

# **Grade 4**

## **Term 1 2020**

### **Revision Programme**

### **Teacher's Guide**

**Acknowledgement:**

These revision lesson plans have been developed based on previous sets of (GPLMS Revision Programme, PILO and TMU 2019 lesson plans) which have been adapted to align with the Mathematics Framework for South Africa: Teaching Mathematics for Understanding.

## Contents

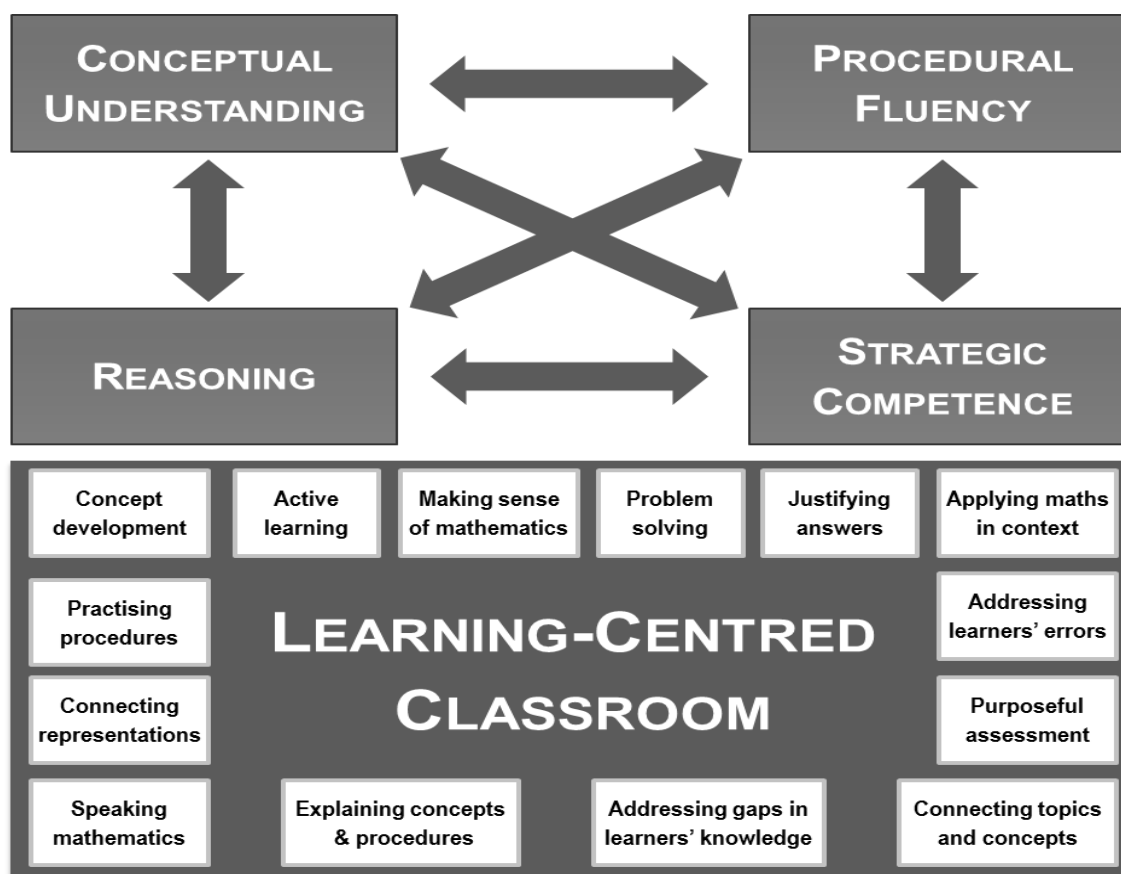
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## Note to the Teachers

The topics selected for this revision program are some key concepts that have been dealt with during 2019 TMU field testing. The topics covered in these lessons follow a progression of learning which is important to revise in order to consolidate learners' mathematical abilities and can serve as a baseline for Grade 4.

## Teaching mathematics for Understanding (TMU)

You are participating in the pilot implementation of the Mathematic Framework – which calls for **Teaching Mathematics for Understanding**. Diagrammatically the framework is represented as shown below.



The Framework proposes that steps should be taken to bring about the transformation of mathematics teaching in South Africa. Teachers should strive to:

- teach mathematics for **conceptual understanding** to enable comprehension of mathematical concepts, operations, and relations;
- teach so that learners develop **procedural fluency** which involves skill in carrying out procedures flexibly, accurately, efficiently, and appropriately;
- develop learners' **strategic competence** – the ability to formulate, represent, and decide on appropriate strategies to solve mathematical problems;
- provide multiple and varied opportunities for learners to develop their mathematical **reasoning** skills – the capacity for logical thought, reflection, explanation and justification; and
- promote a **learning-centred classroom** which teachers support by engaging with learners in ways that foreground mathematical learning, thus enabling all of the above.

The lesson plans you will follow are designed to help you teach according to the framework dimensions.

Day 1:

ADDITION WITH CARRYING (Gr. 3 TERM 1 UNIT 2)

**VOCABULARY:**

Add, and, carry, subtract, take way, borrow, trade, hundreds, tens, ones, column, input, output, flow diagram, table, multiply, groups, patterns.

**Learners in Grade 3 have received the following content:**

**Addition with carrying and subtraction with borrowing** – Learners have practised solving problems involving addition with carrying and subtraction with borrowing. Initially, learners used ten frames with counters/bottle tops to apply “make-a-ten” method to solve problems, but learners were encouraged to work mentally as they become more confident and efficient in working with numbers and operations.

**Addition (column method)** – Learners were introduced to the use of the column method when solving addition problems. (Simplified pictorial is used to understand the exchange/carrying in addition with column method.)

**Subtraction (column method)** – Learners were introduced to the use of the column method when solving subtraction problems. (Simplified pictorial is used to understand the exchange/borrowing in subtraction with column method.)

**Number patterns** – Learners discovered how to identify and extend number patterns. They were introduced to flow diagrams and tables to represent number patterns and to solve word problems.

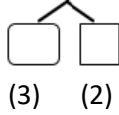
**Whole Class Activity (Done in LEARNERS EXERCISE BOOK)**

- Write  $14 + 20 = \underline{\quad}$  on the board.
- Let learners copy it and answer it mentally.
- Use a base ten kit to solve the question. (1 printed ten and 4 bottle tops in a ten frame plus 2 more printed tens.)
- Ask learners how they think they could solve this problem.
- Ask some learners to share their strategies with the class, and discuss the strategies suggested by the learners.
- Particularly emphasise the idea that the ones are not affected by adding a multiple of 10.
- **So  $14 + 20 = 34$**
- Repeat with:
  - $37 + 40 = \underline{\quad}$
  - $59 + 20 = \underline{\quad}$

**Classwork (LAB)**

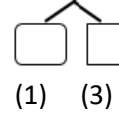
1. Fill in the numbers:
  - a. 8 and 6 is (14)
  - b. 3 and 9 is 12
  
2. Calculate:
  - a.  $15 - 7 = \square$  (8)
  - b.  $13 - 8 = \square$  (5)
  
3. Break the number down into tens and ones to find the solution:

a.  $67 + 5 = \underline{\quad}$



$(67 + 3 = 70)$ $70 + 2 = 72)$
-----------------------------------

b.  $49 + 4 = \underline{\quad}$



$(49 + 1 = 50)$ $50 + 3 = 53)$
-----------------------------------

4. Solve the problems:

- a.  $28 + 4 = (32)$
- b.  $98 + 6 = (104)$

5. Solve the following using the column method:

a)  $64 + 59 = (123)$

b)  $588 + 59 = (647)$

c)  $249 + 86 = (335)$

	H	T	O
		1	
		6	4
+		5	9
	1	2	3

	H	T	O
	1	1	
	5	8	8
+		5	9
	6	4	7

	H	T	O
	1	1	
	2	4	9
+		8	6
	3	3	5

**Homework**

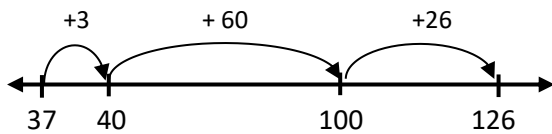
Solve the following using the column method:

a)  $29 + 78 = (107)$

	H	T	O
		1	
		2	9
+		7	8
	1	0	7

2. Solve the following by a number line:

a)  $37 + 89 = (126)$



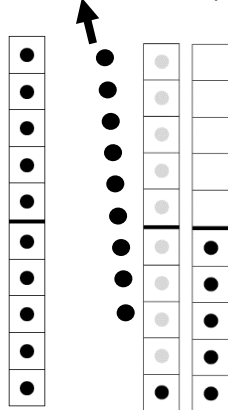
Day 2:

**SUBTRACTION WITH BORROWING (Gr. 3 TERM 1 UNIT 2)**

**Class Activity (Done in LEARNERS EXERCISE BOOK)**

- Write  $25 - 9 = \underline{\quad}$  on the board.
- Let learners represent the 25 with 2 printed ten and 5 bottle tops in a ten frame.
- Ask learners how they think they could solve this problem.
- Some learners may suggest counting backwards from 25. Try to encourage learners to move beyond counting.
- Let learners present their methodologies.
- Let learners use the make-a-ten method, i.e. replace a printed ten by 10 bottle tops. Then, remove 9 bottle tops from the ten as follows.

Remove 9 bottle tops



- From the diagram,  $25 - 9 = 10 + (10 - 9) + 5 = 10 + 1 + 5 = 16$

**Classwork (LAB)**

1. Fill in the missing numbers:

- 20 is 3 and (17)
- 20 is 16 and (4)

2. Calculate:

- $25 - 7 = \square$  (18)
- $23 - 8 = \square$  (15)

3. Break the number down into tens and ones to find the solution:

a.  $35 - 9 = \underline{\quad}$



(20) (15)

$$\begin{aligned} (15 - 9) &= 6 \\ 20 + 6 &= 26 \end{aligned}$$

b.  $76 - 8 = \underline{\quad}$



(60) (16)

$$\begin{aligned} (16 - 8) &= 8 \\ 60 + 8 &= 68 \end{aligned}$$

4. Solve the problems:

- a.  $81 - 4 = (77)$
- b.  $92 - 6 = (86)$

5. Solve using the column method:

a)  $348 - 75 = (273)$

b)  $107 - 69 = (38)$

c)  $218 - 119 = (99)$

	H	T	O	
	3	4	8	
-		7	5	
<hr/>				
	2	7	3	

	H	T	O	
	1	0	7	
-		6	9	
<hr/>				
	3	8		

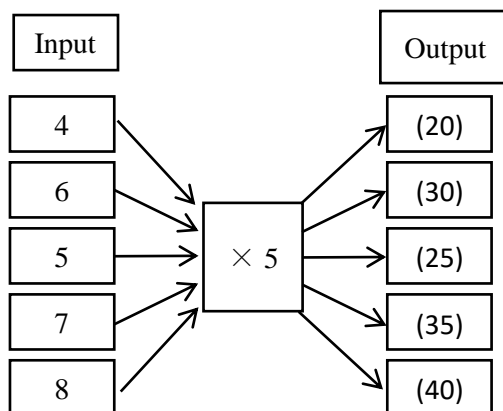
	H	T	O	
	2	1	8	
-	1	1	9	
<hr/>				
	9	9		

Day 3:

NUMBER PATTERNS (Gr. 3 TERM 1 UNIT 4)

**Whole class activity (Done in LEARNERS EXERCISE BOOK)**

- Draw the flow diagram below but do not include the numbers.
- Explain to the learners that the number in the blocks on the left are the numbers we will be working with.
- Write the numbers 4, 6, 5, 7, 8 in the rectangles as shown below.
- Discuss the arrows connecting to the square  $\times 5$ . (All of the numbers are going to be subjected to the same rule – multiply by 5.)
- Ask: **What is 4 groups of 5?** (20)
- Record this answer in the first output block.
- Continue to complete the follow diagram with the learners.
- Ask: **What pattern do you notice?** (the rule is to that the output numbers are found by multiplying the input numbers by 5. The output numbers are thus all multiples of 5)



**Classwork (LAB)**

1. Describe these patterns:

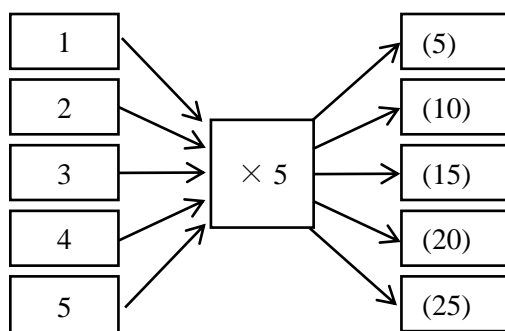
- a) b) 360, 370, 380, 390, 400,
- c) 414, 417, 420, 423,

(Counting forwards in 10s starting at 360.)  
 (Counting forwards in 3s starting at 414.)

2. Extend the patterns:

- a. 345, 350, 355, \_\_, \_\_, \_\_, \_\_ (360, 365, 370, 375)  
 b. 492, 496, 500, \_\_, \_\_, \_\_ (504, 508, 512)

6. Busi eats 5 sweets a week. How many sweets will she have eaten after 5 weeks?  
 Solve this word problem using the flow diagram and table below.



### Homework

Complete the pattern:

- 100, \_\_\_\_, 104, \_\_\_\_, 108, \_\_\_\_, 112. (102, 106, 110)
- 100, \_\_\_\_, 108, \_\_\_\_, 116, \_\_\_\_ (104, 112, 120)
- Which numbers are in both the 2s pattern and the 4s pattern. (104, 108, 112)

Day 4:

MULTIPLICATION TABLES (Gr. 3 TERM2 UNITS 1&2; TERM 3 UNIT 1)

#### VOCABULARY

Multiples, calculate, multiply, times, array, row, column.

#### CONTENT

**Multiplication tables** – Learners have practised solving problems involving multiplication tables (10 × 10). It is important for learners to become confident with these, as this will increase their efficiency in solving problems.

### Whole class activity (Done in LEARNERS EXERCISE BOOK)

#### Activity 1

- Give each learner an array diagram and 2 pieces of paper.
- Put an enlarged array diagram on the board.
- Write the following multiplication number sentence on the board:  $3 \times 4 = \underline{\quad}$
- Ask the learners to use the array diagram to help them solve the problem.
- Ask: **How did you use the array diagram to find the answer?** (Hide the diagram to show only the four columns and three rows.)
- Select a learner to come up to the board and explain to the class how they solved the problem.
- Let the learners record the number sentence and answer in their classwork books.
- Hide away some of the columns by holding paper (1) so that you leave 4 columns open. The number of columns gives us the size of the group:  $3 \times 4 = \underline{\quad}$  needs groups of 4 (see below).
- Then, hide away some of the rows, using a second piece of paper (2) as shown below. The number of rows gives us the multiple we need (in  $3 \times 4 = \underline{\quad}$  the multiple is 3×)
- Paper 2 can be moved up and down, to show different multiples of 4.
- The diagram below shows an array and papers to show  $3 \times 4 = 12$ . (NOTE: It is not  $4 \times 3$ . This would be shown by 4 rows with 3 dots in each row.)



	1	2	3	4
1	●	●	●	●
2	●	●	●	●
3	●	●	●	●

*Paper 1*

*4 columns are shown – we have 4 dots in a row.*

*Paper 2*

*Move this paper up or down to show different multiples of 4.*

*This position shows 3 groups of 4.*

- Ask the learners to discuss the following problems in pairs:
  - $4 \times 4 =$
  - $5 \times 4 =$
  - $6 \times 4 =$
  - $7 \times 4 =$
  - $8 \times 4 =$
  - $9 \times 4 =$
- Allow the learners time to use the array diagram for each problem.
- Let the learners record all the number sentences with answers in their classwork books.
- Corrections should be done on the board.
- Encourage the learners to verbalise what they are doing each time they solve a problem. It is important for the learners to be able to identify the number of rows and columns so that they can clearly verbalise the number sentences.

*The array diagram should always be used in the way shown above, i.e. by hiding unnecessary parts with paper.*

### **Activity 2 - Multiplication tables (Term 2 Units 1 & 2; Term 3 Unit 1)**

Play the 1 to 9 multiplication card game. Your teacher will explain the rules

**NOTE:** Give each learner, each pair, or each group of learners a set of multiplication cards of the 1 to 9 times tables with the answers written at the back (these should have been prepared in Term 2 and were used in the first two lessons of this term, prepare more if necessary). Activity 2 is important as it consolidates teaching on the commutative law. The intention of these activities is to help the learners to begin to memorise the multiplication tables.

#### **Rules of the game**

1. Learners work in pairs.
  - a. Learners shuffle the cards.
  - b. One learner holds up a number sentence.
  - c. The second learner must read the number sentence and give the answer.
  - d. Learners check the answer by looking at the back of the card.

- e. The second learner then holds up a number sentence card for the first learner.
  - f. Keep going until all the cards have been read.
2. Learners work in pairs.
- a. Learners shuffle the cards.
  - b. Learners lay out the cards with the answers facing up.
  - c. One learner holds up an answer.
  - d. The second learner gives a number sentence for which the answer is shown.
  - e. Learners check the number sentence by looking at the back of the card. (Note that they might find the factors written in reverse relative to what they have said because of the commutative law.)

### Classwork (LAB)

1. Calculate:

- a.  $8 \times 5 = \square$  (40)
- b.  $6 \times 6 = \square$  (36)
- c.  $7 \times 9 = \square$  (63)
- d.  $0 \times 4 = \square$  (0)

2. Complete each of the following multiplication grids.

What do you notice about row 2 and row 3 in a) - b)? – answers may vary

a)

	1	2	3	4	5	6	7	8	9	10
$\times 2$	<u>2</u>	<u>4</u>	<u>6</u>	<u>8</u>	<u>10</u>	<u>12</u>	<u>14</u>	<u>16</u>	<u>18</u>	<u>20</u>
$\times 4$	<u>4</u>	<u>8</u>	<u>12</u>	<u>16</u>	<u>20</u>	<u>24</u>	<u>28</u>	<u>32</u>	<u>36</u>	<u>40</u>

b)

	1	2	3	4	5	6	7	8	9	10
$\times 3$	<u>3</u>	<u>6</u>	<u>9</u>	<u>12</u>	<u>15</u>	<u>18</u>	<u>21</u>	<u>24</u>	<u>27</u>	<u>30</u>
$\times 6$	<u>6</u>	<u>12</u>	<u>18</u>	<u>24</u>	<u>30</u>	<u>36</u>	<u>42</u>	<u>48</u>	<u>54</u>	<u>60</u>

### Homework

Draw an array to show the multiple and write the answer below the array:

	Multiple	Array
	$7 \times 6$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: inline-block;">??????</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: inline-block;">??????</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: inline-block;">??????</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: inline-block;">??????</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: inline-block;">??????</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: inline-block;">??????</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: inline-block;">??????</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: inline-block;">??????</div>

Day 5:

**DIVISION (Gr. 3 Term 3 Unit 1)**

**VOCABULARY**

Group, grouping, share, sharing, divide

**CONTENT**

**Division (sharing)** – Learners were introduced to division as sharing. Learners need to be able to understand what a problem is asking them to do, so they need to be clear on this type of problem.

**Division (grouping)** – Learners were introduced to division as grouping. Learners need to be able to differentiate between grouping and sharing problems in order to develop strategic competence.

**Division (sharing) (Term 3 Unit 1)**

**Class Activity (Done in LEARNERS EXERCISE BOOK)**

<p>There are 42 sweets.</p> <p>Share the sweets equally between 7 learners.</p> <p>How many sweets will each learner get?</p>		<p><b>QUESTIONS TO ASK:</b></p> <ul style="list-style-type: none"> <li>• Ask: <b>What is the story about?</b> (Sweets.)</li> <li>• Ask: <b>What numbers do you see in the story?</b> (42 and 7)</li> <li>• <b>Underline</b> these numbers.</li> <li>• Ask: <b>What is the question?</b> (How many sweets will each learner get?)</li> <li>• Underline the question with <b>wavy line</b>.</li> <li>• Ask: <b>How can you solve this problem?</b> (We do division and can use the 6 times table to find the answer.)</li> </ul>
Write the number sentence.	$(42 \div 7 = \square)$	
Turn it into multiplication.	$(7 \times \boxed{6} = 42)$	
Write the answer.	(6 sweets each)	

**Classwork (LAB)**

**Division (sharing) (Term 3 Unit 1)**

1. Solve the following problems:

a.	<p>There are 36 pencils.</p> <p>Share the pencils equally between 4 learners.</p> <p>How many pencils will each learner get?</p>	
	Write the number sentence.	$(36 \div 4 = \square)$
	Turn it into multiplication.	$(4 \times \boxed{9} = 36)$
	Write the answer.	$(36 \div 4 = 9, 9 \text{ pencils})$
b.	<p>There are 48 sweets.</p> <p>Share the sweets equally between 8 learners.</p> <p>How many sweets will each learner get?</p>	
	Write the number sentence.	$(48 \div 8 = \square)$

Turn it into multiplication.	$(8 \times 6 = 48)$
Write the answer.	$(48 \div 8 = 6, 6 \text{ sweets each})$

### **Division (grouping) (Term 3 Unit 1)**

2. Solve the following problem:

There are 21 children. The children must be put in groups of 7. How many groups will there be?	
Write the number sentence.	$(21 \div 7 = \square)$
Turn it into multiplication.	$(3 \times 7 = 21)$
Write the answer.	$(21 \div 7 = 3, 3 \text{ groups})$

### **Homework**

Calculate:

- $35 \div 5 = \square$  (7)
- $54 \div 6 = \square$  (9)
- $72 \div 9 = \square$  (8)
- $40 \div 4 = \square$  (10)

Day 6:

SHARING LEADING TO FRACTIONS (Gr. 3 TERM 3 UNIT 2 ; TERM 4 UNIT 1)

#### **VOCABULARY**

Half, quarter, eighth, third, fifth, tenth, share, divide, fraction. Long, length

#### **CONTENT**

**Sharing leading to fractions** – Learners were introduced to the relationship between sharing and fractions. They need to be able to use their understanding of halving to solve fraction problems.

### **Whole Class Activity (Done in LEARNERS EXERCISE BOOK)**

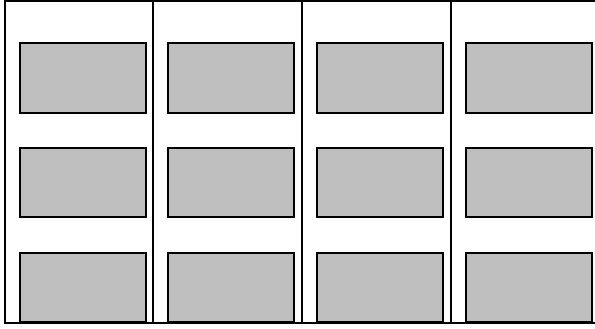
**Share 13 chocolate bars between 4 friends**

**so that they all get the same amount and there is nothing left over.**

**How many chocolate bars will they each get?**

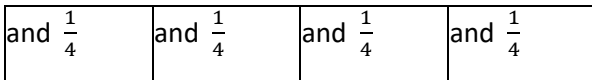
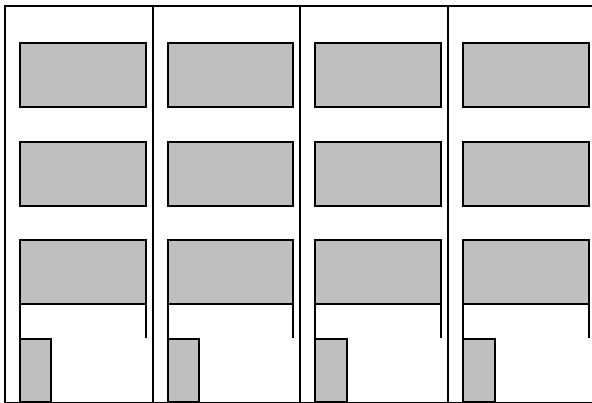
- Read the problem.
- Ask: **What is the story about?** (Chocolate.)
- Ask: **What numbers do you see in the story?** (13 and 4.)
- Underline these numbers.
- Ask: **What is the question?** (How many chocolate bars will they each get?)
- Underline the question with wavy line.
- When the learners understand the story, let them read the word problem, following after you sentence by sentence.
- Ask: **How can you solve this problem?** (We can share the chocolate equally.)
- Ask a learner to write the number sentence on the board ( $13 \div 4 = \square$ ).
- Ask: **Which multiplication table could you use to find the answer?** (4 times table.)
- Give the learners time to solve the problem.
- Ask: **Could you multiply anything by 4 to get 13?** (No because  $3 \times 4 = 12$ , and  $4 \times 4 = 16$ .)
- Ask: **Could we use  $4 \times 4$  to help us?** (No because we only have 13 chocolates, not 16.)

- Say: **So if we say  $3 \times 4 = 12$ , how many chocolates would be left over?** (1 chocolate.)



(1 chocolate left over.)

- Ask: **What must we do with that one chocolate?** (We must share it between 4 friends.)
- Ask: **How could we do that?** (We could cut it up into 4 equal parts; we can cut it into quarters.)
- Draw the following on the board to represent what the learners are describing:



Ask: **How many chocolate bars would each friend get?** (3 and  $\frac{1}{4}$  chocolate bars.)

### Classwork (LAB)

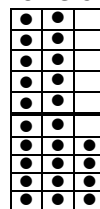
1. Solve the problem:

Themba has 24 flowers.  
She gives  $\frac{1}{2}$  of her flowers to her friend.  
How many flowers does she give to her friend?

Draw the diagram.

- Dots
- Fractions

a whole 24 flowers



	$\frac{1}{2}$	$\frac{1}{2}$
Write the number sentences to show $\frac{1}{2}$ of 24.	$(24 \div 2 = 12)$	
Write the answer.	(Themba gave 12 flowers to her friend.)	

### Homework

Shade half of each fraction strip and write the fraction:

		Fraction
a.		$\left(\frac{3}{6}\right)$
b.		$\left(\frac{4}{8}\right)$
c.		$\left(\frac{2}{4}\right)$

Day 7:

FRACTIONS (Gr. 3 TERM 3 UNIT 2)

#### VOCABULARY

Half, quarter, eighth, third, fifth, sixth, seventh, tenth, fraction

#### CONTENT

Learners have learned about unitary and non-unitary fractions. Learners have identified fractions of whole numbers and where they use division together with fractions. They have also practiced adding and subtracting fractions that have the same denominator.

You need to prepare the learners' paper strips by folding and cutting A4 scrap paper in half (along the short side of the A4 page).

Prepare the teacher's paper strip by using a sheet of flip chart paper, folded and cut into quarters along the short side of the flip chart paper.

### Whole Class Activity (Done in LEARNERS EXERCISE BOOK)

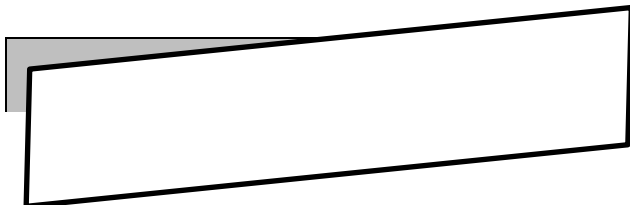
#### Activity 1

- Make sure that each learner has 2 paper strips to work with.

- Hold up a large paper strip for the learners to see.



- Fold the paper strip in half. Make sure that it is folded neatly so that the edges of the paper line up.



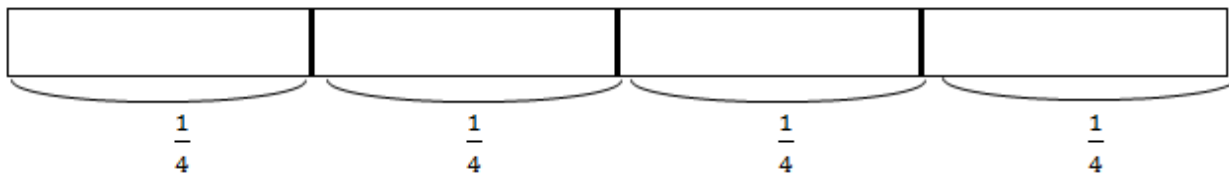
- Ask: **What can you tell me about the length of the paper strip now that I have folded it?** (It is shorter; it is half the length of the original strip.)
- Ask: **How do you know that it is half the length of the original strip?** (Because when we open it up we see 2 rectangles that are the same size, if one rectangle is laid on the other one, it fits exactly.)
- Open the strip and paste it on the board, tracing the centre line with kokie.



$$\frac{1}{2} *$$

$$\frac{1}{2} **$$

- Ask: **What do we call the half of the original paper** (indicating the left-side part of the strip)? (A half or one half.)
- Ask: **Do you remember how we write a half?** ( $\frac{1}{2}$ )
- Write  $\frac{1}{2}$  under the strip.\*
- Let the learners read  $\frac{1}{2}$  several times.
- Ask: **How about the right-side part of the strip?** (It is a half as well.)
- Write another  $\frac{1}{2}$  under the strip. \*\*
- Confirm: we have 2 equal parts in the strip.
- Let the learners fold their paper strips in half and open them.
- Let them trace a centre line with a pencil and write  $\frac{1}{2}$  in both parts.
- Fold another large paper strip in half twice.
- Open the strip and paste it under the  $\frac{1}{2}$  strip, aligning with the centre line of  $\frac{1}{2}$  strip on the board, and tracing the 3 fold lines with kokie.



$$\frac{1}{4}$$

$$\frac{1}{4}$$

$$\frac{1}{4}$$

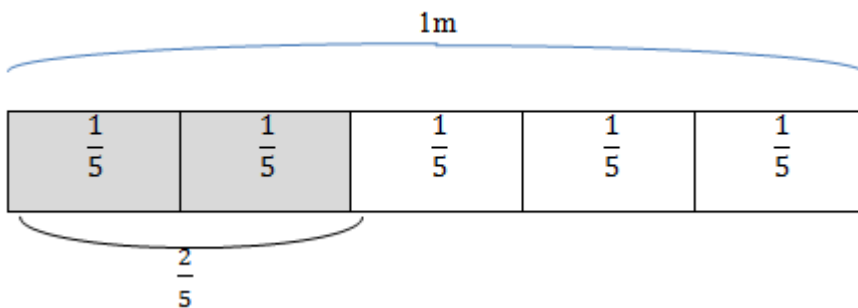
$$\frac{1}{4}$$

- Ask: **What can you tell me about paper strip now?** (It has been folded into even smaller pieces than before; there are 4 parts; all the parts are the same size.)
- Ask: **What do we call one part of the strip when it is divided into 4 equal parts?** (a quarter, one quarter, a fourth, one fourth.)
- Ask: **Do you remember how we write a quarter?** ( $\frac{1}{4}$ )

- Write  $\frac{1}{4}$  under the strip.
- Let the learners read  $\frac{1}{4}$  several times.
- Continue asking the same question for the second part, the third part and fourth part, writing  $\frac{1}{4}$  under each part.

### ACTIVITY 2 – Whole Class Activity (Done in LEARNERS EXERCISE BOOK)

- In preparation for this activity you need the second prepared strip to show fifths.
- Make sure that the learners have **an unfolded paper strip** that they will use to show fifths.
- Place the large paper strip that has the  $\frac{1}{5}$  markings on it on the board.
- Ask the learners to fold one of their paper strips to create five equally sized parts.
- Explain: **we call one of the 5 equal parts 'one fifth' and write  $\frac{1}{5}$  as you see in my strip.**
- Let the learners read and write  $\frac{1}{5}$  several times in the air.
- Let the learners write  $\frac{1}{5}$  in all 5 parts in their folded strips.
- Ask the learners to shade in two of the five equal parts.



- Let a learner show how they shaded 2 parts of  $\frac{1}{5}$ .
- Ask: **What would we call two of the parts of your 1 m paper strip?** (The learners may suggest  $\frac{2}{5}$ , from their experience with  $\frac{2}{3}$ ).
- Explain: **We read the fraction  $\frac{2}{5}$  as two fifths.**
- Write  $\frac{2}{5}$  under the large strip.
- Let the learners read  $\frac{2}{5}$  several times in the air and write it in their classwork books.
- Let the learners paste the shaded strip into their classwork books as well.
- Ask: **So, what does the bottom of the fraction number 5 tell us?** (That we divide one whole strip into 5 equal parts.)
- Ask: **So, what does the number 2 at the top of the fraction tell us?** (That we are looking at 2 parts on the 1 m paper strip.)
- Say: **So, if we are looking at 2 parts of the 1 m paper strip, then we know that they are  $\frac{2}{5}$  m of the 1 m paper strip.**

### Classwork (LAB)

1. Calculate:

- $\frac{2}{5} + \frac{1}{5} = \square \left(\frac{3}{5}\right)$
- $\frac{3}{6} + \frac{2}{6} = \square \left(\frac{5}{6}\right)$
- $\frac{7}{8} - \frac{3}{8} = \square \left(\frac{4}{8}\right)$
- $\frac{9}{10} - \frac{7}{10} = \square \left(\frac{2}{10}\right)$



2. Colour in the fraction parts. (any one block of each paper strip can be coloured in)

	Fraction	
	$\frac{1}{2}$	
	$\frac{1}{8}$	
	$\frac{1}{4}$	

3. What fraction is shaded in each diagram?

	Fraction	

4. Solve the following problem:

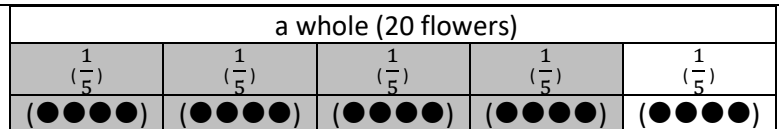
Themba has 20 flowers.

She gives  $\frac{4}{5}$  of her flowers to her teacher.

How many flowers does she give to her teacher?

Draw the diagram.

Dots
Fractions



Write the number sentences to show  $\frac{4}{5}$  of 20.

$$(20 \div 5 = 4, 4 \times 4 = 16)$$

Write the answer.

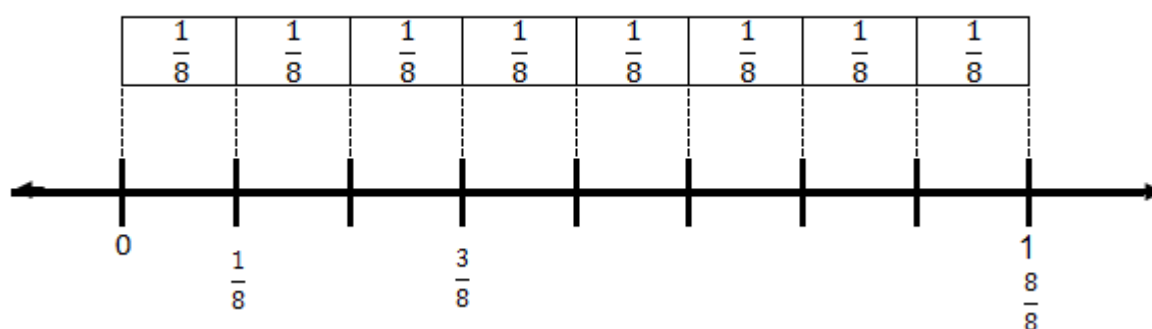
(Themba gave 16 flowers to her teacher.)

## Day 8

### FRACTIONS ON A NUMBERLINE (Gr. 3 TERM 3 UNIT 2)

#### Whole Class Activity -Learners work in pairs (Done in LEARNERS EXERCISE BOOK)

- Draw a bar diagram showing eighths on the board.
- Ask: **How many equal parts can you see on the bar diagram?** (8)
- Ask: **What do we call one of these parts on the bar diagram?** ( $\frac{1}{8}$ ; one eighth.)
- Write  $\frac{1}{8}$  on each part of the bar diagram.
- Draw a blank number line under the bar diagram on the board so that they can see the connection between the parts of the bar diagram and the lines of the number line as shown below. (NOTE: this drawing is in the LAB.)

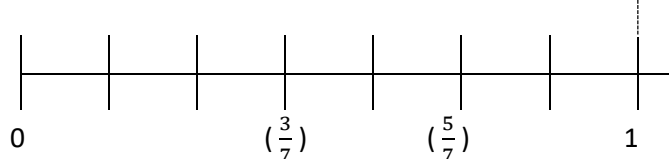
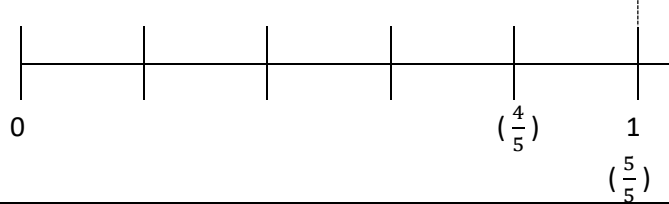
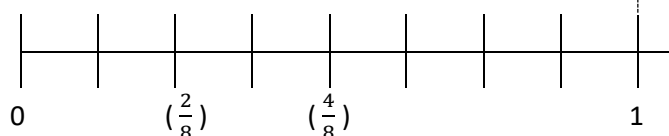


- Write 0 and 1 under the number line.
- Ask: **How many parts do you see between 0 and 1 on the number line?** (8)
- Confirm that the diagram and the number line are connected.
- Ask: **Does anyone know where we would put  $\frac{1}{8}$  on the number line?**
- Call a learner to the board to write the fraction on the number line.
- Ask: **Why do you think  $\frac{1}{8}$  must go there on the number line?** (Because the number line marker lines up with the end of the first part of the bar diagram.)
- Ask: **Where would we write  $\frac{3}{8}$  on the number line?**
- Give the learners time to discuss, then call one learner to the board to demonstrate where the fraction should go.
- Ask: **Why do you think  $\frac{3}{8}$  must go there on the number line?** (Because when I shade  $\frac{3}{8}$  of the diagram, and go down to the number line, I land on  $\frac{3}{8}$  on the number line.)
- Repeat the same activity for  $\frac{7}{8}$ .
- Give the learners time to discuss, then call one learner to the board to demonstrate where the fraction should go.
- Complete the rest of the number line between  $\frac{1}{8}$  and  $\frac{7}{8}$ .
- Ask: **Where would we write  $\frac{8}{8}$  on the number line?**
- Give the learners time to discuss, then call one learner to the board to demonstrate where the fraction should go.
- Make sure that each learner has 3 paper strips to work with.
- Hold up a large strip of paper for the learners to see.

## Classwork

### Fractions on a number line (Term 3 Unit 2)

1.

Write the fractions in the correct place on the number lines.		Which fraction is smaller?
a.	$\frac{5}{7}$ and $\frac{3}{7}$ 	$(\frac{3}{7})$
b.	$\frac{4}{5}$ and $\frac{5}{5}$ 	$(\frac{4}{5})$
c.	$\frac{2}{8}$ and $\frac{4}{8}$ 	$(\frac{2}{8})$

Day 9:

### MEASUREMENT – AREA & PERIMETER (Gr. 3 TERM 3 UNIT 3)

#### VOCABULARY

perimeter, area, estimate, investigate, centimetre, measure difference

#### CONTENT

**Measurement** – Learners revised the different aspects of measurement (time, length, mass, capacity/volume, perimeter and area) and solved problems and calculations involving measurement. In this lesson, perimeter and area will be revised as they were only introduced in Grade 3.

### Whole class activity (Done in LEARNERS EXERCISE BOOK)

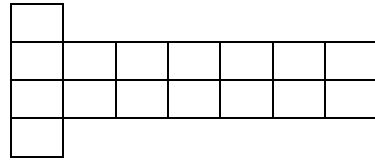
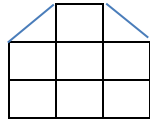
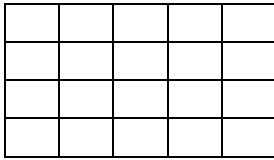
#### Activity 1 - Area

- Before the lesson, draw grids on the board with all the blocks of identical size.
- Ask the learners to help you to find out the number of squares/tiles in each drawing.
- What is the area of each of these shapes, using the given tiles in the shapes?

(20 tiles)

(8 tiles)

(16 tiles)

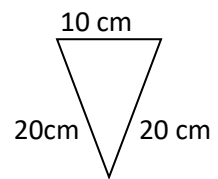
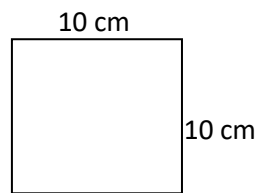
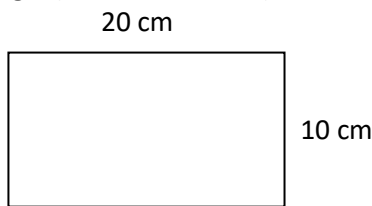


### Activity 2 – Perimeter

#### Learners work in groups

Explain that the term *perimeter* means the measurement of the distance around a shape.

- Ask the learners how they would go about working out the distance around a rectangle.
- Explain to the learners that we add the measurements of all of the sides of the rectangle together to work out the perimeter of the rectangle.
- Draw a rectangle on the board, measure each side and label the lengths of the sides. Show the learners the calculation for finding the perimeter. Do the same for a square and a triangle (illustrated below).






Rectangle:  $20\text{ cm} + 10\text{ cm} + 20\text{ cm} + 10\text{ cm} = 60\text{ cm}$

Square:  $10\text{ cm} + 10\text{ cm} + 10\text{ cm} + 10\text{ cm} = 40\text{ cm}$

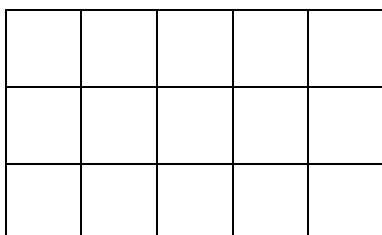
Triangle:  $20\text{ cm} + 20\text{ cm} + 10\text{ cm} = 50\text{ cm}$

#### Classwork (LAB)

First estimate, then measure the lengths. Complete the table.

	Estimate	Measure	Difference
1. 	(various)	(6½ cm)	(various)
2. 		(4 cm)	
3. 		(4½ cm)	
4. The length of my Maths Workbook.		(27½ cm)	
5. The width of my Maths Workbook.		(21 cm)	

6. What is the area of this rectangle? \_\_\_\_\_ tiles. ( 15 tiles)



7. Calculate the perimeter of this rectangle.

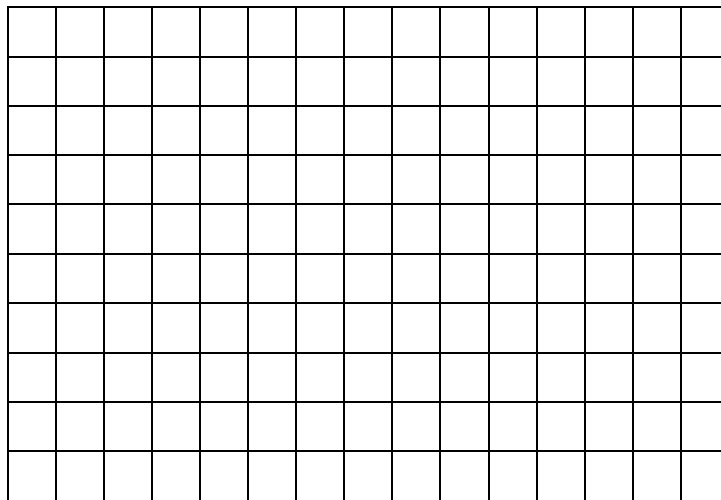
$$(9 + 9 + 4 + 4 = 26 \text{ cm}) \quad 9 \text{ cm}$$



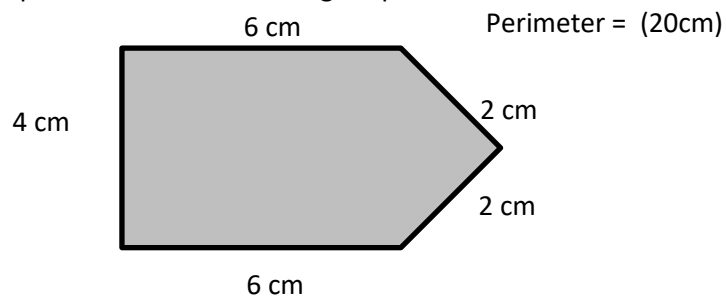
### Homework

**NOTE:** Learners answers will vary for this activity. Check that they are correct.

1. Draw **three shapes**, each with an area of **10 blocks** on the grid paper.



2. Calculate the perimeter of the following shapes.



Day :10

PROPERTIES OF 3D OBJECTS (Gr. 3 TERM 4 UNIT 4)

**VOCABULARY**

symmetry, 2-D, geometrical, non-geometrical shapes, vertical line, horizontal line, line of symmetry.

**CONTENT**

Learners revised and explored the properties of shapes and objects. These were covered in Grade 3 in term 4 . The focus of the revision will be on characteristics of 3D objects and symmetry.

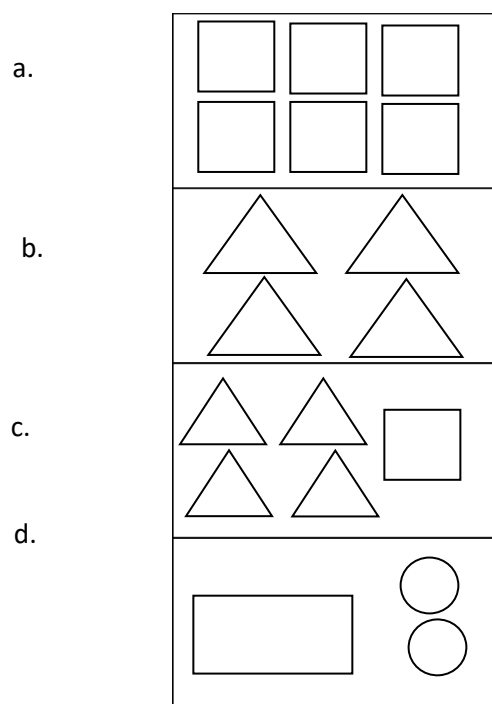
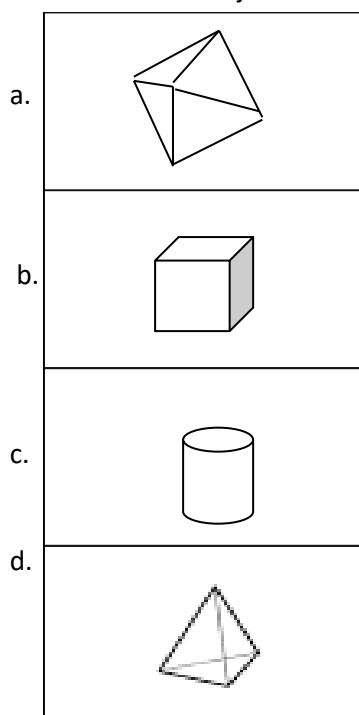
**Whole class activity (Done in LEARNERS EXERCISE BOOK)**

Hold up each 3-D object up for the class to see and discuss the shapes that form the surfaces of the object. Discuss what kind of shapes the surfaces are and whether the surfaces are curved or flat.






- **Which shapes make up the surfaces of a box/cube?** (Squares; flat.)
- **Which shapes make up the surfaces of a cylinder?** (Circles and rectangles; circles are flat, rectangles are rounded/curved.)
- **Which shapes make up the surfaces of a pyramid?** (Triangles, square/rectangle/triangles; all flat.)
- **Which shapes make up the surfaces of a cone?** (Circles, semicircles; semicircles are curved and one circle is flat.)
- **Which shapes make up the surfaces of a prism?** (Rectangles, triangles, rectangles, squares; all flat.)
- Draw the shapes on the board.
- Allow learners time to practice drawing the shapes on the board and help them if necessary.

**Classwork (LAB)**

1. Match each 3-D object with its surfaces. (a-c, b-a, c-d, d-b)



2. Write down the number and shape of the faces for each 3-D object. The first one has been done for you.

Shape	Number and shapes of the faces
	4 triangles
	(2 circles and 1 rectangle)
	(2 squares and 4 rectangles)
	(4 triangles and 1 square)
	(1 circle and 1 semi-circular shape – not exactly a semi-circle.)

### Homework activity (LAB)

1. Draw the shapes that make up this pyramid:

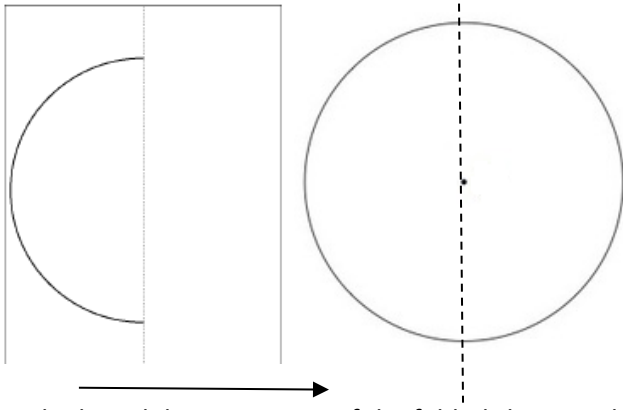


### Day 11

#### SYMMETRY (Gr. 3 TERM 2 UNIT 4)

#### Whole Class Activity (Done in LEARNERS EXERCISE BOOK)

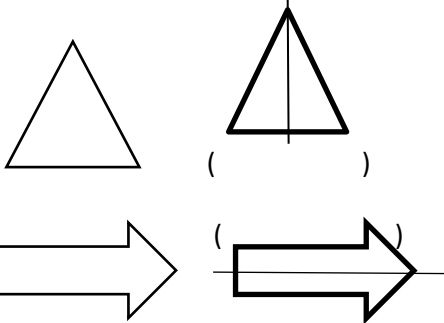
- You need a large cut-out circle for this activity – for demonstration purposes.
- Show learners a large circle and explain that you are going to fold it to find the line of symmetry.
- Fold the circle perfectly in half, so that the fold will be in the place of a line of symmetry for the circle.
- Ask: **What will the shape look like when you open it up?**
- Ask: **How would you do a drawing of the shape with its line of symmetry?**
- Unfold the circle and examine the fold line that represents a line of symmetry.
- Once you have worked with the concrete shape, do the drawings.
- On the drawings mark the lines of symmetry.



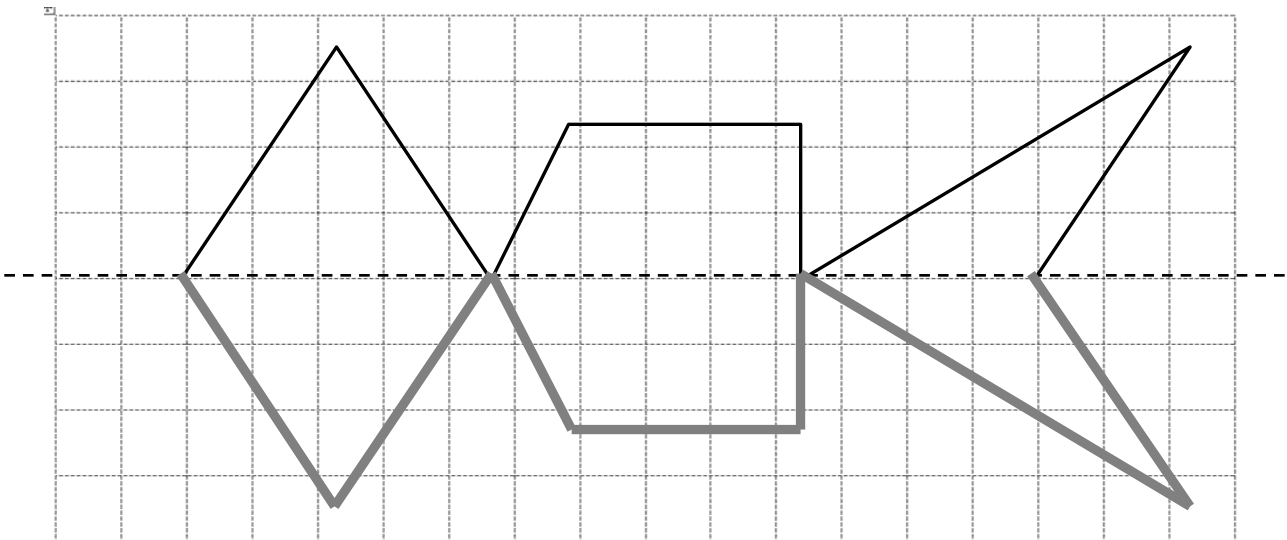
- On the board draw a picture of the folded shape and the unfolded shape with the line of symmetry in its place.
- Ask: **Could I fold the shape in another place to find a different line of symmetry?** (Yes, I could fold it many ways and find a line of symmetry. Demonstrate.)

### Classwork (LAB)

3. Draw the line of symmetry.



4. Draw the other part of the shape to make a symmetrical figure.



### Homework



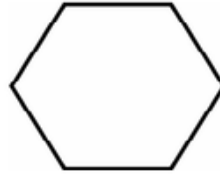
1. Which of the diagrams below are symmetrical in shape?



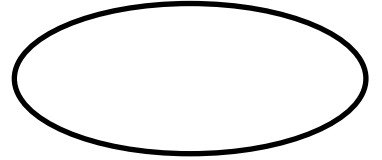
A



B



C



D

A;B;C;D

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