Foundations For Learning

Intermediate Phase Mathematics Lesson plans

Third term

Grade 4

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THIRD TERM OVERVIEW

	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10
Conceptual Development and Problem Solving	Express numbers and quantities in words, in expanded notation		Counting up to 5000							
	Express numbers with flard cards	Building up and breaking down of numbers								
	Express numbers in positional notation									
		Solve problems using addition and subtraction	Solve problems using multiplication					Solve problems that involve addition and subtraction of whole numbers with at least 4 digits		Solve problems that involve addition and subtraction of whole numbers with at least 4 digits
						Addition of common fractions in context				
		Multiples of 1 000 up to 5 000	Number patterns up to 5000							Number patterns up to 10 000
		Multiples of single-digit numbers to at least 100 (multiplication tables)	Development multiplication and division					Solve problems that involve division of at least whole 3-digit by 2-digit numbers		
		Solve problems that involve grouping and sharing				Solve problems involving fractions				Solve problems that involve multiplication, grouping and sharing
							Solve problems involving ratio (proportion)			
						Solve problems involving rate				Solve problems involving rate

Conceptual Development and Problem Solving		Investigate and extend numeric patterns (to 5 000)	Extend number patterns that lead to multiplication					Extend number patterns in order to solve problems
			Flow diagrams					
				Recognise, identify and names 3D objects				
				Draw, sort, compare physical 3D objects				
	Locate position on a grid			Draw shapes on grid paper Make 3D models		Concept of area using square grids and tiling		
					Read, tell, and write analogue, digital and 24-hour time			
					Solve problems involving time			Solve problems involving time
							Data collection, recording and interpretation - pictograms	Data collection using tallies

THIRD TERM ASSESSMENT OVERVIEW

Important Note: The primary value and purpose of assessment is to gather sound information on what knowledge and skills learners have, as well as how they think. This informs you as the teacher and allows you to focus on providing teaching and learning opportunities which will further develop learners' thinking so that it becomes more sophisticated than what it was when you assessed it. Remember, informal assessment takes place on a regular basis throughout the term and will inform your planning.

	Milestones for Assessment Tasks	**Suggested activities for Assessment**
Week 1	• Recognise and represent numbers in order to describe and compare them: - Whole numbers to at least 4 digits • Locate positions on a coded (labelled) grid including: - Column and row (Assessment Task 2)	**Day 3:** Activity 1: Practical and written work on sheets of paper. **Day 5**: Activity 2: Worksheet with a grid to be complete and then assessed.
Week 2	• Perform mental calculations involving: - Multiplication of whole numbers to at least 10 x 10	**Day 1:** Activity 4: Assess the completed multiplication grids on a worksheet
Week 3	• Estimate and calculate by selecting and using operations appropriate to solve problems that involve: - Multiplication of at least whole 2-digit by 2-digit numbers to 200 (Assessment Task 2) • Determine through discussion and comparison the equivalence of different descriptions of the same relationship or rule represented: - Verbally - In flow diagrams (Assessment Task 2)	**Day 2:** Activity 1: Learners complete Case 3 for assessment after practicing Case 1 and 2. **Day 2:** Activity 4: Observe learners ability to complete flow diagrams and discuss the rule
Week 4	• Perform mental calculations involving: - Addition and subtraction • Counting forwards and backwards in a variety of intervals (including 2s, 3s, 5s, 10s, 25s 50s and 100s) between 0 and 5 000 • Recognise and represent numbers in order to describe and compare them: - Common fractions with different denominators including halves, thirds, quarters, fifths, sixths and eighths - Common fractions in diagrammatic form • Estimate and calculate by selecting and using operations appropriate to solve problems that involve: - Rounding off to the nearest 10, 100 or 1 000 - Equal sharing with remainders	**Day 5:** Formal assessment through a written task

Week 5	NO FORMAL ASSESSMENT	
Week 6	NO FORMAL ASSESSMENT	
Week 7	NO FORMAL ASSESSMENT	
Week 8	• Perform mental calculations involving: - Addition and subtraction • Estimate and calculate by selecting and using operations appropriate to solve problems that involve: - Addition and subtraction of whole numbers with at least 4 digits - Addition and subtraction of common fractions in context - Multiplication of at least whole 2-digit by 2-digit numbers to 200 - Division of at least whole 3-digit by 2-digit numbers • Solve problems involving: - Comparing two or more quantities of the same kind (ratio) - Comparing two or more quantities of different kinds (rate, e.g. kg/R) • Solve or complete number sentences by inspection or by trial-and-improvement, checking the solutions by substitution • Investigate and approximate - Areas of polygons (using square grids and tiling) to develop understanding of square units • Read, tell and write analogue, digital and 24-hour time to at least the nearest minute and second. • Solves problems involving calculations with and conversions between appropriate time units	**Day 3**: Observe Test 1, then use Test 2 for formal assessment. **Day 5**: Formal written assessment
Week 9	• Organise and record data using tallies and tables. • Draw graphs and interpret data (ungrouped) • Pictographs with a one-to-one correspondence between data and representation (e.g. one picture = one person)	Observe all the activities during the week to form a judgement on learners understanding of data handling.
Week 10	NO FORMAL ASSESSMENT	

THIRD TERM: WEEK 1 OVERVIEW

Hours: 5					**Number of periods: 5**
Learning Outcomes and Assessment Standards LO 1 AS 1,3, 4 LO 2 AS 1			**Milestones:** In the range up to 5 000: - Say which of two given numbers is bigger; - Order more than two given numbers from smaller to bigger; - Count given structured collections of objects (pictures and marks) up to 5000, recording the result by writing the number name in words, by showing it with flard cards and by writing it in expanded notation. • Locate position on a coded (labelled) grid including: - column and row.		
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content focus	Investigating collections of more than 2000 objects, up to 5000.	Learner will experience forming a quantity bigger than 2000.	Assess learners' understanding of numbers 2000-5000. A highly integrated activity: find positions on a numbered grid, write numbers in given intervals and compare numbers.	This is a continuation of the previous lesson.	Finding positions on a labelled grid.
Resources	A copy of Term 2 Annexure C (Six apple counting sheets) for each learner. The set of flard cards for each learner. The set of fake banknotes (Term 1 Annexure O) for each learner.	One set of Term 2 Annexure B (4-digit number cards) for use in the class. The set of fake banknotes (Term 1 Annexure O) for each learner. A calculator, for you to check learners' answers. A copy of sheet E of Term 2 Annexure C (apple sheets) for each learner.	4-digit number strips, cut from Term 3 Annexure A, one strip for each learner. The set of flard cards for each learner. Two copies of Term 3 Annexure B (Number card template) for each learner, preferably printed on light cardboard or heavy paper. **These must be printed on the front and the back**. One set of Term 2 Annexure B (4-digit number cards) Scissors. 25 plastic bags (like shopping bags).	The Annexure A sheets on which learners wrote numbers the previous day. Scissors. An envelope (it may be a used envelope) for each learner. A plastic bag or small box (for 144 cards) for every four learners. Labels for the plastic bags or boxes.	Three copies of Term 3 Annexure C (Coded grid) for each learner. Print the grid on both sides of the paper. You may also print the codes in Activity 2.

WEEK 1: DAY 1

Notes to the teacher:

- In this lesson you will provide learners with opportunities to become aware of collections of more than 2000 objects, up to 5000.

Resources:

- A copy of Term 2 Annexure C (Six apple counting sheets) for each learner.
- The set of flard cards for each learner.
- The set of fake banknotes (Term 1 Annexure O) for each learner.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Arrange learners in groups of four or three. Ensure that each learner has his/her set of flard cards. Hand a copy of Annexure C (all six sheets) to each learner.

Put this question to the learners, but do not take answers:

How many apples are shown on your sheet C? Show this number with flard cards and write it in words.

The purpose of this question is to help learners to conceive of a quantity more than 1000. Circulate to check that learners manage. *The answer is one thousand and thirty-five*. Learners who do not manage should do the counting activities in the lesson plans for Term 1 Weeks 1 and 2 again. Now put this question to the groups, but do not take answers:

How many apples do you have, altogether in your group, on your sheets C? Show it with flard cards **and write the number in words**.

Circulate. The answer is 3105 in groups of three and 4140 in groups of four.

Activity 2:

Each learner individually figures out how many apples there are on sheets D, E and F together. It is fine if they do this by counting only, but they may also use calculation.

Activity 3:

Write the following number patterns on the board. Learners should extend these patterns up to at least 4000, but may continue as far as they wish.

Pattern A:	1800	1850	1900	1950	
Pattern B:	250	500	750	1000	1250
Pattern C:	1100	1250	1400	1550	1700
Pattern D:	1820	1843	1866	1889	1912

WEEK 1: DAY 2

Notes to the teacher:
- The purpose of Activity 1 is to give each learner an experience of forming a quantity bigger than 2000.

Resources:
- One set of Term 2 Annexure B (4-digit number cards) for use in the class.
- The set of fake banknotes (Term 1 Annexure O) for each learner.
- A calculator, for you to check learners' answers.
- A copy of sheet E of Term 2 Annexure C (apple sheets) for each learner.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Each learner must have his/her set of fake banknotes.

Give two of the 4-digit cards to each learner.

Tell learners that the two cards are prices for items they have bought at different shops. They have to pack out the banknotes they need to pay for each purchase.

As they finish, learners should form pairs to check each other's payments.

When they have finished checking, learners should work individually again.

Each learner should now determine the total cost of their two purchases and write the amount down as a single number. Learners should also write down, on a loose sheet of paper, how they found the total. They will need some time to do this. Let them write their names on these sheets and take the sheets in for assessment purposes.

Activity 2:

As learners finish Activity 1, hand out copies of sheet F with apples. Tell learners that the apples cost R3 each. They have to pack out the banknotes to pay for all the apples on sheet C. They also have to write the amount as a single number.

Activity 3:

Learners who have finished should copy the following number sequences from the board and extend them, at least until the number exceeds 5000:

Pattern E:	1200	1750	2300	2850	
Pattern F:	1	2	4	8	16
Pattern G:	300	600	900	1200	1500
Pattern H:	1850	1945	2040	2135	2230

WEEK 1: DAY 3

Notes to the teacher:

- During the first two lessons, you have given learners opportunities to become aware of and work with numbers between 2000 and 5000. In Activity 1 today, you will assess how well they understand numbers in this range.
- Activity 2 is a highly integrated activity: learners will use positions on a numbered grid, write numbers in given intervals and compare numbers.

Resources:

- 4-digit number strips, cut from Term 3 Annexure A, one strip for each learner.
- The set of flard cards for each learner.
- Two copies of Term 3 Annexure B (Number card template) for each learner, preferably printed on light cardboard or heavy paper. **These must be printed on the front and the back**.
- Kokipens or dark-colored crayons if available.
- One set of Term 2 Annexure B (4-digit number cards) for use in the class.
- Scissors.
- 25 plastic bags (like shopping bags).

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1 (Assessment):

Hand out the strips with 4-digit numbers (5 numbers on each strip), that you have cut from Annexure A. Different learners should get different sets of numbers. Learners should write their names at the top of the sheets.

Ask learners to do the following for each number:

- make a drawing to show how they will represent the number with flard cards;
- write the number in expanded notation;
- write the number in words.

Learners may use their flard cards to figure out how to represent the numbers.

At the bottom of the sheet, they have to write the five numbers, from smallest to largest.

Take the sheets in for assessment when learners have finished, so that you can analyse their answers to help you prepare for the teaching challenges you face this term.

Activity 2:

Hand out a number card template sheet (Annexure B) and one 4-digit number card to each learner. Tell learners that they will write numbers in the blocks, using large symbols like on the number card you have given them. Learners should write with pencils. Ask learners to each choose any number between 2800 and 3200, and to write in the cell labelled D2 on their sheets. Walk around and check that learners get this right and that they write in big symbols to fill the available space.

Ask learners to tell each other what the cell immediately above D2 is called and what the cell immediately below D2 is called. Each learner then has to write a number about (but not precisely) 500 more than their first number in the cell immediately above D2, in other words in cell E2. Keep circulating among learners to check that they do this correctly. Learners have to continue upwards in the same way, filling in numbers of increasing size in cells F2, G2 and H2, in steps of approximately 500. It is critically important that learners choose their own numbers individually.

If you have Kokipens and or dark crayons, hand them out now so that learners can use them instead of pencils.
Once learners have reached cell H2 at the top of the grid, they should fill in the cells below D2, with each number about 500 less than the number immediately above it.
When learners have reached A2, they should write a number about (but not precisely) 300 less in A1, then continue upwards in jumps of approximately (but not precisely) 500, right up to H1.
Having reached H1, learners should put a number approximately 300 more than H2 in cell H3.
Learners should then complete the table by going downwards from H3, with each number about 500 less than the number above it.
Hand out new Annexure B sheets and scissors to the 25 learners who finish first. Each of them has to form a set of 24 cards and put each set into a plastic bag.

Activity 3:
As soon as all learners have completed one side of the sheet, arrange them into groups of three and four and let them play the simple game described below. To play the game, each learner needs his/her completed table with numbers and each group needs a plastic bag with the 24 labelled cards. Each group also needs a blank sheet with the names of the players as a scoresheet.
Players take turns to draw a card from the plastic bag. When the card is drawn, for example C3, each learner has to check what number he/she has on that cell. The player with the biggest number wins. The drawn card is not put back into the bag. When half the cards (12) have been drawn, the rule changes and for the next 12 cards the learner with the smallest number on that cell wins.
Remember to take the sheets and the plastic bags with number cards, as well as Koki pens and/or crayons in at the end of the lesson.

WEEK 1: DAY 4
Notes to the teacher: • This is a continuation of the previous lesson. **Resources:** • The Annexure A sheets on which learners wrote numbers the previous day. • Scissors. • An envelope (it may be a used envelope) for each learner. • A plastic bag or small box (for 144 cards) for every four learners. • Labels for the plastic bags or boxes.
ACTIVITIES FOR THE DAY
ORAL, MENTAL AND CONCEPT DEVELOPMENT **Activity 1:** Hand out one Annexure A sheet, that is already completed on one side, to each learner (they do not have to get "their own" sheets back). They now have to complete the other side in exactly the same way, but starting at a different number in cell D2 (but again a number between 2800 and 3200). Hand out scissors and envelopes to learners who have finished. Once a learner has finished, he/she should cut out the cards on the lines and put them in the envelope. Take the envelopes in and empty the contents of four envelopes into each plastic bag.
Activity 2: Assign every four learners who have handed in their envelopes to a group and give them a plastic bag with 96 cards. They have to play the Number Placement Game as described in the lesson plan for Term 2, Week 2, Day 1, Activity 3.

WEEK 1: DAY 5

Notes to the teacher:
- In this lesson learners will get more experience in finding positions on a labelled grid.

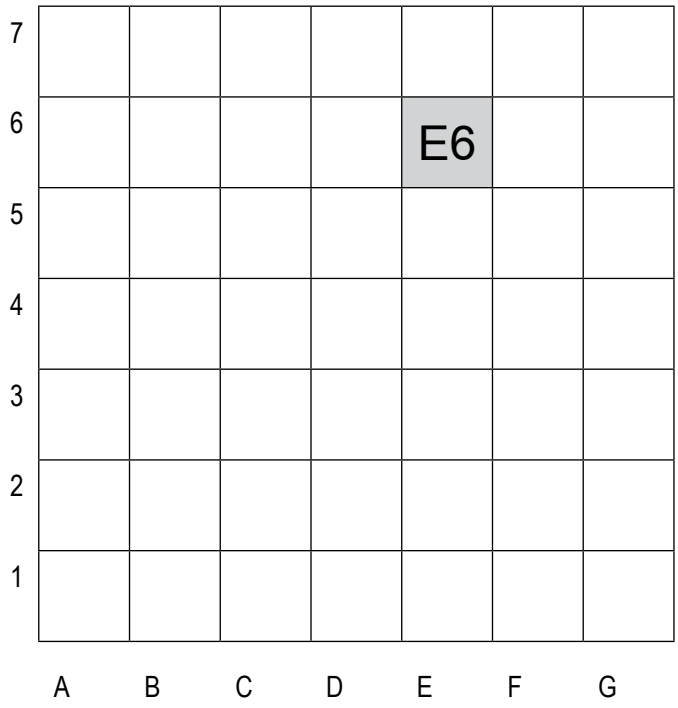
Resources:
- Three copies of term 3 Annexure C (Coded grid) for each learner. Print the grid on both sides of the paper.
- You may also print the codes in Activity 2.

ACTIVITIES FOR THE DAY

CONCEPT DEVELOPMENT

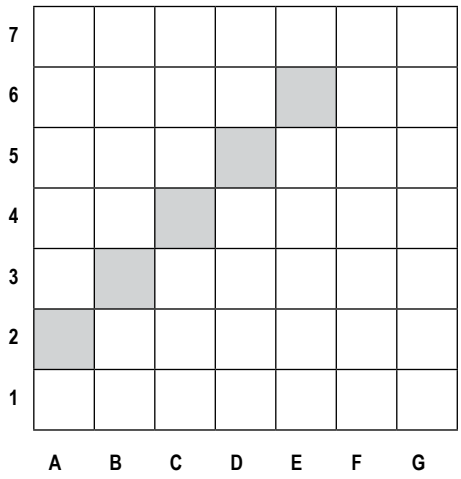
Activity 1:

Hand out a copy of the coded grid. Tell learners that you will refer to the squares as "cells" and ask them to find out how many cells there are on the grid. While they work on this, draw part of the grid on the board roughly:



Shade cell E6 and ask learners to shade the same cell on their grids very lightly with a pencil. Ask learners to also shade cell A2 lightly and to shade the cells that lie directly between A2 and E6.

Circulate among learners to check that they get this right and correct and help them where they make mistakes. Ask learners to write down the codes of the cells between A2 and E6.

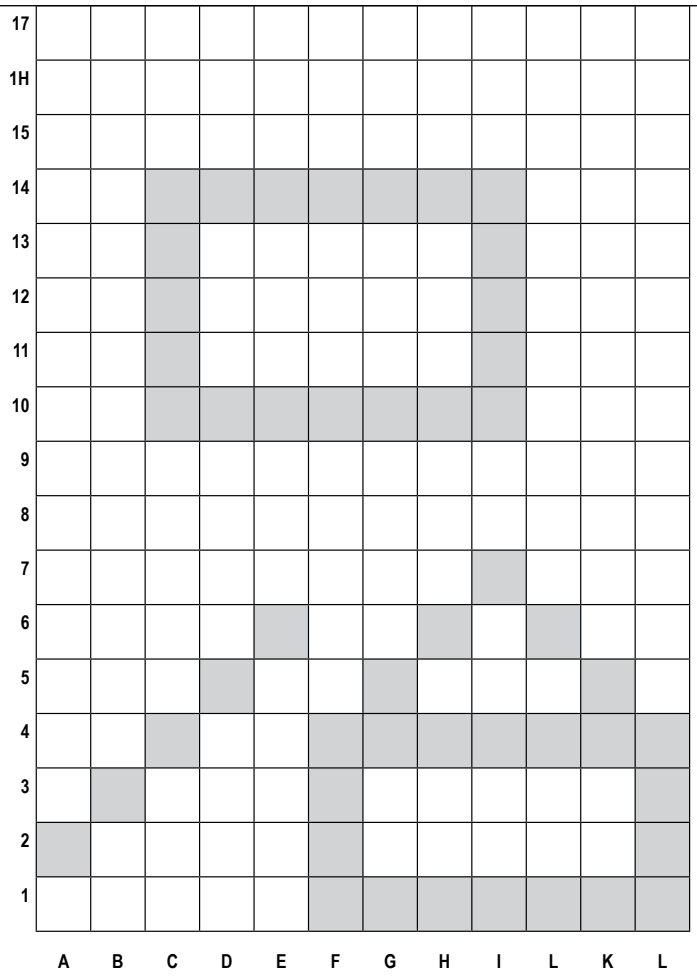


Activity 2:

Write the following on the board, or read it slowly, or hand out the copies you have made. Learners should shade all these cells. The purpose of this activity is to give learners practice in locating positions on a labelled grid.

C10, **J**6, **F**3, **L**3, **I**14, **C**14, **H**1, **I**13, **G**14, **I**11, **C**13, **L**1, **F**1, **F**4, **G**5, **K**1, **D**14, **H**10, **F**2, **C**11, **L**4, **H**14, **G**1, **E**14, **J**1, **I**13, **K**5, **I**7, **C**12, **G**10, **K**4, **I**1, **H**10, **I**4, **G**4, **L**2, **D**10, **J**4, **F**14, **F**10, **H**6, **I**12, **E**10, **H**4, **L**2.

Take the sheets in when learners have finished, for assessment purposes. (Formal Assessment Task 2: LO 3 AS 8a) You can see on the right what the sheets should look like once learners have finished, so you can see quickly to what extent each learner managed.



Activity 3:

Hand out a clean coded grid sheet to each learner.

Ask learners to write the number 1200 in cell A1, the number 1290 in cell B1, 1380 in C1, 1470 in D1 and 1560 in E1.

Ask learners to continue this pattern in cells F1 to L1.

Circulate to check that learners get it right.

Now ask learners to write 1450 in cell A2, 1700 in cell A3, 1950 in cell A4, 2200 in cell A5 and to continue this pattern upwards in column A.

Circulate to check that learners get it right.

Finally, learners have to make a pattern in each row, for example in row 2, by adding 90 each time. For example, to find the number in B2, they have to add 90 to the number in A1, i.e. to 1450.

THIRD TERM: WEEK 2 OVERVIEW

Hours: 5					**Number of periods: 5**
Learning Outcomes and Assessment Standards LO 1: AS 3, 6, 8, 10 LO 3: AS 8			**Milestones:** • Know how different multiples of 1 000 up to 5 000 can be formed in different ways as a sum of multiples of 1 000, e.g. 4 000 = 1000 + 3000. • Solve problems by addition. • Solve problems by subtraction. Understand the different types of situations, can do the calculations needed to solve them and can judge whether the result makes sense. These problem types may be solved by adding or subtracting. • Multiplication of 2-digit by 2-digit numbers with answers to at least 5 000. • Know or quickly determine multiples of single-digit numbers to at least 100 (multiplication tables).Locates position on a coded (labelled) grid including: - column and row.		
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content Focus	Developing multiplication knowledge through different activities.	Learners use known or easily-reproducible multiplication facts (tables) to do multiplication, by breaking the numbers down.	Provide opportunities for learners to consolidate their understanding of multiplication.	Learners will work at money situations that require addition and subtraction.	Learners will work at more problems that require addition and subtraction.
Resources	A set of multiplication fact cards (Annexure K) for each learner. An extra set of multiplication bond cards for every group of four or three learners Three envelopes for each learner. A copy of the Term 1 Resource R (sheets with bunches of bananas) for each learner.	A set of fake banknotes for each learner.	A set of multiplication fact cards for each group of three or four learners in the class. The set of fake banknotes for each learner.	A set of fake banknotes for each learner.	A set of fake banknotes for each learner. The set of number bond cards Term 2 Annexure H for each group of four or three learners.

WEEK 2: DAY 1

Notes to the teacher:

- In Activities 1, 2 and 3 each learner will do a self-assessment of his/her knowledge of multiplication facts.
- In Activity 4 learners will play the number bond game with multiplication fact cards.

Resources:

- A set of multiplication fact cards Term 2 (Annexure K) for each learner.
- An extra set of multiplication bond cards for every group of four or three learners that you will set up in Activity 2.
- Three envelopes for each learner.
- A copy of the Term 1 Resource R (sheets with bunches of bananas) for each learner.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Hand out a card set and three envelopes to each learner. Each learner has to sort his/her cards into three piles:

A. Those for which the learner believes he/she knows the correct answer straightaway.
B. Those for which the learner believes he/she knows a way to quickly find the correct answer, e.g. by counting or in some other way.
C. Those for which the learner does not know the answer, nor know of a quick way to find the answer.

Each pile of cards should be put into a separate envelope, labelled A, B or C.
While learners do this, hand out a copy of the banana bunch sheets to each learner.

Activity 2:

Each learner should work through his/her B-cards, find the answer in some way or another (e.g. by counting) and write the answers in their classwork books. The answers should be checked by referring to banana bunches on the resource R sheets. The purpose of having the learners refer to these sheets is to ensure that they keep the actual meaning of multiplication in mind and do not just try to blindly memorise facts. Each learner should then look at all his/her B-cards again. For some of them, he/she may now know the answer straightaway. These cards may be transferred to the A-envelope.

Activity 3:

Each learner should now work with his/her C-cards and try to find a way to work out the answer. Allow learners to consult one another. While learners work, make the three blank tables for Activity 4 on the board. Learners may decide to transfer some of their C-cards to the B-envelope, or even the A-envelope. Let learners put their envelopes with cards away.

Activity 4:

Make three tables like these on the board. Learners have to copy the tables. Fill in some multiplication facts on the tables as shown here. Learners have to complete the tables, except the shaded part of the third table.

	2	3	4	5	6	7	8	9	10
10									
9									
8						56			
7									
6									
5									
4									
3									
2									

	2	3	4	5	6	7	8	9	10
100									
90									
80									
70									
60	120								
50				250					
40									
30		90							
20					120				
10									

	10	20	30	40	50	60	70	80	90	100
100										
90										
80	800									
70					3500					
60										
50										
40							2800			
30		600								
20					3					
10										

Take the completed tables in for assessment (Formal Assessment Task: LO 1 AS 8). Hand them back to learners on the next day.

WEEK 2: DAY 2

Notes to the teacher:

- Learners will do multiplication, using whatever method they are comfortable with, in the context of money.
- The purpose of the lesson is to provide learners with strong opportunities to use known or easily-reproducible multiplication facts (tables) to do multiplication, by breaking the numbers down.

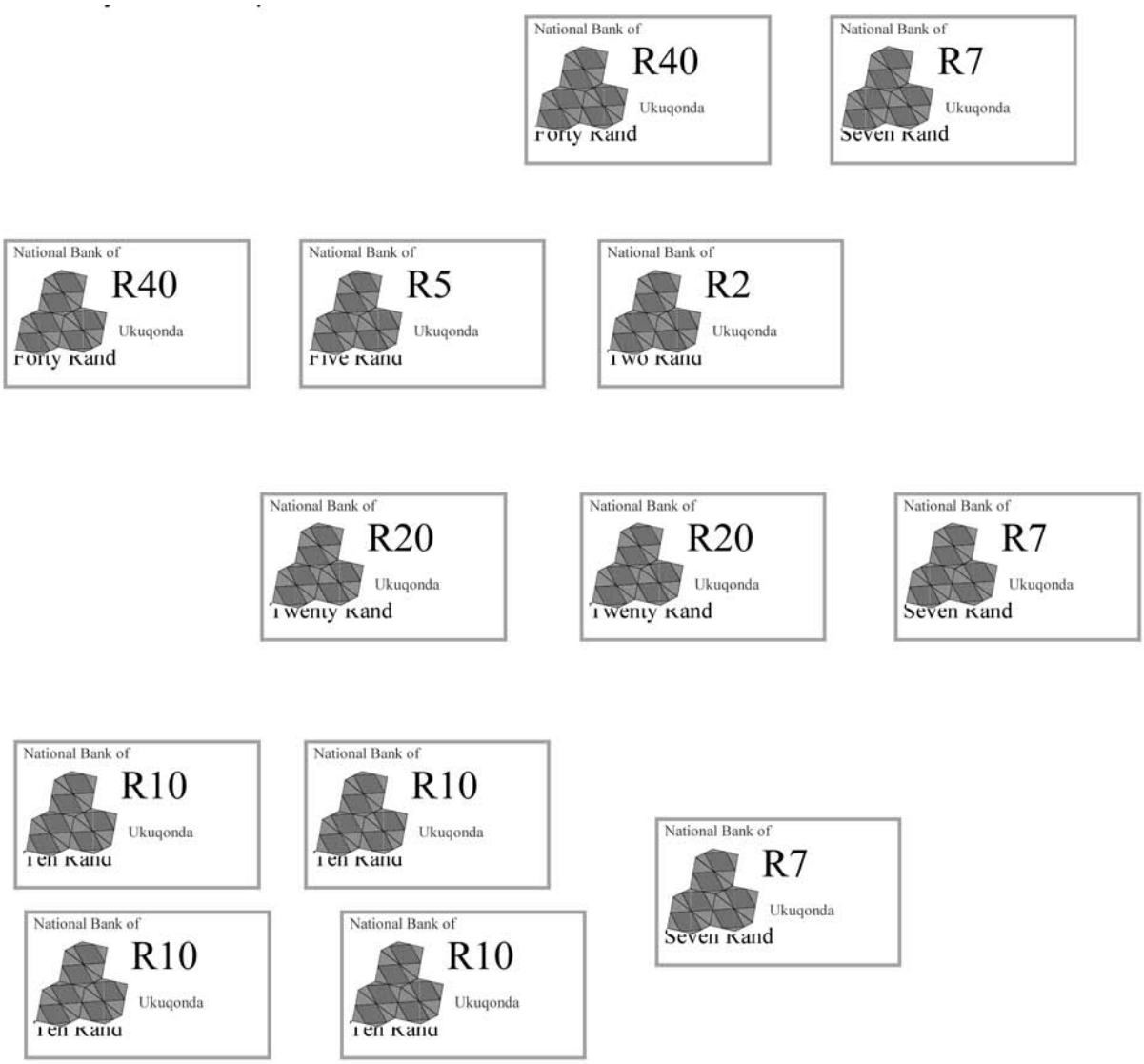
Resources:

- A set of fake banknotes for each learner.

ACTIVITIES FOR THE DAY

PROBLEM SOLVING

Ask learners to imagine that they have all worked in a factory for a few hours and now they have to be paid. They will each by paid R47. Ask them to show this money with fake banknotes. Circulate among learners to see that they do this. Different learners may show the R47 in different ways, for example:



Ask learners to work out how much money they have earned altogether. They have to do this individually. You may need to tell them how many there are in class today and to make it real, you may quickly do a count so that they can all observe you counting.

Leave the learners alone for a minute or two, so that they clearly understand that they have to engage with this on their own. Start circulating and observe what they do. After a few minutes, you may suggest that they look at the tables they produced on the previous day. Tell them they may consider using some of the information on the tables to solve the problem on which they now work. Learners who do this may use a variety of similar methods, depending on the way in which they have represented the R47. Here are some examples, assuming there are 54 learners in the class (learners may write this up in slightly different ways):

- 40 × 50 = 2000 40 × 4 = 160 7 × 50 = 350 7 × 4 = 28
  2000 + 160 + 350 + 28 = 2538
- 40 × 50 = 2000 40 × 4 = 160 5 × 50 = 250 5 × 4 = 20 2 × 50 = 100 2 × 4 = 8
  2000 + 160 + 250 + 20 + 100 + 8 = 2538
- 20 × 50 = 1000 20 × 50 = 1000 20 × 4 = 80 20 × 4 = 80 7 × 50 = 350 7 × 4 = 28
  1000 + 1000 = 80 + 80 + 350 + 28 = 2538

In the above methods, the 54 learners have been treated as a group of 50 and a group of 4. Some learners may do this differently. They may, for instance, treat the class as 5 groups of 10 learners each and one group of 4, calculate the total separately for each of these groups and add up at the end.

As learners complete their work, you may suggest that they now represent the R47 in a different way and do the calculation again according to the different way in which they now represent (break down) the R47. This may help learners to become strongly aware of the strategy they use, namely to represent the number by showing how it can be broken down into parts and then to work with these parts separately.

About halfway through the lesson period, allow learners to explain their methods to each other in groups of four or three learners.

In the last 15 minutes, demonstrate one of the methods on the board. Emphasize the fact that the computation was achieved by breaking the numbers down into smaller parts and then using known or easily-reproducible facts (e.g. 40 × 5 = 200).

WEEK 2: DAY 3

Notes to the teacher:

- In this lesson learners will work at similar problems as in the previous lesson. The purpose is to provide learners with opportunities to consolidate their understanding of multiplication.

Resources:

- A set of multiplication fact cards for each group of three or four learners in the class.
- A set of fake banknotes for each learner.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL ACTIVITY

Let learners play the Number Bond Game with the multiplication fact cards, in groups of four or three learners.

PROBLEM SOLVING

Write the following (or similar) problems on the board, and ask learners to tackle them individually:

1. There are 38 learners in a class. Each learner brings R46 for books.
   How much money is this, altogether?
2. Miriam buys 43 chickens at R76 each. How much does she pay in total?
3. A new school has 36 classrooms. There are 48 chairs in each classroom. How many chairs are there in total?
4. Calculate 37 × 58.

WEEK 2: DAY 4

Notes to the teacher:
- Learners will work at money situations that require addition and subtraction.
- You may find it helpful to read the notes on subtraction methods in the lesson plan for Term 1, Week 7, Day 2 before teaching this lesson.

Resources:
- A set of fake banknotes for each learner.

ACTIVITIES FOR THE DAY

CONCEPT DEVELOPMENT AND PROBLEM SOLVING

Activity 1:

Write the following problem on the board:

Tebogo has saved R4843. She wants to buy furniture for her house, for R3786.

Ask learners to show the money Tebogo has saved with false banknotes and to write down how they show it. Circulate between learners and observe how they do this. Different learners may show the same amount of money in different ways. Check that they write the representation. Some learners may do this by "writing banknotes", for example:

R4000	R800	R80	R 6

Other learners may just write numbers, for example, R4843 = R4000 + R800 + R40 + R3, and may even leave out the Rand symbols. That is fine.

Also ask learners to show the money Tebogo will need for the furniture and to write down how they show it.

When learners have represented both numbers, ask them to work out how much money Tebogo will have left, after she has paid for the furniture. While learners work, write the problems for Activity 2 on the board (or similar problems that will make sense to your learners).

Circulate and observe what learners do. You may find it interesting to compare their methods to the methods described in the lesson plan for Term 1, Week 7, Day 2.

Activity 2:

1. Manare has saved R4923. He wants to buy a very smart bicycle for R3857. How much money will he have left?
2. Fritz has saved R2623. He also wants to buy a bicycle for R3857. How much money does he still need to find?
3. Gertrude bought a TV set and a table for R4581. She paid R1199 for the table, but she has now forgotten how much she paid for the TV set. Work it out for her.

WEEK 2: DAY 5

Notes to the teacher:

- Learners will work at more problems that require addition and subtraction.

Resources:

- A set of fake banknotes for each learner.
- The set of number bond cards Term 2 Annexure H. for each group of four or three learners.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL ACTIVITY

Let learners play the Number Bond game with the Term 2 Annexure H cards, in groups of four or three.

CONCEPT DEVELOPMENT AND PROBLEM SOLVING

Tell learners that a group of friends went shopping together to buy groceries, clothes and presents. Some information about their shopping is given in the table below which you should write on the board. Learners should copy the table into their workbooks.

	Groceries	Clothes	Presents	Total
Joachim	R2678	R1532	R655	?
Temba	R1886	?	R17921	R4519
Felicity	R3581	R342	?	R4738
Total	?	?	?	?

Learners should figure out what number belongs at each of the question marks. Learners who want to use fake banknotes to support their thinking should feel free to do so.

Circulate among learners and assist those who need help to understand the question.
Do not help them by telling them what calculations to do. For instance, do not tell them they have to add to find the total Joachim has spent. (They have to learn to figure out for themselves what operations to do, because that is what they need to do in life.)

THIRD TERM: WEEK 3 OVERVIEW

Hours: 5					**Number of periods: 5**
Learning Outcomes and Assessment Standards LO 1: AS 3, 7, 8, 10 LO 2: AS 1, 3, 6			**Milestones:** • Solve problems that involve grouping and sharing. • Investigate and extend numeric (to at least 5 000)and geometric patterns looking for general rules or a relationship, including patterns: - represented in physical and diagrammatic form; - of learners own creation. • Describe the observed relationships of rules in own words. • Determine the output values for given input values using: - verbal description; - flow diagrams; • Determine through discussion and comparison the equivalence of different descriptions of the same relationship or rule represented: - Verbally; - in flow diagrams; - by number sentences.		
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content Focus	Learners solve problems related to number patterns.	Learners will solve problems related to number patterns. Introduce flow diagrams as a way to specify the calculations one may do in a certain situation, and to the idea of a verbal formula.	Integration of counting, number patterns, and the development of knowledge about multiplication and division.	Division done in simple ways to determine the step size in constant-difference (constant-step) sequences,	Learners engage with a real situation, and imagine certain things about the situation. Repeated addition and multiplication.
Resources	Copies of Sheet X ("Number Journey A") of Term 2 Annexure A. Two copies of each of Number journey X and sheets 1, 2 and 3, printed on both sides, for each learner Three tables for Activity 4 on poster sheets.	Two copies of each of Number journey X and sheets 1, 2 and 3 as for the previous day, printed on both sides, for each learner. A copy of Term 3 Annexure D (Table flow diagrams) for each learners (3 sheets).			A calculator so that you can check learners' answers. A class list for notes you will make about the learners.

WEEK 3: DAY 1

Notes to the teacher:

- Learners will solve some problems related to number patterns.
- This work on number patterns is designed to promote learners' awareness and understanding of situations in which one may use multiplication to solve problems.

Resources:

- Make sheets 1, 2 and 3 in A4 size, by cutting and pasting copies of Sheet X ("Number Journey A") of Term 2 Annexure A (see next page). The dotted rectangles indicate parts of Sheet X that should be pasted out.
- Two copies each of: Number journey X, and sheets 1, 2 and 3, printed on both sides, for each learner.
- You need to make the three tables for Activity 4 on poster sheets beforehand.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Hand out one copy of sheet 2 and one copy of Number journey X to each learner.

Ask learners to write the number 2000 in the starting position (directly under the word "number") on both sheets. Then ask learners to add 20 in each step, right up to the end of the journey. They should write "+20" in each arrow block and write each answer after the arrow.

Before learners actually start to work, ask them to try to predict what the final number at the end will be, on both sheets. Do not take their predictions publicly: ask them to write it down.

While learners work, you may hand out copies of sheets 1 and 3.

Tell learners they may briefly tell some classmates how they reached their predictions. They may then check their predictions by filling in the number journeys if they feel it is necessary. Otherwise they may continue with Activity 2.

Activity 2:

Ask learners to do exactly the same as the above for sheets 1 and 3.

Activity 3:

Write the following on the board while learners work on Activity 2, so that learners who finish quickly do not become idle. Learners who have filled in all the spaces may use the other sides of the sheets that are already handed out, for activity 3.

Write 3000 in the starting position on all the journeys. Predict what the final numbers will be if you add 32 in each step.

Tell learners they may briefly tell some classmates how they reached their predictions. They may then check their predictions by filling in the number journeys if they feel it is necessary. Otherwise they may continue with Activity 4.

> The activities in this lesson are also intended to make learners aware that one has a choice between adding the same number repeatedly, or using a combination of known or easily-producible facts. For example, to calculate 24 × 32, one may add 32 repeatedly (24 times). Alternatively, one may utilize the known or easily-producible facts that that 20 × 30 = 600 and 20 × 2 = 80 and 4 × 30 = 120 and 4 × 2 = 8.
> In these activities, learners will possibly use the latter strategy to make predictions and repeated addition when they check.

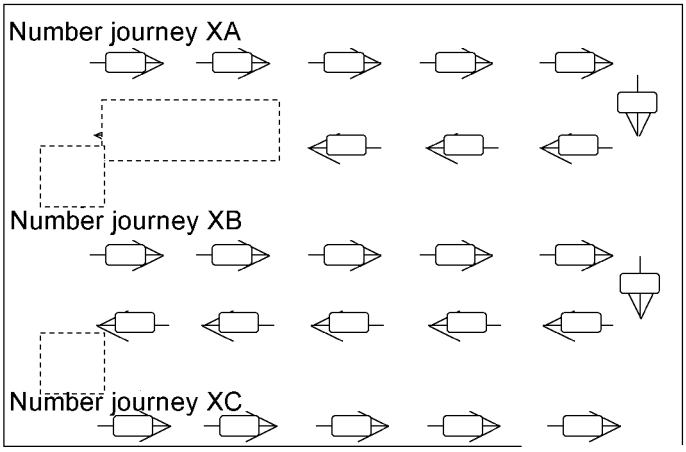
Activity 4:

This is just like the previous activities, for the following cases. In each case learners have to do it for all the different number journeys on the sheets, i.e. X, XA, XB, XC, XD and XE.

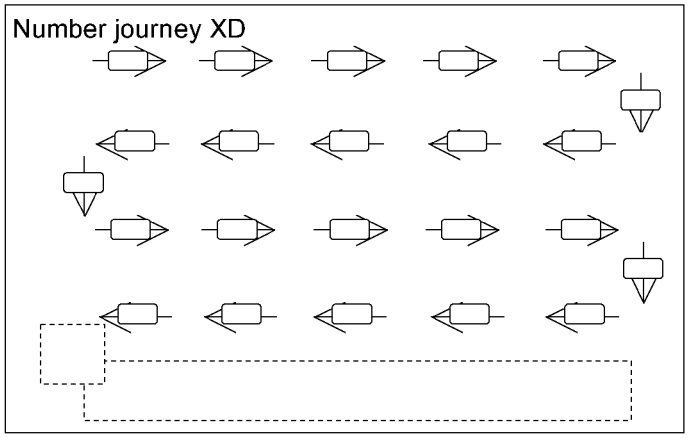
Case 1: Starting number 2348, step size 48.

Case 2: Starting number 3275, step size 28.

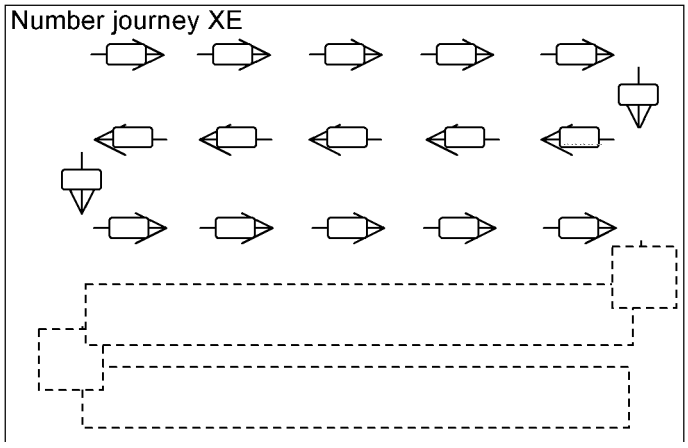
Case 3: Starting number 1227, step size 67.



Sheet 1



Sheet 2



Sheet 3

WEEK 3: DAY 2

Notes to the teacher:

- Learners will again solve some problems related to number patterns.
- This work on number patterns is designed to promote learners' awareness and understanding of situations in which one may use multiplication to solve problems.
- In Activity 2, learners are introduced to flow diagrams as a way to specify the calculations one may do in a certain situation and to the idea of a verbal formula.

Resources:

- Two copies each of Number journey X and sheets 1, 2 and 3 as for the previous day, printed on both sides, for each learner.
- A copy of Term 3 Annexure D (Table flow diagrams) for each learner (3 sheets).

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Hand out copies of the four sheets to each learner.

This is just like Activity 4 of the previous lesson, for the cases described below. In each case learners have to find the final number for all the different number journeys on the sheets, i.e. X, XA, XB, XC, XD and XE. They may choose whether they will only make predictions and trust their predictions, without filling in and executing the steps in the journeys or whether they will also do it step-by-step.

Case 1: Starting number 1569, step size 57.

Case 2: Starting number 2328, step size 43.

Case 3: Starting number 1354, step size 76.

It is not necessary that all learners finish all three cases now. Circulate among learners and when all or almost all learners have finished case 2, proceed to Activity 2.

Activity 2:

Tell learners that you have come across a girl (you may call her Kealeboga or whatever name you prefer to use), who claims that she can describe her method to do the tasks in Activity 1 in a very simple way. For example, to make a prediction for journey XA for Case 1, Kealeboga describes her work like this:

$$10 \longrightarrow \boxed{\times 57} \longrightarrow \boxed{+\ 1569} \longrightarrow 2139$$

Ask learners to try to figure out what Kealeboga means by this and to describe in writing what they understand Kealeboga to mean. Circulate, and assign learners who have finished writing to groups of four or three learners. Learners should compare their verbal descriptions.

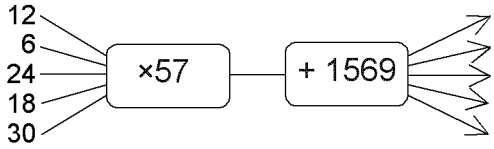
Activity 3:

Tell learners that Kealeboga's way of describing her work is called a *flow diagram*. Ask learners to use flow diagrams to describe how one may make predictions for the other number journeys in Case 1 and all the different number journeys in Case 2.

Circulate and check learner's work.

Activity 4:

Demonstrate on the board that one can use one flow diagram to describe a number of journeys (number patterns, sequences) with different numbers of terms, but all with the same step size and starting point:



Ask learners to describe case 3 with a flow diagram like this, with 6 lines passing through it.

ASSESSMENT

Learners who have not done so yet, should now complete case 3. Take this work in for assessment (Formal, recorded Assessment Task 2: LO 2 AS 6).

CONSOLIDATION

Hand out copies of the flow diagram sheets A, B and C. Learners who do not complete this in class have to do so for homework.

WEEK 3: DAY 3

Notes to the teacher:

- The work in this lesson is an integration of counting, number patterns and the development of knowledge about multiplication and division.
- Another purpose of the lesson is to provide learners with opportunities to acquire language relating to patterns.
- You may introduce the word *sequence* and use it as an alternative to *number pattern*.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Tell learners that they will make simple number patterns, by adding the same number repeatedly. Give them the following instructions to form pattern A:

Write 856. Add 20 to it and write the answer down. Add 20 again, and continue like this.

Activity 2:

After a minute or two, write the following on the board, while learners are still working:

Number 1	Number 2	Number 3	Number 4	Number 5	Number 6	Number 7	Number 8	Number 9	Number 10
856	876	896	916	936	956	976	996	1016	1036

Also write the following questions on the board:

1. What is the sixth number in the sequence?
2. After how many steps, from the start, does the sequence pass 1000?
3. How much is added in five steps?
4. What is the step size (1 step)?
5. How much is added in ten steps?
6. How much is added in twenty steps?
7. How much is added in one hundred steps?
8. After how many steps, from the start, will the sequence pass 2000?
9. After how many steps, from the start, will the sequence pass 4000?
10. What is the 30th number in the sequence?

Circulate among learners and check whether they understand the questions you have written on the board. Help them to understand it where necessary, e.g. by explaining what is meant by “the start” (856) and “step” (adding 20 to produce the next term).

You may judge that some learners will work alone quite productively on this, while others may become more productive if they work with some classmates. Use your discretion to form some small groups, while letting other learners still work individually.

At some stage, but before some learners have finished with all the questions, write the following on the board and point it out to learners who have answered all eight questions with respect to pattern A.

In pattern A the step size was 20 and the first number was 856.

In pattern B the step size is 25 and the first number is 733.

Write down the first 20 numbers in pattern B. Write “Step 1”, “Step 2”, etc, above the numbers. Then answer the same ten questions you answered for pattern A.

If some learners work quickly, you may also write the specifications for patterns C and D on the board, for which they have to do the same as for A and B:

Pattern C: The step size is 75. The first number is 900.

Pattern D: The step size is 27. The first number is 900.

All learners have to complete at least pattern B (the first 20 numbers and the questions). While they work, write Activity 3 on the board, then circulate again.

With about 15 minutes of the lesson left, ask learners to stop and do Activity 3.

Activity 3:

Write this on the board:

Pattern E:

Number 1	Number 2	Number 3	Number 4	Number 5	Number 6	Number 7	Number 8	Number 9	Number 10	Number 11
		3240				3360				3480

Write down the first 20 numbers in pattern E.

WEEK 3: DAY 4

Notes to the teacher:

- This is a continuation of the work of the previous day. Learners do division in simple ways to determine the step size in constant-difference (constant-step) sequences.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Arrange learners in groups of four and/or three. Ask them to tell each other, within their groups, how they found the step size and the first numbers in sequence E on the previous day. Tell them that it is important that each group member gets a proper opportunity to tell his/her story, because it is by describing one's thoughts to others that one really clarifies your own thinking and acquires new knowledge.

Circulate and listen to what learners say. Make notes of the different methods they use to find the step size. It is possible that many learners will use an "estimate-and-test" method. They may for instance estimate a step size of 20, test it and find that it does not make them reach 3360 from 3240 in four steps. They may then try a bigger number, say 25, test it, find that it does not work, and continue to estimate-and-test step sizes until they find that 30 works.

Demonstrate the estimate-and-test method on the board for sequence E, but tell learners they may also use other methods. Learners should then continue, individually, with Activity 2.

Activity 2:

Tell learners that they will work with some more sequences with constant step sizes. Write this information about sequence F on the board:

Term 5	Term 6	Term 7	Term 8	Term 9	Term 10	Term 11	Term 12	Term 13	Term 14	Term 15
	2850					3030				3174

Find out what the first 20 terms are and write them down.

Circulate and observe what learners do. Arrange learners who have finished in groups of four and three, to explain to each other how they figured it out.

Also write the information about sequences G, H and I, given below, on the board. Learners have to determine and write down the first twenty terms in all cases.

G	Term	7	8	9	10	11	12	13	14	15	16
	Value	4564						4702			4771

H	Term	12	13	14	15	16	17	18	19	20	21
	Value	3012				3140					3300

I	Term	18	19	20	21	22	23	24	25	26	27
	Value	3220							4221		

WEEK 3: DAY 5

Notes to the teacher:

- One of the reasons why learners often find it difficult to solve word problems is because they do not actually engage, in their minds, with the real situation in which the problem question is situated. It is this lack of engagement with the situation and hence not understanding the question at all, that leads to failure, rather than poor computation skills, although the latter may also play a role. In Activity 1, you will allow learners to engage with a real situation by making a drawing of it. Making a drawing forces them to think about the situation. In Activity 2, learners have to imagine certain things about the situation, to further strengthen their engagement.
- In Activity 3, learners have to produce information by adding the same number repeatedly or by multiplying.

Resources:

- A calculator so that you can check learners' answers.
- A class list for notes you will make about the learners.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND PROBLEM SOLVING

Activity 1:

Tell learners that the day's work will be about trucks that transport bags of oranges and potatoes. Ask learners to make a rough drawing of an open truck with a load of oranges in bags. Allow learners about 15 minutes to make the drawings. Ask them to show their drawings to each other and to tell each other how many bags of oranges there are on the trucks they have drawn. While they do this, you may also make a rough drawing of a truck loaded with bags.

Activity 2:

Ask learners to each write down the following three pieces of information and to bring it to you to look at when they have finished. Tell them that they may take time to think about it.

- The number of bags they imagine to be on the truck.
- The number of oranges they imagine to be on the truck.
- The number of oranges they imagine to be in one bag.

While they do this, write the three questions for Activity 3 on the board.

Learners will now bring you what they have written down. Use your calculator to check whether their figures match up, i.e. whether the number of bags times the number of oranges give the total they have given. For each learner, identify in which of the following three ways the learner has generated the information:

A. By accurate computation.
B. By making a reasonable estimate.
C. By just writing numbers arbitrarily.

This provides you with an assessment of how seriously different learners engage with a given problem situation. Note your observation on the class list. You will repeat this kind of assessment later, to see whether learners become more serious about given problems.

Activity 3:

Write these problems on the board. Learners have to do them individually.

1. *There are 88 bags with 35 oranges each on a truck. How many oranges are there in total?*
2. *There are 73 bags with 38 oranges each on a truck. How many oranges are there in total?*
3. *There are 67 bags with 42 oranges each on a truck. How many oranges are there in total?*

Circulate among the learners. Observe what they do and interact with learners who seem not to understand the question, without showing learners what to do. When learners do not respond at all, it is normally because they do not understand the question.

Some learners may **add 35 repeatedly**, e.g. 35 + 35 → 70 + 35 → 105 + 35 → 140 . . . .

Other learners may **double repeatedly**, e.g. 35 + 35 → 70 + 70 → 140 + 140 → 280 . . . . .

Some learners may use **grouping**: they may break the 88 bags up into separate groups, for example, groups of 10 and proceed like this:

10 bags is 350 oranges, another 10 bags is another 350 oranges, ...

Yet other learners may **break the numbers up and work separately with the partial products**, writing something like this:

80 × 30 80 × 5 8 × 30 8 × 5

Learners who use any of these methods may set their work out in different ways from those shown here.

Try to reach all learners while they work and make notes on the class list which of the above four methods they used, or any other methods. This is an assessment (Formal, recorded Assessment Task 2: LO 1 AS 7: multiplication of at least whole 2-digit by 2-digit numbers) and during the week learners may change their methods. Hopefully, more and more learners will start to break both numbers up and work with the parts in order to multiply. This method is only attractive if one has confidence in easily finding the answers to the partial products. One way in which you can promote this, is to point learners to the tables they have produced on Day 1.

CONSOLIDATION

During the last 20 minutes of the lesson, you may demonstrate each of the above methods on the board, and point out that different learners used different methods.

THIRD TERM: WEEK 4 OVERVIEW

Hours: 5					**Number of periods: 5**
Learning Outcomes and Assessment Standards LO 1 AS 1 LO 3 AS 1,2, 3			**Milestones:** • Recognises, identifies and names 3-dimensional objects including triangular prisms, triangular- and square-based pyramids. • Draws, sorts and compares physical 3-dimensional objects (listed above) according to geometrical properties including shape and/or number of faces. • Investigates and compares (alone and/or as a member of a group or team) 2-dimensional shapes and 3-dimensional objects studied in this grade according to properties listed above by: - drawing shapes on grid paper; - making 3-dimensional models using cut-out polygons.		
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content Focus	Learners will estimate lengths, then check and try to make a better estimate next time. Learners will make prisms on different bases by folding up a sheet of paper in different ways.	Free-hand drawings of the faces of some of the prisms made.	This lesson is about measurement, estimation and drawing, utilizing the paper prisms that learners have made.	Consolidation and revision of previously taught concepts.	Continuation of lessons from earlier this week including formal assessment. Learners will make pyramids on different bases.
Resources	6 Sheets of A4 paper for each learner (this may be recycled, i.e. already printed on) and scissors. Glue and/or staplers and/or sticky tape. Rulers or copies of Grade 4 Term 2 Annexure V.	6 Sheets of A4 paper for each learner (this may be recycled, i.e. already printed on) and scissors. Glue and/or staplers. Rulers.	The paper prisms learners made on the previous days.	Chalkboard, scrap paper for each group of learners.	The prisms and pyramids that learners made in the previous two lessons.

WEEK 4: DAY 1

Notes to the teacher:

- In Activity 1 learners will estimate lengths, then check and try to make a better estimate next time.
- In Activity 2 learners will make prisms on different bases by folding up a sheet of paper in different ways.

Resources:

- 6 Sheets of A4 paper for each learner (this may be recycled, i.e. already printed on) and scissors.
- Glue and/or staplers and/or sticky tape.
- Rulers, or copies of Grade 4 Term 2 Annexure V.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Ask learners to each estimate how long his/her pencil is and to write the estimate down, including the unit of measurement.

Walk between the desks to check that they have all done this.

Ask them to now measure their pencils, either with a ruler or with the paper ruler that they cut from Grade 4 Term 1 Annexure V. They have to write the measurement down.

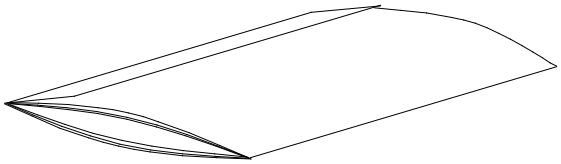
Now ask them to estimate the width of the sheet of paper on which they are working, to write the estimate down, then to measure it and to write the actual length down. Demonstrate this table on the board and ask learners to organize their written work into a table like this:

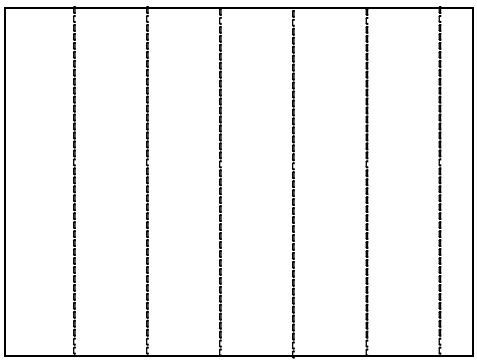
Object	Estimated length	Measured length	Error
Pencil			
Width of paper			
Length of paper			

Activity 2:

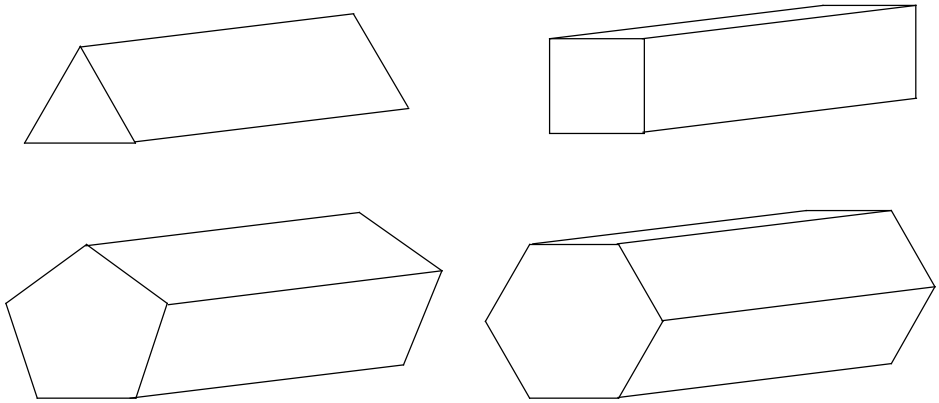
Let each learner fold a sheet of A4 paper over the length into segments of approximately 5 cm each:

Learners should sharpen the creases with their fingers.





The paper can now be folded open to form a tube like any of those shown below:



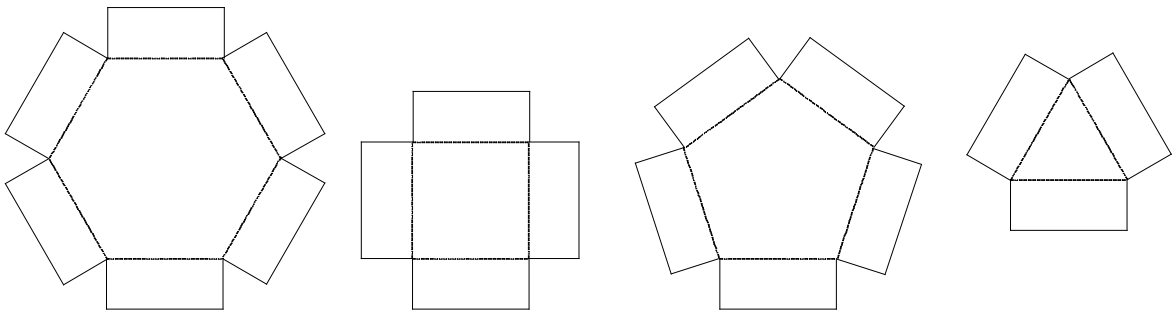
Let each learner make a hexagonal tube with the sheet they have folded. Let them stabilize their tubes with glue and/or staples and/or sticky tape. Let them fold more sheets:

- with segments of about 6 cm, to make a pentagonal tube;
- with segments of about 7 cm, for a square tube; and
- with segments of about 10 cm to make a triangular tube.

Stabilize all the tubes. Learners who work fast may fold sheets into 3 cm segments and make tubes with seven- and eight-sided bases.

Activity 3:

Let learners draw, cut and fit end caps on both sides of each tube, to make closed prisms. This will be quite a challenge to them, but highly rewarding. In the process they will learn much about the properties of the shapes involved. Learners may use their tubes as templates to draw the pentagons in the end caps, in the way one can use a round tube to draw circles. Learners should write their names on the end caps, so that they can identify their own prisms later.



Let learners also make end caps for their round tubes, as described in the lesson plan for Term 1, Week 6, Day 4. Learners will probably not finish this work today and will continue with it tomorrow.

WEEK 4: DAY 2

Notes to the teacher:

- In Activity 1 learners will complete what they started in Activity 3 of the previous day.
- In Activity 2 learners will make free-hand drawings of the faces of some of the prisms.
- In Activities 3 and 4 learners will make estimates.

Resources:

- 6 Sheets of A4 paper for each learner (this may be recycled, i.e. already printed on) and scissors.
- Glue and/or staplers.
- Learners will need rulers.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Learners complete the end caps for their prisms and tube.

Set high standards for neatness and accuracy of the objects learners make. They may not always make a good prism the first time. Allow them to retry until they manage to get good results.

Activity 2:

Ask learners to make a drawing of all the faces of the prism with squares at the ends which they have made, without using a ruler to make the drawings. Having to make good freehand drawings will provide learners with valuable opportunities to develop drawing skills. Encourage learners to make their drawings as close to the actual sizes of the faces as they can.

Activity 3:

Ask learners to estimate the length in millimetres of each of the lines on their drawings and to write the estimate next to the line on the drawing. When they have finished, they should measure each line with a ruler and write down the actual measurement next to the estimate. They should then enter the estimates and measurements in a table like this and calculate the errors. The last two columns should be left open now:

Estimated length on drawing	Measured length on drawing	Error in estimate	Measured length on prism	Error on drawing
. . .	. . .	. . .	. . .	. . .

Tell learners that they will have more opportunities to estimate lengths in future, so that they can get better. If there is still time available, start with Activity 1 of the next lesson.

WEEK 4: DAY 3

Notes to the teacher:

- This lesson is about measurement, estimation and drawing, utilizing the paper prisms that learners have made.

Resources:

- The paper prisms learners have made on the previous days.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

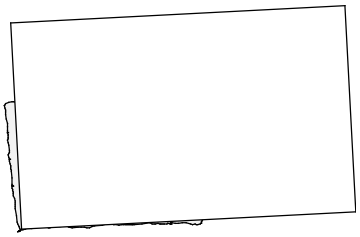
Point out to learners that when they made drawings of the faces of the prism with square ends the previous day, they tried to make the shapes the same size as the actual faces of the prism. In doing this they also made estimates, without using numbers. They will now check how good these estimates were. They have already measured the sides of their drawings and have entered this information in the second column of their table.

Ask them to now measure the corresponding lengths on the actual prism and to enter these measurements in the fourth column of the table they made the previous day. Then they should calculate the sizes of their errors and enter this in the fifth column of their table.

Activity 2:

Learners should now check how well they made the corners on their drawings. They can check this by holding the corner of a sheet of paper against the corner of their drawing, as shown on the right.

You should illustrate this technique on the board.



Activity 3:

Ask learners to make good freehand (no rulers) drawings of the end faces of their triangular, pentagonal and hexagonal tubes.

Activity 4:

Tell learners that they will soon estimate the lengths of the sides of the shapes they have drawn. Ask them to think about how they may see whether they are now better at estimating lengths than they were on the previous day. Let them talk about this in small groups. Circulate.

Activity 5:

Ask learners to now estimate in millimetres, the lengths of the sides of their drawings and to write their estimates on a table like the one they used in Activity 1. They should then calculate the errors and compare the errors they made in Activity 3 of the previous lesson. Each learner should come to a conclusion, whether he/she has now estimated better, the same or worse than the previous day and should submit a written report (with the tables) to you.

WEEK 4: DAY 4
Notes to the teacher: • Use this lesson for consolidation and revision of previously taught concepts. • Divide the class into teams and make this revision period a competition between the teams. **Resources:** • Chalkboard, scrap paper for each group of learners.
ACTIVITIES FOR THE DAY
ORAL, MENTAL AND CONCEPT DEVELOPMENT **Activity 1:** Do counting activities around the class. Start with any number and let learners, in turn, count forwards or backwards in a variety of intervals, e.g. 5s, 25s, 100s.
Activity 2: Divide the class into groups of four to five learners. Write a problem on the board, e.g. *42 apples have to be shared among 8 households. How many apples does each household receive?* Give the groups of learners a few minutes to solve the problem and instruct them to raise their hands as soon as they have finished. Afterwards award points as follows for the first three teams to complete the problem correctly: first team gets 5 points; the second team 4 points; and the third team 3 points. All other groups who obtained the correct answer can be awarded 1 point. Write the scores on the board. Repeat and include work on: - Recognising common fractions (refer to term 2, week 10). - Decimal fractions in the context of measurement (refer to Term 1, Week 5). - Rounding off to the nearest 10, 100 and 1 000. - Converting between units of length. - Names of 3-d objects - Building up and breaking down numbers. - Addition, subtraction and multiplication problems. After each problem or challenge, ask a learner to explain his/her method to the class. Afterwards, count up the scores and give the winning group a reward.

WEEK 4: DAY 5

Notes to the teacher:
- This lesson is a continuation of lessons from earlier this week.
- There will also be time for formal assessment.

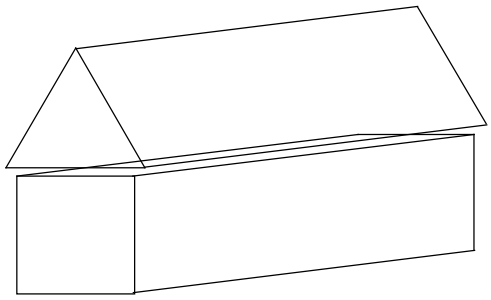
Resources:
- In Activity 2, learners will make pyramids on different bases.
- The prisms and pyramids that learners have made in the previous two lessons.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1 (5 minutes):

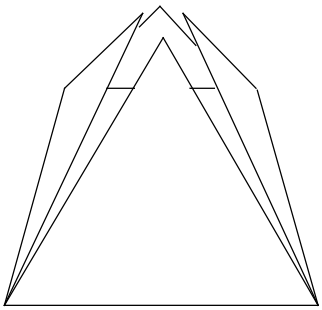
Ask learners to put their triangular pyramid on top of their square pyramid and ask them what it looks like. Allow some discussion.

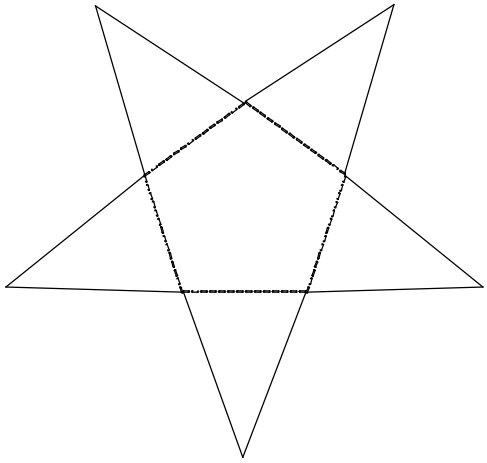


Activity 2 (15 minutes):

Let learners in groups make a pyramid on a square base like they did in Term 1, Week 3, Day 5. Let them also make pyramids on triangular, pentagonal and hexagonal bases. It is helpful to make the triangles that form the “upward” faces of a pyramid identical (or almost identical), as shown in the diagram (net) below: Each group must produce one of each kind of pyramid. It will take too long if individual learners make each pyramid.

Learners can get an excellent sense of the shape and faces of the different pyramids in any case, by making them like this and handling them. They will make pyramids in a different way in the fourth term.





ASSESSMENT TASK 1 (40 minutes):

Give the learners a written activity to assess their ability to:

- Perform mental calculations involving addition and subtraction.
- Count forwards and backwards in a variety of intervals.
- Recognise and represent common fractions with different denominators.
- Recognise Common fractions in diagrammatic form.
- Decimal fractions of the form 0,5; 1,5; 2,5 in the context of measurement.
- Solve problems that involve rounding off.
- Solve problems that involve equal sharing with remainders.

THIRD TERM: WEEK 5 OVERVIEW

Learning Outcomes and Assessment Standards LO 4 AS 1, 2, 3, 4, 6			**Milestones:** • Reads, tells and writes analogue, digital and 24-hour time to at least the nearest minute and second. • Solves problems involving calculations with, and conversions between, appropriate time units including: - seconds↔minutes; - minutes↔hours; - hours↔days; - days↔ weeks; - days↔months (i.e. know the number of days in each month); - weeks↔years; - months↔ years. • Uses time-measuring instruments to appropriate levels of precision, including: - watches and clocks (specifically 24-hour and digital clocks) to read time.		
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content Focus	Introducing "Time" beginning with a calendar.	Revise Time using a calendar. Revise hours in a day, minutes in an hour, seconds in a minute, using a 12-hour clock.	Tell time using clock faces. Revise am and pm and then move on to 24-hour clock. Learners make digital clocks.	Convert between minutes, seconds, hours and days Use calendars to practically calculate between days and weeks, hours and days.	Solve problems involving calculation and conversion between appropriate time units including seconds, minutes, hours, days, weeks, months and years.
Resources	Full year calendar on one page – use current year – one for each learner. Class work books, glue and pencil. Textbook or prepared worksheet for written task. Chart showing units of time.	Large wall clock To make clock faces, each learner will need: - Cardboard cut out circles, approx. diameter of 10cm each and strips of cardboard - Split pin. - Khoki pens to mark numbers. Chart showing units of time	Digital clock like a bedside radio/clock, stopwatches, etc. Small pieces of card with the numbers 13-24. Classwork books, pencils, scissors and rulers. Cardboard to make digital clocks. Chart showing units of time	Chart showing units of time Calendar (stuck in Maths books). Timetables like TV magazine or newspaper. Jotters and pencils.	Chart showing units of time Calendar (stuck in Maths books). Jotters and pencils.

WEEK 5: DAY 1

Notes to the teacher:

Introduce "Time" by beginning with a calendar, looking at the months of the year, the number of weeks in a year, days in a year, days in each month, days in a week, Learners will have some background knowledge but many at this stage still have difficulty actually telling the time. Briefly discuss public holidays and days of celebration in South Africa

Resources.

- Full year calendar on one page – use current year – one for each learner. Learners stick this into their Mathematics books for later reference.
- Classwork books, glue and pencil.
- Textbook or prepared worksheet for written task.
- Chart showing units of time: 60 seconds = 1 minute; 1 hour = 60 minutes; 1 day = 24 hours; 7 days = 1 week; 52 weeks in a year; 365 days in a year (except for Leap Years – 366 days, once every four years).

ACTIVITIES FOR THE DAY

2010

January						
Su	Mo	Tu	We	Th	Fr	Sa
					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						

February						
Su	Mo	Tu	We	Th	Fr	Sa
	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						

March						
Su	Mo	Tu	We	Th	Fr	Sa
	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			

April						
Su	Mo	Tu	We	Th	Fr	Sa
				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	

May						
Su	Mo	Tu	We	Th	Fr	Sa
						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					

June						
Su	Mo	Tu	We	Th	Fr	Sa
		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			

July						
Su	Mo	Tu	We	Th	Fr	Sa
				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

August						
Su	Mo	Tu	We	Th	Fr	Sa
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				

September						
Su	Mo	Tu	We	Th	Fr	Sa
			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		

October						
Su	Mo	Tu	We	Th	Fr	Sa
					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						

November						
Su	Mo	Tu	We	Th	Fr	Sa
	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				

December						
Su	Mo	Tu	We	Th	Fr	Sa
			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	

ORAL AND MENTAL ACTIVITY AND CONCEPT DEVELOPMENT:

- Give learners their individual calendars. They will refer to these during the lesson. Ask learners to tell you the number of months in the year. Ask them to calculate the number of months in 6 years, 2 years, etc.
- Ask learners to find the 7th of February. Now count on in 7s, up to the 28th. Ask learners to tell you how many days in February. (There are usually 28 except every fourth year when there are 29 days – we call this a Leap Year.)
  - Discuss the number of days in each month. Ask learners to tell you which months have the same number of days as January and then June. Teach learners the rhyme:

    30 Days has September, April, June and November.
    All the rest have 31,
    excepting February alone.
    That has but 28 days clear
    and 29 in each leap year.
  - Ask learners to identify the months that do not have an "R" in their name.
  - Count the number of weeks in the year.
  - Count the number of days in 5 weeks, e.g. start on a Tuesday and count five Tuesdays on then count the number of days in-between.
  - Ask learners the number of days in the year shown. They then tell you the number of days in 3 years, 5 years, 7 years, etc.
  - Count the number of Thursdays in the year. Ask learners to tell you the number of Thursdays in 5 years, 8 years, etc.
  - Count the number of weeks in one year and then calculate the number of weeks in 3 years, 9 years, etc.

Ask learners why some days have a highlighted block around them? (Public holidays – see which holidays learners can identify. 1 January – New Year's Day; 21 March – Human Rights Day; Easter – Good Friday and Easter Monday; 27 April – Freedom Day; 1 May – Workers Day; 16 June – Youth Day; 9 August – Women's Day; 24 September – Heritage Day; 16 December – Reconciliation Day; 25 December – Christmas Day; 26 December – Day of Goodwill.) Ask the learners if they know why some (if any) dates are shaded, but are not public holidays. (The public holiday is on a Sunday, therefore the next working day, i.e. Monday, is a holiday.)

INDEPENDENT/WRITTEN WORK:

Learners complete a written task in their classwork books, where they calculate the number of days in a week, month, year, etc, as taught in the concept and oral section of the lesson. This may be from their textbook or a worksheet.

- How many months are there in 3 years?
- How many days are there in 4 years?
- How many days are there between 25 August and 30 September; 31 December and 10 February?
- What day of the week will it be 21 days from today?

WEEK 5: DAY 2

Notes to the teacher:

- Revise using a calendar.
- Revise hours in a day, minutes in an hour, seconds in a minute, using a 12-hour clock
- Revise telling the time. Some learners may be able to tell the time, but you will need to revise this aspect and determine which learners are unable to do so and need to be taught this concept. Revise the meaning of the two hands on a clock face.
- Learners may make own clock showing 12-hour time. Learners use clocks to tell the time and then complete an exercise where they fill in the time on a blank clock face and tell the time on given clocks.

Resources:

- Large wall clock.
- To make clock faces, each learner will need:
  - Cardboard cut out circles – with an approx. diameter of 10cm each.
  - Split pin.
  - Cardboard with which to make hands of clock.
  - Koki pens to mark numbers.
- Chart showing units of time: 60 seconds = 1 minute; 1 hour = 60 minutes; 1 day = 24 hours; 7 days = 1 week; 52 weeks in a year; 365 days in a year (except for Leap Years – 366 days, once every four years).
- Full year calendar on one page – use current year – and stuck into their books.
- Worksheet or textbook, pencils.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL ACTIVITY:

Learners refer to their calendars as they answer questions like: Count the number of days between 3 March and June 23. How many Sundays are there during this period? Etc.

CONCEPT DEVELOPMENT:

Display the wall clock. Ask learners how many hours in a day. (24). Learners read the numbers with you from the clock. Ask learners to tell you the number of hours in a day, minutes in an hour and the number of seconds in a minute. Pose questions like: If there are 60 minutes in one hour, how many minutes are there in 4 hours? 7 hours? 4 and a half hours? etc. How many seconds will there be in 5 minutes?

Learners make their clocks step by step with you, as follows:

1. Divide the face into quarters.
2. Fill in the numbers: 12, 3, 6, and 9.
3. Divide each of the quarters again and fill in the remaining numbers: 1, 2, 4, 5, 7, 8, 10, 11.
4. They make the two hands, one longer than the other, and attach them to the centre of the clock face with the split pins.
5. Divide each 5 minute segment to show the minutes between each.

Ask why there are only the numbers 1 – 12 on the clock. Discuss noon – 12 o'clock midday and that "am" means before midday/noon and "pm" past midday/noon. Remind learners that the small hand tells the hours and the large hand, the minutes. The large hand moves around the clock once every hour and the small hand, twice a day. Draw learners' attention to the small

markings showing the minutes. Learners tell you that there are 60 minutes in an hour. Count the minutes in 5s together, around the clock face. Put the hour hand on any number but the minute hand on the 3. Let learners tell you what fraction of the hour this is (they should be able to divide the circle into 4 quarters in their minds, as they will have done this before in lessons on fractions) and the number of minutes in a quarter of an hour. Move the minute hand to the 6. Ask a learner to tell you what fraction of an hour this is and how many minutes have passed – half an hour or 30 minutes. Move the minute hand to the 9. Repeat the questions – ¾ of an hour or 45 minutes. Remind learners that from the number 12 to 6 the minutes show "*past the hour*" and from the 6 to 12 the minutes show the number of minutes "*to the hour".* Show learners that the short way of writing minutes is "min" and hour or hours is "h".

Learners now move the hands of the clock to tell the time with you, e.g. 8 o'clock, 20 past 3, etc. Learners also tell the time when you show them the clock face with the hands in place.

INDEPENDENT/WRITTEN WORK:

- Learners complete a written task where they are given either:
  - Clock faces (or have to draw their own) and have to fill in the time as given: *Show these times on the clocks: 25 past 10; quarter to 5.* The time is written in both forms.
  - Clock faces with the time filled in and learners have to copy the clock, tell the time and write it below.
- Learners calculate between hours, minutes and seconds, e.g.
  - Write the following in minutes: 2400 seconds; 12 hours; 2 hours and 35 minutes; 480 seconds.
  - Write the following times in hours and minutes: 260 minutes; 590 minutes; 4 hours 95 minutes.

WEEK 5: DAY 3

Notes to the teacher:

- Learners will revise telling time using clock faces.
- Revise am and pm and then move on to 24-hour clock, by adding the numbers 13-24 on the 12-hour clocks they made.
- Introduce digital time, as learners are used to seeing this form of display, on mobile phones, displayed on the television, in newspapers and magazines.
- Learners make digital clocks.

Resources:

- Digital clock like a bedside radio/clock, stopwatches, etc.
- Small pieces of card with the numbers 13-24.
- Classwork books, pencils, scissors and rulers.
- Cardboard to make digital clocks.
- Chart showing units of time: 60 seconds = 1 minute; 1 hour = 60 minutes; 1 day = 24 hours; 7 days = 1 week; 52 weeks in a year; 365 days in a year (except for Leap Years – 366 days, once every four years).

ACTIVITIES FOR THE DAY

ORAL AND MENTAL WORK:

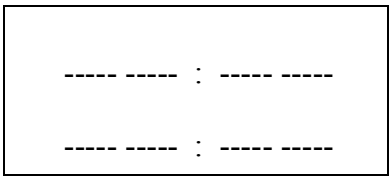
Call out "times" or write them on the board and learners show it on their clocks, e.g. quarter past 7. Learners hold up their clocks after each one so you can see at a quick glance if they are correct. (use only 12-hour time at this stage)

CONCEPT DEVELOPMENT:

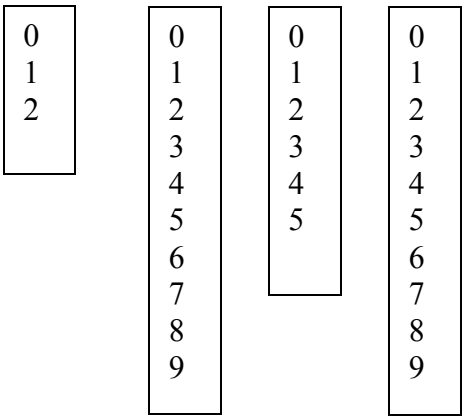
Ask learners if they can think of how you would write the time "25 past 8 in the evening" and show that it is after midday. Give learners a few minutes to work with a partner and see if they can think of a way. Allow a few pairs to share their idea with the class.
If no one can give you the correct answer, ask learners to tell you the meaning of "am" and "pm". (am – before noon/midday and pm – after/post noon/midday) This may help them to come to the solution. Ask learners to tell you the number of hours in a day and night – 24 hours. Learners stick the numbers 13-24 to their original clock face. Explain to learners that in place of having to write am and pm, we use the numbers 13-24.

Show learners a 24-hour digital clock (like a bedside clock/radio). Explain to learners that this is digital time and shows all 24 hours in a day and takes away the need to write am or pm after the time. Set the time to 17:30. Ask learners to read the time (seventeen thirty). Show learners that once the time is past midday or 12 o'clock the numbers now go to 13, 14, etc.

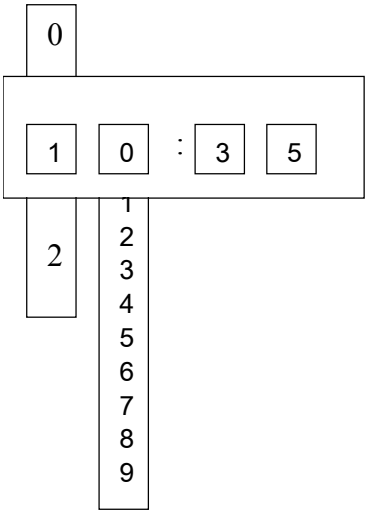
Learners can now make their own digital clock:
Learners cut the following strips of cardboard, according to given measurements. (Revision of measurement)
2 pieces/strips measuring 11 cm X 2 cm each.
1 piece/strip measuring 8 cm X 2 cm.
1 piece/strip measuring 5 cm X 2 cm.
1 piece/strip measuring 6 cm X 19 cm. The largest piece is marked in 2 similar lines, as follows: 2 cm space, 2 cm line, 2 cm space, 2 cm line, 3 cm space marked with **:** in the middle, 2 cm line, 2 cm space, 2 cm line, 2 cm space. Cut along the dotted lines.



Mark the other strips as follows:



Insert the strips through the slits so that the numbers appear on the top



Explain to learners that 10 past 5 can also be written as 10:05. Write both times on the board and learners show the time on both their clocks. Explain that the minutes are written as two digits and thus single-digit minutes have a zero in front, i.e. 1, 2, 3, 4, 5, 6, 7, 8, 9 are written as :01, :02, :03, :04, :05, :06, :07, :08, :09.
“25 past 8” in the evening would be written as “8:25 pm”.
“quarter past 2 in the morning” is written “2:15 am”.

CONSOLIDATION/WRITTEN WORK:

Learners complete a written task from a textbook, workcard or worksheet:

- Rewrite the times as they would appear on the 24-hour digital clock: 10 past seven am (7:10); half past eight pm (20:30); 9:30 pm (21:30); 6:45 pm (18:45); quarter to seven pm (18:45).
- Clocks with hands showing time and learners write the digital time.

WEEK 5: DAY 4

Notes to the teacher:

- Revise converting between minutes, seconds, hours and days in preparation for the formal sector of the lesson.
- Use a timetable from a magazine or newspaper, showing the times of television programmes.
- Use calendars to practically calculate between days and weeks, hours and days.

Resources:

- Chart showing units of time: 60 seconds = 1 minute; 1 hour = 60 minutes; 1 day = 24 hours; 7 days = 1 week; 52 weeks in a year; 365 days in a year (except for Leap Years – 366 days, once every four years).
- Calendar (from Week 9 and stuck in Maths books).
- Timetables like TV magazine or newspaper.
- Jotters and pencils.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL WORK:

Use counting charts and count in 60s. Stop and ask how many 60s were counted, e.g. 0, 60, 120, 180, 240. How many 60s (4), etc. Display chart showing units of time. Discuss with learners (60 seconds = 1 minute). If we counted 4 lots of 60 and each was 60 seconds, how many seconds did we count (240). If each one of those 60 seconds was equal to 1 minute, how many minutes did we count (4). Begin converting between seconds and minutes in this manner. Continue along these lines until you feel learners understand the concept, then progress in the same way to minutes and hours.

CONCEPT DEVELOPMENT: (35-40 minutes)

- Ask learners the number of hours in a day (24). Learners may work in their jotters to do calculations. Ask learners to tell you as quickly as they can, how many minutes there are in 5 hours, 25 hours, 150 hours, etc. And conversely, how many hours are there in 720 minutes?
- Give learners their copy of the timetable/schedule that you have found. An example:

6.00,News and weather

6.25	Traffic report
6.30	Breakfast cartoon
6.50	Traffic report
6.55	News headlines
7.00	Trim and gym
7.15	Traffic report
7.20	News headlines
7.25	Morning Chat Show
7.40	Sport report

Learners now work with a partner and refer to their schedule to answer the following questions. You may write the questions on the board or a worksheet:

- How long is the traffic report?
- How often is the traffic report?
- Name the longest programme. How long is it? How much time is spent on this programme in 5 days?

- At what time would you watch if you wanted to watch an exercise programme?
- What programme is at 7.25?
- How long are the news headlines?

CONSOLIDATION/WRITTEN WORK:

Learners refer to their calendars and complete a written task similar to the following example. This may be from a textbook or a prepared worksheet. Learners work independently. Walk between the desks and assist any learners who may need help.

- Find the Monday of the current week. Ask how many days to a specific date (in nine days' time). Ask now how many hours between now and that date? (work from, e.g. 8.30 am on current day to 8.30 am on the future day) How many seconds in that number of hours?
- How many weeks and days in July on their calendar? How many hours is that?
- How many days are there in June, July and August altogether? How many hours is that? How many minutes?

- Progress now to converting between days and weeks. If there are 7 days in a week, how many days in 6 weeks? 25 weeks? 163 weeks? Etc. How many weeks in 420 days? Etc.
- Convert between days and weeks and weeks in a year. Refer to chart that explains that there are 52 weeks in a year. Ask learners to tell you the number of weeks in half a year, ¾ of a year, etc. How many weeks in 15 years? 7 years? etc.
- If there are 365 days in one year, how many days are there in 6 years? (Remind learners that there are 366 days in a leap year and that is once every fourth year, when February has 29 days. For the purpose of this calculation assume that this period has 2 leap years.) Ask learners to tell you how many years in 1095 days? Tell learners to use non-leap years for these calculations.
- Learners complete an exercise to practise converting between units of time:
  - How many days in 480 hours? 168 hours?
  - How many hours in 15 days? 73 days? 1 week? 3 weeks?
  - How many seconds in 10 minutes? 50 minutes? 5 hours? 2 days?
  - How many weeks in 3 months? 3 years? 441 days?

WEEK 5: DAY 5

Notes to the teacher:

- Solve problems involving calculation and conversion between appropriate time units including seconds, minutes, hours, days, weeks, months and years.

Resources:

- Chart showing units of time: 60 seconds = 1 minute; 1 hour = 60 minutes; 1 day = 24 hours; 7 days = 1 week; 52 weeks in a year; 365 days in a year (except for Leap Years – 366 days, once every four years).
- Calendar (stuck in Maths books).
- Jotters and pencils.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL ACTIVITY: (10 minutes)

Call out questions for learners to put their hands up and give you the answers. Include converting between various units of time, e.g. How many minutes in 18 hours? How many days in 6 weeks? How many days in 2 years? How many seconds in 30 minutes? How many weeks in 3 years? How many minutes in 4200 seconds?

CONCEPT DEVELOPMENT: (25 – 30 Minutes)

Learners refer to the calendars they stuck into their books

2010

January						
Su	Mo	Tu	We	Th	Fr	Sa
					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						

February						
Su	Mo	Tu	We	Th	Fr	Sa
	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						

March						
Su	Mo	Tu	We	Th	Fr	Sa
	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			

April						
Su	Mo	Tu	We	Th	Fr	Sa
				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	

May						
Su	Mo	Tu	We	Th	Fr	Sa
						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					

June						
Su	Mo	Tu	We	Th	Fr	Sa
		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			

July						
Su	Mo	Tu	We	Th	Fr	Sa
				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

August						
Su	Mo	Tu	We	Th	Fr	Sa
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				

September						
Su	Mo	Tu	We	Th	Fr	Sa
			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		

October						
Su	Mo	Tu	We	Th	Fr	Sa
					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						

November						
Su	Mo	Tu	We	Th	Fr	Sa
	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				

December						
Su	Mo	Tu	We	Th	Fr	Sa
			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	

Tell your class the following story: Mr and Mrs Xaba are going on holiday. On the 15 May, they make a hotel booking from 8 July to 14 July. Explain that the first date is the first night that they will sleep in the hotel and the last date is the morning they will be leaving. They book in at 2.00 pm and leave at 10.30 am. They will travel home and only get home on 16 July at 2.30 pm.
Learners now answer the following questions:

- How many days will Mr and Mrs Xaba spend at the hotel?
- How many hours will they spend at the hotel? (Learners calculate from the time they arrived until the actual time they leave – not just convert the days to hours.)
- How many days before the time did Mr Xaba make his booking?
- How many hours will it take them to travel home?
- How many minutes is this?
- If they stayed until 20 July, how many days would they spend at the hotel?
- How many hours would that be?
- If they made the booking 72 hours before the time, on what date would they have made the booking?
- If they arrived 90 minutes late, what time would they arrive?

INDEPENDENT/WRITTEN WORK: (20 Minutes)

Learners work independently and solve a word problem similar to the example above. E.g. This is a typical working day for Mrs Smith:

Wake up	5.45
Shower	6.15
Breakfast	6.45
Catch bus	7.15
Start work	8.00
Tea break	10.15 -10.30
Lunch	12.30 – 13.15
Finish work	16.30
Arrive at home	17.30
Eat supper	19.30
Watch TV	20.00 – 21.15
Go to bed	22.00

Learners now answer questions referring to the chart:

- How many hours in a day is Mrs Smith at work?
- How many hours would she work in 5 days?
- If she works five days a week, how many days would she work in 6 weeks?
- How many hours would this be?
- For how many minutes does she watch TV? How many seconds is this?
- How long is her tea break? What fraction of an hour is this? How many seconds is this?
- How long is her lunch break? What fraction of an hour is this?
- Her bus trip takes 18 minutes. How many minutes does she have to spare before she starts work? How many hours does Mrs Smith spend awake in a day? In three days? How many minutes is this?
- If she reads for 2400 seconds, how many minutes is this?
- How long does Mrs Smith have to cook supper?
- How much longer does it take her to get home, than to go to work?

THIRD TERM: WEEK 6 OVERVIEW

Hours: 5					**Number of periods: 5**
Learning Outcomes and Assessment Standards LO 1 AS 6, 7, 8 LO 2 AS 1 LO 4 AS 5, 6, 7, 8			**Milestones:** • Solve problems involving rate. • Learners count the squares in 2-d and irregular shapes to see how many squares fit inside the shape. They understand the concept of squares being used to cover the surface or area without gaps or overlaps (unlike, e.g., circles). • Investigates and approximates (alone and/or as a member of a group or team): - area of polygons (using square grids and tiling) in order to develop an understanding of square units. • Solves problems involving equal sharing and measurement, involving fractions including halves, thirds, quarters, fifths, sixths, sevenths, eighths, ninths and tenths and mixed numbers involving these fractions, expressed in: - addition of common fractions in context.		
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content Focus	Problems relating to multiplication, division and the concept of rate.	Learners will count and do simple calculations in a technological context. They will engage with simple rates, e.g. number of support poles per sector.	Continuation of Day 2 lessons. Equal sharing.	Area Fractions	Area Fractions
Resources		A copy of the drawings of fences on Day 1, for each learner.	A copy of the drawings of different types of fences for each learner.	A copy of the page "Cookies 1" (page 1 of Annexure F) for each learner. A copy of the tenths ruler on page 3 of the Term 1 Annexure Q. An ordinary ruler or the ruler in Term 1 Annexure V for each learner.	A copy of the last page for each learner and some spare copies.

WEEK 6: DAY 1

Notes to the teacher:

- In this lesson (and the next two lessons), wire fencing is used in a technological context for a number of problems relating to multiplication, division and the concept of rate. The emphasis is on challenging learners to make sense of the situation rather than to engage them in complicated calculations.

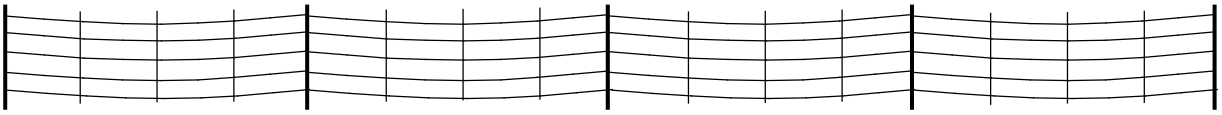
ACTIVITIES FOR THE DAY

ORAL, MENTAL AND PROBLEM SOLVING

Activity 1:

Invite learners to tell the class about fences they have recently seen, for example the fence around the school, fences along the road and fences around other buildings. Ask them what fences are made of and why fences are put up. If there is a fence visible through the classroom windows, let learners quickly take a look at it. The purpose of the discussion is only to get learners to focus on fences in their minds. Do not allow the discussion to extend beyond 5 minutes.

Then make a rough drawing of a wire fence with poles on the board (you may also do this beforehand):



It is important that learners understand which are anchor poles (the thick ones, they are planted in the ground) and which are support poles (the thin ones, they are not planted). Ask learners to tell you how many wire strands there are (five) and how many support poles between each two anchor poles (three). Tell them that we will use the word “section” to describe a part of a fence from one anchor pole to the next.

Ask learners to each make a similar drawing, but with only four wire strands and with 5 support poles in each section. Tell learners that their drawings do not have to be precise (they should definitely not use rulers). They should try to make the drawings quickly.

While they work, you may write the questions for Activity 2 on the board.

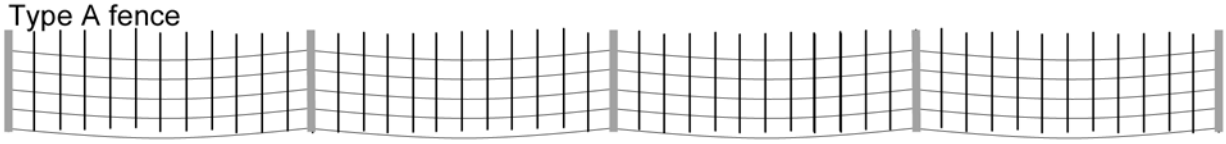
Activity 2:

Ask learners to work at the following questions individually:

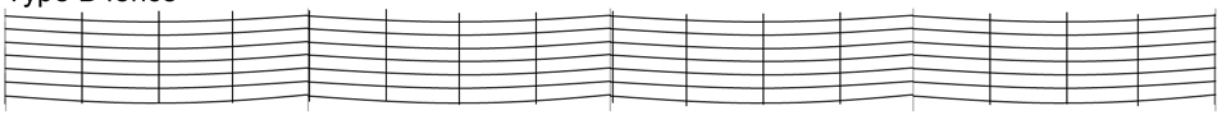
1. The anchor poles in your fence are 12 metres from each other. How far from each other are the support poles?
2. The bottom wire and the top wire are 1,2 metres apart. What is the distance between each pair of two wire strands?
3. 37 sections of your fence are needed to go around the grounds of a school. How many support poles are needed?
4. What total length of wire is needed?
5. What will be the total cost of materials for building the fence around the school grounds, if wire costs 34 c for one metre, anchor poles cost R187 each and support poles cost R17 each? (Give this question only if there is time left for it.)

You may wish to make copies of the following for each learner, for tomorrow's lesson.

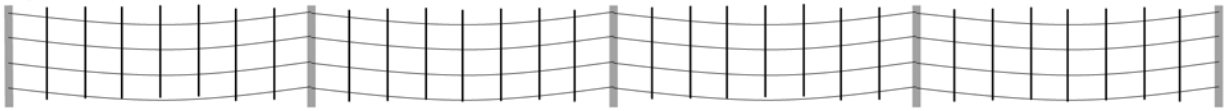
Type A fence



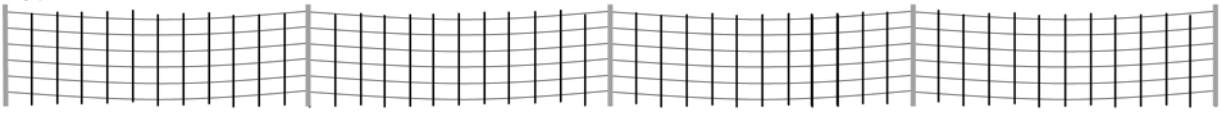
Type B fence



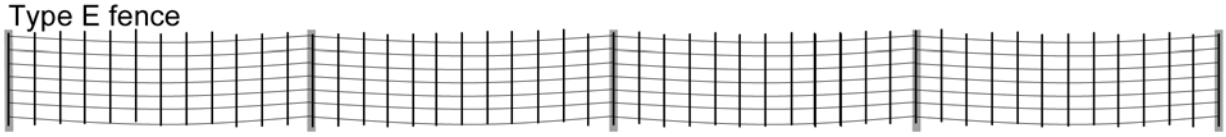
Type C fence



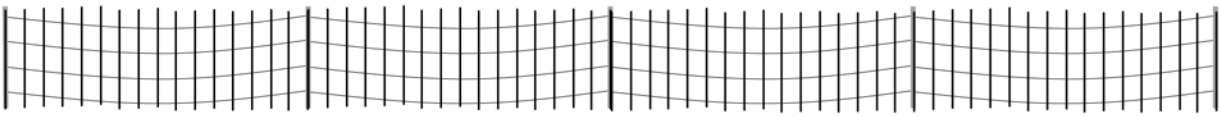
Type D fence



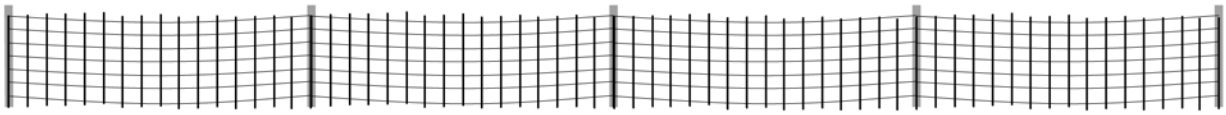
Type E fence



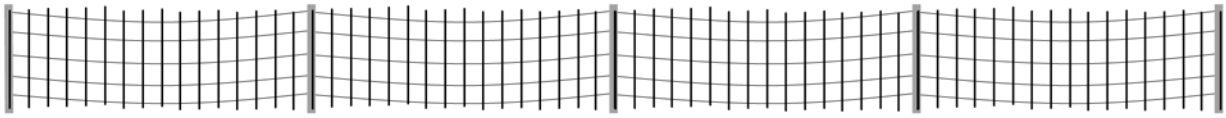
Type F fence



Type G fence



Type H fence



WEEK 6: DAY 2

Notes to the teacher:

- Learners will count and do simple calculations in a technological context. They will engage with simple rates, e.g. number of support poles per sector.

Resources:

- A copy of the drawings of fences on Day 1, for each learner.

ACTIVITIES FOR THE DAY

PROBLEM SOLVING

Activity 1:

Hand out copies of the sheet with drawings of fences. Write the following table on the board and tell learners that it is a description of a certain type of fence. Inform learners that in all the fence types A to H, the distance between anchor poles is 12 m, and the distance between the top wire strand and the bottom wire strand is 1,2 m. Ask learners to identify which type of fence (from A to H on the sheet you handed out) is described by the information given in this table:

Support poles in each sector	*Wire strands*	*Openings in each sector*	*Distance between wire strands in cm*	*Distance between support poles in cm*	*Dimensions of openings in cm*
11	*7*	*72*	*20 cm*	*100 cm*	*100 by 20*

Activity 2:

Show learners how to extend the table and ask them to fill in the information for the fence types F, G and H shown on the sheet you handed out.

	Support poles in each sector	*Wire strands*	*Openings in each sector*	*Distance between wire strands*	*Distance between support poles*	*Dimensions of openings*
Type E fence	*11*	*7*	*72*	*20 cm*	*100 cm*	*100 cm by 20 cm*
Type F fence						
. . . .						

Most learners may decide to find the number of openings between two anchor poles by counting on the drawing, although some may do it by calculating. Do not suggest that calculation is more appropriate than counting. Allow them to come to this view themselves as they progress through the different activities of this week. Arrange learners who have finished into groups of four or three learners to compare their work and specifically to tell each other how they worked.

CONSOLIDATION

Write this on the board: *In a type K fence, there are 9 strands of wire and 9 support poles between two anchor poles. What are the dimensions of the openings in the fence?*

Learners should work on this individually. Advise them to make a rough drawing, unless they are sure they can do without it. The anchor poles are again 12 m apart, and the upper and lower strands of wire are 1,2 m apart.

WEEK 6: DAY 3

Notes to the teacher:
- Activity 2 involves equal sharing and learners may find the computation hard. Allow them to struggle with it.
- Learners extend the table begun in the previous lesson.

Resources:
- A copy of the drawings of different types of fences for each learner.

ACTIVITIES FOR THE DAY

PROBLEM SOLVING AND ASSESSMENT

Activity 1:

Let learners extend the table they made in Activity 2 on the previous day, for the fence types A, B, C and D. While they work on this, write the problems for Activities 2, 3 and 4 on the board.

Activity 2:

Write this on the board:

In a type M fence, the top and bottom strands of wire are 1,5 m apart and the anchor poles are 10,8 m apart. There are 13 strands of wire and 17 support poles between two anchor poles. What are the dimensions of the openings in the fence?

Learners should work on this individually. Advise them to make a rough drawing, unless they are sure they can do without it. If learners have not done this by themselves after a while, you may suggest that they convert the metres to centimetres.

Take in learners' work for Activities 1 and 2 for assessment purposes.

Activity 3:

Write this on the board:

In a type P fence, the top and bottom strands of wire are 1,44 m apart and the anchor poles are 9,6 m apart. The openings in the fence are 20 cm by 60 cm rectangles (almost). How many strands of wire are there in the fence and how many support poles between two anchor poles?

Activity 4:

Learners have to calculate the cost of materials for one section of fence, for each of the fence types A to H, using the following prices for the various materials: wire costs 34 c for one metre; anchor poles cost R187 each; and support poles cost R17 each. If they do not complete it in class, they must finish it for homework.

WEEK 6: DAY 4

Notes to the teacher:

- This lesson provides learners with opportunities to develop ideas about area. Note that no formulas for area calculations are to be done in Grade 4. If formulas are introduced too early, learners are at huge risk of not acquiring a proper understanding of what area means. Activity 3 also provides learners with opportunities to add fractions in context.

Resources:

- A copy of the page "Cookies 1" (page 1 of Annexure F) for each learner.
- A copy of the tenths ruler on page 3 of the Term 1 Annexure Q.
- An ordinary ruler or the ruler in Term 1 Annexure V for each learner.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Hand out the page *Cookies 1*. Ask learners to measure the cookies, with their *tenth of a stick* (tenth of a decimetre) rulers and to write down the length and the width of each cookie. You may write this table on the board, for learners to copy and use to record their measurements:

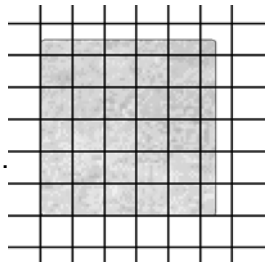
	A	B	C	D	E	F
Length in tenths of a decimetre						
Width in tenths of a decimetre						

Let learners also measure the cookies in millimetres with an ordinary ruler or the ruler in Annexure V and record their measurements in the table.

Activity 2:

Ask learners to decide which cookie is the biggest and to compare their decisions with each other in small groups. This may lead to serious disagreements and intensive discussions. It is unlikely that learners will reach agreement or that they will come up with the idea of area. Do not allow the discussion to continue for longer than 10 minutes.

Activity 3:



Ask learners to extend the grid lines across the cookies on the hand-out sheets, as shown in the example on the right. For each cookie, they have to count the squares, half-squares and quarter squares. For example, in Cookie B, there are 25 full squares, 10 half-squares and one quarter-square. When learners have finished, ask them to again try to decide which cookie is the biggest. Let learners who have reached a conclusion compare and discuss their conclusions. Some learners might not succeed in reaching good conclusions today.

WEEK 6: DAY 5

Notes to the teacher:

- This lesson provides for further development of the idea of area. It also provides for further experience with fractions and experience in estimation and approximation.

Resources:

- A copy of the last page for each learner and some spare copies.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Hand out a copy of the next page to each learner. Say to learners that we want to find out which leaf is the biggest, but that this will be quite difficult. Ask each learner to write down, without making any measurements or without counting any squares, which leaf they think is biggest. They will later have opportunities to check whether they are right.

Activity 2:

Ask learners to count all the full 1 cm by 1 cm squares on each leaf and to shade these lightly with their pencils so that they know which parts they have already "measured". Suggest to learners that they may wish to revise their idea of which leaf is the biggest, on the basis of the number of full 1 cm by 1 cm squares on each leaf.

Activity 3:

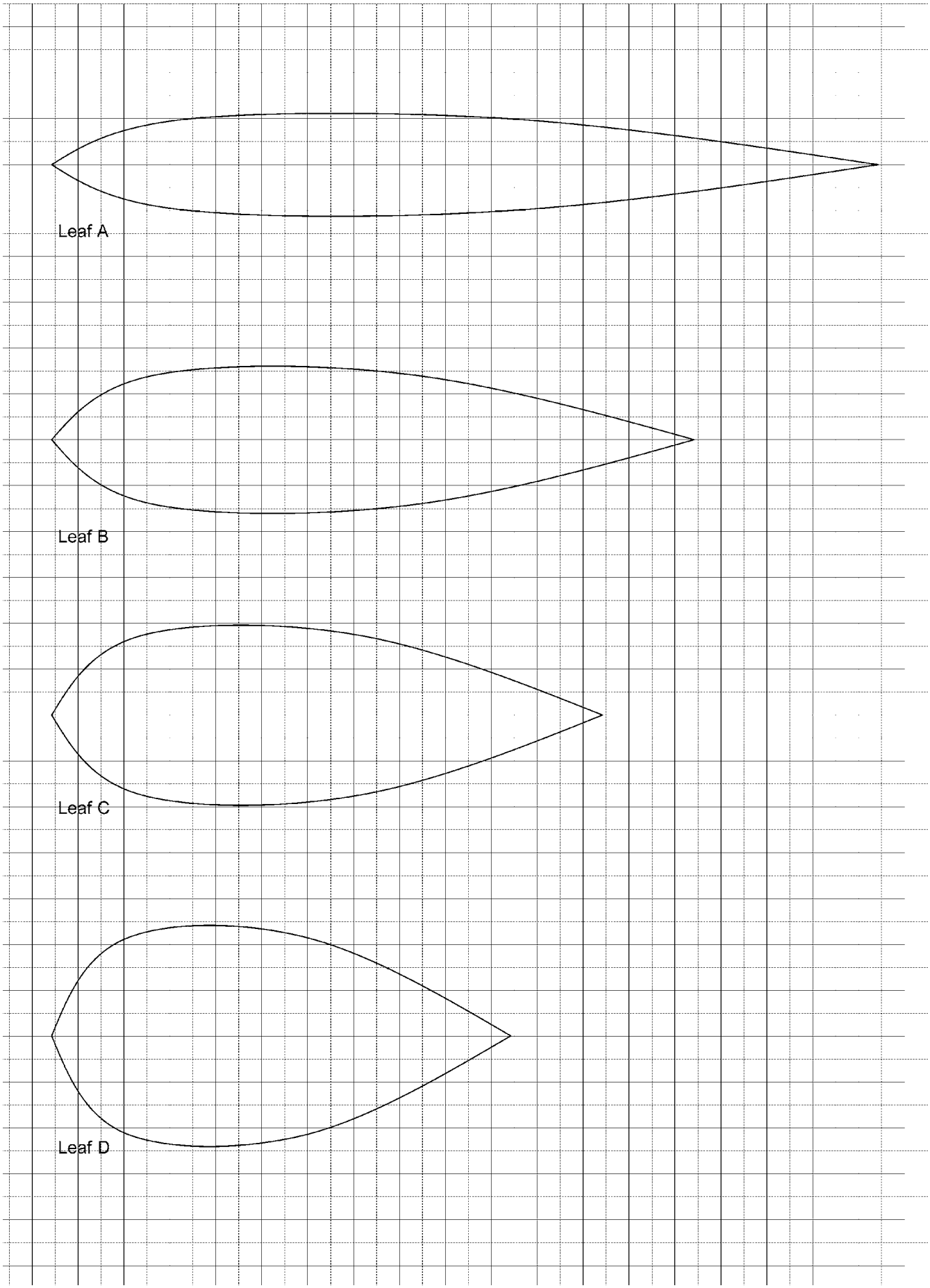
Inform learners that by counting the squares on each leaf, they are trying to find out what the "area" of each leaf is. The word "area" will possibly be a new word for them. Tell them that when they found out which cookie was biggest on the previous day, they actually found out which cookie had the biggest area.

Activity 4:

Ask learners to now count and lightly shade all the **full quarter** 1 cm by 1 cm squares on each leaf. Again suggest to learners that they may wish to revise their idea of which leaf is the biggest.

Activity 5:

If there is time left, learners may talk about how one may possibly measure the area of the leaves more accurately than they have done today.


Leaf A
Leaf B
Leaf C
Leaf D

THIRD TERM: WEEK 7 OVERVIEW

Hours: 5					**Number of periods: 5**
Learning Outcomes and Assessment Standards LO 1 AS 3, 5, 7, 8 LO 4 AS 5, 6			**Milestones:** • Solves problems involving equal sharing and measurement, involving fractions including halves, thirds, quarters, fifths, sixths, sevenths, eighths, ninths and tenths and mixed numbers involving these fractions, expressed in: - words - diagrammatic form - common fraction notation - decimal notation for tenths • Recognise and use equivalent fractions. • Addition of common fractions in context. • Solve problems involving ratio (proportion). • Solve problems involving rate.		
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content Focus	Revision of fractions and addition of fractions in context.	Introduce the conventional notation for fractions.	Calculate fractions of given amounts of money and materials. Experience the "equivalence" of fractions and division as sharing.	Calculations with rates and multiplication. Calculate price rates from given information and practice division.	Problems in which quantities are compared in two different ways: in terms of their difference; and in terms of their ratio.
Resources	An ordinary ruler (or the ruler in Term 1 Annexure V) for each learner. The various fraction rulers in Term 1 Annexure Q, for each learner.			A set of multiplication fact cards for every group of four or three learners in the class. Sets of fake banknotes (Term 1 Annexure O) should be available to each learner for Activity 3.	

WEEK 7: DAY 1

Notes to the teacher:

- This lesson provides for revision of fractions and addition of fractions in context.

Resources:

- An ordinary ruler (or the ruler in Term 1 Annexure V) for each learner.
- The various fractionrulers in Term 1 Annexure Q, for each learner.

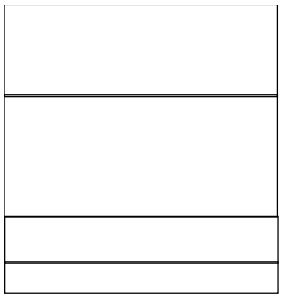
ACTIVITIES FOR THE DAY

CONCEPT DEVELOPMENT

Activity 1:

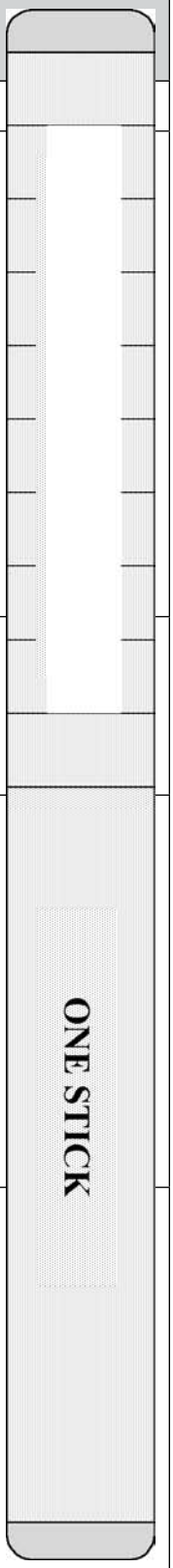
Ask learners to draw the following rectangles, using an ordinary ruler or the ruler in Annexure V, directly below each other and touching as shown below:

A. 180 mm wide and 60 mm high
B. 180 mm wide and 80 mm high
C. 180 mm wide and 30 mm high
D. 180 mm wide and 20 mm high



Activity 2:

Let learners now measure the height of each rectangle with the tenths-ruler from Annexure Q. Remind learners that one STICK is the same as one decimetre



Activity 3:

Write the heights of the four rectangles, as fractions of a decimetre, on the board:
Rectangle A: 6 tenths of a decimetre
Rectangle B: 8 tenths of a decimetre
Rectangle C: 3 tenths of a decimetre
Rectangle D: 2 tenths of a decimetre
Ask learners to find out what the total height of the four rectangles is, in decimetres, without measuring it.

Activity 4:

Make this drawing on the board and ask learners to find out what the total length is.

3 tenths decimetre	2 fifths decimetre	half decimetre

Ask them to also write the lengths in millimetres and to use this to check their answer. Give more similar questions.
Take this in for assessment purposes.

WEEK 7: DAY 2

Notes to the teacher:

- In this lesson you will introduce learners to the conventional notation for fractions.

ACTIVITIES FOR THE DAY

CONCEPT DEVELOPMENT

Activity 1:

Explain the conventional fraction notation to learners, with respect to tenths, fifths, quarters, halves and thirds. Also revise the decimal notation for tenths.

Activity 2:

Let learners extend this sequence up to 25 numbers. Once they have done that, let them rewrite the sequence in decimal notation.

$\frac{1}{10}$ $\frac{2}{10}$ $\frac{3}{10}$ $\frac{4}{10}$ $\frac{5}{10}$ $\frac{6}{10}$ $\frac{7}{10}$ . . . . . .

You may also ask learners to rewrite the sequence in ordinary fraction notation again, using fifths and halves instead of tenths in the cases where this is possible.

Activity 3:

Let learners copy and complete this table:

Fraction in words	Ordinary fraction notation	Decimal notation
3 tenths	$\frac{3}{10}$	0, 3
7 tenths		
9 tenths		
1 and 3 tenths		
	$\frac{3}{10}$	
	2 and $\frac{5}{10}$	
	1 and $\frac{1}{10}$	
		0,6
		1,7
		2,4
		1,5

WEEK 7: DAY 3

Notes to the teacher:

- Learners will calculate fractions of given amounts of money and materials. While working on these questions, learners will experience the "equivalence" of fractions and division as sharing.

ACTIVITIES FOR THE DAY

ORAL AND PROBLEM SOLVING

Activity 1:

Write the following questions on the board and let learners do the questions individually:

1. *Miriam, Teboho, Mzwi, Gertrude and Simon paint a house together and the owner pays them. They all do the same amount of work. What part of the money should each of them get?*
2. *Miriam, Teboho, Mzwi, Gertrude, Simon, Elsie, Nare and Temba paint a shop together, and the owner pays them. They all do the same amount of work. What part of the money should each of them get?*
3. *Miriam, Teboho and Mzwi paint a school together and the principal pays them. Miriam worked for 2 days, Teboho worked for 10 days and Mzwi worked for 4 days. What part of the money should each of them get?*

Arrange learners who have finished in groups of four or three to compare their answers.

Activity 2:

Write the following question on the board and let learners tackle it individually:

4. *The house owner paid R2550, the shop owner paid R6400 and the school principal paid R9600 for the painting jobs. How much did Mzwi earn in each case and how much did he earn in total?*

Activity 3:

Write the following questions on the board and let learners do the questions, individually:

How much is each of the following?

5. $\frac{3}{8}$ *of 480 kg of sugar*
6. $\frac{7}{10}$ *of 480 kg of sugar*
7. $\frac{2}{5}$ *of 480 kg of sugar*
8. $\frac{5}{6}$ *of 480 kg of sugar*

WEEK 7: DAY 4

Notes to the teacher:

- In Activity 1 learners do calculations with rates and practise multiplication.
- In Activity 2, learners practice mental multiplication.
- In Activity 3, learners calculate price rates from given information and practice division.

Resources:

- A set of multiplication fact cards for every group of four or three learners in the class.
- Sets of fake banknotes (Term 1 Annexure O) should be available to each learner for Activity 3.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL ACTIVITIES

Activity 1: (15 minutes)

Set these problems for learners to tackle individually (write the problems on the board):

1. *A certain type of milk costs R3,40 for one litre. How much will 72 litres of this milk cost?*
2. *A certain type of rice costs R12,95 for one kg. How much will 58 kg of this rice cost?*

It is absolutely fine if learners calculate the rands and cents parts separately, then convert cents to rands to work out the total.

CONCEPT DEVELOPMENT

Activity 2: (20 minutes)

Learners play the Number Bond game with the multiplication fact cards, in groups of four or three.

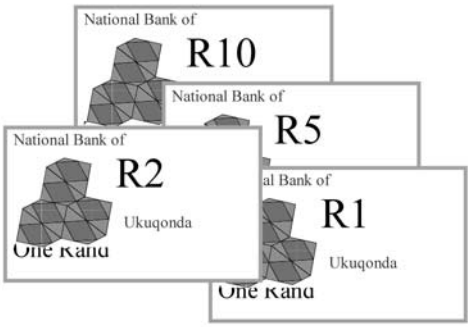
Activity 3: (15 minutes)

Set these problems for learners to tackle individually (write the problems on the board):

3. *A certain type of margarine costs R90 for five kg. How much is it for 1 kg?*
4. *4 kg of potatoes cost R25. How much is it for 1 kg?*

Note that learners may do these problems in a variety of ways. For example, they may do problem 3 by representing R90 with smaller fake banknotes, trying to form 5 sets of notes with the same value.

What is important in this lesson, is that learners develop understanding of situations involving rates, not that they demonstrate sophisticated methods of division.



WEEK 7: DAY 5

Notes to the teacher:

- Learners will do problems in which quantities are compared in two different ways: in terms of their difference; and in terms of their ratio.
- The questions are designed in such a way as to provide learners with opportunities to experience that, in some cases, the one method of comparison is more appropriate than the other.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND PROBLEM SOLVING

Activity 1:

Set these problems for learners to tackle individually (write the problems on the board):

1. *Samuel earns R900 each week.*
   Nancy says: Samuel earns 3 times as much as Lerato!
   How much does Lerato earn each week?
2. *Gertrude earns R858 each month.*
   Mpho says: Sally earns earns R235 more than Gertrude each month!
   How much does Gertrude earn each week?
3. *Maria saves R40 each week and Chris saves R120.*
   How would Nancy compare their savings and how would Mpho compare their savings?
4. *Faaiz saves R400 each month and Jaamiah saves R490.*
   Make a statement to compare their savings.
5. *Mzwi saves R10 each week and Angie saves R100.*
   Make a statement to compare their savings.

Activity 2:

Arrange learners who have finished all 5 questions in groups of four or three, to compare and discuss their answers to questions 3, 4 and 5.

Activity 3:

Let learners work out, for each of the people mentioned as earning in the questions in Activity 1, how much they would earn in a year.

Let learners also work out, for each of the people mentioned as saving in the questions in Activity 1, how much they would save in a year.

THIRD TERM: WEEK 8 OVERVIEW

Hours: 5					**Number of periods: 5**
Learning Outcomes and Assessment Standards LO 1 AS 8, 9; LO 2 AS 4, 5 LO 4 AS 1, 2, 8			**Milestones:** • Recognise and describe lines of symmetry in 2-dimensional shapes, including those in nature and in cultural art forms. • Make 2-dimensional shapes and patterns from geometric shapes (e.g. tangrams) with a line symmetry. • Solve problems that involve addition and subtraction of whole numbers with at least 4 digits. • Solve problems that involve addition and subtraction of common fractions in context. • Solve problems that involve division of at least whole 3-digit by 2-digit numbers. • Solve problems that involve comparing two or more quantities of the same kind (ratio). • Solve problems that involve comparing two or more quantities of different kinds (rate). • Investigate and approximate areas of polygons using square grids. • Read, tell and write analogue, digital and 24-hour time. • Solve problems that involve calculation and conversion between appropriate time units.		
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content Focus	Lines of symmetry. Revision of concepts taught.	Symmetry : folding paper.	Assessment	Explore lines of symmetry in more detail and investigate how many different lines of symmetry can be drawn for specific figures.	Assessment Task 2: The learners must work individually to complete an Assessment Task.
Resources	A ruler for each learner.	Two sheets of A4 paper (this may be recycled paper) for each learner. A pair of scissors and one copy of page 6 for each learner.	Prepared tests	Three copies of a sheet with polygons and a circle for each learner (page 6). Rulers.	A prepared test on addition and subtraction bonds and multiplication facts that can be easily marked.

WEEK 8: DAY 1

Notes to the teacher:

- This lesson is about lines of symmetry.
- Any spare time you have during this week, revise previously taught concepts, e.g. problem solving entailing addition, subtraction, multiplication, equal sharing, fractions, problems entailing conversions between units of time and reading analogue and digital time.

Resources:

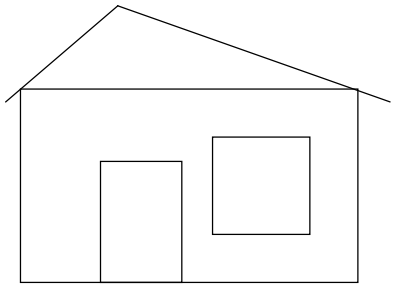
- A ruler for each learner.

ACTIVITIES FOR THE DAY

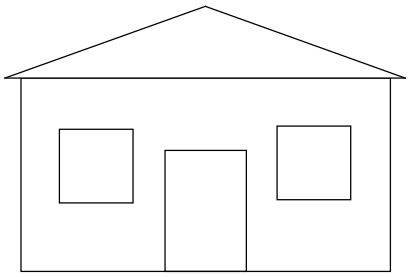
CONCEPT DEVELOPMENT

Activity 1:

Make two simple, rough but neat drawings of houses, like this on the board:



House A

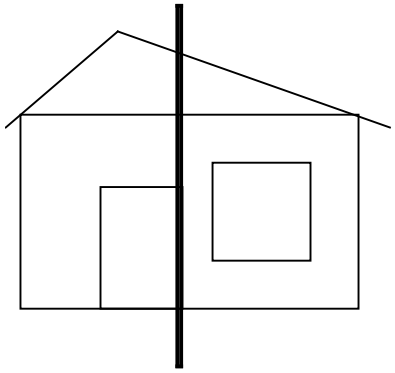


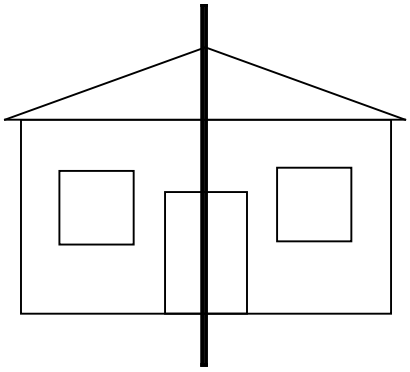
House B

Ask learners to discuss the differences between the two houses in small groups (four or three learners) for about five minutes. Take some feedback from the class. There may or may not be learners who indicate that house B is symmetrical but house A not, although they may not use the word “symmetrical”. Leave it at that.

Activity 2:

Go to the board and ask learners to watch what you will do. Tell them that you will do something that will help them to clearly see one major difference between the two houses. Then draw vertical lines as shown below:

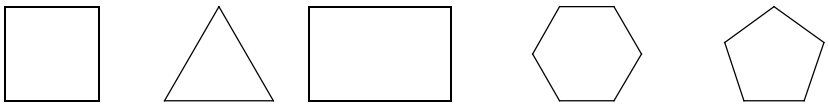




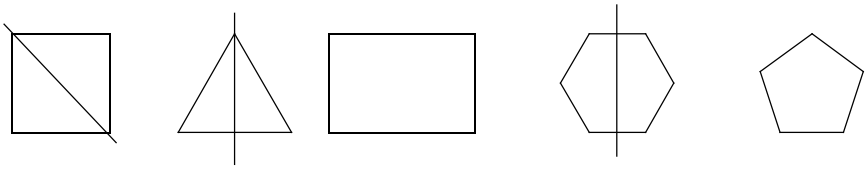
Ask learners whether the lines you have drawn help them to see a difference among the two houses. Allow them to talk about this in small groups for 3 to 5 minutes. Walk around between the groups and listen to what they talk. Identify groups or individuals that talk about the two "equal" or "similar" parts of house B in some way.
Take public feedback from groups or learners who talked about the two similar parts of house B. Inform learners that this is called "symmetry" (write the word on the board) and that the line you have drawn through the drawing of house B is called a "line of symmetry" (write this phrase on the board too).

Activity 3:
Ask learners to try to think about objects they know that are symmetrical. Ask them to make rough drawings of any such objects they may think of.
Circulate and take note of what learners produce. In the case of learners that fail to come up with something after a few minutes, ask them to think of any objects, like a taxi, a goat, a dog, a book, a church, a bicycle, etc.
Once learners have produced some ideas, let them discuss in small groups for about four minutes. Then have some public discussion about objects that are symmetrical and objects that are not symmetrical.

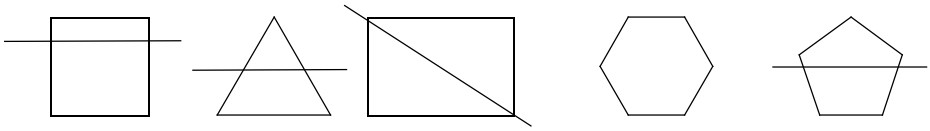
Activity 4:
Ask learners to look at the faces of the prisms and pyramids they have made, to make drawings of some of the faces and to identify faces for which one may draw a line of symmetry.
Circulate for a while, then draw some faces that prisms and pyramids may have, on the board, for example:



Ask learners to also make such drawings and to try to draw lines of symmetry on them. Observe what learners do and show some examples on the board of lines that are *not* lines of symmetry and lines that *are* lines of symmetry, for example:
Lines of symmetry:



Not lines of symmetry:



Learners may not be very successful in this. It is fine, since they will have more opportunities to explore symmetry in the lessons that follow.

WEEK 8: DAY 2

Notes to the teacher:
- In this lesson learners will explore symmetry by folding paper.

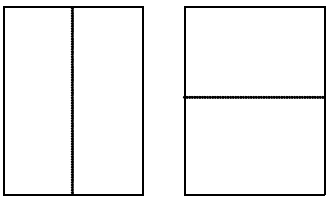
Resources:
- Two sheets of A4 paper (this may be recycled paper) for each learner.
- A pair of scissors and one copy of page 6 for each learner.

ACTIVITIES FOR THE DAY

CONCEPT DEVELOPMENT

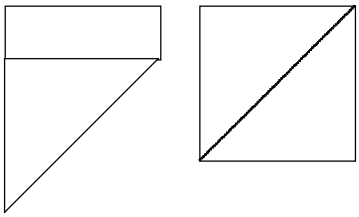
Activity 1:

Give several A4 sheets to each learner. Ask them to fold one sheet in half and make the crease sharp. They will do this along the length or along the width. Tell them that in each case they have made a line of symmetry, because the fold divides the sheet into two identical parts. Learners who have folded it one way, may now fold the same sheet the other way, so that they have two "creases of symmetry" on the same sheet. Ask learners to try to fold the sheet in a different way (along a different line), so that it again forms two identical parts. They will find this impossible.



Activity 2

Let learners now take a new sheet and show them how to fold it to form a square. They then have to fold over the part that is not in the square, make the crease sharp from both sides of the paper and tear it off so that they have only the square left. There is already one fold of symmetry on the square sheet. They should now try to fold it into two identical halves in some other ways. Circulate among the learners and ensure that they all find the four different lines of symmetry.



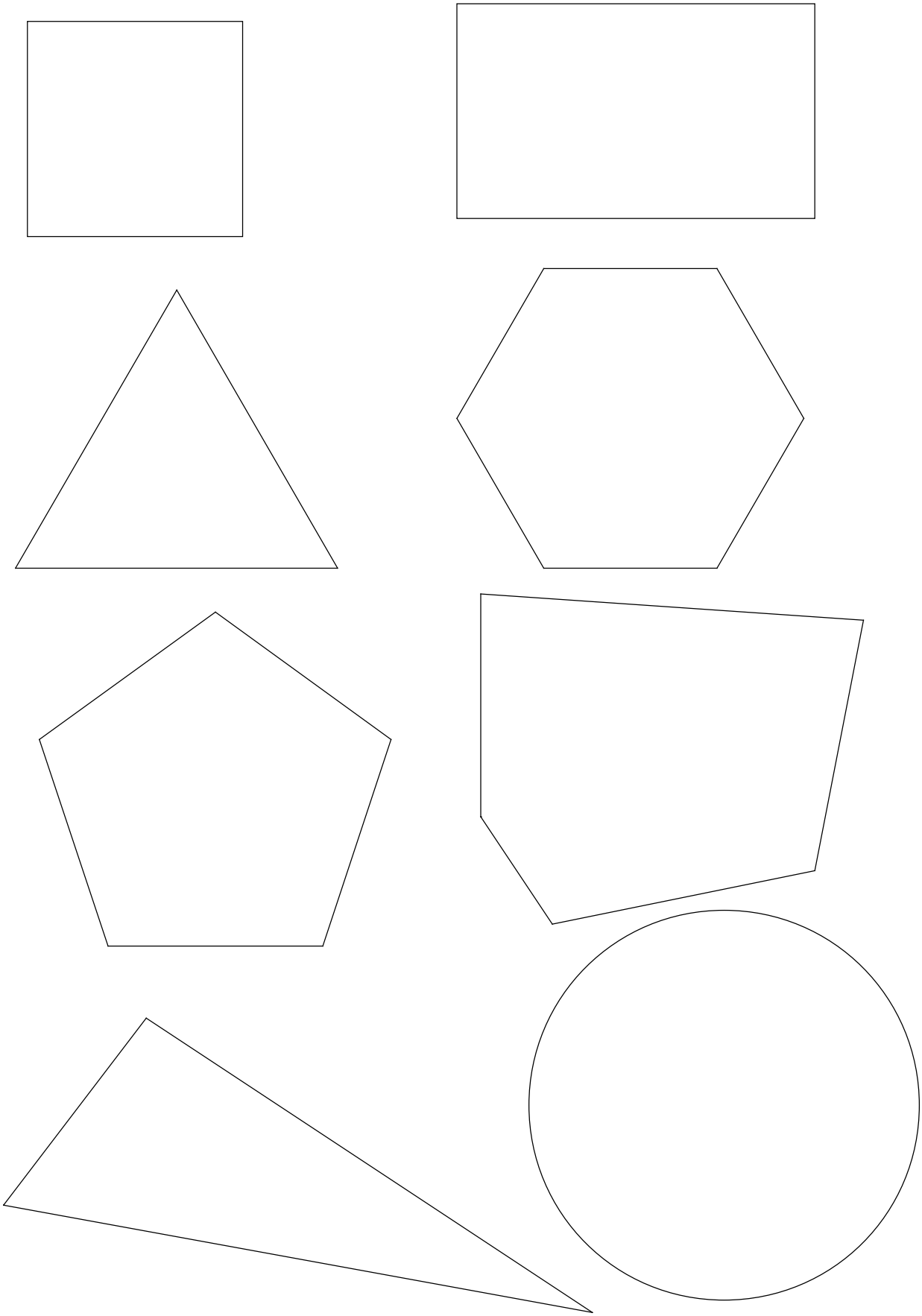
Activity 3:

Hand out copies of the next page. Let learners cut out the triangle and let them fold it to find lines of symmetry as they did for the square. When learners finish, they should continue in the same way with each of the other figures, except the square and the rectangle.

Learners who do not finish in class may continue this work as part of the work in the next day's lesson.

CONSOLIDATION

Inform learners that they will be assessed on their knowledge of work done in the past three to four weeks, on the last day of the week. Revise any work that you can during this time by means of a quiz.



WEEK 8: DAY 3

Notes to the teacher:

- In activity 1 you will do a formal assessment of learners' knowledge of addition and subtraction bonds and multiplication facts, by means of a written test.

Resources:

- Copies of two similar tests on addition and subtraction bonds and multiplication facts that can be easily marked. The test should contain about 20 questions, such as those on the number bond and multiplication fact cards.
- Have copies of the number bond and multiplication card sets, and the banana bunch sheets ready in case some learners ask for that during activity 2.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL ACTIVITIES

Revise addition, subtraction and multiplication by means of some oral and mental activities. These must be fun for the learners and should get them thinking.

ASSESSMENT

Activity 1 (15 minutes maximum)

Let learners write one of your tests.

Activity 2

Tell learners that they will write another such test in the last 15 minutes of the lesson. They should use their time up to then to prepare themselves to do better, but they have to decide for themselves how they will do that. Make resources available for learners to use during this time.

Activity 3 (same duration than activity 1)

Learners write your other test.

WEEK 8: DAY 4

Notes to the teacher:

- In this lesson learners will explore lines of symmetry in more detail and investigate how many different lines of symmetry can be drawn for specific figures.

Resources:

- Three copies of a sheet with polygons and a circle for each learner (previous page).
- Rulers.

ACTIVITIES FOR THE DAY

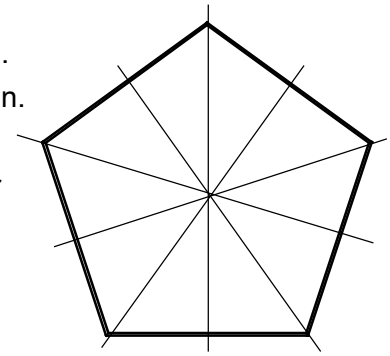
CONCEPT DEVELOPMENT

Activity 1:

Hand out one copy of the sheet to each learner and ask them to write the names of the shapes on the page, next to the shapes. Take these sheets in and give learners clean copies.

Activity 2:

Ask learners to draw different lines of symmetry on the pentagon.
Ask them to draw as many different lines of symmetry as they can.
(There are 5 as you can see on the diagram here.)
Learners may not identify all five lines of symmetry of the regular pentagon. At some stage, make this drawing on the board.



Activity 3:

Ask learners to do the same for each figure and to enter their findings in a table like this:

Shape	Number of lines of symmetry
Square	
Rectangle	
Triangle 1	
Hexagon	
Pentagon 1	
Pentagon 2	
Circle	
Triangle 2	

note that it has 6 symmetries

The irregular pentagon and triangle are included to provide you with an opportunity to point out that a polygon need not have equal sides. Circulate and monitor their work: learners may draw some lines that are not lines of symmetry. The circle may intrigue learners: one cannot count the number of lines of symmetryL

This work might not be completed today. You may ask learners to continue with it for homework.

WEEK 8: DAY 5

Notes to the teacher:

- In Activity 1 you will do a formal assessment of learners' knowledge of addition and subtraction bonds and multiplication facts, by means of a written test.
- Thereafter, the learners will complete Assessment Task 2.

Resources:

- A prepared test on addition and subtraction bonds and multiplication facts that can be easily marked. The test should contain about 20 questions, such as those on the number bond and multiplication fact cards.
- Prepared Assessment Task 2.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL ACTIVITY (15 minutes maximum)

Let learners write a quick mental test where they are asked to perform mental calculations involving addition and subtraction and multiplication of whole numbers to at least 10x10.

ASSESSMENT TASK (Formal, recorded Assessment Task 2): (45 minutes)

The learners must work individually to complete an Assessment Task to assess their ability to:

- Solve problems that involve addition and subtraction of whole numbers with at least 4 digits (LO 1 AS 7).
- Solve problems that involve addition and subtraction of common fractions in context (LO 1 AS 7).
- Solve problems that involve division of at least whole 3-digit by 2-digit numbers (LO 1 AS 7).
- Solve problems that involve comparing two or more quantities of the same kind (ratio) (LO 1 AS 6).
- Solve problems that involve comparing two or more quantities of different kinds (rate) (LO 1 AS 6).
- Write number sentences to describe a problem situation within a context (LO 2 AS 4).
- Solve or complete number sentences by inspection (LO 2 AS 5).
- Investigate and approximate areas of polygons using square grids (LO 4 AS 8).
- Read, tell and write analogue, digital and 24-hour time (LO 4 AS 1).
- Solve problems that involve calculation and conversion between appropriate time units (LO 4 AS 2).

THIRD TERM: WEEK 9 OVERVIEW

Hours: 5					**Number of periods: 5**
Learning Outcomes and Assessment Standards LO 5 AS 1, 2, 3, 4, 5			**Milestones:** • Pose simple questions about own school and family environment and identifies appropriate data sources in order to address human rights, social, political, cultural, environmental and economic issues in that environment. • Organises, records and interprets data by using/drawing: – pictographs with a one-to-one correspondence between data and representation (e.g. one picture = 1 person). • Critically reads and interprets data presented in a variety of ways (including own representations and representations in the media, both words and graphs) to draw conclusions and make predictions sensitive to the role of: – context (e.g. rural or urban); – other human rights issues.		
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content Focus	Working with pictographs	Data handling	Designing a questionnaire in order to establish an overall idea of the brands used most by the adults in their homes.	Learners use the information collected to draw pictograms.	Interpreting data collected.
Resources	Large pictograph to display to class so learners can see it and answer questions, or small copies that learners can use with a partner.		Maths classwork book. Prepared pictogram. Piece of paper per pupil on which they complete their survey at home.	List learners drew up in previous lesson. Large piece of paper per group (at least A3 size). Stapler or pins. Pencils, rulers, crayons.	Charts as drawn up in previous lesson. Set of questions to guide learners through the process of interpreting the data on the charts.

WEEK 9: DAY 1

Notes to the teacher:

- Begin the lesson playing a team game to revise place value. Learners give the value of the underlined digit and score points for their team with correct answers.
- Learners interpret a pictograph with you. This is an introduction to pictographs and also serves as revision from Grade 3 skills taught.
- Learners work with a partner, interview 10 peers and draw up their own pictograph. They answer questions relating to their pictograph.

Resources:

- Large pictograph to display to class so learners can see it and answer questions, or small copies that learners can use with a partner.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL ACTIVITY (10-15 minutes)

Play a team game where learners have the opportunity to revise place value within the number range 0-5000. Learners may sit in teams and one member of each team comes up and writes the answer on the board, as you write numbers on the board and underline one digit. Learners have to identify the underlined digit, e.g. 4724 – the value of the "4" is 4000 or four thousand. All learners have a turn and score points for correct answers. At the end of the game, the team with the most points wins. Vary the questions by asking learners to write a number on the board, as they would make it if they were using flard cards, e.g. 3782=3000+700+80+2, or 40+200+1000+9=1249.

CONCEPT DEVELOPMENT (20 minutes)

Display the chart (or give learners their copies of the pictograph) and explain to learners that a pictograph tells a story about numbers of items (like a tally table) but uses pictures of the item. One picture counts for one item.

Tell learners the following story: Mama Thembi owns a tuckshop and decides to see whether it is men or women who buy more of certain foods. She draws up a diagram/picture called a pictograph to help her keep a record.

Explain to learners that these symbols represent the following: ♀ female, and ♂ male. As each item was sold, she put the symbol in each line to show whether it was a male or female who bought it. At the end of the day, her pictograph looked like this:

Item	Number of people who bought items
Hot dogs	♀♂♂♀♀♂♀♀♀♀♂♂
Bunny chow	♂♀♂♂♂♂♀♀♀♀♂♂♂♂♂♀♂♂♂
Fried chicken pieces	♀♀♀♀♂♂♂♂♀♀♀♀♂♂♂♀♀♀♂♀♀♀♀♂♂♂

Count the number of ♂ and ♀ symbols in each line. Remind learners that each symbol stands for a person who bought a particular item. As you ask questions and learners give the answers, count aloud with the class and check the answer. Learners follow with you as they count. Ask learners questions like: (These are an idea/suggestion and you may change them to suit your needs.)

a. How many people bought bunny chow?
b. How many males bought bunny chow?
c. Was this more or less than the number of females? By how many?
d. How many people bought from Mama Thembi on this day, altogether?
e. Was bunny chow more popular with females or males and by how many?
f. Did more males or females buy the fried chicken? Can you think of a reason why?
g. To whom did Mama Thembi sell the most food overall – females or males?
h. Are hotdogs popular? Why do you think this is so?
i. Which is the most popular food sold? Can you think of the reasons for this?
j. If Mama Thembi sold the same amount of each of the foods as listed above, each day:

– How many meals does she serve altogether in 5 days?
– How many women does she serve in 1 day, 9 days?
– How many men does she serve in 1 day, 6 days?
– How many chicken meals would she sell in 15 days, 30 days, 5 days?

CONSOLIDATION (25 minutes)

Learners now work with a partner and collect data from at least ten members of the class. They then draw their own pictograph. Learners discuss the meals eaten by each learner the day before. You may adapt this to suit your learners and situation and the type of food they may have eaten. The collection of the information can be become noisy and you will need to arrange a system for your learners to complete this part of the task. Remind learners that they must draw a picture to represent each item eaten, i.e. one item = one picture. For example:

Item	Number who ate each item
Beef	(Learners would draw a small cow for each learner who ate beef)
Chicken	(Learners would draw a small chicken for each learner who ate chicken)
Pie	(Learners would draw a small pie for each learner who ate pie)
Phutu	(Learners would draw a bowl of phutu for each learner who ate phutu)

Learners draw their pictograph and then answer questions that you set, e.g.

– How many learners ate beef?
– Was this more or less than the number who ate chicken? By how many?
– Why do you think more or less children ate phutu than pie?

You can extend by letting groups compare and contrast their data. Is there a pattern where boys or girls tend to eat more (or less) of a certain food type?

WEEK 9: DAY 2

Notes to the teacher:

- As learners work through the next few days, keep a set of notes towards assessing the ability of each learner against the milestones as set above.
- Begin the lesson with an oral activity where learners complete oral number calculations involving all four operations.
- Learners give you data to draw a large class pictogram. You may choose any topic relevant to your learners. The example given researches the activities carried out by learners in their leisure time.

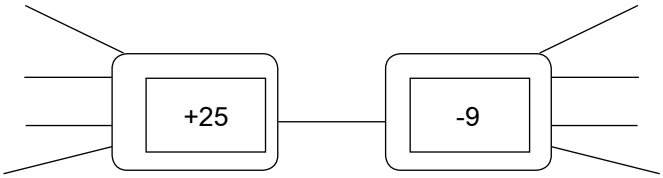
Resources:

- Pencils and jotters.

ACTIVITIES FOR THE DAY

ORAL AND MENTAL ACTIVITY (10 minutes)

Draw a number machine on the board with missing output or input numbers and learners tell you the missing number. Choose learners randomly to answer, giving each a turn. Practise calculations involving addition and subtraction. Vary input numbers and the operations. You can also give the output numbers and learners must tell you the input numbers.



CONCEPT DEVELOPMENT (30 minutes)

Draw a table on the board and collect data from your learners to complete it. Your pictogram and questions will be based on the type of environment from which your learners come.

The school is going to hold a traditional games day and you need to know the most popular games that children play in their free time. Ask learners to give you suggestions as to the type of games played. Write these on the board as suggestions are given. These may include skipping, mlabalaba, marbles, TV games, computer games, cars, etc. This will differ according to where you are situated. Urban children will play different games from rural children. Draw a table on the board in preparation to draw a pictogram. Tell learners they may choose only one of their favourite games. If you do not restrict this vote, you may find that all learners will vote for each of the games.

Choose an icon to represent each sport/game. Ask learners to come up and draw their picture to represent the data. They can come up a few at a time to save time.

Skipping	
Mlabalaba	
Ride bicycle	
Throw/skim stones on the water in the river	
Soccer/ball games	
Play cars	

Write questions on the board now that learners answer in their jotters. Again the questions will depend on the type of activities. The following is a short suggestion and you will need to add more and adjust them to your situation. Write the questions on the board, e.g. – How many children chose skipping? – Do you think any of these were boys? Why? – If there were 12 times as many children who liked skipping than the second most popular game, how many would there be?
WRITTEN TASK (10-15 minutes) Learners complete a written task from their textbook where they revise computations and problem solving. This exercise may be taken from a textbook or worksheet. Use this opportunity to revise measurement, time and mass. For example: A train leaves Durban station at 14:30 on Tuesday and arrives in Cape Town on Thursday at 21:45. How many days and hours does the journey take? How many hours is this altogether? If the journey was 5 hours shorter, how many hours would it take?

WEEK 9: DAY 3

Notes to the teacher:

- Learners will pose questions in order to establish an overall idea of the brands used most by the adults in their homes. These may include banking, magazines read, shops where groceries are bought, types of soap powder used, bath soaps used, brand of milk used, etc.
- Learners then draw up a questionnaire that they take home to complete and return the next day, to use in class.
- You will need to collect the charts made by the groups today, in order to draw up questions that learners will use to interpret the data.

Resources:

- Maths classwork book.
- Prepared pictogram.
- Piece of paper per pupil on which they complete their survey at home.

ACTIVITIES FOR THE DAY

CONCEPT DEVELOPMENT (30 minutes)

- Ask learners if they know which brand of soap powder their mother/aunt/guardian uses most often. Let a few tell you, as you write the brands on the board. Tell learners they may not tell you a brand that is already written on the board. Ask them to put up their hands for the one used most often in their home. Draw a quick tally table and record the answers next to each brand. Discuss which is the most and least popular and see if they can give you reasons why they think the particular brands are most and least used – could be cheaper, more expensive, available at the local shop, or only available in town, etc.
- Tell learners that they are going to carry out a survey to determine the most popular brands of daily items used in their homes. Learners work in mixed ability groups of about six to eight and brainstorm the items they think they would like to research, e.g. soap powder, banks, cars, etc. They need to select 5 items per group. After a few minutes, one member of each group will report back to the class. Write the suggestions from each group on the board. When all groups have reported back, choose the most popular items. Select enough items so that each group will have an item to draw a pictogram, i.e. if you have six groups in your class, you need to choose six items like banks, cars, soap powder, etc. When you have selected your items, each child draws up a list/table to complete at home. It may look like the table below (remember to have one item per group). Number each group and learners write this number on their list. This will help you organise the groups while they are using the data in the next lesson.

Name:	Group number:
Item	Brand name
Soap powder	*e.g. Mac*
Coffee	
Tea	
Bank	
Peanut butter	
Car	

WEEK 9: DAY 4

Notes to the teacher:
- Learners use the questionnaires they took home to complete after the previous lesson, to draw pictograms.
- Learners work in groups to complete the pictograms.

Resources:
- List learners drew up in previous lesson.
- Large piece of paper per group (at least A3 size).
- Stapler or pins.
- Pencils, rulers, crayons.

ACTIVITIES FOR THE DAY

CONCEPT DEVELOPMENT

- Learners take out the questionnaires they completed the previous day. Learners sit in their groups. Staple or pin all the papers from the members of the group together. You will have 5 or 6 piles of paper. The piles of paper will be passed from group to group. Tell each group which item they are going to record, e.g. group 1 – brand of soap powder, Group 2 – magazines, etc. Each group will now draw a pictogram to represent the brands of the item allocated to their group. They will have to skim the first pile they get and draw a column for each brand, leaving space in case they there additional brand names on other piles. Each group selects a symbol/icon to represent their item. As groups complete recording their item, they swap for another pile of questionnaires. They must ensure that they record the data for all groups. A typical chart may look like this:

Banks	
Standard Bank	€ € € €
First National	$ $ $ $ $ $ $ $ $
Emanzi	R R R R R R R R R R R R R
Nedbank	
Investec	
ABSA	
Old Mutual	
Etc	

CONSOLIDATION

- When learners have completed their charts, they may complete an extension exercise. The recording of the data will possibly take the full hour of the lesson. If there is time however, you may give learners a written revision task from their textbook.

WEEK 9: DAY 5

Notes to the teacher:

- Display the large charts as made in previous lesson. After discussion, learners will work alone to interpret the data.
- Assessment suggestion to complete assessment towards the milestones. This should be carried out during the course of these lessons and completed today.

Resources:

- Charts as drawn up in previous lesson.
- Set of questions to guide learners through the process of interpreting the data on the charts.

ACTIVITIES FOR THE DAY

CONCEPT DEVELOPMENT (20 minutes)

Display the charts made by the groups in the previous lesson. Give learners a few minutes to study the displayed charts. Ask learners questions that will draw their attention to the charts and encourage them to compare and contrast the items. As you ask the questions give a few learners the chance to answer and give their reasons.

Ask which is the most popular brand on the charts? Why do they think so?

Which is the least popular brand on the charts?

CONSOLIDATION (40 minutes)

Learners work alone and answer the questions you have set them. A few sample questions are supplied, but you will have to adapt these to suit the items on the charts drawn up by your class. Ask a set of questions about each chart as well as making learners compare and contrast data from other charts. Be sure to include the final example as this involves comparing the data from each of the charts, e.g.

- What is the most popular magazine? Which is the least popular magazine? What is the difference between these? Why do you think this is so?
- Look at all the charts. What is the most and least popular of all the items? By how many? Can you think of a reason why this is so?
- Look at the chart showing the soap powder data. Do you know any of the brands shown here? Is your favourite brand the same choice as that on the chart? Can you give a reason?

End by having learners draw up two final lists. One to show the most popular brand from each chart and the second to show the least popular brand from each chart. Ask learners to give two reasons why they think the result is what it is.

ASSESSMENT

Formal Assessment:

- Poses simple questions about own school and family environment, and identifies appropriate data sources in order to address human rights, social, political, cultural, environmental and economic issues in that environment.
- Organises, records and interprets data by using/drawing:
  - pictographs with a one-to-one correspondence between data and representation (e.g. one picture = 1 person).
- Critically reads and interprets data presented in a variety of ways (including own representations and representations in the media, both words and graphs) to draw conclusions and make predictions sensitive to the role of:
  - context (e.g. rural or urban);
  - other human rights issues.

THIRD TERM: WEEK 10 OVERVIEW

Hours: 5	**Number of Periods: 5**
Learning Outcomes and Assessments: LO 1 AS 8, 9, 10, 11 LO 2 AS 1, 2 LO 4 AS 2, 3 LO 5 AS 3	**Milestones:** • Counts given structured collections of objects (pictures and marks) up to 10 000, recording the result by writing the number name in words, by showing it with Flard cards and by writing it in expanded notation • Investigates and extends numeric (to at least 10 000) and geometric patterns looking for general rules or a relationship, including patterns: - represented in physical and diagrammatic form - of learners own creation • Solves or completes number sentences by trying different numbers and checking the solutions by substitution • Critically reads and interprets data presented in own representations (tallies, pictographs, bar graphs) and representations in the media (both words and graphs) to draw conclusions and make predictions sensitive to the role of: - context (e.g. rural or urban);

	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**
Content Focus	Consolidation of number concept using 4-digit numbers	Strengthening of learners' sense of how long a second and a minute are. Strengthening of learners' understanding of rates.	Extend numbers patterns and solve problems about number patterns	Problems related to number patterns requiring the use of addition, subtraction, multiplication and division.	Solve problems, all set in the same context, that require multiplication, sharing and grouping.
Resources	The sets of 4-digit number cards learners made in Week 1 (Days 3 and 4) of this term, one set for every group of four or three learners. A copy of Term 1 Annexure R (sheets with bunches of bananas) for each learner.	A watch that shows seconds			Copies of the problems in the lesson plan, to have more learning time in class.

WEEK 10: DAY 1
Notes to the teacher: • This lesson provides for consolidation of number concept. **Resources:** • The sets of 4-digit number cards learners made in Week 1 (Days 3 and 4) of this term, one set for every group of four or three learners. • A copy of Term 1 Annexure R (sheets with bunches of bananas) for each learner.
ACTIVITIES FOR THE DAY
ORAL, MENTAL AND CONCEPT DEVELOPMENT **Activity 1:** Learners play the Number Placing Game as described in the lesson plan for Term 2, Week 2, Day 1, with the 4-digit number cards they made in Week 1 (Days 3 and 4) of this term, with the additional rule that a number card can only be placed if it differs by less than 100 from the card next to which it is placed.
Activity 2: Hand out the sheets with bunches of bananas (Term 1, Annexure R). Each learner has to determine how many bananas there are in total, on all the sheets together.
Activity 3: Learners have to figure out, individually, how much all the bananas together will cost if one banana costs 40c.

WEEK 10: DAY 2

Notes to the teacher:

- This lesson provides for strengthening of learners' sense of how long a second and a minute are. It also provides for strengthening of learners' understanding of rates.

Resources:

- A watch that shows seconds.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Tell learners that they will make tally marks for a period of time. They should try to make one tally mark every 5 seconds. Make sure that they all have pencils and paper to write on. Show them again how we normally make tally marks: 4 vertical stripes and the fifth one horizontally across. Ask learners to be ready and to start making tally marks when you say "start". Wait till the second indicator on your watch is at a convenient point and say "start". After some period of time between 1 and 2 minutes, but a multiple of 5 seconds, say "stop". Tell learners what the period of time was (for example 80 seconds) and ask them to work out how many tally marks they should have made during this period, if they made one tally mark every 5 seconds. Circulate and observe how learners do this or try to do it. After some time you may go to the board and write the sequence 5, 10, 15, 20 on the board up to the number of seconds which you allowed them to draw tally marks, like this:

5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	5 secs	
5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80

Let learners count their tally marks and find out by how much it differs from the required number, for the period of time that you allowed. Let learners who differ by less than 5 from the required number stand up to get a round of applause (there may be no such learners).

Repeat this activity a few times, allowing different periods of time between 1 and 2 minutes.

Activity 2:

Repeat Activity 1, but now require that learners make a tally mark every two seconds.

Activity 3:

Repeat Activity 1, but now require that learners make a tally mark every 10 seconds.

Activity 4:

Let learners complete a written task in which they have to make conversions between different units of time, for example: 8 days = ... hours = ... minutes; and

3½ hours = ... minutes = ... seconds; and 4 weeks = ... days = ... hours.

WEEK 10: DAY 3

Notes to the teacher:

- Learners will extend numbers patterns and solve some problems about number patterns.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Learners have to find the fortieth term and the sixtieth term of each of the sequences that are partially represented in the table below (write the table on the board):

	Term 45	Term 46	Term 47	Term 48	Term 49	Term 50	Term 51	Term 52	Term 53	Term 54	
A.	2565	2605	2645	2685	2725	2765	2805	2845	2885	2925	. . . . .
B.	4380	4395	4410	4425	4440	4455	4470	4485	4500	4515	. . . . .
C.	4195	4255	4315	4375	4435	4495	4555	4615	4675	4735	. . . . .
D.	4425	4450	4475	4500	4525	4550	4575	4600	4625	4650	. . . . .
E.	4300	4375	4450	4525	4600	4675	4750	4825	4900	4975	. . . . .
F.	4450	4475	4500	4525	4550	4575	4600	4625	4650	4675	. . . . .
G.	4348	4361	4374	4387	4400	4413	4426	4439	4452	4465	. . . . .
H.	3954	3978	4002	4026	4050	4074	4098	4122	4146	4170	. . . . .
I.	1950	2100	2250	2400	2550	2700	2850	3000	3150	3300	. . . . .

Activity 2:

Find out what the 90th and the 20th term of each sequence are.

Activity 3:

Find out what the first term of each sequence is.

Activity 4:

Investigate whether sequence G will ever become equal to or bigger than sequence H.

WEEK 10: DAY 4

Notes to the teacher:

- Learners work on problems related to number patterns that require division with small numbers, addition, subtraction and multiplication.

ACTIVITIES FOR THE DAY

ORAL, MENTAL AND CONCEPT DEVELOPMENT

Activity 1:

Learners have to find the first term and the thirtieth term of each of the sequences that are partially represented in the table below (write the table on the board). Tell the learners that the difference between consecutive terms is constant in each of the sequences.

	Term 15	Term 16	Term 17	Term 18	Term 19	Term 20	Term 21	Term 22	Term 23	Term 24	
A.	3208			3568				4048			. . . . .
B.	3937					4487				4927	. . . . .
C.	3580						4174				. . . . .
D.	2875									4000	. . . . .
E.	3981							4688			. . . . .

Activity 2:

Learners have to find the first term and the thirtieth term of each of the sequences that are partially represented in the table below (write the table on the board). Tell the learners that the difference between consecutive terms is constant in each of the sequences.

	Term 15	Term 16	Term 17	Term 18	Term 19	Term 20	Term 21	Term 22	Term 23	Term 24	
A.	4314	4216	4118	4020	3922	3824	3726	3628	3530	3432	. . . . .
B.	3950			3500					2750		. . . . .
C.	3960					3360				2880	. . . . .
D.	4375				4075					3700	. . . . .
E.	3725						2675				. . . . .

WEEK 10: DAY 5
Notes to the teacher: • Learners work on a variety of problems, all set in the same context, that require multiplication, sharing and grouping. **Resources:** • You may make copies of the problems in the lesson plan, to have more learning time in class.
ACTIVITIES FOR THE DAY
ORAL, MENTAL AND PROBLEM SOLVING Let learners look up the sketches they made in the lesson for Week 3, Day 5. Write the following problems on the board. Learners have to tackle the problems individually. 1. *There are 42 bags with 28 oranges each on a truck. How many oranges are there, in total, on the truck?* 2. *There are 3060 oranges on a truck. They are in bags, with 36 oranges in each bag. How many bags are there on the truck?* 3. *There are 96 bags of oranges on a truck, each with the same number of oranges. The total number of oranges is 3072. How many oranges are there in each bag?* 4. *3600 oranges have to be packed in bags. There must be 35 oranges in each bag. How many bags are needed?* 5. *3200 oranges have to be packed into 28 bags. How many oranges should go into each bag?* Circulate and assist learners who may not understand the context or the question, without telling them what to do.

4186	3663	4963	4860	2298
2903	2799	2886	4817	2861
3743	4226	3146	3434	3233
4986	2513	2383	4682	2628
4023	2210	3297	3136	2810

3167	2701	1883	1903	4037
3956	3720	3054	4993	2262
4372	4815	2646	4009	3480
3100	3737	2812	3109	2931
1822	4263	3371	4078	1800

1827	3557	3407	2621	2133
4289	2963	4281	2336	4073
2290	2756	2440	4454	3575
4136	1895	2165	3316	2756
3789	4599	3480	1884	2465

2331	2889	3964	4480	3140
2168	2219	5000	3174	3904
3506	4718	1851	3315	4050
3088	4425	1915	3697	4593
2377	2339	2679	2632	3732

4483	1923	2331	4194	3704
4310	4194	2098	4835	3299
3827	3422	3862	1780	3304
3729	4822	3347	2881	1836
2445	2091	4711	4413	3582

Term 3 Annexure A (Many 4-digit numbers)

4883	4342	3515	3541	2380
3998	3012	2465	4984	3879
3633	3014	3518	3764	3806
3045	3755	1886	3750	2113
2630	3432	4676	3313	3146

3421	4607	3244	3974	3063
3917	4538	3920	1984	3663
3425	4824	2480	4072	4519
4863	3478	3052	2334	2951
3241	2639	4433	2890	4383

3823	4801	2926	1907	2207
4710	4916	4935	4140	4051
4273	3535	4121	3881	4899
4864	4824	3163	2633	2403
2976	1994	3615	4367	4673

3910	2669	4659	3136	3379
3227	3601	4216	2518	4938
2555	3267	3115	3524	2362
3747	4155	2084	3142	4331
1926	3225	2754	4293	2309

4426	1893	4968	3339	4612
3911	4304	3638	2806	2287
2102	3130	4658	2509	3583
4191	3109	4407	3728	3588
1943	2569	4400	3335	2940

Term 3 Annexure A (Many 4-digit numbers)

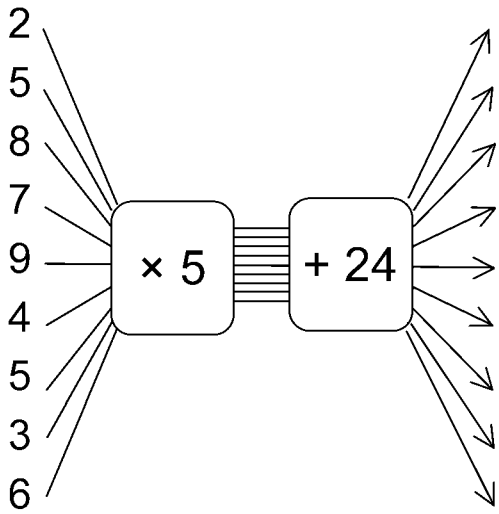
H1	H2	H3
G1	G2	G3
F1	F2	F3
E1	E2	E3
D1	D2	D3
C1	C2	C3
B1	B2	B3
A1	A2	A3

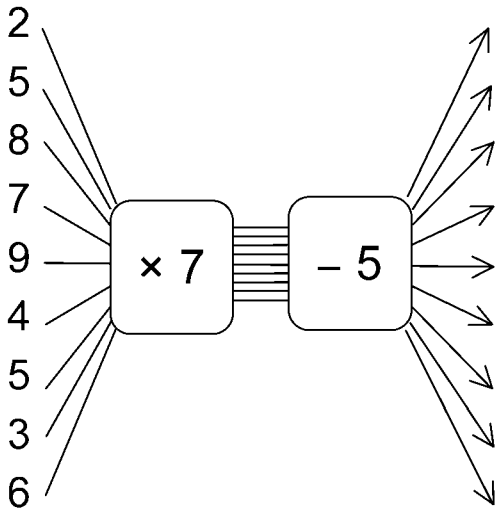
Annexure B (Number bond cards)

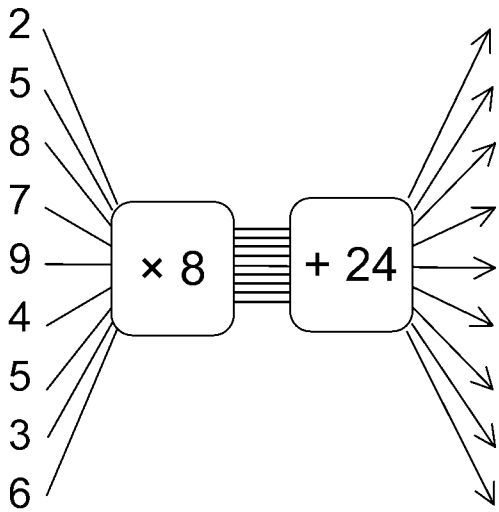
17												
16												
15												
14												
13												
12												
11												
10												
9												
8												
7												
6												
5												
4												
3												
2												
1												
	A	B	C	D	E	F	G	H	I	J	K	L

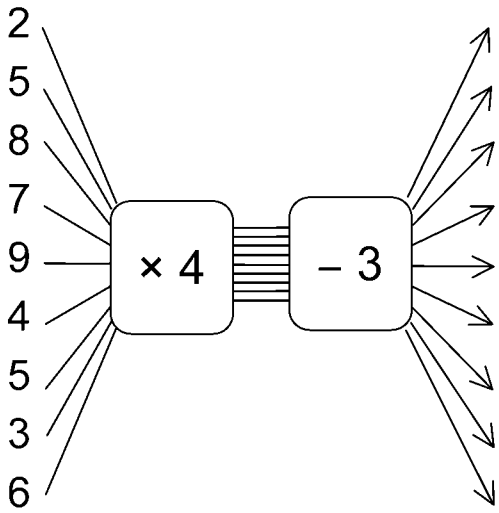
Term 3 Annexure C (Coded grid)

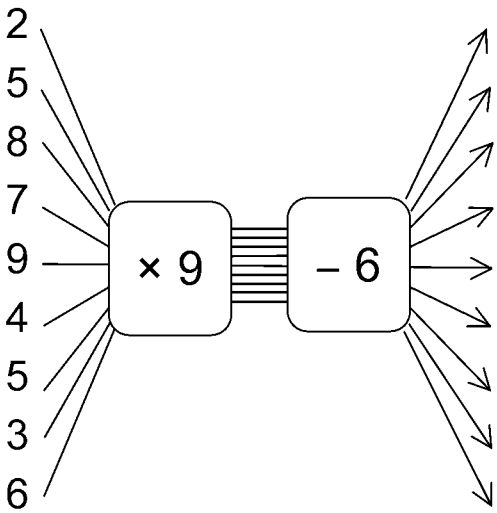
Flow diagrams A

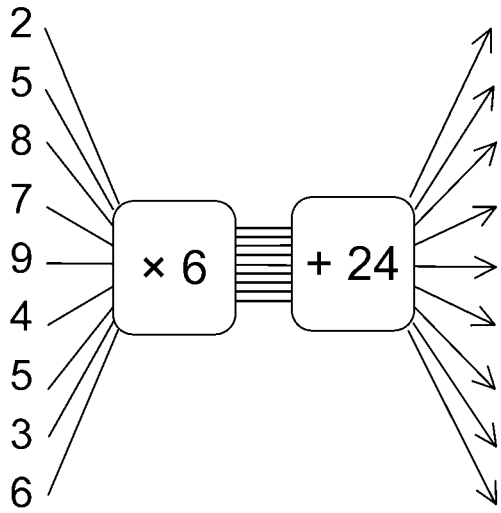






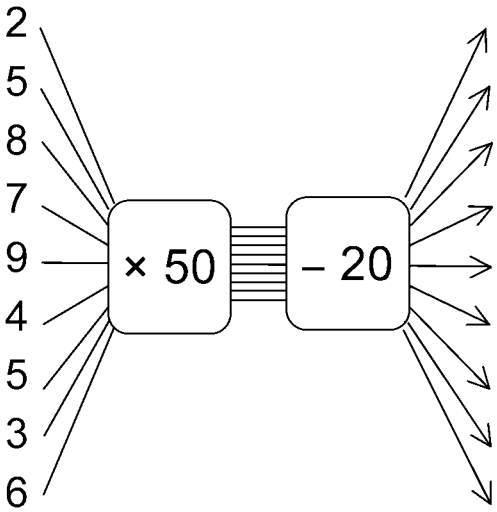


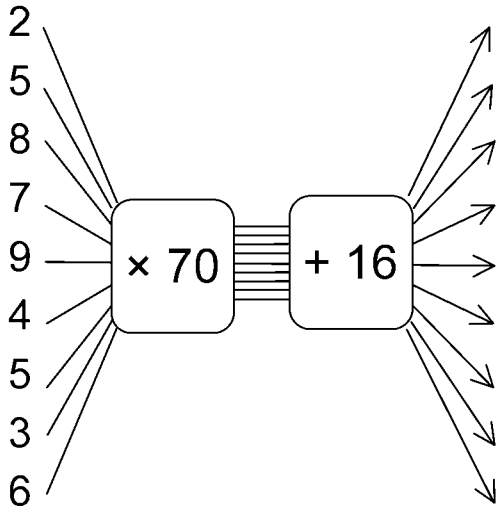


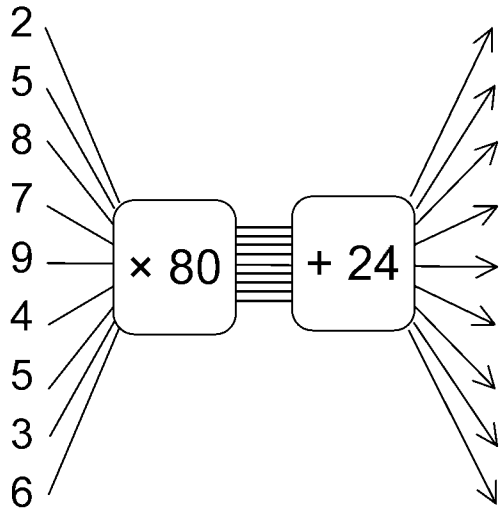


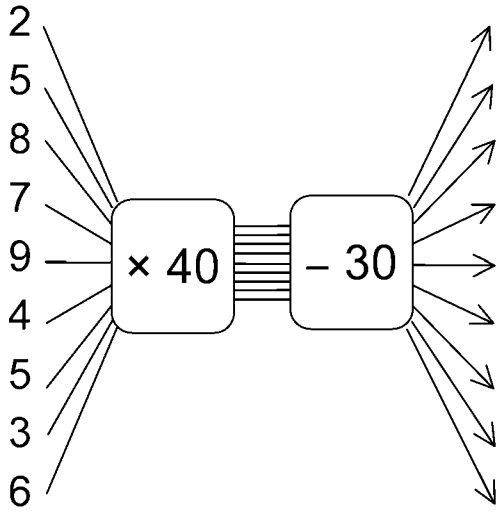
Annexure D (Flow diagrams)

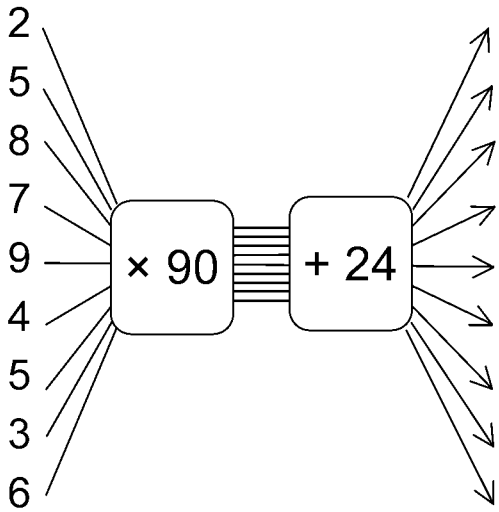
Flow diagrams B

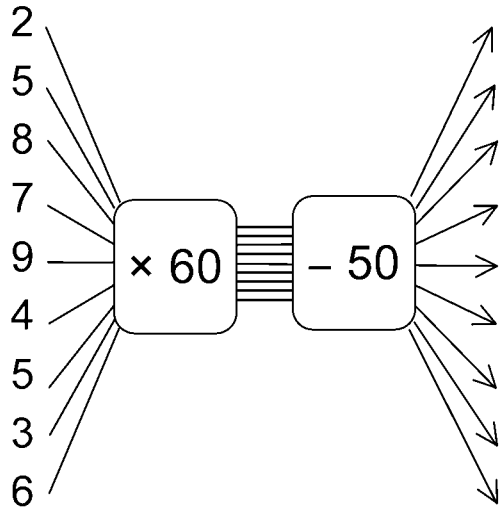






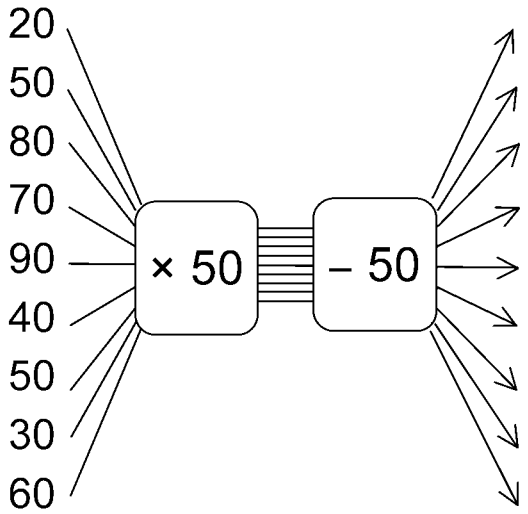


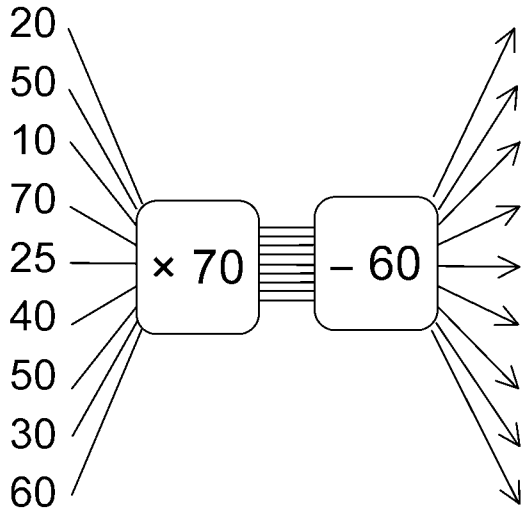


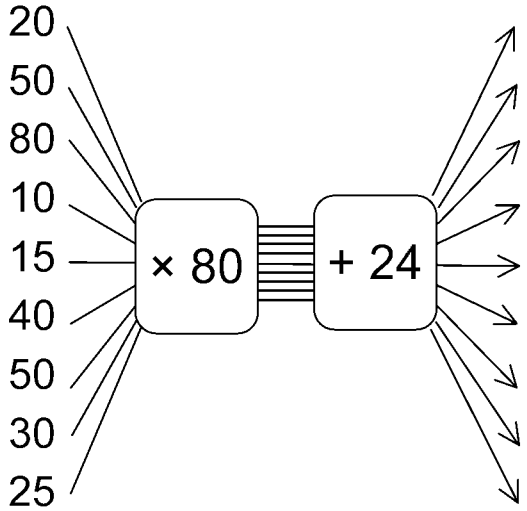


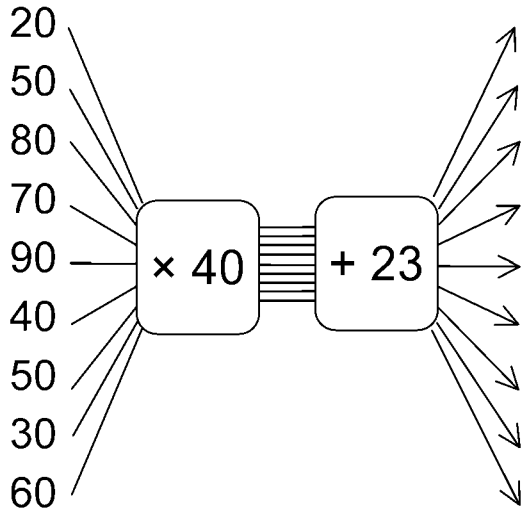
Annexure D (Flow diagrams)

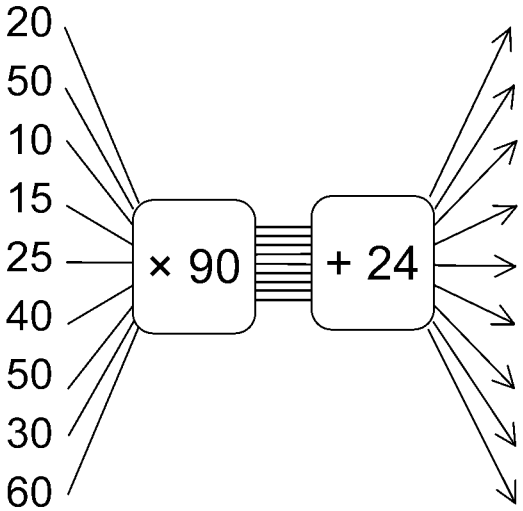
Flow diagrams C

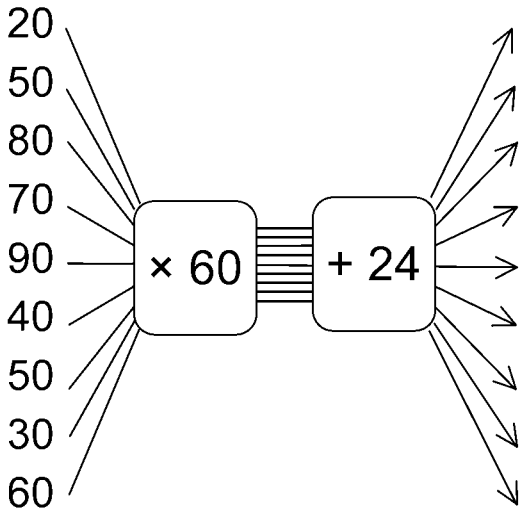






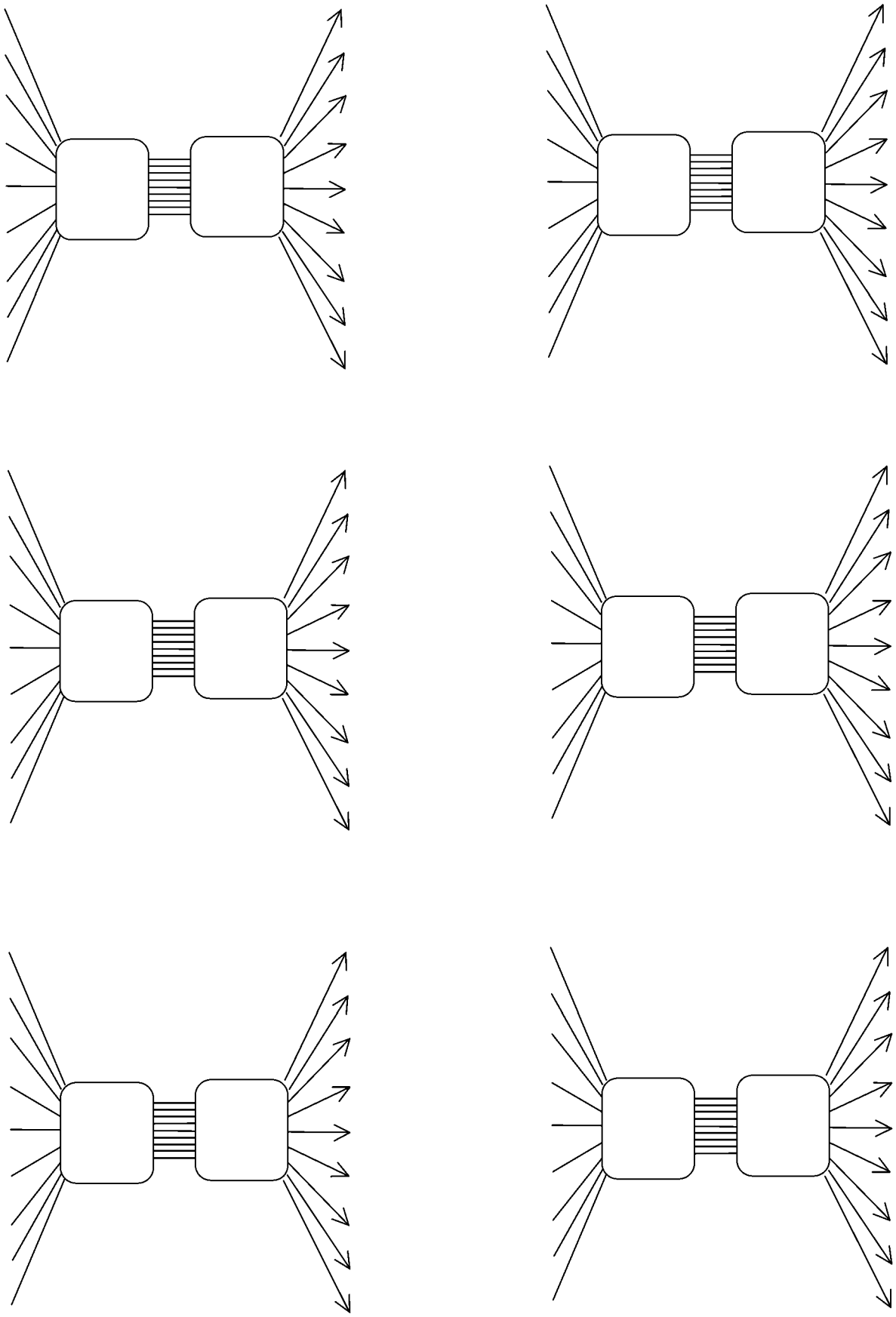




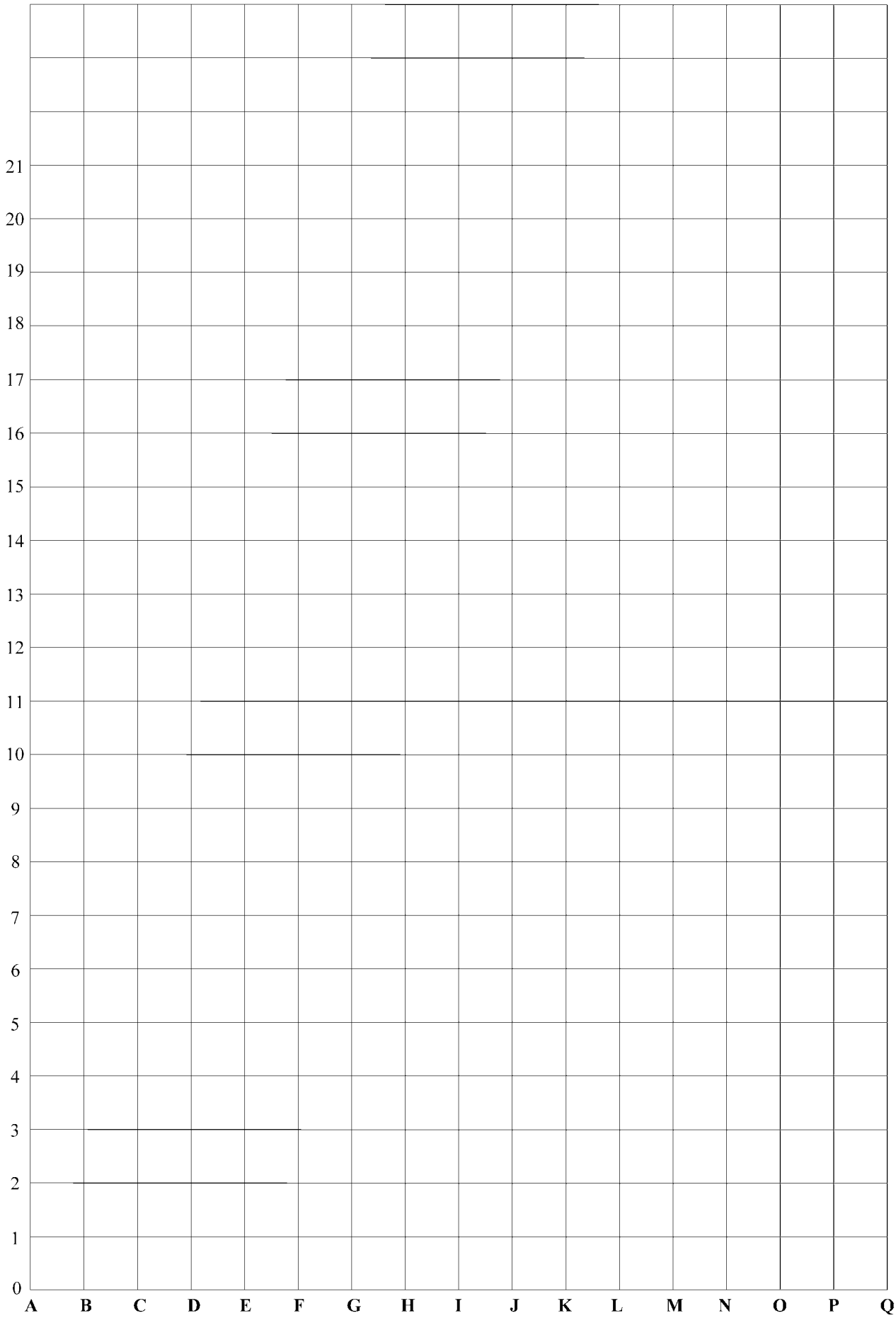


Annexure D (Flow diagrams)

Flow diagrams X



Annexure D (Flow diagrams)



Term 3 Annexure E (Coded grid B)

Cookies 1

Cookie A

Cookie B

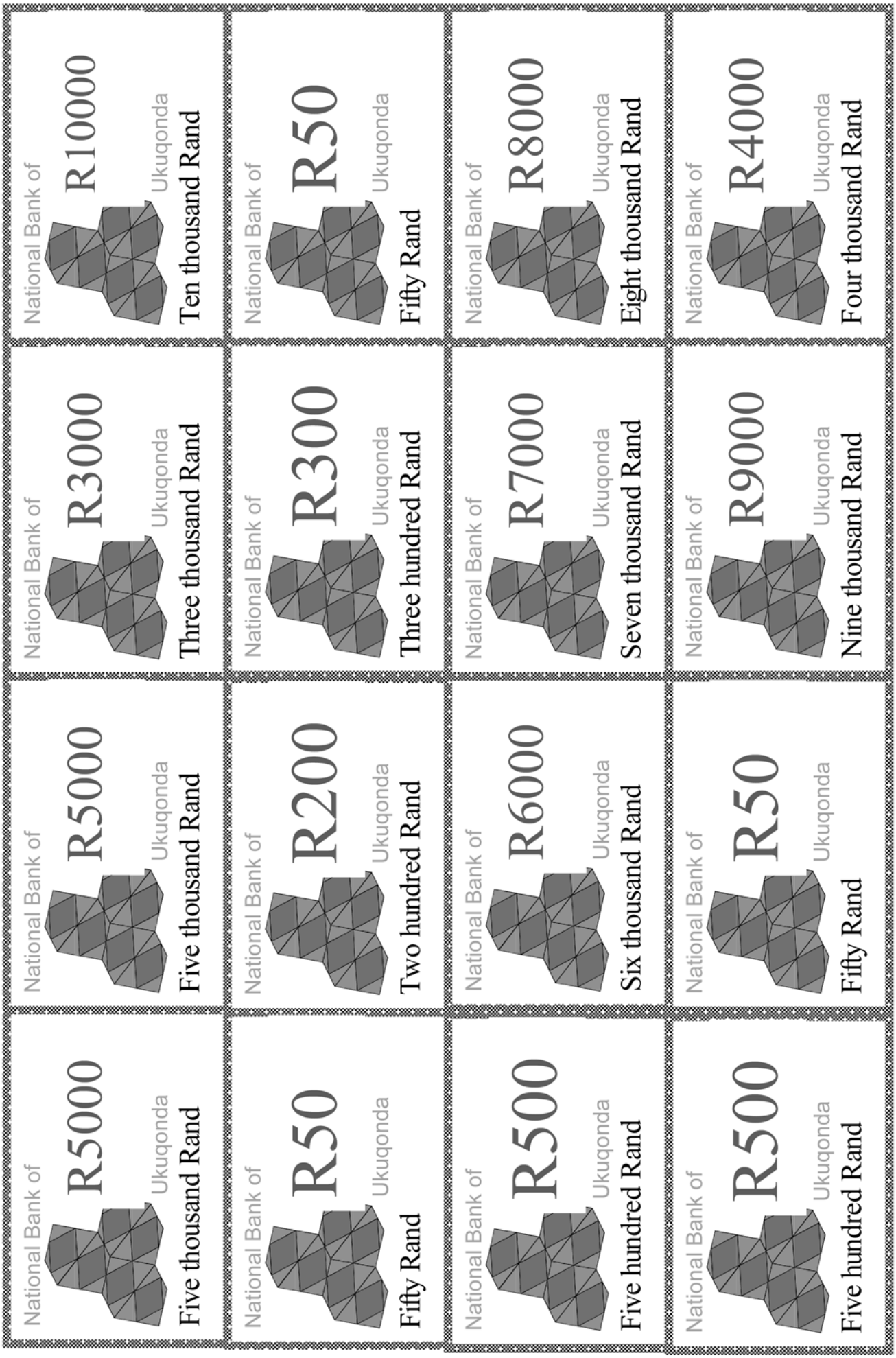
Cookie C

Cookie D

Cookie E

Cookie F

Term 3 Annexure F (Cookie sheets)



Term 3 Annexure G (More fake money notes)

Notes: