

# Mathematics

## *Teacher's Guide 2*

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## FOREWORD

I am delighted to present to you this Teacher's Guide, which is developed by the Ministry of General Education and Instruction based on the new South Sudan National Curriculum. The National Curriculum is a learner-centered curriculum that aims to meet the needs and aspirations of the new nation. In particular, it aims to develop (a) Good citizens; (b) successful lifelong learners; (c) creative, active and productive individuals; and (d) Environmentally responsible members of our society. This textbook, like many others, has been designed to contribute to achievement of these noble aims. It has been revised thoroughly by our Subject Panels, is deemed to be fit for the purpose and has been recommended to me for approval. Therefore, I hereby grant my approval. This Teacher's Guide shall be used to facilitate learning for learners in all schools of the Republic of South Sudan, except international schools, with effect from 4th February, 2019.

I am deeply grateful to the staff of the Ministry of General Education and Instruction, especially Mr Michael Lopuke Lotyam Longolio, the Undersecretary of the Ministry, the staff of the Curriculum Development Centre, under the supervision of Mr Omot Okony Olok, the Director General for Quality Assurance and Standards, the Subject Panelists, the Curriculum Foundation (UK), under the able leadership of Dr Brian Male, for providing professional guidance throughout the process of the development of National Curriculum, school textbooks and Teachers' Guides for the Republic of South Sudan since 2013. I wish to thank UNICEF South Sudan for managing the project funded by the Global Partnership in Education so well and funding the development of the National Curriculum, the new textbooks and Teachers' Guides. I am equally grateful for the support provided by Mr Tony Calderbank, the former Country Director of the British Council, South Sudan; Sir Richard Arden, Senior Education Advisor of DfID, South Sudan. I thank Longhorn and Mountain Top publishers in Kenya for working closely with the Ministry, the Subject Panels, UNICEF and the Curriculum Foundation UK to write the new textbooks. Finally, I thank the former Ministers of Education, Hon. Joseph Ukel Abango and Hon. Dr John Gai Nyuot Yoh, for supporting me, in my role as the Undersecretary, to lead the Technical Committee to develop and complete the consultations on the new National Curriculum Framework by 29 November 2013.

The Ministry of General Education and Instruction, Republic of South Sudan, is most grateful to all these key stakeholders for their overwhelming support to the design and development of this historic South Sudan National Curriculum. This historic reform in South Sudan's education system is intended to benefit the people of South Sudan, especially the children and youth and the future generations. It shall enhance the quality of education in the country to promote peace, justice, liberty and prosperity for all. I urge all Teachers to put this textbook to good use.

May God bless South Sudan. May He help our Teachers to inspire, educate and transform the lives of all the children and youth of South Sudan.



Deng Deng Hoc Yai, (Hon.)

Minister of General Education and Instruction, Republic of South Sudan

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# INTRODUCTION

This Primary 2 Mathematics teacher's guide will be used alongside the learner's book. It places the learner at the centre of learning as he or she solves mathematical problems.

The learning activities are based on a variety of situations familiar to the learners. Teaching is an interesting endeavour that requires creativity. Try to relate Mathematics activities and problems to relevant, real-life situations.

## Components of the book

This primary two mathematics book contains 3 different units each with its own sub unit. Each unit is strategically integrated with discussion sessions with activities that will help further the learners understanding.

The unit are as outlined below.

Primary 2 Mathematics	
Unit	Title
1	Numbers: place value and operations
2	Measurement: metric units, money and time
3	Geometry: common shapes

This teacher's book entails detailed notes covering all the 3 units.

Each unit and sub unit is outlined for the learning of each child as per their criteria of understanding. The teacher's guide book explains in detail about all the information in the mathematics book.

The learner's book also has a series of exercises that come at the very end of each sub-topic and their answers are provided in this teachers guide.

## Purpose

This Teacher's Guide must be used in conjunction with the Mathematics learner's book. Its main purpose is to help you to implement the syllabus in your classroom.

This guide provides you with guidelines to help you plan and develop teaching and learning activities for the achievement of the learning outcomes. It also provides you with information and processes to:

### Mathematics teaching and learning strategies

#### a) Problem-based learning

Using this strategy, you can set a problem or a task for the class to solve.

#### Steps

- ✍ Brainstorm learners' ideas and record them on the board.
- ✍ Ask related questions such as, "How many different multiplication strategies can you find?"
- ✍ Have learners carry out the investigation in groups and report back to the class.

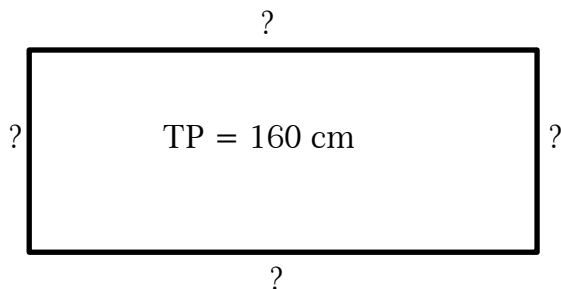
To make the learning explicit, it is important that you create a summary of what has been learnt from solving the problem.

#### b) Open-ended questions

Closed questions, commonly used in Mathematics lessons, only have one answer.

Open-ended questions can have more than one answer and the variety of possible answers allows learners to make important discoveries.

An example of an open-ended question is:



‘The total perimeter of the rectangle above is 160 cm.

Opposite sides are equal in length. What would be the lengths of the sides of the rectangle? How many different answers can you find?’

One answer could be **50 cm × 2 + 30 cm 2**.

If a learner comes up with one answer and stops, ask the class if anyone had a different answer. How many different answers are possible?

You may allow the learners to discuss their answers in groups and agree on an answer for presentation and discussion.

One open-ended question can provide many answers for learners to find and provides them with practice basic skills.

### c) Group work

The purpose of group work is to give learners opportunities to share ideas and at the same time learn from other group members.

Every group should have a leader to supervise the group’s activities. The leader would, for example, delegate tasks and consult you for assistance.

Group activities can take place inside or outside the classroom. A good example of a group activity would be drawing shapes such as squares and rectangles, and making models of common three-dimensional shapes such as cubes or cones.

Groups of learners could also use a soccer field to measure distance and perimeter using traditional methods of measuring such as with strings and sticks.

This will not only ensure participation by all learners but also gives room for collaborative learning and talk. When grouping, bear in mind their special educational needs, gender balance and their abilities. Groups should never be too large.

**d) Peer teaching and learning**

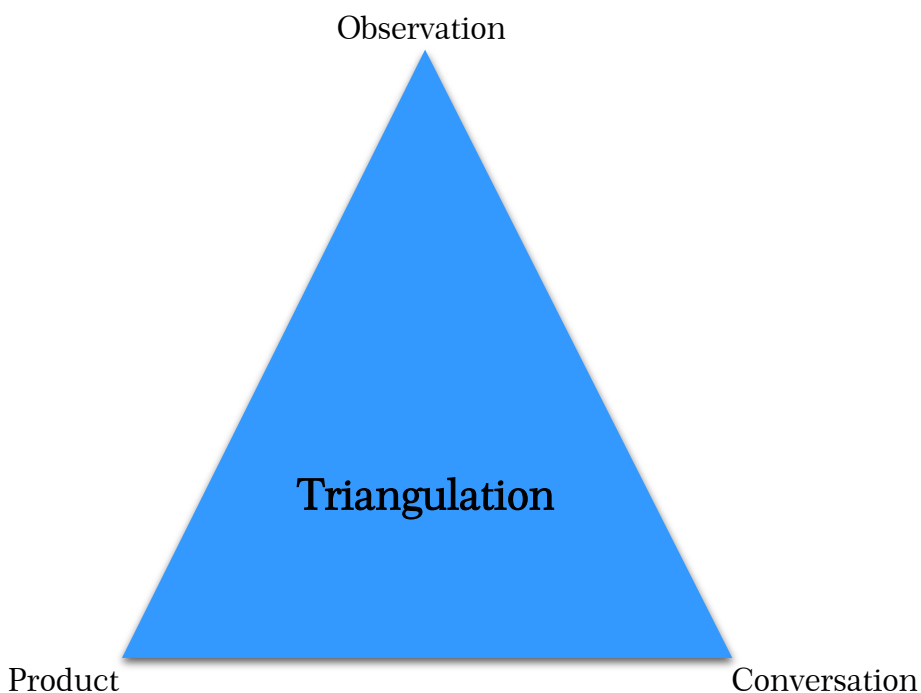
This is organised as a partnership activity in which one learner performs a task while the other observes and assist; making corrections and suggesting new ideas and changes. For example, one learner decides to multiply three-digit numbers by two-digit numbers. The learner who is observing should assist and make sure that all the steps are followed before the final answer is given. The teacher's role in this strategy is to observe and encourage positive interaction and effective communication through which the intended outcome can be achieved.

You are advised to set additional exercises depending on the learner's learning abilities.



## MAKING CLASSROOM ASSESSMENT

- Observation – watching learners as they work to assess the skills learners are developing.
- Conversation – asking questions and talking to learners is good for assessing knowledge and understanding of the learner.
- Product – appraising the learner’s work (writing report or finding, mathematics calculation, presentation, drawing diagram, etc).



To find these opportunities, look at the “Learn About’ sections of the syllabus units. These describe the learning that is expected and in doing so they set out a range of opportunities for the three forms of opportunity.

# UNIT 1:

# NUMBERS

Maths Primary 2	Unit 1: Numbers
<p><b>Learn about</b></p>	<p><b>Key inquiry questions</b></p>
<p>Learners engage in a wide range of practical activities (<i>counting objects, measuring, shopping, sorting and matching</i>) to develop their ability to read, write and order numbers up to three digits to 100.</p> <p>They should use a number line to investigate the relationship of numbers, and to add numbers involving carrying and subtraction without borrowing. They should apply these skills in a range of practical situations throughout the year. They should build on their understanding to estimate numbers and round off numbers to the nearest ten and hundred.</p> <p>Learners should work together to sort objects into groups to investigate multiplication facts up to <math>10 \times 10</math> (<i>3 groups of 5 is the same as 5 groups of 3 etc; Some numbers can be grouped exactly, some cannot etc</i>). They should use these experiences to understand that multiplication can be seen as repeated addition. Practical work of this kind will help them internalize division facts of numbers up to 100 by numbers not exceeding 10.</p> <p>They should work in groups to use a 100 square to investigate the patterns of the different multiplication tables and relate these to the objects in the groups (<i>eg noticing that in the sequence 09, 18, 27 ... the second digit decreases by one, and the digits always add to 9</i>)</p>	<ul style="list-style-type: none"> <li>• Can you write and read any number with 3 digits?</li> <li>• How do you arrange numbers in ascending or descending order?</li> <li>• How do we round numbers to the nearest tens and hundreds?</li> <li>• How do you add a three digit numbers with one carrying??</li> <li>• What are the multiples in the table of 2 to 10 numbers?</li> <li>• How do you divide numbers up to 100 by numbers not exceeding 10?</li> <li>• What is a fraction?</li> </ul>

Learners should engage in a wide range of practical activities to investigate dividing an object into two parts and each part into two parts and develop the concept of fraction as part of a whole.		
<b>Learning outcomes</b>		
<b>Knowledge and understanding</b>	<b>Skills</b>	<b>Attitudes</b>
<ul style="list-style-type: none"> <li>Recall multiplication facts up to 10x10</li> <li>Know division facts for-numbers up 100 by numbers not exceeding 10</li> <li>Understand fractions (half and quarter as a part of a whole)</li> </ul>	<ul style="list-style-type: none"> <li>Read, write, compare and order numbers up to 3 digits</li> <li>Round off numbers to the nearest tens and hundreds</li> <li>Carry out addition involving carrying</li> <li>Carry out subtraction without borrowing</li> <li>Use number lines to add and subtract numbers</li> </ul>	<ul style="list-style-type: none"> <li>Appreciate the importance of the use of mathematics in daily life</li> </ul>
<p><b>Contribution to the competencies:</b>  <u>Critical thinking:</u> enhanced through problem solving in the four operations  <u>Communication:</u> skills improved through discussion  <u>Co-operation:</u> during group activities</p>		
<p><b>Links to other subjects:</b>  <u>Life skills</u> through shopping activities</p>		

### Objectives

By the end of this unit, the learner should be able to:

- Read and write numbers up to four digits
- Write the place value of the digits in a 3 digit number
- Compare numbers using greater or less than or equal to.
- Arrange numbers in ascending and descending orders
- Carry out addition involving carrying
- Carry out subtraction without borrowing
- Use number lines to add and subtract numbers

## 1.1 Reading 3 digit numbers

Ask learners what they remember from their previous learning on reading digits. This will help you help the learners understand that it is a continuation from primary 1.

**Materials:** Bundles of sticks and number cards

**Activities:**

1. Revise counting reading and writing numbers 1 to 10 in words.
2. Learners count orally numbers, list the symbols on the chalkboard, call on learners to read the numbers and show them how to write the numbers in words.
3. Hold number cards for the learners to say the number name of digits up to 3 digits.

### UNIT 1: NUMBERS

**1.1 Reading 3 digit numbers**

**Activity 1**

In pairs, read the numbers you can see in the pictures below. What do they mean?



Buy Ariel 500gms @ 130/- SAVE 30/-

Buy Ariel 1kg @ 230/- SAVE 60/-

CHICKEN PIECES			FAMILY DEAL	
2 Piece 369	3 Piece 550	9 Piece 1300	8 Piece Crispy Chicken & Chips 1,600	

WRAPS		HOT DOGS		SIGNATURE LEMONADES	
Wraps Crispy Chicken 400	Wraps Chicken & Veggie 675	Hot Dog 390	Hot Dog Black Combo 450	Lemonade 200ml 200ml 200ml 200ml 200ml	Lemonade 200ml 200ml 200ml 200ml 200ml

1

### Activity 2

In pairs, read the following numbers.

110	120	130	140	150	160	170	180	190	200
210	220	230	240	250	260	270	280	290	300
310	320	330	340	350	360	370	380	390	400
410	420	430	440	450	460	470	480	490	500
510	520	530	540	550	560	570	580	590	600
610	620	630	640	650	660	670	680	690	700
710	720	730	740	750	760	770	780	790	800
810	820	830	840	850	860	870	880	890	900
910	920	930	940	950	960	970	980	990	991
992	993	994	995	996	997	998	999		

1. What do you notice?
2. What are you counting in?

2

### Activity 1

This activity should be completed in pairs. Learners identify and read the number in the picture. Guide learners in talking about what the numbers represent.

## Activity 2

Learners to complete this activity in pairs. Let the pairs take turns identifying and saying the missing numbers.

### Activity 3

In pairs, say the missing numbers.

130				134				139
250						256		259
320		322						329
440					445			449
560			563					569
610								618
780								789
870							877	
990								999
515			518		520		522	524
926		928				932		935
237				241				245
619			622					628
425					430			434

## Activity 3

Learners to complete this activity in pairs. Let the pairs take turns identifying and saying the numbers.

## Activity 4

Learners to complete this activity in pairs. Guide the learners in reading out loud the number names. Correct any pronunciation mistakes.

This work can be done on a manila paper for presentation after the lesson.

- a) Twelve   12
- b) Thirteen  13
- c) Seventeen  17

- d) Twenty six  26
- e) Thirty four  34
- f) Forty seven  47
- g) Fifty one  51
- h) Sixty six  66
- i) Ninety seven  97
- j) eighty two  82

## 1.2 Writing 3 digit numbers

### Activity 2

Read and write in words in your exercise book. Work in pairs.

- |        |        |
|--------|--------|
| a) 216 | e) 693 |
| b) 942 | f) 621 |
| c) 371 | g) 512 |
| d) 415 | h) 741 |

### Activity 3

Read and write the numbers in words. Work in pairs.

- |       |       |
|-------|-------|
| a) 27 | f) 68 |
| b) 34 | g) 59 |
| c) 76 | h) 48 |
| d) 91 | i) 14 |
| e) 53 | j) 85 |

### Activity 4

Copy, read the number name and match with the correct number symbol. Work individually.

One hundred	800
Four hundred	200
Six hundred	300
Two hundred	500
Eight hundred	900
Five hundred	700
Three hundred	600
Nine hundred	400
Seven hundred	100

### Activity 1

Learners to complete this activity in pairs. This activity tasks the learners with writing number. Guide the learners writing the numbers. This work can be done on a manila paper for presentation after the lesson.

- a) 254
- b) 341
- c) 513
- d) 671
- e) 123
- f) 466
- g) 732
- h) 912
- i) 834

5

### Activity 2

Learners to complete this activity in pairs. This activity tasks the learners with writing number names. Guide the learners writing the numbers. This work can be done on a manila paper for presentation after the lesson. Check that learners use the hyphen properly when writing the number names.

- a) 27 **\_\_\_twenty-seven**
- b) 34 **\_\_thirty-four**
- c) 76 **\_seventy-six**
- d) 91 **\_\_ninety-one**
- e) 53 **\_\_\_fifty-three**
- f) 68 **\_sixty-eight**
- g) 59 **\_\_fifty-nine**
- h) 48 **\_\_\_Forty-eight**
- i) 14 **\_\_fourteen**
- j) 85 **\_\_Eighty-five**

### Activity 3

---

Learners to complete this activity in pairs. This activity tasks the learners with writing number names. Guide the learners writing the numbers. This work can be done on a manila paper for presentation after the lesson. Check that learners use the hyphen properly when writing the number names.

- a) 216 **\_two hundred and sixteen**
- b) 942 **\_nine hundred and forty-two**
- c) 371 **\_three hundred and seventy-one**
- d) 415 **four hundred and fifteen**
- e) 693 **\_six hundred and ninety-three**
- f) 621 **\_six hundred and twenty-one**
- g) 512 **\_five hundred and twelve**
- h) 741 **\_seven hundred and forty-one**

### Activity 4

---

Learners to complete this activity individually. This activity tasks the learners with recognizing and matching number names with the symbols. Guide the learners this matching activity. This work can be done on a manila paper for presentation after the lesson.

## 1.3 Ordering numbers

### 1.3 Ordering numbers

#### Activity 1: Work in pairs.

**1. Arrange the numbers from the smallest to the largest.**

- a) 4, 6, 2, 3, 7, 10, 23, 5
- b) 13, 79, 46, 32, 102, 314
- c) 400, 200, 600, 900, 100, 300, 500,
- d) 830, 340, 513, 570, 215, 184

**1. Write the numbers missing in the following sequence.**

- a) 100, \_\_\_\_\_, 102, 103, \_\_\_\_\_, 105, \_\_\_\_\_.
- b) 210, \_\_\_\_\_, 212, \_\_\_\_\_, \_\_\_\_\_, 215
- c) 350, 351, \_\_\_\_\_, \_\_\_\_\_, 354, \_\_\_\_\_, 356
- d) 444, \_\_\_\_\_, 446, 447, \_\_\_\_\_, \_\_\_\_\_
- e) 596, \_\_\_\_\_, 598, \_\_\_\_\_, 600, 601, \_\_\_\_\_

**2. Write the next five numbers in the following sequence.**

- a) 970, 971, 972, 973, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.
- b) 777, 778, 779, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.
- c) 640, 641, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.
- d) 888, 889, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
- e) 300, 350, 400, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**3. Write these numbers from the smallest to the largest.**

932    427    16    4    23    271

**4. Write these numbers from the largest to the smallest.**

6

- a) 101, 104, 106
- b) 211, 213, 214
- c) 352, 353, 355
- d) 445, 448, 449
- e) 597, 599, 602

**3. Write the next five numbers in the following sequence.**

- a) 974, 975, 976, 977, 978
- b) 780, 781, 782, 783, 784
- c) 642, 643, 644, 645, 646
- d) 890, 891, 892, 893, 894
- e) 450, 500, 550, 600, 650

**4. Write these numbers from the smallest to the largest.**

4, 16, 23, 271, 427, 932

### Activity 1

Learners to complete this activity in pairs. This activity tasks the learners with recognizing the order and sequence of numbers. Guide the learners in ordering numbers. This work can be done on a manila paper for presentation after the lesson.

**1. Arrange the numbers from the smallest to the largest**

- a) 2, 3, 4, 5, 6, 7, 10, 23
- b) 13, 32, 46, 79, 102, 314
- c) 100, 200, 300, 400, 500, 600, 900
- d) 184, 215, 340, 513, 570, 830

**2. Write the numbers missing in the following sequence.**



402 204 871 13 112 316 9

5. Circle the smallest number in each of the following.

- a) 110      42      250      12      300  
b) 567      704      648      900      130  
c) 305      478      500      220      700  
d) 352      147      526      190      999  
e) 905      840      492      570      955

6. Which one is greater?

- a) 150 or 900  
b) 915 or 205  
c) 500 or 100  
d) 400 or 660  
e) 250 or 70  
f) 325 or 700

7. Study the table below and answer the questions that follow.

658	350	470
824	176	629
217	962	708
579	309	156

a) State a number that is between 300 and 350.

5. Write these numbers from the largest to the smallest

871, 402, 316, 204, 112, 13, 9

6. Circle the smallest number

- a) 12      d) 147  
b) 130      e) 492  
c) 220

7. Which one is greater?

- a) 900      d) 915  
b) 500      e) 660  
c) 250      f) 700

7

## 1.4 Addition & subtraction by using number line

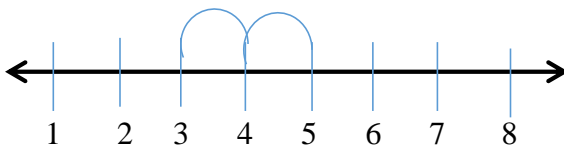
### Activity 1

Draw number line on the board. Let the learners count to the right while adding numbers and count to the left while subtracting.

### Activity 2

For this exercise, let the learners show movement towards the right while adding and movement towards the left while subtracting

a)  $3+2=5$



b)  $4+1=5$

c)  $2+3=5$

d)  $6+2=8$

e)  $5+2=7$

2. Add using number line

a)  $10+4=14$

b)  $21+3=24$

c)  $30+5=35$

d)  $52+6=58$

e)  $46+2=48$

3. Add these numbers using a number line

a)  $120+4=124$

b)  $130+3=133$

c)  $145+5=150$

d)  $160+7=167$

4. Subtract using number line

a)  $9-3=6$

b)  $10-6=4$

c)  $7-2=5$

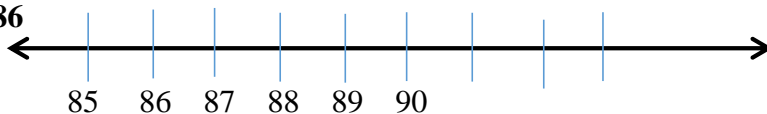
d)  $5-4=1$

4. Subtract

a)  $20-5=15$

b)  $37-6=31$

c)  $90-4=86$



a)  $16-2=14$

b)  $40-3=37$

c)  $77-7=70$

d)  $51-5=46$

e)  $44-4=40$

6. Subtract using number line

a)  $142-7=135$

b)  $100-10=90$

- b) State all the numbers which are even.
- c) State all the numbers that are odd.
- d) State the numbers which are less than 200.
- e) State a number that is above 500.

1.4 Addition & subtraction by using number line

Activity 1: Whole class activity.



Go outside. Stand in a straight line to form a number line.

- c)  $115 - 5 = 110$
- d)  $230 - 6 = 224$
- e)  $310 - 8 = 302$

## 1.5 Place value

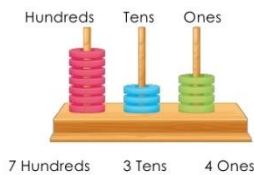
**Materials:** Number cards, locally made abacus

**Activities:**

- i. Remind learners on place value of numbers up to 3 digits
- ii. Write numbers on the chalkboard and let the learners give the place values
- iii. Guide learners on how to give place value of numbers up to 4 digits
- iv. Show number card for the learners to give the place values
- v. Let learners copy and complete the exercise in the pupils' book

### 1.5 Place value

We can use the abacus to represent 734.



7 is the **hundred** place digit  
 So, the place value of 7 = 7 **hundred** or 700  
 3 is the **tens** place digit  
 So, the place value of 3 = 3 **tens** or 30  
 4 is the **ones** place digit  
 So, the place value of 4 = 4 **ones** or 4

We can also use bottle tops to represent the place value of the same number. In groups, collect bottle tops. Arrange them to show the place value of 734.



12

### Example

349

Number	place value
3	Hundreds
4	Tens
9	Ones

In pairs, collect locally available objects and use them to make an abacus. Use it to write the numbers in the abacus below.



### Activity 1

1. Complete the following table. Work in pairs.

number	hundreds	tens	ones
634			
271			
304			
529			
613			
473			
791			
358			
890			

13

## Activity 1

Guide learners to collect locally available materials and make an abacus. Then let them use them to fill in the table.

1. Copy and complete the following table. To be completed in pairs.

number	ones	tens	hundreds
634	4	3	6
271	1	7	2
304	4	0	3
529	9	2	5
613	3	1	6
473	3	7	4
791	1	9	7
358	8	5	3
890	0	9	8

### Activity 2

Give the place value of the number in bold. Work in pairs.

- a) 32**1**=Tens
- b) **632**
- c) **423**
- d) 216
- e) **572**
- f) **736**
- g) **914**

Activity 3: Work in pairs.

What is the place value of each digit?

- 1. **92** = \_\_\_\_\_ tens \_\_\_\_\_ ones
- 2. **908** = \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones
- 3. **80** = \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones
- 4. **115** = \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones
- 5. **3** = \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones
- 6. 500 = \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones

## Activity 2

Give the place value of the number in bold/underlined

- a) 321=Tens
- b) **632**= Ones
- c) **423**= Hundreds
- d) 216= Tens
- e) **572**= Ones
- f) 736= Tens
- g) **914**= Hundreds

### Activity 3

What is the place value of each digit?

1. **92** = 9 tens 2 ones
2. **908** = 9 hundreds 0 tens 8 ones
3. **80** = 0 hundreds 8 tens 0 ones
4. **115** = 1 hundreds 1 tens 5 ones
5. **3** = 0 hundreds 0 tens 3 ones
6. **500** = 5 hundreds 0 tens 0 ones

#### Activity 4

In groups, determine the place value of digit 5 in these numbers.

- |                      |                     |
|----------------------|---------------------|
| a) <b>205</b> _____  | f) <b>592</b> _____ |
| b) <b>571</b> _____  | g) <b>856</b> _____ |
| c) <b>795</b> _____  | h) <b>625</b> _____ |
| d) <b>1245</b> _____ | i) <b>517</b> _____ |
| e) <b>965</b> _____  | j) <b>215</b> _____ |

#### Activity 5: Work in groups

1. Write the place value of the underlined digit in these numbers.

- |                      |                      |
|----------------------|----------------------|
| a) <b>1<u>6</u>4</b> | f) <b>2<u>8</u>8</b> |
| b) <b>2<u>7</u>0</b> | g) <b>1<u>7</u>2</b> |
| c) <b>9<u>1</u>2</b> | h) <b>2<u>1</u>2</b> |
| d) <b>7<u>2</u>1</b> | i) <b>8<u>1</u>2</b> |
| e) <b>1<u>0</u>0</b> |                      |

2. Write the digit that represents place value of ones in these numbers.

- |               |               |
|---------------|---------------|
| a) <b>47</b>  | e) <b>99</b>  |
| b) <b>940</b> | f) <b>510</b> |
| c) <b>69</b>  | g) <b>451</b> |
| d) <b>881</b> | h) <b>172</b> |

3. Write the digit that represents place value of tens in these numbers.

- |                     |                     |
|---------------------|---------------------|
| a) <b>174</b> _____ | b) <b>696</b> _____ |
|---------------------|---------------------|

#### Activity 4

In groups, determine the place value of digit 5 in these numbers.

- a) **205** ones
- b) **571** hundreds
- c) **795** ones
- d) **245** ones
- e) **965** ones
- f) **592** hundreds
- g) **856** tens
- h) **625** ones
- i) **517** hundreds
- j) **215** ones

### Activity 5: Work in groups

---

- Write the place value of the underlined digit in these numbers.
  - 164 tens
  - 270 ones
  - 912 tens
  - 791 tens
  - 100 ones
  - 288 tens
  - 179 ones
  - 219 ones
  - 812 hundreds
- Write the digit that represents place value of ones in these numbers.
  - 47 -7
  - 940 -0
  - 69 -9
  - 881 -1
  - 99 -9
  - 510 -0
  - 451 -1
  - 172 -2
- Write the digit that represents place value of tens in these numbers.
  - 174 7 \_\_\_\_\_
  - 696 9 \_\_\_\_\_
  - 21 2 \_\_\_\_\_
  - 265 6 \_\_\_\_\_
  - 100 0 \_\_\_\_\_
  - 219 1 \_\_\_\_\_
- Write the digit that represents place value of hundreds in these numbers.
  - 605 6 \_\_\_\_\_
  - 261 2 \_\_\_\_\_
  - 805 8 \_\_\_\_\_
  - 206 2 \_\_\_\_\_
  - 989 9 \_\_\_\_\_
  - 999 9 \_\_\_\_\_

## 1.6 Addition of numbers up to 3 digits

### Activity 1

---

Guide learners in the steps involved in the addition of 3 digit numbers as shown below. Learners to follow and talk about the examples in the Pupil's Book in pairs.

Add  $26 + 37$

1. Re-arrange the numbers as shown below.

$$\begin{array}{r} 26 \\ + 37 \\ \hline \\ \hline \end{array}$$

2. Add the ones digits.

$$6 + 7 = 13$$

3. Write 3 which represent the ones digit in the space just below 6 and 7.
4. Carry forward 1 from 13 because it represents the tens digits.
5. Add 1 which is a tens digit to the other 6 is a tens digit, write it directly below the other tens digit 2 and 3.

The answer to  $26 + 37$  is therefore **63**.

$$26 + 37 = 63$$

$384 + 208$

1. Re-arrange the numbers.

$$\begin{array}{r} 384 \\ + 208 \\ \hline \\ \hline \end{array}$$

2. Add the ones digit  $4+8=12$
3. Write 2 which is the ones digit and carry 1 forward.
4. Add  $1+8+0=9$
5. Add  $3+2=5$

$$384 + 208 = 592$$

## Activity 2

Guide learners to use the examples they have discussed and worked out to apply the same steps to do the activity.

Learners to complete the activity in pairs.

1. Add

- a)  $241 + 12 = 253$
- b)  $319 + 23 = 342$
- c)  $472 + 42 = 514$
- d)  $615 + 236 = 851$
- e)  $927 + 26 = 953$

2. Add the following

a)  $629 + 241 = 870$

b)  $328 + 207 = 535$

c)  $417 + 234 = 651$

d)  $632 + 194 = 826$

e)  $184 + 341 = 525$

f)  $376 + 293 = 669$

### Activity 3

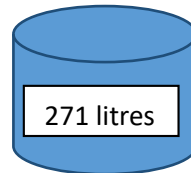
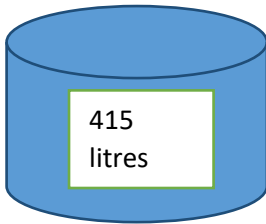
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#### Word problems

1. John has 300 mangoes. Jane has 415 mangoes. How many mangoes do they have all together?

= **715 mangoes**

2. A container carries 415 litres of water. Another container carries 271 litres of water. How many litres of water can both of them carry together?

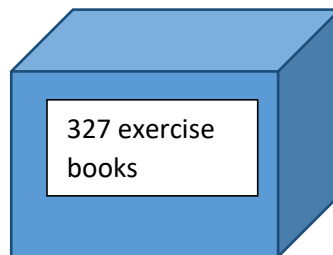
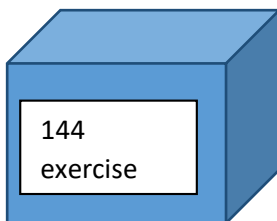


= **686 litres**

3. Deng has 512 shillings. Elizabeth has 269 shillings. How many shillings do they have all together?

= **781 shillings**

4. A box has 144 exercise books. Another box has 327 exercise books. How many books are there all together?



= **471 exercise books**

5. A school has 436 pupils. Another school has 481 pupils. How many pupils are there all together?

= **917 pupils**



6. A primary school has 372 boys and 263 girls. How many boys and girls are there all together?  
**=635 boys and girls**

## 1.7 Subtraction of numbers up to 3 digits without borrowing

### Activity 1

---

#### 1. Subtract the following.

- a)  $74-42= 32$
- b)  $43-20= 23$
- c)  $327-16= 311$
- d)  $459-42= 417$
- e)  $871-620= 251$
- f)  $576-321= 255$
- g)  $437-215= 222$
- h)  $691-471= 220$
- i)  $784-243= 541$
- j)  $634-231= 403$
- k)  $568-327= 241$
- l)  $972-341= 631$

### Activity 2

---

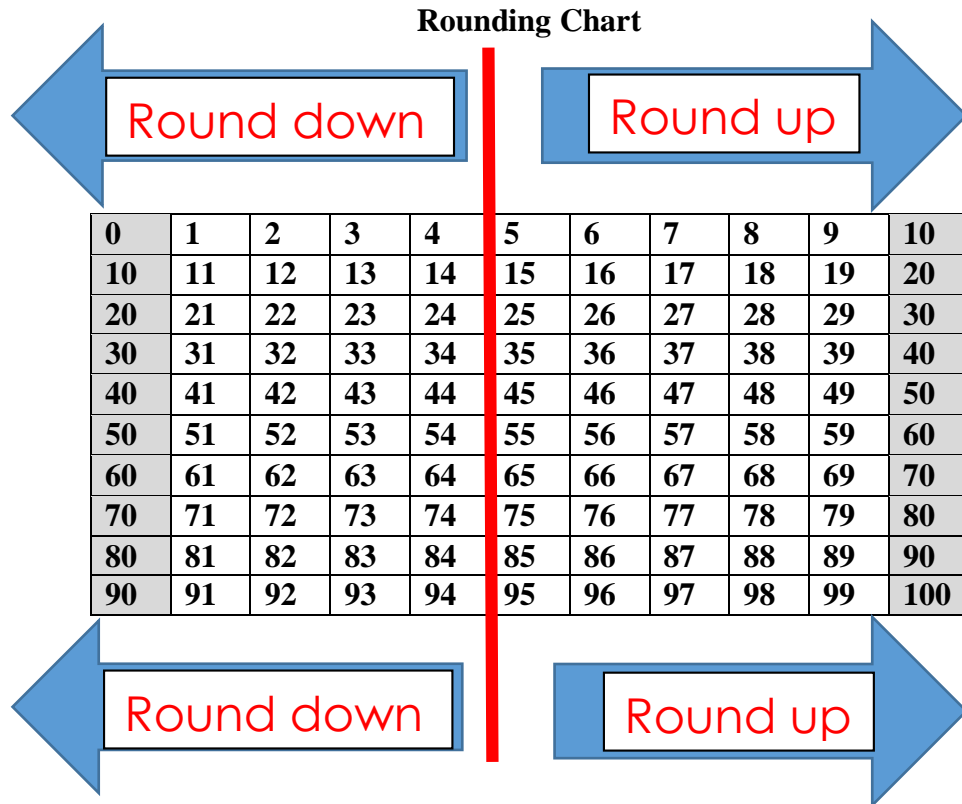
#### Word problems

- 1. Subtract 23 from 69= **46**
- 2. Subtract 231 from 578= **347**
- 3. Subtract 615 from 927 = **312**
- 4. What is 764 take away 512? = **252**
- 5. Take away 613 from 927 = **314**
- 6. Jacob had 688 shillings. He used 420 shillings. **He remained with..268.. shillings.**
- 7. Joseph had 370 chicken. He sold 220 chicken. How many chicken did he remain with?= **150**
- 8. There are 750 pupils in a school. 320 are boys. How many girls are there?= **430**

## 1.8 Rounding off

### Activity 1

Guide learners in studying the rounding off chart below. Learners to know the numbers on the right and left and their differences.



Check whether the ones digit is greater or less than 5. In this case it is less than 5. It will not affect the tens digit. Make the ones digit equal to zero. The answer is 320. Round off 236 to the nearest tens. Again check whether the ones digit is greater or less than 5. It is greater than 5 therefore it will affect the tens digit. Add one to the tens digit to get  $1+3=4$ . The answer is 240.

2. Round off 361 to the nearest hundreds  
The answer is 400.
3. Round off 532 to the nearest hundreds  
The answer is 500.

#### Activity 1: Complete in groups.

1. Round off the following numbers to the nearest tens.
 

a) 314	d) 512
b) 327	e) 638
c) 476	f) 761
2. Round off the following to the nearest hundreds.
 

a) 365	e) 619
b) 413	f) 534
c) 271	g) 473
d) 738	h) 657

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### Activity 1: Complete in groups.

1) Round off the following numbers to the nearest tens

- a) 314   310
- b) 327   330
- c) 476   480
- d) 512   510
- e) 638   640
- f) 761   760

2) Round off the following to the nearest hundreds

- a) 365   400
- b) 413   400
- c) 271   300
- d) 738   700
- e) 619   600
- f) 534   500
- g) 473   500
- h) 657   700

## 1.9 Multiplication

### Activities

- i. Introduce the multiplication symbol ( $\times$ ) by arranging some counters on the table and use them as follows. Write 2 on the chalkboard. Pick two counters and ask how many times you have picked the counters. Let the learners say how many times you have picked the counters. Write the multiplication sentence  $1 \times 2 = 2$ . Repeat the activity to develop  $2 \times 2$ ,  $2 \times 3$ ,  $2 \times 4$ , ...
- ii. Let the learners do the exercise in the pupils book

### Activity 3

1. Fill the multiplication table

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

### Activity 4: Complete in groups.

#### Multiply

$1 \times 5 = 5$

$2 \times 5 = 10$

$3 \times 5 = 15$

$4 \times 5 = 20$

$5 \times 5 = 25$

$6 \times 5 = 30$

$7 \times 5 = 35$

$8 \times 5 = 40$

$9 \times 5 = 45$

$10 \times 5 = 50$

$1 \times 6 = 6$

$2 \times 6 = 12$

$3 \times 6 = 18$

$4 \times 6 = 24$

$5 \times 6 = 30$

$6 \times 6 = 36$

$7 \times 6 = 42$

$8 \times 6 = 48$

$9 \times 6 = 54$

$10 \times 6 = 60$

$1 \times 7 = 7$

$2 \times 7 = 14$

$3 \times 7 = 21$

$4 \times 7 = 28$

$5 \times 7 = 35$

$6 \times 7 = 42$

$7 \times 7 = 49$

$8 \times 7 = 56$

$9 \times 7 = 63$

$10 \times 7 = 70$

$1 \times 8 = 8$

$2 \times 8 = 16$

$3 \times 8 = 24$

$4 \times 8 = 32$

$5 \times 8 = 40$

$6 \times 8 = 48$

$7 \times 8 = 56$

$8 \times 8 = 64$

$9 \times 8 = 72$

$10 \times 8 = 80$

$1 \times 9 = 9$

$2 \times 9 = 18$

$3 \times 9 = 27$

$4 \times 9 = 36$

$5 \times 9 = 45$

$6 \times 9 = 54$

$7 \times 9 = 63$

$8 \times 9 = 72$

$9 \times 9 = 81$

$10 \times 9 = 90$

$1 \times 10 = 10$

$2 \times 10 = 20$

$3 \times 10 = 30$

$4 \times 10 = 40$

$5 \times 10 = 50$

$6 \times 10 = 60$

$7 \times 10 = 70$

$8 \times 10 = 80$

$9 \times 10 = 90$

$10 \times 10 = 100$

### Activity 5

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#### World problems





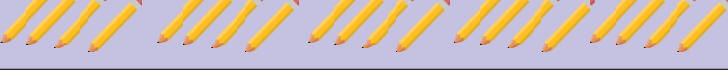
1. A car has 4 wheels. How many wheels do 5 cars have? **20 wheels**
2. A man eats 3 meals in a day. How many meals does the man eat in a week?  
**21 meals**
3. A box contains 10 pens. How many pens are there in 10 boxes? **100 pens**
4. A book costs SSP10. How many pounds will 6 books cost? **SSP 60**
5. A bird has 2 legs. How many legs do 9 birds have? **18 legs**
6. Dorothy is 10 years old. How old is Dorothy's father? **30 years**
7. The pupils will go on holidays for 4 weeks. How many days will the pupils be on holiday? **28 days**






### Activity 6

---

Guide learners in counting and writing the answers to the following problems. Emphasize the point that multiplication can be handled as repeated addition.

	$3 \times 1 =$
	$3 \times 2 =$
	$3 \times 3 =$
	$3 \times 4 =$
	$3 \times 5 =$

	$4 \times 1 =$
	$4 \times 2 =$
	$4 \times 3 =$
	$4 \times 4 =$
	$4 \times 5 =$

	$5 \times 1 =$
	$5 \times 2 =$
	$5 \times 3 =$
	$5 \times 4 =$
	$5 \times 5 =$

## 1.10 Division

### 1.10 Division

Division is sharing.

#### Activity 1: Talk in pairs.

Look at the pictures below. What is happening?



30

### Activity 1

This can be a whole class activity or group activity. Let the learners observe and talk about what they can see in the picture. After this, they can also discuss some things they share at home and in school.

1. Why do they share?
2. What is the importance of sharing?
3. Are there things that should not be shared?

### Activity 2

1. Share 4 loaves of bread between 2 people. How many loaves of bread does each person get?
2. Share 8 pencils among 8 learners.

How many pencils would each learner get?

3. Share 16 books among 8 groups. How many books would each group get?
4. Abdi shared 25 rulers equally among 5 classes. How many rulers did each class get?
5. Amunja share 20 pencils equally among his 4 friends how many pencils did each get?

**Use ‘÷’ sign in writing division sentences.**

### Activity 3

1. Share fifteen books among five people. This also be written as  $15 \div 5 = 3$ .
2. Share twelve oranges among six people equally. This can also be written as  $12 \div 6 = 2$
3. Amos shared eighteen brooms among three classes equally. This can also be written as  $18 \div 3 = 6$

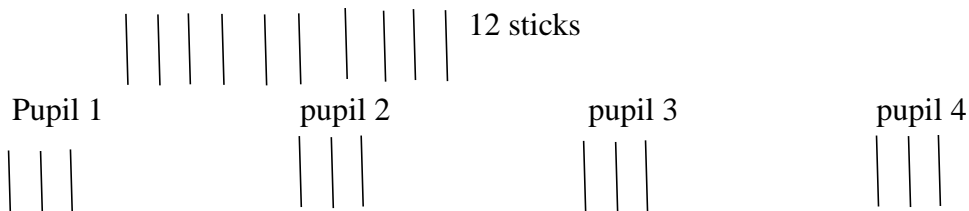
- Muasya had twenty five trees to be planted. Five learners were to plant them equally. This can also be written as  $25 \div 5 = 5$
- Kendi divided her twenty four apples equally among her four friends. She wrote this as  $24 \div 4 = 6$

#### Activity 4

**Materials:** Counters, sticks

#### Activity

- Collect 10 books from pupils in your class. Share the books equally among 5 pupils. How many books will each pupil get?  
We can therefore say that  $10 \div 5 = 2$
- Collect 12 small sticks. Share the sticks equally among 4 pupils in the class. How many sticks will each pupil get?



**Example**

#### Activity 5

Guide learners to collect safe object like pens, sticks and use them in sharing which will help in defining division.

- Divide

$$4 \div 2 = 2$$

$$10 \div 2 = 5$$

$$15 \div 3 = 5$$

$$20 \div 2 = 10$$

$$20 \div 5 = 4$$

$$25 \div 5 = 5$$

$$30 \div 5 = 6$$

$$30 \div 10 = 3$$

$$45 \div 5 = 9$$

$$8 \div 4 = 2$$

$$10 \div 5 = 2$$

$$15 \div 5 = 3$$

$$20 \div 4 = 5$$

$$20 \div 10 = 2$$

$$30 \div 2 = 15$$

$$30 \div 6 = 5$$

$$40 \div 4 = 10$$

$$50 \div 10 = 5$$



## Activity 6

---

Guide the following activities. Let learners give their observations.

1. The teacher will provide bananas for the class. For example if a group has 6 learners and the teacher gives 24 bananas to the learners, how many will each learner get after dividing equally?
2. Go out and collect as many sticks as you can. If a group has 10 learners and they are given 100 sticks, how many does each get after dividing equally?
3. Collect pencils. A group has 5 learners and they are given 50 pencils, how many pencils will each learner have after dividing equally?
4. Collect books. A group has 5 learners and they are given 40 exercise books. How many will each learner get after sharing equally?
5. Collect blackboard chalk. A group has 8 learners and the teacher gives them 72 chalks. How many will each learner have after equal sharing?

## Activity 7

---

Divide:

$$6 \div 3 = 2$$

$$9 \div 3 = 3$$

$$8 \div 4 = 4$$

$$12 \div 4 = 3$$

$$24 \div 6 = 4$$

$$21 \div 3 = 7$$

$$12 \div 3 = 4$$

$$18 \div 3 = 6$$

$$8 \div 2 = 4$$

$$10 \div 5 = 5$$

Divide:

$$2 \overline{)4} = 2$$

$$2 \overline{)6} = 3$$

$$2 \overline{)14} = 7$$

$$5 \overline{)25} = 5$$

$$4 \overline{)16} = 4$$

$$4 \overline{)20} = 5$$

$$5 \overline{)20} = 4$$

$$3 \overline{)24} = 8$$

$$3 \overline{)9} = 3$$

$$2 \overline{)8} = 4$$

$$2 \overline{)10} = 5$$

$$5 \overline{)15} = 3$$

## Activity 8

---

**Read and calculate. Work in groups.**

1. Share 12 pens equally among 6 learners equally. How many pens does each learner get? **2 pens**
2. Janet shared 25 mangoes equally among her five friends. How many mangoes did each friend get? **5 mangoes**

3. Jacob had shared 12 books equally among 3 learners. How many books did each pupil get? **4 books**
4. Abdi shared 15 brooms equally among 3 classes. How many brooms did each class get? **5 brooms**

### Activity 9

Game involving division.

#### Divide

$15 \div 3 =$

$18 \_ 3 =$

$16 \_ 4 =$

$15 \_ 5 =$

#### Answer

15 divide by 3 is 5

18 divide by 6 is 3

16 divide by 4 is 4

15 divide by 5 is 3

Copy the table and fill the answers for the following division sentences.

<b>10 ÷ 5</b>	_____
<b>14 ÷ 2</b>	_____
<b>25 ÷ 5</b>	_____
<b>24 ÷ 3</b>	_____
<b>20 ÷ 5</b>	_____
<b>20 ÷ 4</b>	_____

Choose from (5, 4, 4, 5, 8, 7, 2) to fill the spaces above.

### Activity 10

**Words problems. Work in groups.**

1. A mother shared 20 oranges equally among her 4 children. How many did each get? **5 mangoes**
2. The headmaster shared 80 pencils among 8 classes. How many pencils did each class get? **10 pencils**

3. A teacher shared 20 pounds among 5 pupils, how many pounds did each pupil get? **4 pounds**
4. Carol bought 4 notebooks for 80 Sudanese pounds. What was the cost of each notebook? **SSP 20**
5. Share 24 oranges equally among 6 children. How many does each get? **4 oranges**
6. Divide 20 mangoes among 4 children. How many does each get? **5 mangoes**
7. David went to a day care near his house. He had 50 sweets and the day care has 10 children. How many sweets did each child get? **5 sweets**
8. Our teacher has 100 pencils which are to be shared among 20 pupils. How many pencils will each pupil get? **5 pencils**



## 1.11 Fractions


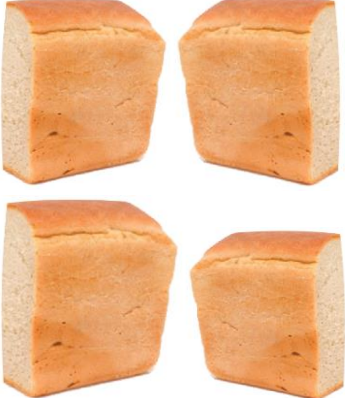
A fraction means a part of a whole. It shows one or more parts out of many equal parts.

Activity 1 below provides an illustration on fractions. Guide learners in identifying the various fractions.

### Activity 1

Deng ordered a loaf of bread for himself.

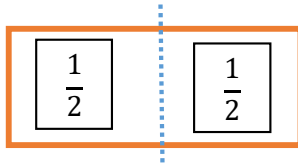
He sat down to eat.		This is a whole. It is denoted by 1.
A friend joined him. He had to cut it into two equal parts.		This is a whole. It is denoted by $\frac{1}{2}$ .

<p>Before they could start, Othow dropped in. It had to be cut into 3 equal parts.</p>		<p>Each part is called one-third. It is denoted by <math>\frac{1}{3}</math>.</p>
<p>Duku walked in to join them. So they had to divide it into 4 equal parts.</p>		<p>Each part is called one-fourth. It is denoted by <math>\frac{1}{4}</math>.</p>

## Activity 2

In this activity, guide learners in carrying out the instructions given. Learners should be able to identify the fractions being illustrated.

1. Take a rectangular sheet of paper. Fold it into two parts from the centre by making a crease. The crease divides the sheet of paper into two equal parts. Each part is called one-half of the whole.



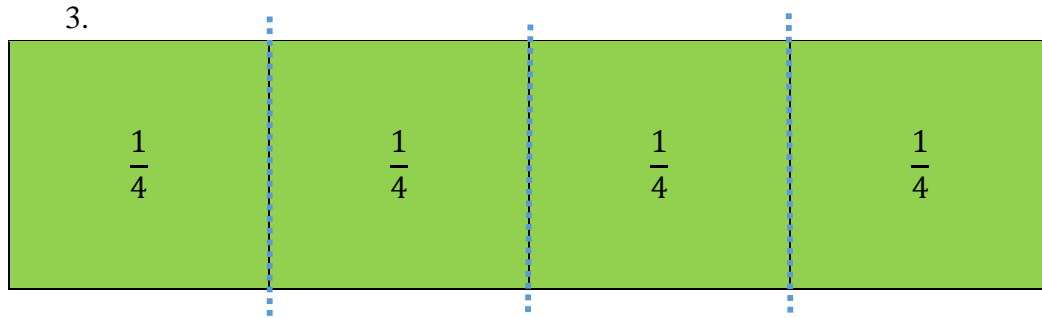
$$\frac{1}{2} + \frac{1}{2} = 1$$

1

one-half

2. Fold the sheet into four equal parts, by first folding it into two equal parts and then folding each half again into two equal parts. Each part is called one-fourth or a quarter of the whole.

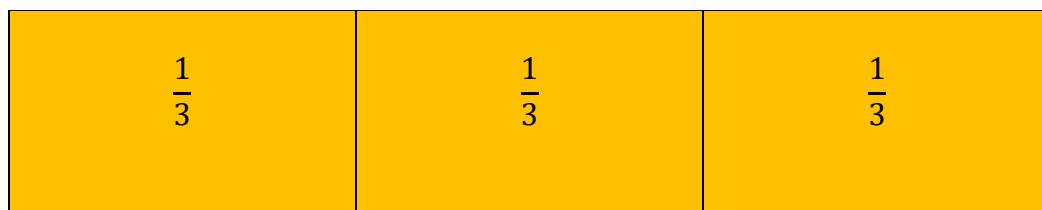
3.



Note: If we consider three parts together, it will represent three-fourth of the whole  $\frac{3}{4}$ . Two one-fourth combined together equal a half.

4. Take another sheet and fold it into three equal parts.

5.



Each part is called one-third and is expressed as  $\frac{1}{3}$  (read as one over three).

### Activity 3

---

This activity can be completed in pairs. Provide manila paper for learners to draw and colour the diagrams and per the fractions. Encourage learners to add their own drawings and colour them according to a fraction. Let learners hang their work on the board for the whole class to see.

# UNIT 2:

# MEASUREMENT

Maths Primary 2		Unit 2: Measurement
<b>Learn about</b>		<b>Key inquiry questions</b>
<p>Learners engage in a wide range of practical activities throughout the year to estimate and measure the length of different objects.</p> <p>They should and investigate capacity using different containers of different shapes.</p> <p>Learners should work in groups to role-play shopping, using the denominations of their currency and calculating the change due after a purchase.</p> <p>Learners should use the clock face to tell the time in hours, half past, quarter past, and link time with the daily activities.</p>		<ul style="list-style-type: none"> <li>• Can you estimate and measure the length of different objects?</li> <li>• How do you measure the capacity of different containers?</li> <li>• How can you measure the different length, capacity and weight of different containers?</li> <li>• In what ways do you use the local currency?</li> <li>• How do we calculate</li> <li>• How do we tell time on the clock face? (Use of the hour and minute hands).</li> </ul>
<b>Learning outcomes</b>		
<b>Knowledge and understanding</b>	<b>Skills</b>	<b>Attitudes</b>
<ul style="list-style-type: none"> <li>• Tell time in hours, half past, quarter past, quarter to the hour</li> <li>• Recognise local currency</li> </ul>	<ul style="list-style-type: none"> <li>• Measure length, weight and capacity of different objects</li> <li>• Estimate and measure length using different objects and capacity using different containers</li> <li>• Use a beam balance to compare the weights of different objects</li> </ul>	<ul style="list-style-type: none"> <li>• Appreciate the importance of the use of mathematics in daily life</li> </ul>

	<ul style="list-style-type: none"> <li>• Carry out simple operations involving money.</li> </ul>	
<p><b>Contribution to the competencies:</b></p> <p><u>Critical thinking</u>: estimate and measure length, weight and capacity of different objects using different measuring tools in the environment</p> <p><u>Communication</u>: team work activities about measures, group work, shopping and telling time</p> <p><u>Co-operation</u>: team work</p>		
<p><b>Links to other subjects:</b></p> <p><u>Life skills</u> through shopping activities</p>		

### Objectives

By the end of the lesson, the learner should be able to:

- Measure length, weight and capacity of different objects.
- Estimate and measure length using different objects and capacity using different containers.
- Use a beam balance to compare the weights of different objects.
- Carry out simple operations involving money.

**Materials:** ruler, metre rule

## 2.1 Length

### Activity 1

1. Look at the picture below, what are they doing? Discuss in groups.



Let learners observe the above picture and talk about what they can see. Where else does measurement take place? What tools and equipment are used to carry out the measurements?

### Activity 2

In pairs, let learners use sticks of equal length to measure different lengths.

Measure	Use sticks of equal lengths
<b>Classroom:</b> Length width	_____ sticks _____ sticks
<b>Cupboard</b>	



Length	_____ sticks
width	_____ sticks
Desk length	_____ sticks
Distance from the flag post to the nearest class	_____ sticks
<b>Window</b>	
Length	_____ sticks
width	_____ sticks

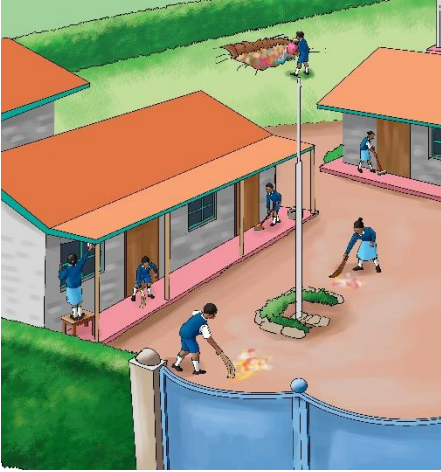
### Activity 3

In groups, let learners use sticks or strings of different lengths, 1m sticks and 1m ruler to measure the lengths of objects in the table below. Let learners record their findings in a table like the one below.

Measure		Use sticks of different lengths (sticks)	Use 1m stick, or 1m ruler (m)
classroom	Length		
	Width		
cupboard	Length		
	width		
Door	Length		
	width		

### Activity 4

Using meter rule and tape measure, guide learners in measuring various distances in the school compound. Some specific ones have been provided on the next page.



Distance from your classroom door to the next class.



The distance from your chair to the front of the class.



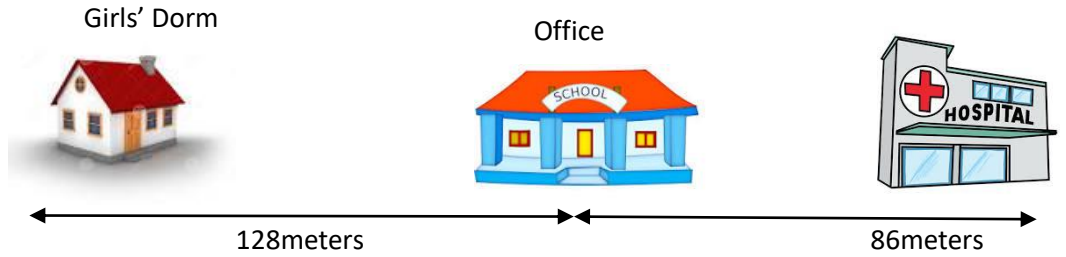
The height of any four classmates.



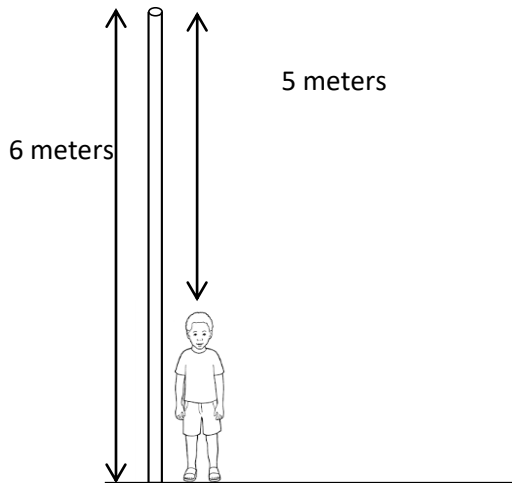
The distance from the door to your chair.

## Activity 5

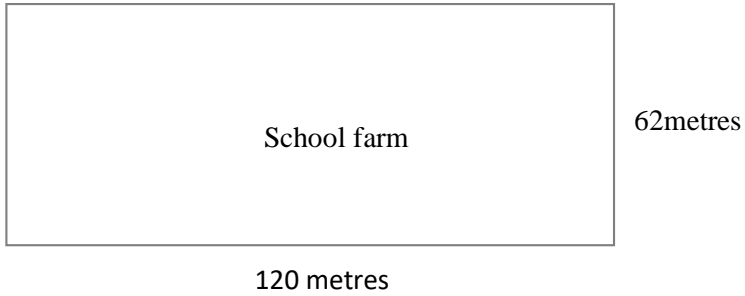
Use the diagram below to guide learners and answer the questions that follow:



1. Jane walked from the girls' dorm to the school clinic and back to the headmaster's office. How many meters did she cover? **300 meters**
2. The school nurse walked from the headmaster's office to the girls' dorm and then walked back to the clinic. How many meters did she walk in total? **342 metres**



3. John is standing next to a flag post. What is John's height? **1 metre.**
4. John walked round the school farm once. What length did he walk in total? **364 meters**

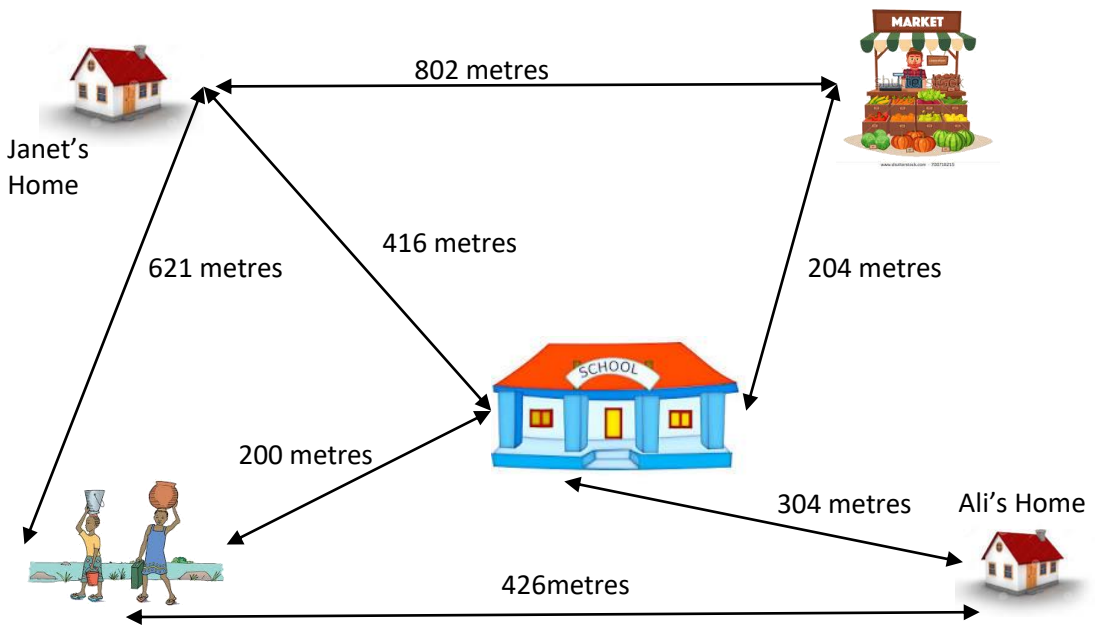


## Activity 6

Work out the following

1.  $426 \text{ m} + 51 \text{ m} = 477 \text{ m}$
2.  $202 \text{ m} + 31 \text{ m} = 233 \text{ m}$
3.  $41 \text{ m} + 621 \text{ m} = 662 \text{ m}$
4.  $589 \text{ m} + 24 \text{ m} = 613 \text{ m}$
5.  $762 \text{ m} + 34 \text{ m} = 796 \text{ m}$
6.  $17 \text{ m} + 107 \text{ m} = 124 \text{ m}$

## Activity 7



1. Janet walked from her home to Ali's home. How many meters did she walk? **1047m**
2. If Ali walks from school to the river then home, how many meters does he cover? **626m**
3. Janet walks to school and back home every day. What distance does she cover? **832 metres**

## 2.2 Mass

### Activity 1


Guide learners in carrying out the following:


1. Collect some common objects like books, blackboard duster, chalk box, packet of sugar, packet of milk and a pencil bag.
2. Estimate the weight of these objects.
3. Find the weight of any of these objects using any of the scales.
4. Record your result.


Object	My estimate	Actual measurement
duster		
sharpener		
book		
Chalk box		


**Activity 2: Work in groups.**


Use 1 kg container of soil to show heavier, lighter or same. Record your observations in your exercise books.


1.  1 kg soil      Small stone


2.  1 kg soil      Text book


3.  A carton of books      1 kg of soil

4.  1 kg of soil      A tin of soil

5.  1 kg soil      A pair of shoes

6.  1 kg soil      A ball

7.  Piece of metal      1 kg of soil

8.  1 kg soil      1 kg cotton

9.  1 kg soil      An eraser

- 10. Which is heavier, 2 kg maize or 4 kg of beans?
- 11. Which is lighter, 3 kg of cotton or 2 kg maize flour?
- 12. Which is heavier, 1 kg piece of wood or 1 kg of feathers?

**Activity 3**

In groups, look at the picture and say what is happening.



## 2.3 Capacity

### Activity 1

Guide learners to work in groups and follow the steps below. Ask them what they understand by following the steps.



1. In groups, let learners use a bottle to fill water into a bucket. How many full water bottles do you need to fill the bucket?
2. In groups, using a cup or a calabash, let learners fill water into a bucket. How many full cups or calabashes do you need to fill the bucket?

In pairs, let learners point out their observations of the picture below.

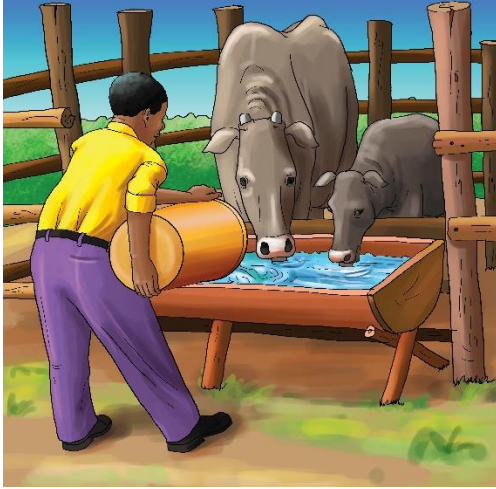




## Activity 2

In groups, let learners look at the following pictures and discuss the choice of the container used. Why are the containers used suitable/not suitable? Expect varied answers.

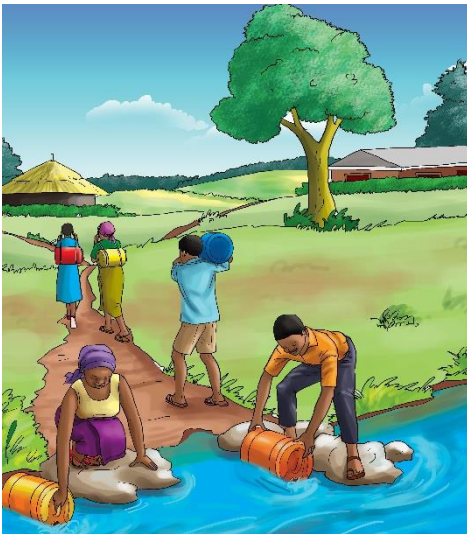
1.



2.



3.



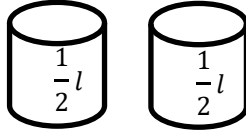
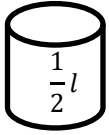
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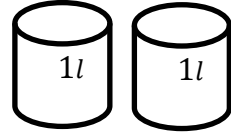


### Activity 3

Guide learners in completing this activity.

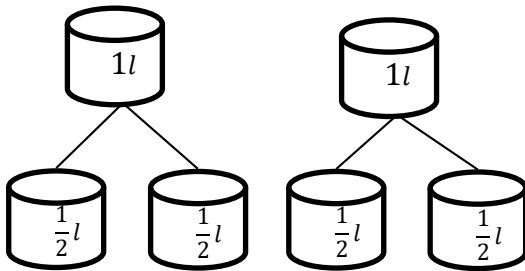


1l

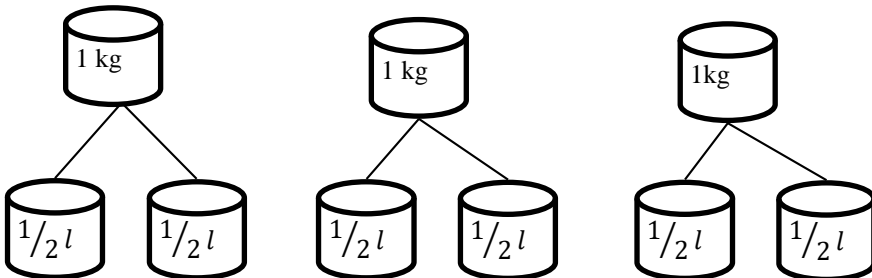


2l

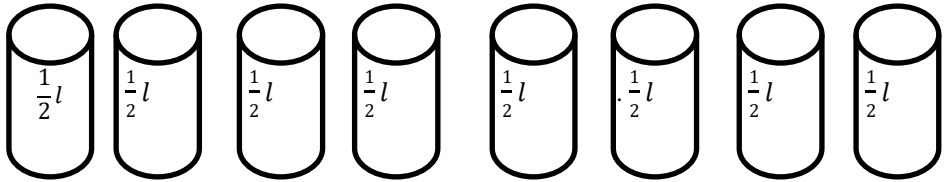
1. How many half litres are there in 3 litres



2. How many half litres are in 3 litres



3. How many litres does 8 half litres make



4. Copy and complete the table below

litres	Half litres
1	2 half litres
3	6 half litres
<b>5</b>	10 half litres
7	<b>14 half litres</b>
<b>6</b>	12 half litres
<b>10</b>	20 half litres

#### Activity 4

In pairs, guide learners in finding out how small containers can fill big containers.

<b>Small containers</b>	<b>Big containers</b>	<b>How many smaller containers were used to fill the big containers</b>
1litre container	5 litre container	5
2 litre bottle	10 litre container	5
3 litre bottle	15 litre container	5
5 litre bottle	25 litre container	5
10 litre container	30 litre container	3
6 litre container	24 litre container	4

## Activity 5

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### Work out in groups.

5.  $80 \text{ half liters} + 20 \text{ half liters} = \mathbf{100 \text{ half litres}}$
6.  $100 \text{ half liters} + 23 \text{ half liters} = \mathbf{123 \text{ half litres}}$
7.  $32 \text{ half liters} - 3 \text{ half liters} = \mathbf{29 \text{ half litres}}$
8.  $45 \text{ half liters} - 21 \text{ half liters} = \mathbf{24 \text{ half litres}}$
9.  $92 \text{ half liters} + 22 \text{ half liters} = \mathbf{114 \text{ half litres}}$
10.  $21 \text{ half liters} - 3 \text{ half liters} = \mathbf{18 \text{ half litres}}$
11.  $16 \text{ liters} + 34 \text{ liters} = \mathbf{50 \text{ litres}}$
12.  $30 \text{ liters} + 41 \text{ liters} = \mathbf{71 \text{ litres}}$
13.  $51 \text{ liters} + 20 \text{ liters} = \mathbf{71 \text{ litres}}$
14.  $50 \text{ liters} + 27 \text{ liters} = \mathbf{77 \text{ litres}}$
15.  $100 \text{ liters} - 33 \text{ liters} = \mathbf{67 \text{ litres}}$
16. Mr. Bongo bought 7 litres of milk. He used 2 litres in the morning and 1 litre at lunch time. How many litres was he left with? **4 litres**
17. Janet used a 3 litre bucket to draw water from a well. Her pot was filled with three buckets of water. How many litres is Janet's pot? **9 litres**
18. Lily carried two litres of water to school on Monday morning. On Tuesday she carried 3 litres. If she divided the water into half litre bottles, how many half-litre bottles did she have? **10 half litre bottles**

## 2.4 Money

### Activity 1

---

#### Know your money

Avail real money in class for the learners to observe the various notes of currency. Let learners look at the front and the back of the currency notes, pointing out the similarities and differences.

## 2.5 Giving Change

### Activity 1

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Learner to work in groups. Let the learners work out how many of the smaller denomination make SSP 100.

## 2.4 Money

### Know your money



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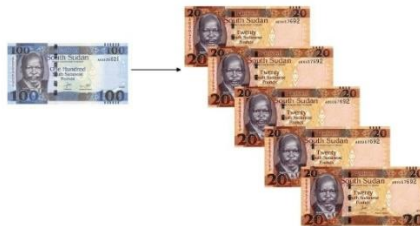
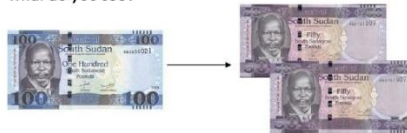
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## 2.5 Giving change

### Activity 1

Work in groups.

What do you see?



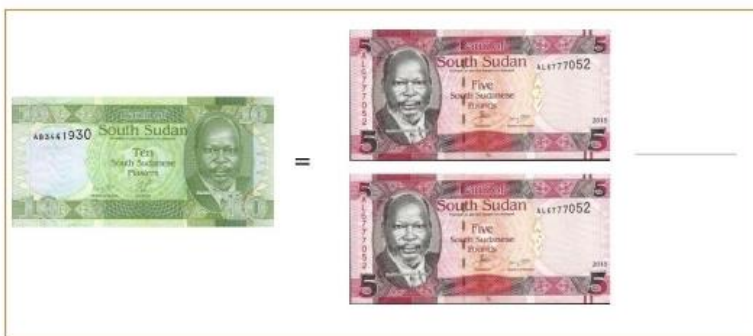
59

## Activity 2

True or False. Learners to complete this activity in pairs.

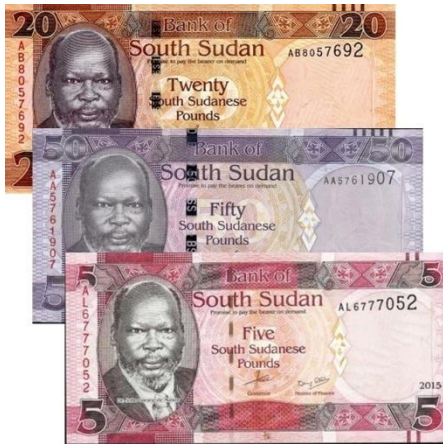
### Activity 2

True or False. Work in pairs.



## Activity 3

### How much?



SSP 75



SSP 26



SSP 300



SSP 150



SSP 130



SSP 120

#### Activity 4

---

1. How many one pound notes are in
  - a. 20 pound notes= **20**
  - b. Four 10 pound coins = **40**
2. How many fifty pound notes are in one hundred pound note= **2**
3. How many five pound notes are in one hundred pound note= **20**

## 2.6 Shop Price List

Trouser  
SSP 650



Box  
SSP 370



Blanket  
SSP 460



School Bag  
SSP 245



School Shoes  
SSP 815



Dress  
SSP 340



Mattress SSP 500



1. Mary had SSP 450. She bought one dress. How much money was she left with? **110 pounds**
2. I had SSP 500. I bought 1 box. How much was I left with? **130 pounds**
3. Kambo had SSP 950. He bought 1 school shoe. How much was left? **135 pounds**
4. How much do you need to buy one box, one blanket and a pair of school shoes? **1645 pounds**
5. Mrs. Keru went to the shop with SSP 2500. She bought one mattress, one box and one bag. How much was she left with? **1385 pounds**



## 2.7 Time

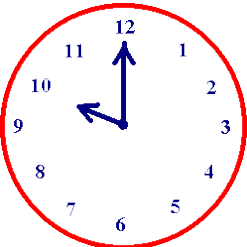
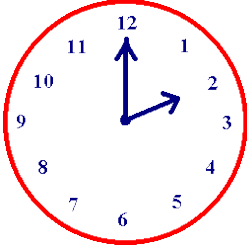
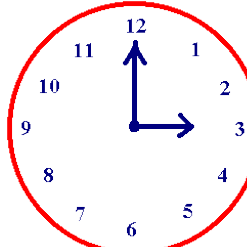
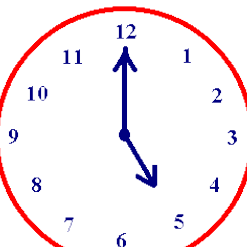
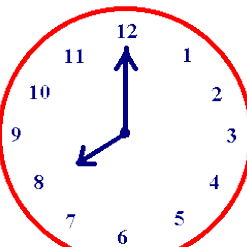
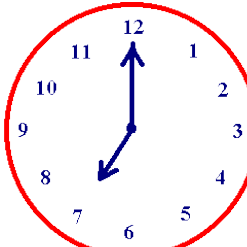
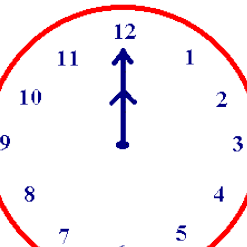
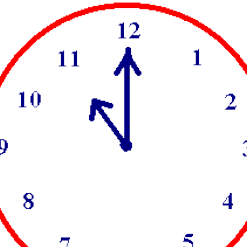
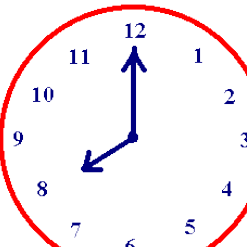
**Know your time.**

### Activity 1

Guide learners to discuss what they do in the morning before they come to school and in the evening after they leave school.

### Activity 2

What is the time?

1.  10 o'clock	2.  2 o'clock	3.  3 o'clock
4.  5 o'clock	5.  8 o'clock	6.  7 o'clock
7.  12 noon/midnight	8.  11 o'clock	9.  8 o'clock

### Activity 3

Guide learners in making clock faces to show the time below. Learners should work in groups.

1. It is 4 o'clock
2. It is 7 o'clock
3. It is midday
4. It is 3 o'clock
5. It is 11 o'clock

Guide learners in drawing the clock faces in their books. Check that the hour hand and minute hand are properly drawn.

## 2.8 Half past the hour

### Activity 1

Using locally available materials, guide learners in making or drawing clock faces to show the following time. Learners should work in groups.

1. Half past 4
2. Half past 6
3. Half past 11
4. Half past 8
5. Half past 5

Guide learners in drawing the clock faces in their books. Check that the hour hand and minute hand are properly drawn.

## 2.9 Quarter past the hour

### Activity 1

Using locally available materials, guide learners in making or drawing clock faces to show the following time. Learners should work in groups.

- |                    |                   |                   |
|--------------------|-------------------|-------------------|
| 1. Quarter past 5  | 5. Quarter to 9   | 9. Quarter past 1 |
| 2. Quarter to 8    | 6. Quarter past 7 | 10. Quarter to 3  |
| 3. Quarter past 12 | 7. Quarter to 11  |                   |
| 4. Quarter to 2    | 8. Quarter to 4   |                   |

Guide learners in drawing the clock faces in their books. Check that the hour hand and minute hand are properly drawn.

## Activity 2

---

**At what time to you do the following activities.**

1. Wake up
2. Have breakfast
3. Start for school
4. First lesson of the day
5. Go for break
6. Have lunch
7. First lesson in the afternoon
8. Last lesson of the day
9. Go home after school
10. Go to bed

Guide learners in talking about the time they carry out the above activities.

## Activity 3

---

**Read the following time out loud.**

1. 4:00      four o'clock
2. 3:30      half past three
3. 6:45      quarter to seven
4. 7.00      seven o'clock
5. 5.15      quarter past five
6. 9.45      quarter to ten
7. 2.30      half past two
8. 12.00     noon
9. 8.00      eight o'clock
10. 1.30     half past one
11. 4.15     quarter past four
12. 2.30     half past two

# UNIT 3:

# GEOMETRY

Maths Primary 2		Unit 3: Geometry
<b>Learn about</b>		<b>Key inquiry questions</b>
<p>Throughout the year, learners should engage in a wide range of practical activities to investigate shape and pattern. For example, they should work in groups to investigate the different patterns they can make from simple shapes (<i>eg squares, rectangles, different shaped triangles</i>). They should note which shapes fit together (tessellate) and which do not. Groups should explain their findings to the class.</p> <p>Working in groups, they should consider the shape of objects from the local environment and investigate patterns that occur in nature or in the built environment</p> <p>Through this work, learners should recognize the different types and properties of triangles, rectangle and square. They should differentiate these three regular geometrical shapes.</p>		<ul style="list-style-type: none"> <li>• How do you use patterns to recognize geometrical shapes?</li> <li>• Can you make different patterns from different geometrical shapes?</li> <li>• What are the properties of the following geometrical shapes; triangle, rectangles and squares?</li> </ul>
<b>Learning outcomes</b>		
<b>Knowledge and understanding</b>	<b>Skills</b>	<b>Attitudes</b>
<ul style="list-style-type: none"> <li>• Know the types and properties of triangles, rectangles and squares.</li> </ul>	<ul style="list-style-type: none"> <li>• Make patterns using geometrical shapes.</li> </ul>	<ul style="list-style-type: none"> <li>• Appreciate the use of patterns to make shapes.</li> </ul>

<ul style="list-style-type: none"> <li>• Understand the properties of triangles, rectangles and squares.</li> </ul>		
<p><b>Contribution to the competencies:</b></p> <p><u>Critical thinking</u>: making patterns to recognize geometrical shapes and their uses.</p> <p><u>Communication</u>: use of pattern and shapes.</p> <p><u>Co-operation</u>: teamwork.</p>		
<p><b>Links to other subjects:</b></p> <p><u>Environment and sustainability</u>: patterns in the natural environment.</p>		

### Objectives

By the end of the topic, the learner should be able to:

- a) Make patterns using geometrical shapes.
- b) Recognize the different types and properties of triangles, rectangles and square. They should differentiate these three regular geometrical shapes.

### Activities

1. The learner should engage in a wide range of practical activities to investigate shape and pattern. For example, they should work in groups to investigate the different patterns they can make from simple shapes ( *e.g., squares, rectangles, different shaped triangles*). They should note which shapes fit together and which do not. Groups should present their findings to class.
2. Working in groups, learners should consider the shape of objects from the local environment and investigate patterns that occur in nature or the built environment
3. The learners should be guided to recognize the different types and properties of triangles, rectangles and square. They should differentiate these three regular geometrical shapes.

## UNIT 3:

## GEOMETRY

Geometry is part of mathematics that deals with points, lines, curves and surfaces.

### 3.1 Shapes

#### Activity 1

Look at the pictures below. What geometric shapes can you see? Talk in groups.

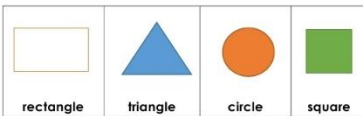


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#### Activity 2: Work in pairs.



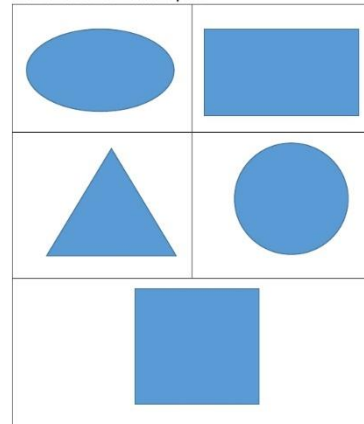
#### What shapes do you see in the pictures?



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#### Activity 3: Work in pairs.

Draw and name these shapes.

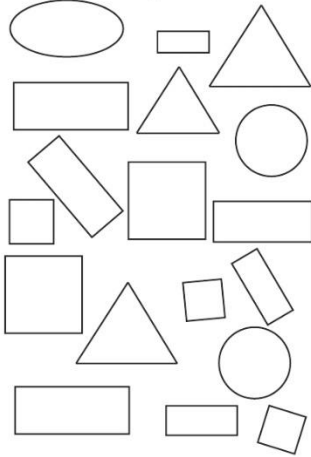


Look around the classroom and point out different shapes.

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Activity 4: Work in pairs.

Copy the following shapes in your exercise book. Colour the rectangle red and the squares blue.

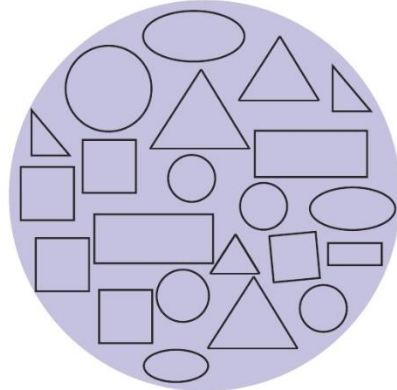


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Tell your partner why they are rectangles and why they are squares.

Activity 5: Work in pairs.

Look at the following shapes. Answer the questions that follow.




1. How many triangles can you count?
2. How many rectangles can you count?
3. How many ovals can you count?

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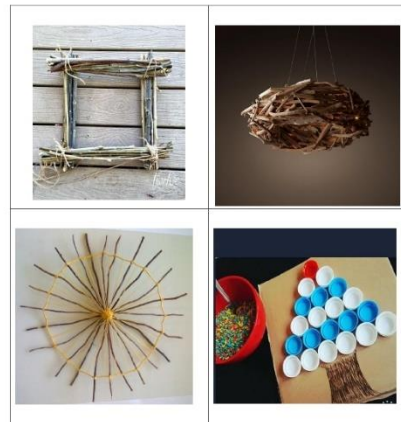
## 3.1 Shapes

- Draw the shapes like triangles, rectangles, squares, oval and circle on the black board.
- Let the learners say loudly what shape it is as you point.
- Help the learners draw the shapes in Manilla papers and make cut outs from them. Write the names too.
- Let the learners match the cut outs with their names.
- Ensure all the learners understand and recognize all the shapes.

4. How many circle can you count?
5. How many squares are there?

 Activity 6: Work in groups.

1. Collect materials from the environment.
2. Make the following crafts.
3. What shapes have you made?



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- Ask learners to name the objects in the classroom or outside which resemble triangles, rectangles, circles, ovals and squares.
- Guide the learners in doing the exercises and activities in the learner's book.

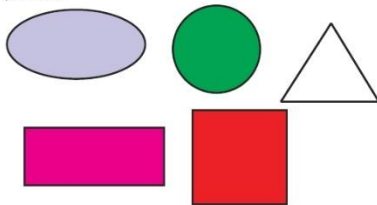
## 3.2 Patterns

- Help the learners in making patterns from the cut outs they have.
- Let them make patterns as instructed in the pupil's book.
- Help them on how to stick together the shapes to make different patterns.
- Let them draw different patterns from the shapes like rectangles and squares, circles and ovals, squares and triangles etc.
- Give maximum help to learners when they are doing the exercises and activities in the pupil's book.

### 3.2 Patterns

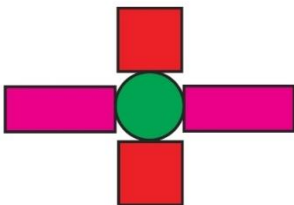
#### Activity 1

In groups, draw and cut out the following shapes. Ask your teacher for assistance. Cut as many shapes as possible.



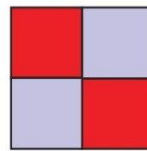
From the cut out shapes make the following patterns.

1.

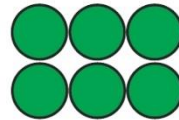


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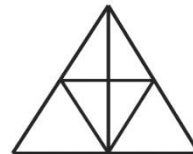
2.



3.



4.



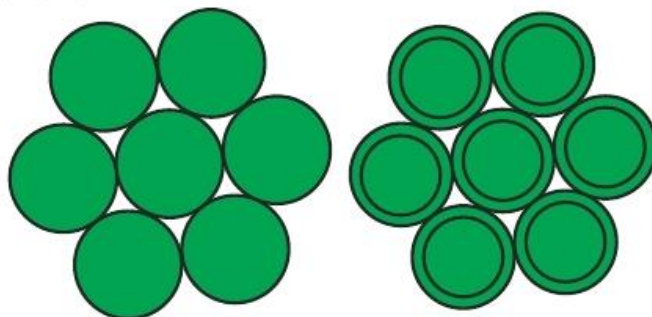
80



## Activity 2

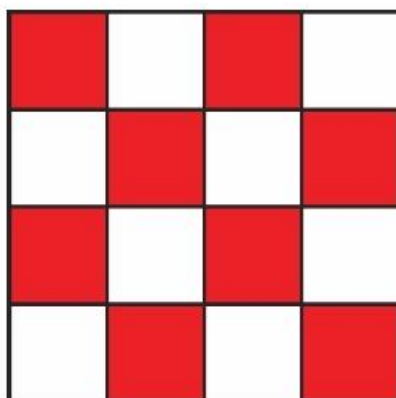
Using the cut outs you have made, do the following activities in groups.

1. Use the circular cut outs to make the following pattern.



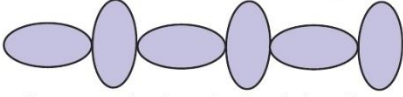
How many circles make the pattern above?

2. Use the square cut outs to make the following pattern.



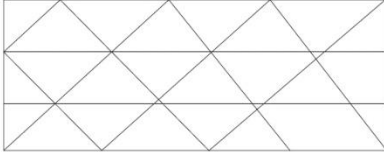
How many squares are there in the pattern above?

3. Use the oval cut outs to make the following pattern.



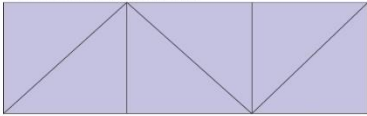
How many rectangles and ovals make the pattern respectively?

4. Use the triangular cut outs to make the following pattern.



How many triangles are there in the pattern?

5. Use the square, rectangular and triangular cut outs to make the following patterns.



How many triangles, rectangles and squares are there respectively?

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**Activity 3: Individually**

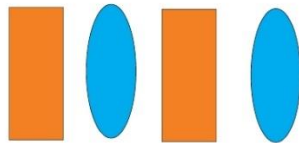
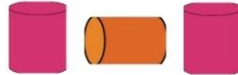
Look at the following patterns. Copy them in your exercise book. Draw the missing shape.



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**Activity 4: Individually**

Copy the pattern. Draw the next shape.

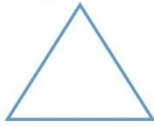


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## 3.3 Properties of triangles

### 3.3 Properties of triangles

A triangle is a plane figure with three straight sides and three angles.



#### Types of triangles



**Equilateral Triangle**  
Three equal sides  
Three equal angles, always  $60^\circ$



**Isosceles Triangle**  
Two equal sides  
Two equal angles



**Scalene Triangle**  
No equal sides  
No equal angles

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- Guide the learners in drawing accurate measures of squares.
- Let them cut out the shapes they have drawn.
- Explain to them the properties as in the pupil's book by practically showing them using the cut outs.
- Ensure that the learners understand all properties of the shapes.

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## 3.4 Properties of squares

### 3.4 Properties of a square



□ means "right angle"  
| show equal sides

#### Activity 1

Study the shape. From the diagram, what properties do you observe? Talk in groups and then present to the class.

### 3.5 Properties of a rectangle



□ means "right angle"  
| and || show equal sides

#### Activity 2

Study the shape. From the diagram, what properties do you observe? Talk in groups and then present to the class.

#### Activity 3

Look at the pictures on the following page and count the number of shapes. **How many?**

- Squares
- Rectangles

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### 3.5 Properties of rectangles

- Guide the learners in drawing accurate measures of rectangles.
- Let them cut out the shapes they have drawn.
- Explain to them the properties as in the pupil's book by practically showing them using the cut outs.
- Ensure that the learners understand all properties of the shapes.

