Colour 170 in. Now count back in 10's and stop at 120.
  - Colour this number in etc.
  - This activity can be continued for at least three days until all the tens have been filled and coloured in.

AS 2.3

- Learners count forwards and backwards in fives in the number range 0 – 200. The learners may use counters, an abacus, number grid or number line.
  eg. 155, 150, 145, … …
  115, 120, 125, …. ….
- Let the learners count in fives using their fingers.



AS 2.4

- Learners count forwards and backwards in twos in the number range 0 – 200. The learners may use counters, an abacus, number grid or number line.
  e.g. 172, 174, 176, … …
  198, 196, 194, … ….
- Let the learners count using an empty number grid. Find the number 62. Count on in 2's. Stop at 102. Count back in 2's. Start at 120 and count back in 2's to 50.

AS 3

- Learners read any number symbol in the number range 1 – 200. The learners read the symbols on number cards, a number grid or a number line.
- Game: Play "Bingo".
- Learners have a hundred grid and small counters. The teacher calls out a few random numbers
- e.g. "132; 106; 117; 145; 150; 123…" etc, then the learners must find the number and cover it with a counter.

101	102	103	104	105	●	107	108	109	110
111	112	113	114	115	116	●	118	119	120
121	122	●	124	125	126	127	128	129	130
131	●	133	134	135	136	137	138	139	140
141	142	143	144	●	146	147	148	149	●

- Learners write any number name in the number range 0 - 100.
  e.g. 20 twenty; 47 forty-seven; 100 one hundred

AS 4

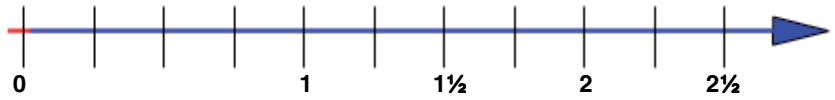
- Orders, describes and compares the following numbers:
- Learners order whole number 0 – 99 in ascending/descending order. Learners may use a number grid or a number line.
  eg. 12, 75, 91, 23 → 12, 23, 75, 91 (ascending)
  44, 31, 55, 99 → 99, 55, 44, 31 (descending)
- Give each learner 6 different cards.
  - The learners must clip the cards on to a string with pegs, in order, from the smallest to the biggest number, or the biggest to the smallest number.
  - Hang the line in the classroom.
  - Answer questions like – what comes before, after, between, what is 1 more, 2 less, etc.
  - Which is the biggest 89 or 54
  - Which is the smallest 63 or 36

- Learners describe the **position** of the numbers 0 – 99 using before, after, between. Learners may use a number grid or a number line.
  eg. What comes before 76? Write down the number name. What comes after 89? Write down the number name. Which numbers come between 69 and 75? Write down the number names.
- Use a number of skittles (plastic bottles). Place a number or number name under each skittle. Roll the ball and read and write all the skittles that were rolled over. The numbers can also be added together and the person with the highest number wins.
- Use vocabulary like: first, last, between, in front of, behind, next, half-way between;
  Ask questions like: what comes before/after/between/three places before/two places after etc.
  Learners can use a number block or a number line.

1		3		5	6	7	8	9	10
11	21	13	14		16	17	18		20
21	22	23	24	25		27	28	29	30
31		33		35	36	37	38	39	
41	42	43	44	45	46	47		49	
51	52		54		56	57	58	59	60
61	62	63		65	66		68	69	70
	72	73	74	75	76	77		79	80
81	82		84	85		98	88	89	90
91		93	94	95	96	97		99	100

AS 4.2

- Learners order and describe ½ and a ¼ in ascending order (smallest to biggest) or descending order (biggest to smallest). Learners may use concrete objects, pictures or the number line.
- Give them a number line where they have to fill in the missing fractions.



¾; 1¾; 1¼; ½; ¼; 2¼

- Ask questions:
  e.g. which is bigger:
  ½ or a ¼?
  ¼ or a whole?

AS 5

- Learners identify the place value of a given digit in a number in the number range 0– 99. Learners may use flard cards**.**
  eg. **8**9 80 or 8 tens 8**9** 9 or 9 ones
  - ask them to pack the following numbers out with flard cards:
  - number 63 and to change it to 43;
  - number 87 and to change it to 78;
  - number 75, then say plus 3 (change the 75 to show the answer), plus 5, minus 10, etc.;

AS 6

- Learners solve money problems in the number range 0 – 99 using R1, R2, R5, R10, R20, R50, 5c, 10c, 20c, 50c. Learners may use play or real money.

- Prepare shopping lists with pictures of 5 items based on the items in the shopping corner.
  Apricot jam R10,30 oil R7,25
  Vienna sausages R14.00 margarine R8,29
  Tennis biscuits R6,80
  Learners have to go shopping and purchase the items on their shopping list. They have to pay for their goods and use the coins from their money box to pay for the items.
  Extension: They can do the calculations in their mat book and also show which "monies" they will use when they are paying.

R6,45

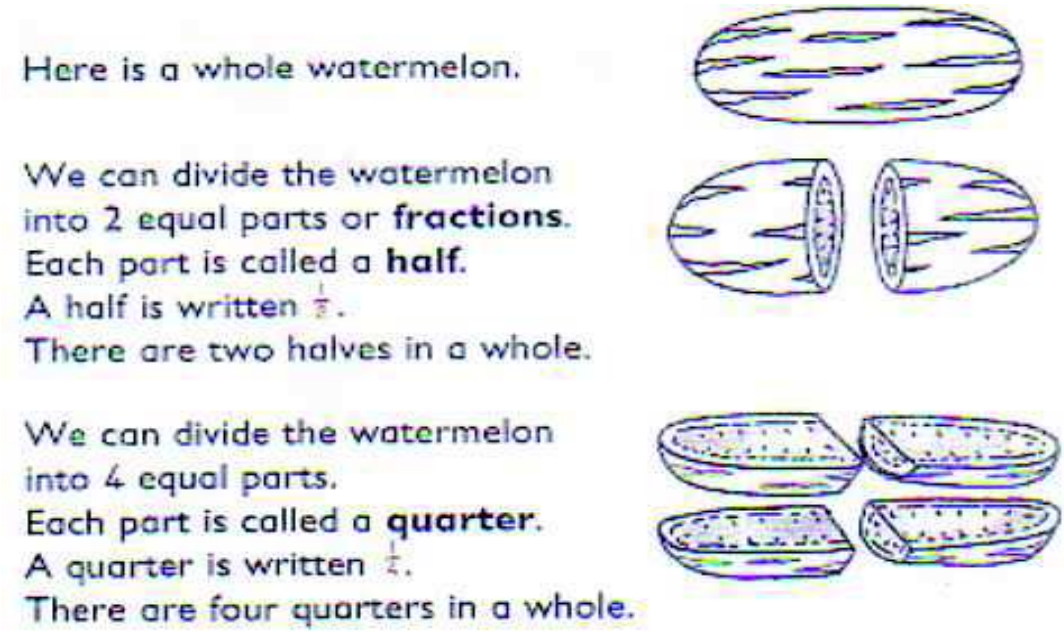
R1, 20

R6,79

- Solve the following problem:
  A pencil costs R1,50. How many pencils can you buy with R10,00? How much cnge will you get?

AS 7

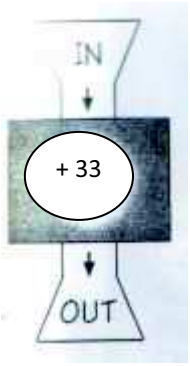
- Solves and explains solutions to practical problems that involve equal sharing and grouping and that lead to solutions that also include unitary fractions (e.g. ¼):
- Give the learners a picture of a eg. large watermelon. They need to cut it out. Tell them they going to share this watermelon with their family. Ask them to help you decide how to do this. Emphasise sharing equally. Ask them what part of the watermelon they have on their desk. (a whole) Show them the number ½ and the number name "half". Let them fold their watermelon in half and cut on the fold line. Ask: How many parts do you have? (2) They write half on each part. Now take your halves and fold them in half again. Cut on the half line again. How many piece do you have now? (4) What do we call each piece? (1/4) Ask a learner to write ¼ on the board. They then write ¼ on each piece.



AS 8.1

- Learners perform addition and subtraction with addition and subtraction with 2-digit numbers in the number range 0 – 99. Learners may use a number square or a number line.

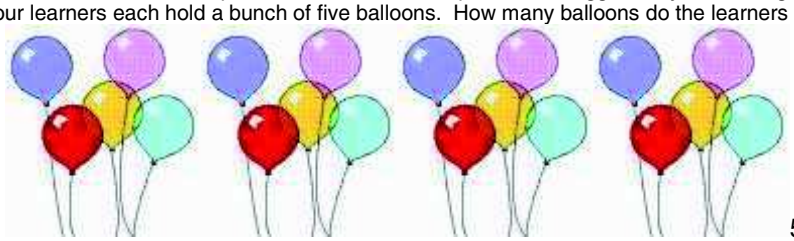
The teacher lays the "In - Out machine" on the carpet. She puts many numbers , face down, above the IN part of the "machine". She then puts the answers to the numbers above, under the OUT part of the machine, face up. Learners turn over a card, read the number and add eg. + 33 to it. They find the answer. If it is correct, they keep the cards. Winner is the one with the most cards. The "centre" and the operation is changed so they experience + 25; +42; - 34, - 69 etc



- Learners solve the following number sentence: 56 + 38 =
  Learners expand the numbers:
  50 + 6 + 30 + 8
  50 + 30 = 80 + 8 = 88 + 2 = 90 + 4 = 94
  OR
  50 + 30 = 80 + 8 + 88 + 6 (count on 89, 90, 91, 92, 93, 94)
- Solve the following: 74 – 43 =
  74 – 40 → 34 – 3 → 31 OR
  70 – 40 → 30 – 3 → 27 + 4 → 31 OR
  43 + 7 → 50 + 20 → 70 + 4 → 74
  ***Learners share their different calculations with their peers.

AS 8.2

- Learners count forwards and backwards in multiples of 3,4,6,7,8 and 9 in the number range 0 – 50 (in preparation for multiplication
- Multiplication of whole 1-digit by 1-digit numbers with solutions to at least 50. Learners may use counters, drawings or a number grid.
- The learners listen to the problem that the teacher poses and suggest ways of solving it.
  Four learners each hold a bunch of five balloons. How many balloons do the learners have at the party?



5+5+5+5=

- Solve this problem:
  There are 10 chocolates in a box. How many chocolates are there in eight boxes? Write the number sentence for your sum.
- Game: Use a set of Dominoes. (2 – 4 players)
  The dominoes are played face down on the table/carpet. Each learner has a turn to turn one over and then to multiply the 2 numbers together eg. 2 x 6 = 12

AS 8.3

- Learners estimate the answer to addition, subtraction and multiplication problems. Learners compare the calculated answer. Estimation should be used by the learners continuously throughout all the LO'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	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

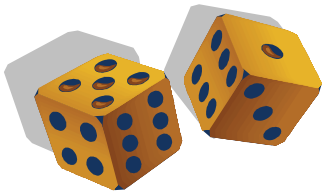
- Game: For 2 players.
  Resources: 100 grid, dice, counters/markers
  Take it in turns to throw two counters on to the grid. Both players *estimate* the total of the two numbers covered by the counters. They share their methods of *estimation*. Calculate the answers together and compare *estimates* to see who was the nearest.
- Rounding off is a very important skill involved in estimation eg. when adding 56 and 32, an estimate of the sum may be made by rounding off the numbers to the nearest 10:
  i.e. 56 → 60 32 → 30
  Then by adding together the 60 and the 30, they get an approximate answer of 90, which is very close to the precise answer of 81. If the answer on checking differs greatly from the estimation then it is likely that something has gone wrong!
- Different learners are likely to have different methods of calculation. These should be encouraged and shared. In this way learners develop a better understanding of numbers and how they can be worked with. It is also likely to result in learners developing more sophisticated methods, taking over those they understand from their friends.

AS 9.1

- Learners perform mental calculations involving addition and subtraction in the number range 0 – 20. Teachers use flashcards with the number symbols to represent the number combinations. Addition and subtraction of single-digit numbers in the number range 0 – 20 with more than one operation.
  e.g. 14 + 5 – 2 = __ 18 – 4 - 5 = __
- Dice game: Add "em up"
  The learners play this game in pairs. Start with two dice and have the learners shake and roll the dice. The learners add the number of dots mentally. One learner gets to throw the dice and give answers until s/he misses and then the play moves to the next learner. When this gets too easy, add another dice, then two more and so on.

AS 9.2

- Learners perform mental calculations with multiplication with answers to at least 20. The teacher uses flash cards with number symbols to represent the multiplication calculations. e.g. 5 x 3 = __; 2 x 8 = __



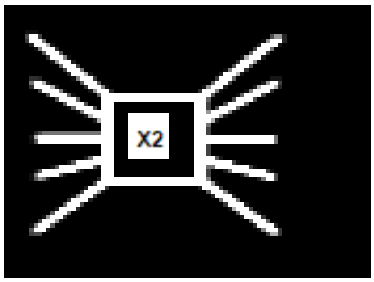
- **Game: Multiply Fly**
  The learners play this game in pairs. Each pair needs 2 dice and possibly a number grid, number line or multiplication chart. Learner A throws two dice and multiplies the numbers together. Learner B has to call out the product of the two numbers. Play continues until learner B makes an error at which point the roles swap and learner B throws the dice, while learner A gives the product (answer of a multiplication sum!)

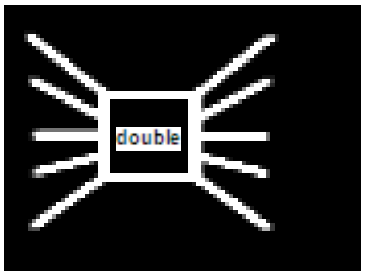
AS 10.1

- Learners break down and build up numbers [illegible] number line.
  eg. 89 = 70 + 10 + 9 or 89 = 80 + 1 + 3 + 5
- Learners build up numbers in the number range 0 – 99. Learners may use counters, drawings, number grid or a number line.
  eg. 50 + 30 + 5 + 2 = 87
- Workcard: building up numbers. Use only 50, 20, 10, 5, 2 and 1 to make your number below. You may use the same number more than once.
- eg. 47 = 20 + 10 + 10 + 5 + 2

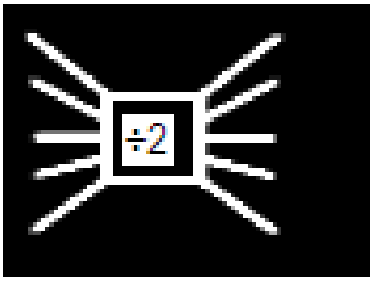
AS 10.2

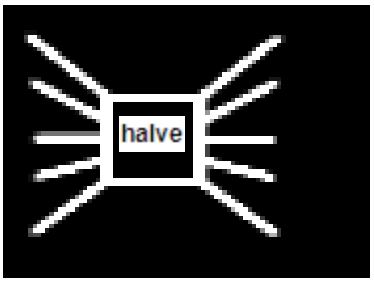
- Learners double numbers with answers in the number range 0 - 99. Learners may use concrete apparatus, drawings, number lines, number grid, abacus or flard cards.
- eg. double 46



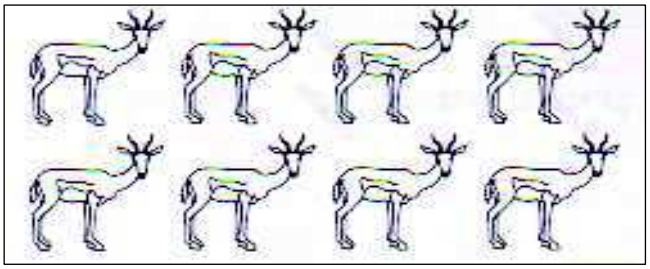


- Solve the following problem:
  Jackie has thirty-eight tomatoes in a box. David has twice as many. How many tomatoes do they have together?
- Learners halve numbers without a remainder (even numbers) in the number range 0 - 99. Learners may use concrete apparatus, drawings, number lines, number grid, abacus or flard cards.
  e.g. halve 86





- Solve the following problem:
  - There are sixty-eight springbuck in a camp. The farmer sells half of them. How many are left?
  - How many legs do 8/10/16/18 springbuck have?



AS 11
- Learners explain solution to the above problem.

AS 12
Learners check each other's solutions to the above problem.

AS 10.2
- Learners halve numbers with a remainder (odd numbers) in the number range 0 - 99. Learners may use concrete apparatus, drawings, number lines, number grid, abacus or flard cards.
  e.g. halve 57 halve 93

AS 10.3
- Learners use concrete apparatus when counting, building up, breaking down, doubling and halving numbers.

AS 10.4
- Number line: - Integrate with all number work

LO 2: PATTERNS, FUNCTIONS AND ALGEBRA

AS 2
- Copies and extends simple number sequences to at least 200. Learners may use an abacus, number grid or a number line.
- Worksheet
  e.g. 158, 162, 166, 170, …., …., ….,
  113, 115, …., 119, …., …., ….
  174, 164, 154, …., …., …., 114, ….
- Learners are given a 100- grid and asked to identify the pattern and to complete it by colouring in the rest of the numbers.

151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210

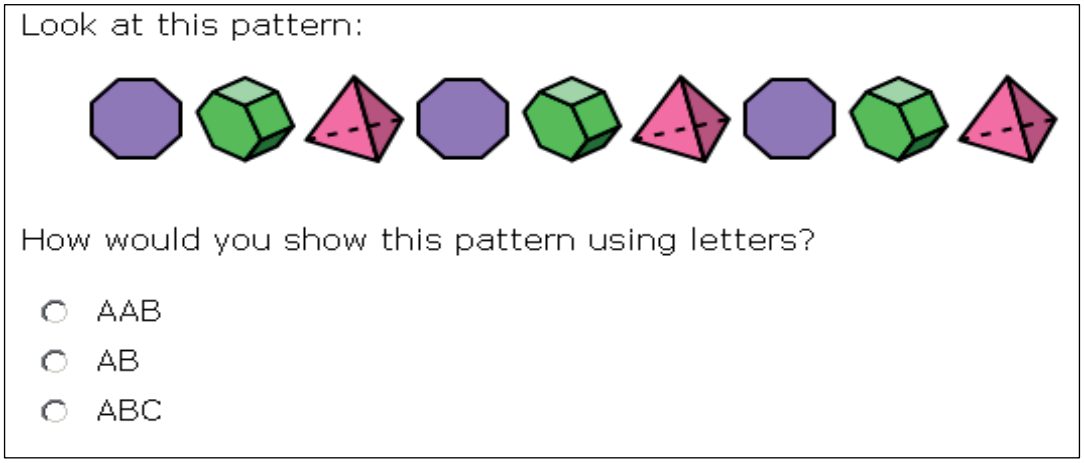
AS 3
- Creates own patterns. Learners create their own number patterns in the number range 0 – 200. Learners may use a number grid or a number line.
  e.g. Count in 10's and start at 93. Write down all the numbers that you say. What do you notice? Explain it to the class or a friend.

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210

e.g. Learners explain that the 5 or the 9 ones remain the same in all the numbers as you go down, adding on ten. The tens grow and the 100 remains the same except when you get to 200.

AS 4

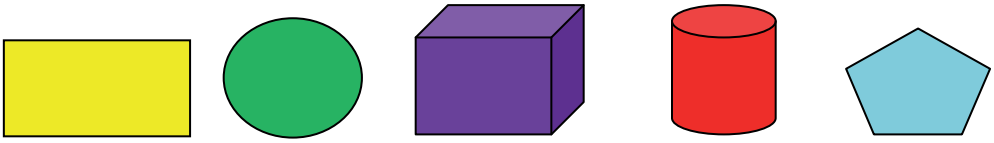
- Learners describe a given/own pattern
  eg. Learners create their own patterns and then discuss it with the group.



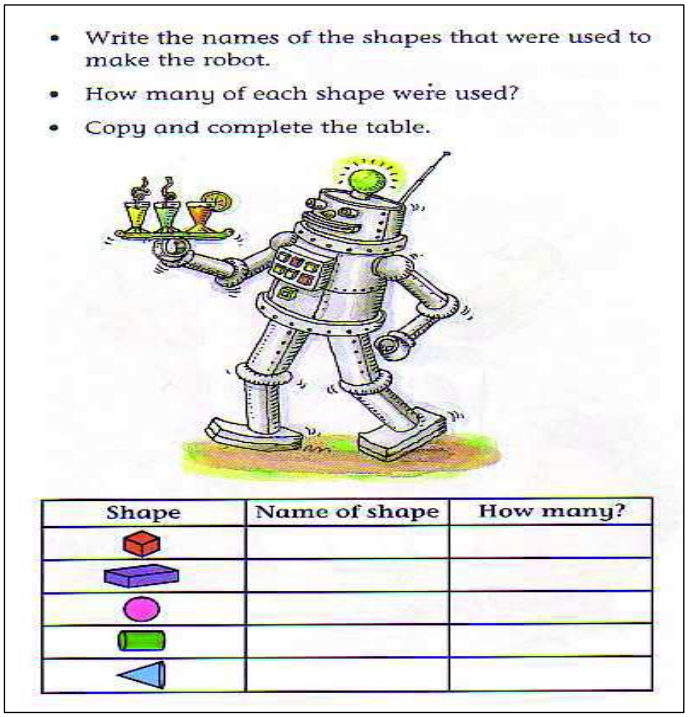
LO 3: SPACE AND SHAPE

AS 1

- Learners recognise, identify and name 2D-shapes and 3D -objects in the environment and in pictures. e.g.
  3D objects: boxes, balls, cylinders 2D-shapes: triangles, squares, rectangles, circle.
- Learners receive a flash card with the names of the 2D shapes and 3D objects on it. They put the correct words with the correct shape or object.

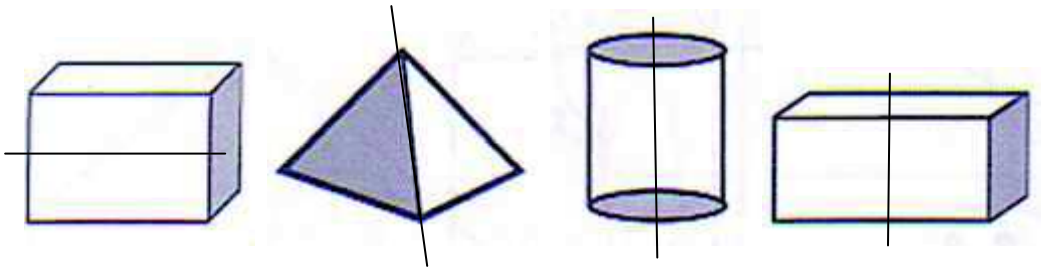


- Learners receive a worksheet with shapes which they identify and count



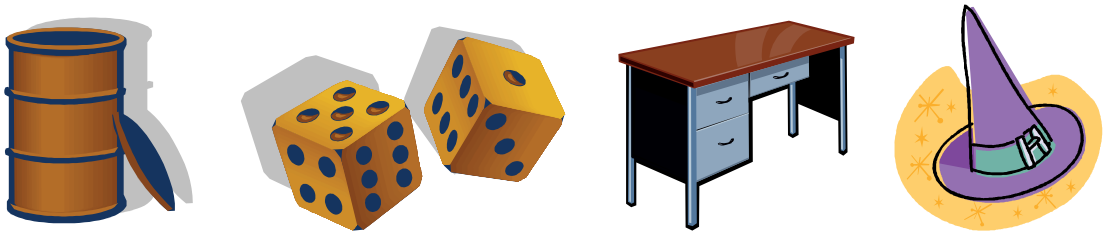
AS 4

- Recognises symmetry in two-dimensional shapes and three-dimensional objects.



AS 5

- Learners recognise and describe 3D objects from different positions eg. from the top, from the side, from the bottom.



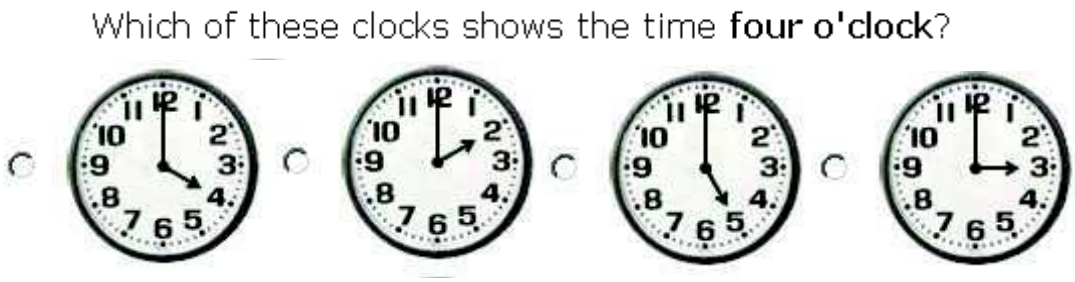
AS 6

- Learners position themselves and use vocabulary to explain position of self in comparison with other 3D objects. E.g. on, above, behind, in front of, under, next to, in between
- Learners must indicate where the little girl is in relationship to the house, eg.

LO 4: MEASUREMENT

AS 1

- Reads and writes analogue and digital clock time in terms of hours and minutes
  Learners read the time on the clock and then write it down in their mat books or on the blackboard. The rest of the group checks.



Which of these clocks shows the time **quarter to ten**?

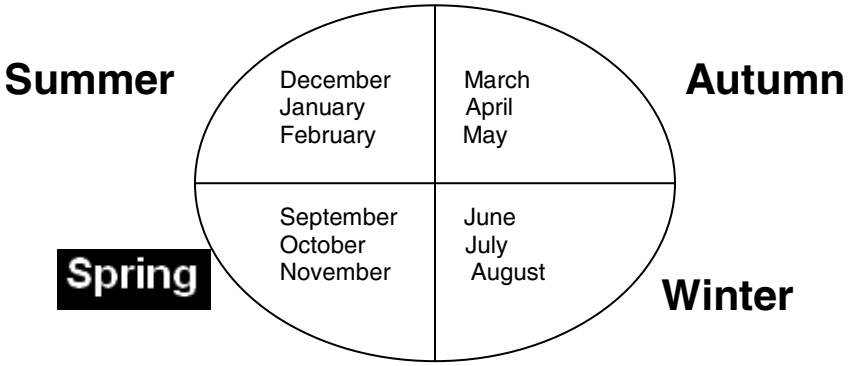
- eg. 25 minutes past 10 OR 10:25
  25 minutes to 10 OR 35 minutes past 9 OR 09:35

AS 3.1

- Calculates elapsed time in: hours and minutes using clocks
- Learners answer the following questions and show or fill in on a worksheet:
  How many hours and minutes is it from 15 minutes past 3 to twenty minutes past 5? How many minutes is it from 13:00 to 14:35? How many minute is it from 12 o'clock to twenty to one?
  eg. They draw in 15 minutes past 3 and then count how many hours and minutes it will be to 20 minutes past 5.

AS 3

- Learners calculate elapsed time in: days, weeks and months using calendars



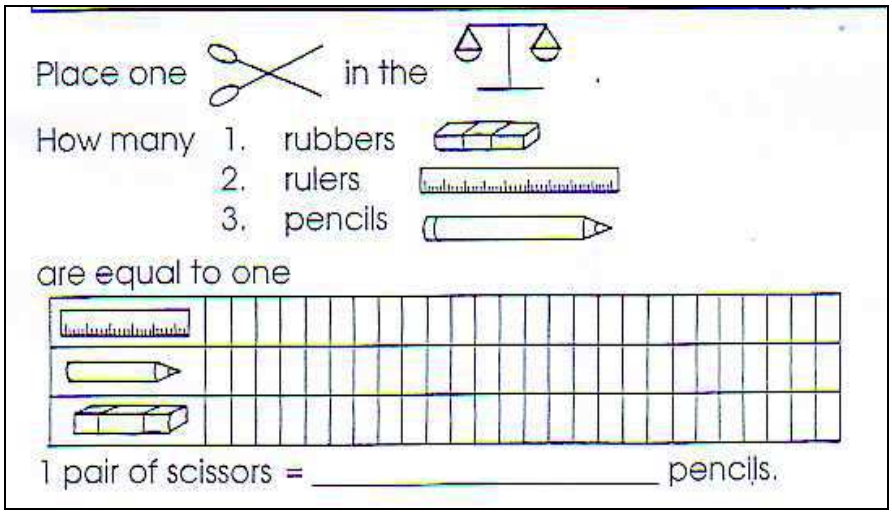
- Using the "Season Display" on the chalkboard, lead the learners (with paper and a pencil) through the following:
  - How many months are there in a year? Get learners to put them in sequence (from January to December)
  - Match the months with the seasons. Which is the hottest, coldest, etc?
  - How many seasons are there in each year. (There are 4 seasons with 3 months in each season.)
  - Revise the number of days in each month. Ask learners to work out which season has the most days. Allow them to calculate to determine the answer.

AS 6

- Learners measure and compare the length, mass and capacity of different objects. Learners arrange the objects from the longest to shortest, shortest to longest, heaviest to lightest, lightest to heaviest and most to least or least to most.

- Teacher sets out different objects for the learners to measure how heavy or light they are.
- They lift different objects and list them in order of heaviness.
- They write down the lightest object first.

Workcard:



LO 5: DATA HANDLING

AS 1

- Integrates with LO 4: AS 6.
- Learners collect data in the classroom and school environment according to one attribute.
  e.g. Learners draw up their own graph and fill it in by answering the questions about their collection on the workcard.
  - How many rulers weigh the same as the pair of scissors?
  - How many pencils weigh the same as the pair of scissors?
  - How many rubbers weigh the same as the pair of scissors?

AS 2

- Integrates with LO 4: AS 6.
- Learners sort physical objects according to one attribute. Learners may use pictures or drawings to represent the real objects.

AS 3

- Learners give reasons for grouping collection in a particular way
  e.g. shapes, objects, etc

AS 4

- Learners draw dots or construct pictographs to show correspondence between collected data and representation. The pictograph can be done horizontally or vertically.

RESOURCES:

Counters (beads, sticks, beans, stones, blocks,), abacus, number grid, number line, empty number grid, paper, scissors, flash cards with numbers/symbols, flash cards with number names, practical activity sheet, 100 number block, worksheets, cards with numbers, skittles or plastic colddrink bottles/tins, ball, string, pegs, dice, flard cards, real or play money, mat books, pencils, crayons, flash cards with bonds, flash cards with mental maths + and - ,flash cards with repetitive addition, flash cards with x, set of cards with sums and set of cards with the answer to the sums (snap cards), flash card with ½ / half on it, cardboard circle, flash card with ¼ / quarter on it, 2D shapes (triangles, squares, rectangles, circles), 3D objects (boxes, balls, cylinders, spheres), calendar, analogue clocks, In/Out machine, Season Clock, abacus

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REFLECTIONS

BARRIERS:
