



South Sudan

Primary Mathematics 1

Primary Mathematics has been written and developed by Ministry of General Education and Instruction, Government of South Sudan in conjunction with Subjects experts. This course book provides a fun and practical approach to the subject of mathematics, and at the same time imparting life long skills to the pupils.

The book comprehensively covers the Primary 1 syllabus as developed by Ministry of General Education and Instruction.

Each year comprises of a Pupil's Book and teacher's Guide.

The Pupil's Books provide:

- Full coverage of the national syllabus.
- A strong grounding in the basics of mathematics.
- Clear presentation and explanation of learning points.
- A wide variety of practice exercises, often showing how mathematics can be applied to real-life situations.
- It provides opportunities for collaboration through group work activities.
- Stimulating illustrations.



All the courses in this primary series were developed by the Ministry of General Education and Instruction, Republic of South Sudan. The books have been designed to meet the primary school syllabus, and at the same time equipping the pupils with skills to fit in the modern day global society.

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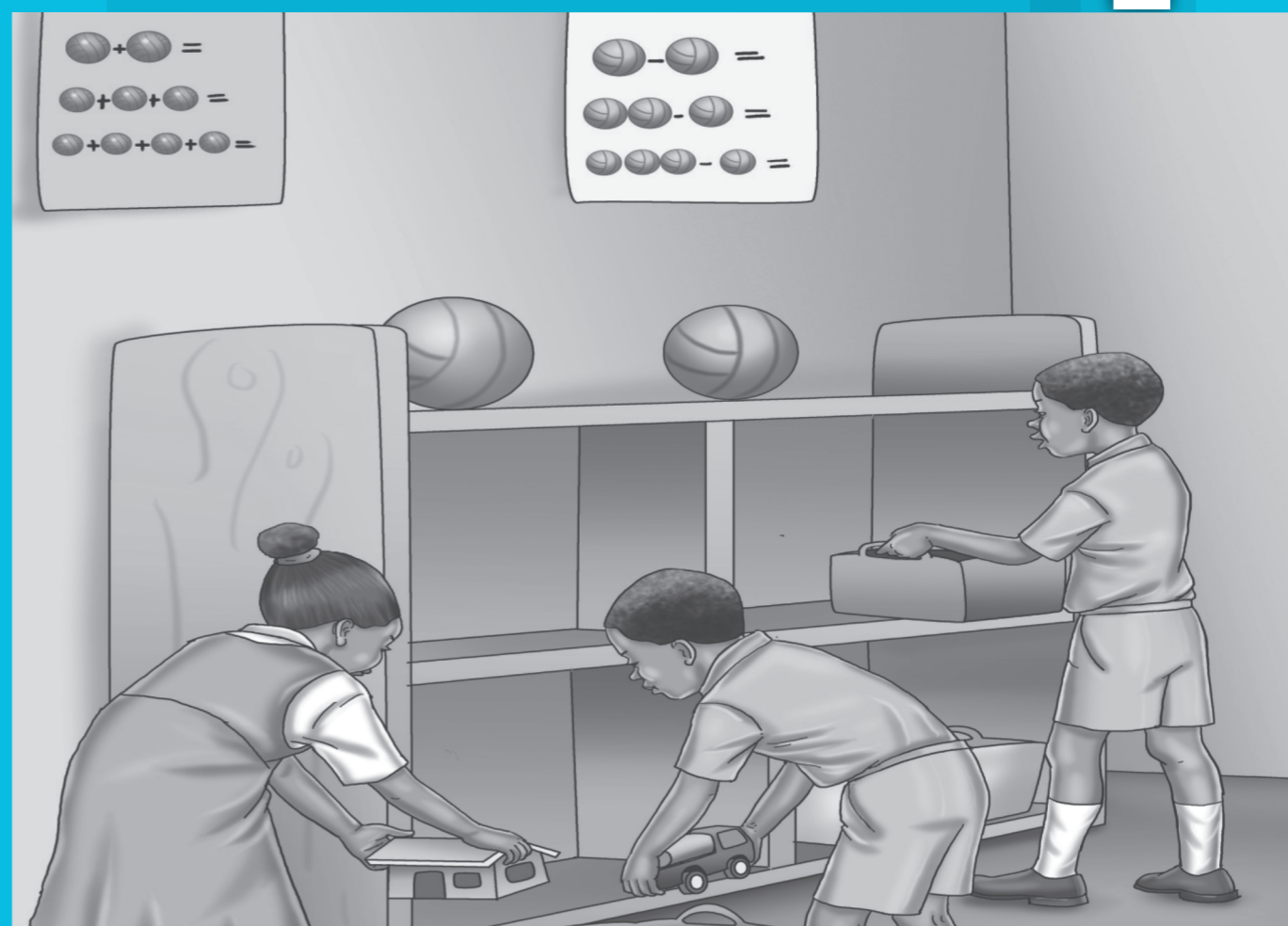
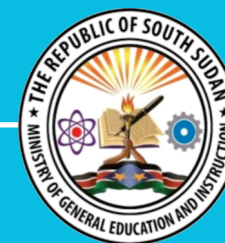
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South Sudan

Primary Mathematics 1

Teacher's Guide



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Mathematics

Teacher's Guide 1

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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 3 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 endeavor that requires creativity. Try to relate Mathematics activities and problems to relevant, real-life situations.

Components of the book

This primary one 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 1 Mathematics	
Unit	Title
1	Numbers: Sorting and matching
2	Measurement: length, capacity and weight
3	Geometry: shapes and lines

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.

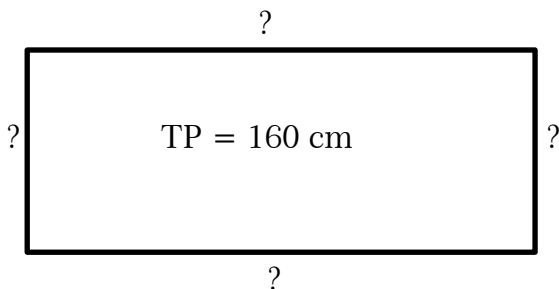
To make the learning explicit, it is important that you create a summary of what has been learnt from solving the problem.

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.

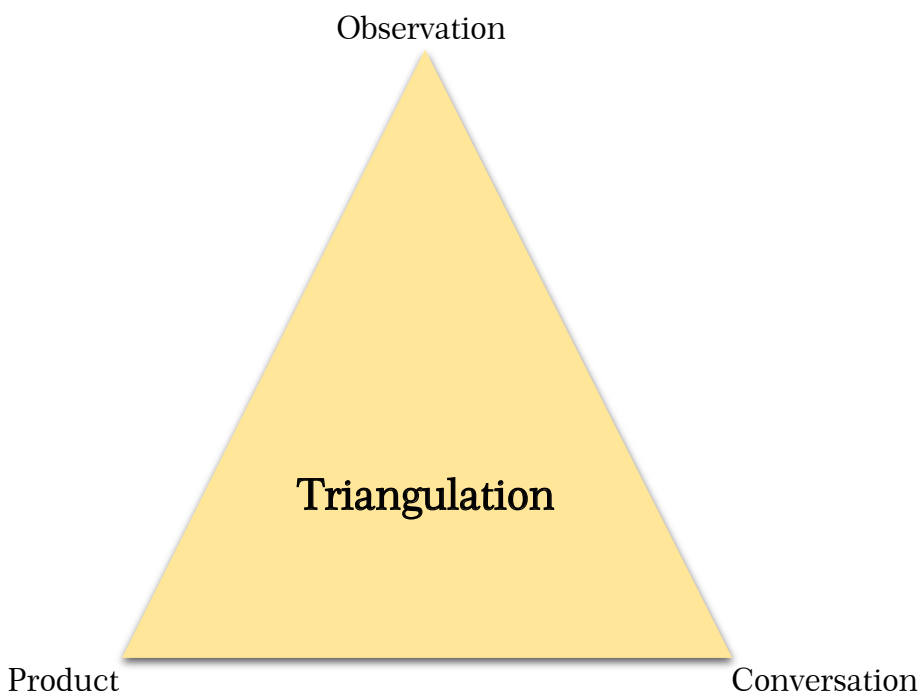
d) Peer teaching and learning

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

Math Primary 1		Unit 1: Numbers
Learn about		Key inquiry questions
<p>Learners should engage in a wide range of practical activities throughout the year to sort and match through arranging objects in groups according to colour, texture, size and shape. They should count using counters and read and write numbers in symbols and in words from 0-99.</p> <p>The should count and recognize shapes in the local environment (<i>eg by investigating the plants and wild life around the school</i>)</p> <p>Learners should investigate even and odd numbers using a number table and counters to perform addition and subtraction of whole numbers up to two digit-numbers.</p> <p>Learners should investigate the distinction between values and comparison of values and how to write ordinal numbers as 1st, 2nd up to 10th.</p>		<ul style="list-style-type: none"> • How do you sort, group, arrange and match these objects? • Can you write in order the numbers from 0-99? • What is an even? • What is an odd numbers? • How do we add a two digit-number to another two-digit number? • In what ways do we distinct and compare values of numbers? • How do you arrange the ordinal numbers?
Learning outcomes		
Knowledge and understanding	Skills	Attitudes
<ul style="list-style-type: none"> • Count, read and write numbers from 0-99. • Recognise even and odd numbers • Recognise ordinal numbers 1st, 2nd up to 10th 	<ul style="list-style-type: none"> • Sort, match and arrange groups of objects. • Add whole numbers up to two digits. • Subtract whole numbers up to two digits. 	<ul style="list-style-type: none"> • Appreciate the activities in mathematics and use of mathematics in daily life situation for example in job creation. • Be confident to investigate mathematics and to take responsibility for their own learning.

Contribution to the competencies:

Critical thinking: is enhanced through mathematical activities for example matching, comparing and ordering numbers.

Communication: through discussion, drawing and ordering or arranging objects and numbers; learners learn to cooperate.

Links to other subjects:

Peace Education: engage in common activities that bring pupils together

Environment and sustainability: Identify things in their surroundings

1.1 Sorting and Grouping

Pupil's Book: Activity 1- Activity 12

Sorting and grouping are basic skills taught to children in entry level. These activities require children to organize items into groups based on a common characteristic such as size, color, shape, texture, or flavor and also explain why they grouped the items as they did.

Sorting and grouping are skills that a child will use in all areas of his or her life at home and in school as he or she puts away toys, organizes clothes or arranges a locker, for example.

Children first learn how to sort items. For example, a young child can likely separate a group of plastic figurines into two groups (vehicles and animals, perhaps) before he or she is able to state the distinction that cars have wheels and animals are living things.

As children gain comfort sorting, they are encouraged to explain their thought process in sorting by identifying and naming the characteristic that determines the groups.

Recognizing groups of objects requires logical thinking, an ability that will be important as children make other decisions.

Also, understanding the relationship between the different groups and being able to discuss that relationship hones analytical skills.

Below are some suggestions on teaching sorting and grouping.

Teaching sorting and Grouping

1. Highlight one characteristic in a large group of items.

Once children are familiar with the basic concept of grouping items together based on a common characteristic, introduce a large group of two items that differ in only one key attribute.

For example, you may give children a bowl of two types of beans that have different colors but the same shape and direct them to sort them according to the color. Or, you could give children a group of salad and dinner forks and ask them to sort them according to size.

Naming the defining characteristic for the children (such as color or size) will help guide children in this beginning sorting activity.

Set out two empty bowls next to the large pile of items, which will give children the clue that they need to sort the pile of items into only two different groups. To help them get started, pick one item from the pile and put it in the first bowl and pick a second (different) item and put it in the second bowl.

Ask leading questions. After you have sorted two of the items into different bowls, pick up a third item and hand it to the children. As they examine it, ask them, "Which bowl does that one go in?" After the children have made their choice, ask them why they picked the bowl that they did.

As children explain their classification methods, encourage them to use descriptive words that refer to the item's color, shape, size, texture, or whatever the defining characteristic happens to be.

If children incorrectly sorted the item, call their attention to the defining attribute (color, size, etc.) and let them try again to put the piece in the correct bowl.

Sorting, Grouping and Matching

Let us sing: Whole class.

Colours



2

Sorting, Grouping and Matching

Activity 1a: In groups 

Collect from around the school compound.



3

Guide learners, to sing as a whole class. (Page 2) of the learner's book

Colours

Which is the best colour,
I have ever seen,
ooh, ooh,
which is the best.
red is the best colour,
I have ever seen,
ooh! ooh!
which is the best.

Repeat for all these colours

Blue, green, brown, black, pink, grey, white, purple, orange

Activity 1a

Define to learners the meaning sorting and marching using safe objects they collect around the school compound.

Sorting is arranging in groups according to colour, texture, size and shape.

Matching is putting together objects according to colour, shape, texture, and size.

1. Walk around the school compound and collect different items, bottle tops, flowers, leaves, bottles etc. with learners.
2. In groups, arrange them in different colours.
3. One group member to present to the class the reasons why they grouped them that way.

2. Introduce more characteristics.

When children are comfortable sorting objects based on an obvious characteristic (such as color), challenge them to sort a more diverse group of items.

With a larger group of items, children will need to make a decision about which characteristic to use to define the groups. For instance, you could have a group of blocks in two different sizes and two different colors. Children will need to decide whether color or size will be the determining factor when sorting into two groups. Buttons are great for this purpose since they have two or four holes,

come in a variety of colors, can be made of wood, metal or plastic, and can be square, circular or oblong. Also, buttons are sold inexpensively and in bulk at most craft or fabric stores.

As children begin sorting the items into two different bowls, encourage them to discuss their reasoning behind each decision. Did they choose to sort based on color and put all red buttons in one bowl and all the remaining buttons in a different bowl? Or are they putting all circular buttons in one bowl and all the oddly shaped buttons in a different bowl? As children articulate their sorting method, they will be honing important analytical and expressive reasoning skills.

When children have finished sorting all the items, consider asking them to re-sort the same group of items in a different way.

Sorting, Matching and Grouping by Colour

Activity 1b: In pairs



Imagine you are in the market above.
Tell your partner three items you would buy.
What colours would they be?

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Sorting, Matching and Grouping by Colour



Activity 2: In pairs.

Discuss the colours of the above objects.
Are there other objects you know that have same colours?
In turns, say the colour and your partner says the object.

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For example, if they initially sorted the items by size, they could sort by color or texture when sorting the same items again. Since the children already sorted the items correctly one time, re-sorting them a second time will be an added challenge.

Activity 3:

Guide learners to form groups and ask them the following questions.

- a) How many are red?
- b) How many have a different colour?
- c) How many are blue?
- d) How many are yellow?
- e) How many are green? In pairs: Tell your partner your favourite colour. Why do you like this colour more than any other?

Sorting, Matching and Grouping by Colour

Activity 3: In groups.

1)

2)

3)

4)

5)

In pairs: Tell your partner your favourite colour.
Why do you like this colour more than any other?

6

Sorting, Matching and Grouping by Colour

Activity 4: In pairs.

What colour you think each object is?

Individually

On a piece of paper, draw and colour the objects above as best as you can.

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Activity 4: In pairs.

Guide learners to look at the pictures and ask them to tell their partner what colour they think each object is.

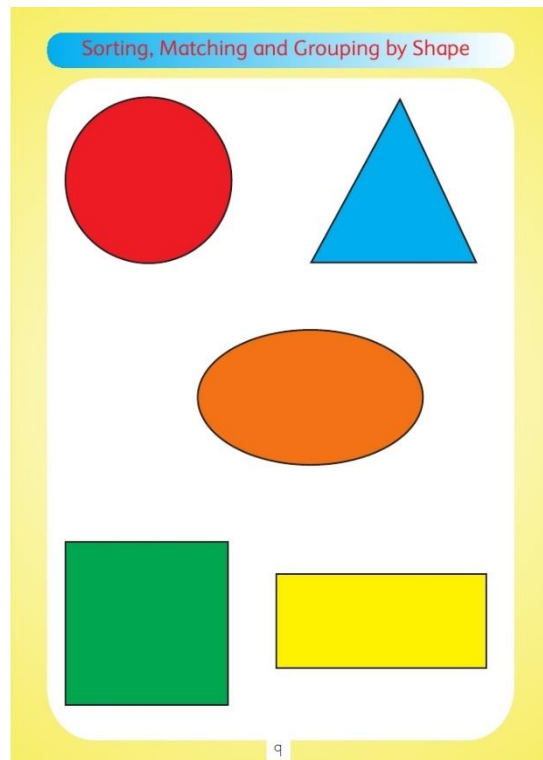
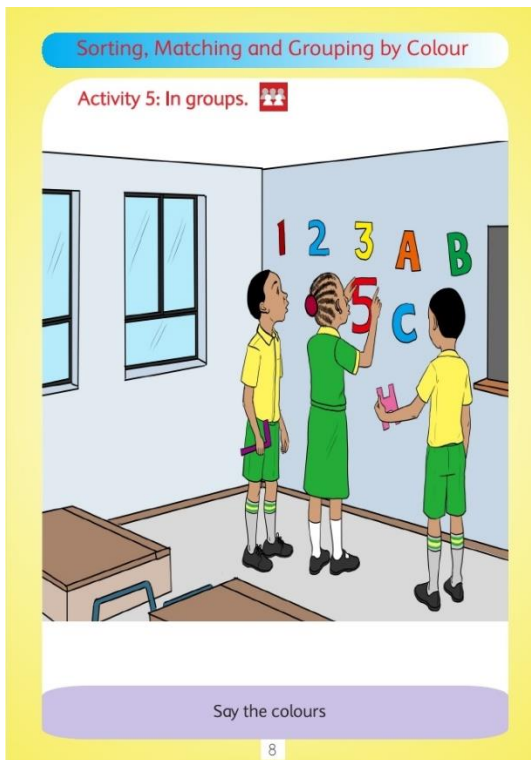
1. On a piece of paper, draw the objects above as best as you can.
2. Colour your pictures.
3. Compare your pictures with those of your desk mate.
4. Are your colours different? Why do you think they are different?

3. Incorporate sorting into everyday activities.

Everyday activities present wonderful opportunities for sorting. When cleaning up at the end of the day, ask them to sort their toys into two bins based on a particular characteristic such as noisy toys in one bin and quiet toys in another or rolling toys (vehicles and balls) in one bin and non-rolling toys (stuffed animals and puzzles) in another.

Activity 5: In groups.

Guide learners to cut out numbers and letters of the alphabet. Colour each number and in turns ask one group member to touch a letter and say the colour. The whole class to say “correct or wrong”.



Shape is the appearance of an object.

Guide the learners to identify the shapes.

Activity 6a: In pairs.

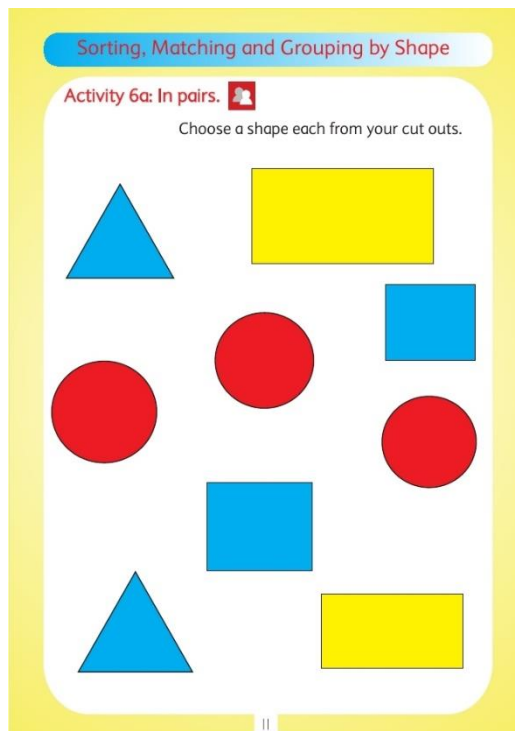
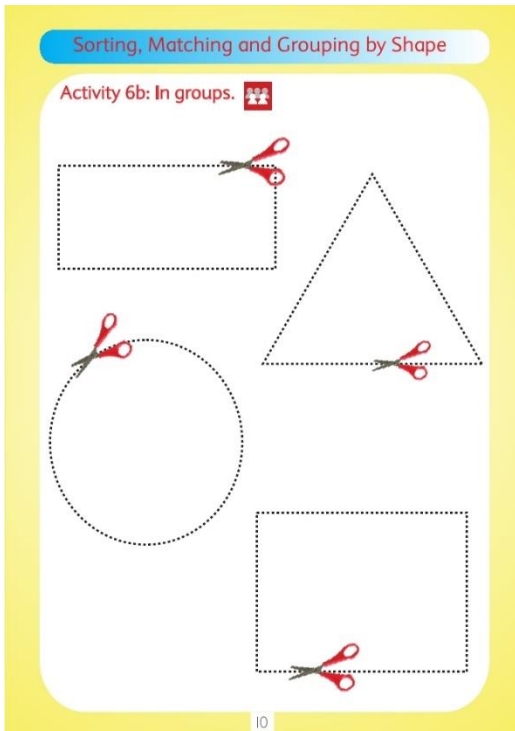
Activity 6b: In groups.

1. On a piece of paper, draw and cut out these shapes.
2. Group leader to hold a shape and the group to say name.
3. How do I know that this is a triangle? Because it has 3 sides. How do I know this is a circle? How do I know this is a square?

Choose a shape each.

Describe your shape to your partner.

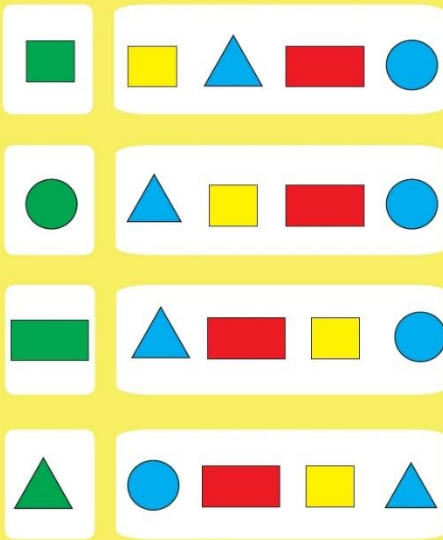
Is my shape the same as yours, how do I know that they are the same. Is my shape different from yours, how do i know this?



Sorting, Matching and Grouping by Shape

Activity 7: In groups.

Which ones look the same as the green ones?



12

Activity 7: In groups.

Look at the shapes in green.

Now look at the shapes on the right hand side. Which shape looks the same?

Activity 8a: Individually

Guide learners to draw and colour these shapes in your exercise book. Match the shapes that look the same.

Activity 8b: In groups

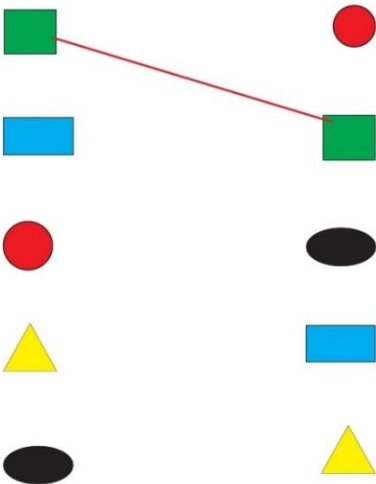
Guide learners to discuss and list the different shapes you can see.

Each group to present to the class in turns.

Sorting, Matching and Grouping by Shape

Activity 8a: Individually 

Draw, colour and match these shapes.



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Sorting, Matching and Grouping by Shape

Activity 8b: In groups 

Discuss and list the different shapes you can see.



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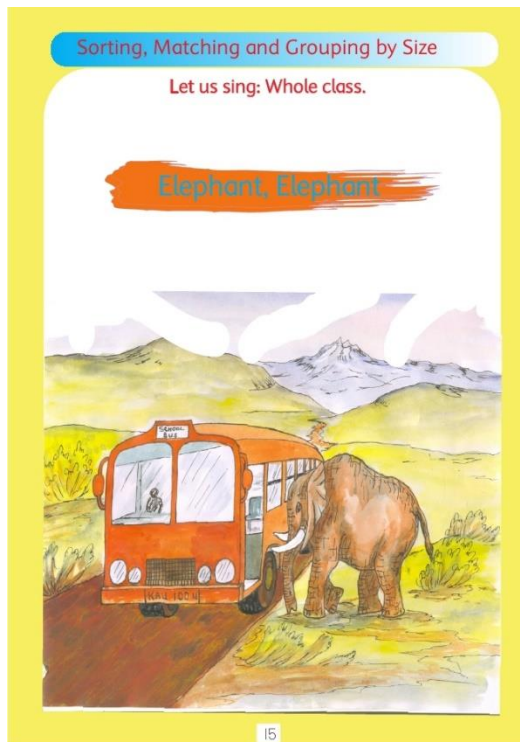
What shape would you give the following; Table, egg, football, duster?

Size is how big or small an object is.

Let us sing: Whole class.

Elephant, Elephant
Elephant , elephant.
Get into the bus.
No....no....no.
Why... why... why.
Because I am too big.
Because I am too big.

Which other animals do you think may not fit into the bus? Why do you say so?



Sorting, Matching and Grouping by Size

Activity 9: In groups. 🧑🧑🧑

1. Look at the pictures below. Discuss which is the bigger one.

2. Collect stones from around the school compound.

16

Activity 9: In groups.

1. Look at the pictures below. Discuss which is bigger one.

2. Walk around the school compound and collect stones of different sizes.

Arrange the stones in your group.

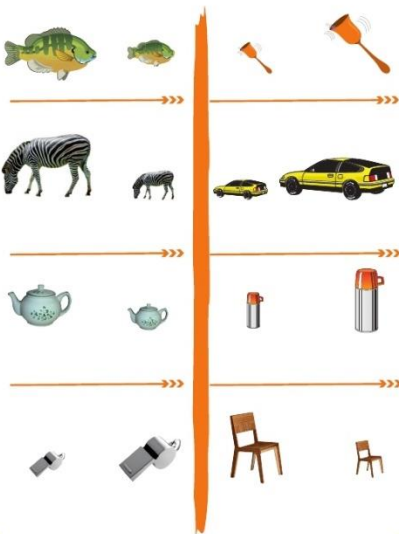
In your group describe how you have arranged them using the vocabulary bigger, smaller.

Now visit another group and see how they have arranged their stones.

Sorting, Matching and Grouping by Size

Activity 10: In pairs.

Look and say which is bigger.
How do you say it?



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Sorting, Matching and Grouping by Size

Activity 11: In pairs.

Look and say which is smaller.
How do you say it?

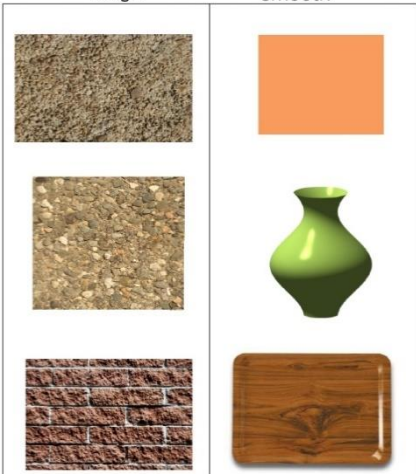


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Sorting, Matching and Grouping according to Texture

rough

smooth



Activity 12: In groups.

Look around the classroom and say "rough or smooth".

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Texture is how smooth or rough a surface is.

Activity 12: In groups.

Look around the classroom. Is the desk smooth or rough? Is the blackboard smooth or rough?

What makes you say it is rough or smooth?

At home, look for smooth and rough items, eggs, pans, and report back to the group.

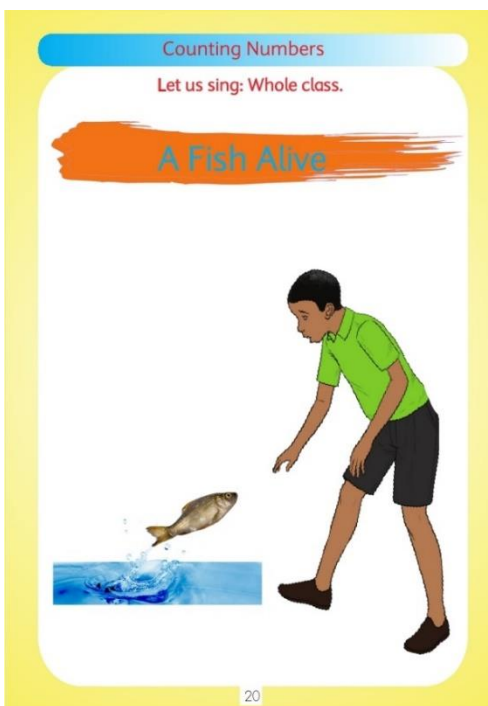
1.2 Counting numbers

An understanding of numbers is crucial in our daily lives. In Primary 1, most children can learn to count and develop a basic sense of how numbers function. This work is important; it prepares them for the more complex mathematical tasks they will face in the coming school years.

- Teach children to count from 1-99; most can remember the ten numbers fairly easily and learn to recite them, like a song or rhyme. Practice this basic skill at every opportunity. Many children learn best when they are using their sense of touch. Let children touch the items they have been counting. This will help them develop a sense for numbers.
- Toss a ball back and forth with learners; after the children catch a ball, they must orally state the next number in a sequence. For example, as you toss the ball, say the number "one." The person who catches it says "two" and tosses the ball to another person, who catches the ball and says "three." Continue the process of tossing and counting until reaching the highest number in the sequence on which you are focusing. For instance, if you're focusing on counting from one to 50, stop at the number 50. You can continue the process of tossing and counting again, starting over at the number one.
- Snap, clap and foot tap to encourage rote counting. Starting with a chosen number, say the number aloud and snap, say the next number in the sequence aloud, and clap and state the next number in the sequence aloud and foot tap. For example, snap while saying "one," clap while saying "two" and foot tap while saying "three." Repeat the physical actions again, continuing the sequence of numbers; snap for "four," clap for "five" and foot tap for "six." Repeat the actions over again while counting aloud all the numbers in the series.
- Physically and orally count aloud a collection of blocks to encourage rote counting. Lay a collection of blocks on the floor in a straight line. Point to the first block in the line and say the first number in your series of numbers. Point to the second block in the line and say the next number in the series and so on, until reaching the end of the line of blocks. Upon reaching the last block, go back to the first block and start the process

over again. For example, point to the first block and say "one," point to the second block and say "two" and so forth.

- Have children jump up and down and count the number of times they jump. Count by 2's, 5's and 10's.
- Have children take really big steps and count by 1's, 2's, 5's and 10's.
- Tap a balloon and try to keep it in the air, count the number of times the children can hit the balloon before it hits the ground.



Let us sing: Whole class.

A Fish Alive

1, 2, 3, 4, 5,

Once I caught a fish alive.

6, 7, 8, 9, 10.

And then I let it go away.

Why did you let it go?

Because it bit my finger so.

Which finger did it bite?

This little finger, on my right.

Number recognition

Pupil's Book: Activity 13

- Encourage and support attempts to learn to count numbers to 99 or higher.
- Include and refer by name to written numbers in the classroom environment during daily routines and in the context of large and small group experiences.

- Intentionally refer to the symbol and number name when discussing numbers (quantities) of objects.

Counting Numbers

Activity 13: Whole class

Count loudly

1	2	3	■	■	■	■	■	10		
11	12	13	14	15	■	■	■	■		
21	22	■	■	■	■	■	28	29	30	
31	32	■	■	■	■	■	■	39	40	
■	■	■	■	■	■	47	48	49	50	
■	■	■	■	■	■	■	■	58	59	60
61	■	■	■	■	■	■	■	■	■	
71	72	■	■	■	■	■	■	■	■	
81	■	■	■	■	■	■	■	■	90	
■	■	■	■	■	■	■	■	■	99	

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Counting Numbers

Activity 14: In pairs

Your partner to say missing number.

1	2		4		6		8		10
		13		15		17		19	
	22		24		26		28		30
31			34		36		38		
		43		45				49	
51		53			56		58		60
	62		64			67		69	
71			74		76		78		
81		83		85		87		89	
91		83			96		98		100

22

Activity 13: Whole class

Model counting with learners joining in on a regular basis.

Teacher could start at different points, learners to come to the front and lead the class. Guide them to work in groups to do this.

Each colour code represents a group.

Activity 14: In pairs

Your partner to say missing number.

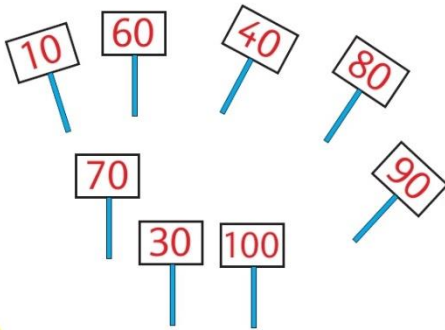
In pairs, draw a number in the air and let your partner guess which number it is. Do this in turns.

Counting concrete objects

- Provide manipulatives and materials (e.g., print and digital material, sand molds, tactile numeral cards, puzzles, counting books, hand-held devices such as tablets, interactive whiteboards) and activities (e.g. tracing numbers in sand, forming numbers with clay, recording data) that feature number names and number quantities.
- Provide a wide variety of writing materials for children to informally explore writing numbers along with meaningful contexts for children to write numbers on charts and graphs.
- Make materials and books that promote exploration of number quantities (e.g., collections of small objects, cash registers with money, number puzzles, counting books and games in print and digital formats, egg cartons and plastic eggs) accessible to children.
- Integrate purposeful counting experiences throughout the school day, indoors and outdoors (e.g., taking attendance, following the rule to stay three steps behind another person, climbing the ladder of the slide, pulling the paper towel holder lever twice. Play board games that involve arranging and counting objects and identifying small quantities of objects with small groups of children).
- Encourage children to compare numbers frequently through questions (e.g., “Are there more people riding in the bus or in the airplane?”) and graphing (e.g., favorite colors, pets).
- Foster one-to-one correspondence throughout the day (e.g., ask a child to put out just enough bowls and spoons for each stuffed animal seated at the table, ask a child to arrange just enough cars so that each garage space has one car in it).
- Model how to represent and describe data (e.g., display daily attendance on a graph and discuss “how many,” “more,” “less,” “fewer,” “equal to.”).
- Work with children in small groups to help them organize (classify) objects, describe their work, and represent the results (e.g., children use a series of graphs to represent the results of experiences in sorting buttons by various attributes – size, color, number of holes, etc.).

Counting Numbers

Activity 15a: In groups.



23

Counting Numbers

Activity 15b: Individually

Count the tens and read the numbers alongside.

	10 Ten
	20 Twenty
	30 Thirty
	40 Forty
	50 Fifty
	60 Sixty
	70 Seventy
	80 Eighty
	90 Ninety
	100 Hundred

24


Activity 15a: In groups.

Draw number cards. Hold out a card and ask the class to say number.











Hold another card at the back and ask the class to guess which number it is.
Were they correct? Show the card.

Count backwards from 100, 90, 80, 70.....

Counting Numbers

Activity 16: Individually 

Count and write the answer in your exercise book.

25

Incorporate images

Many children learn best when they can visualize a concept. For each number, write the number itself and a drawing that represents it. If you teach the number 2, for example, draw two eyes, two apples, or two flowers. Dice, dominoes, and cards with dots or points may also work well. For best results, try letting the children draw the visuals themselves.

Engage the sense of touch

Using beans, cubes, or other tangible items may help children grasp these concepts. When you teach the number 3, for example, have each child count out three of something, touching the items one at a time.

Sing counting songs

Basic counting songs and rhymes help children remember numbers and their sequence.

Use picture books

There are a huge number of counting and number books available. Choose some with bright colors and beautiful pictures.


Ask “how many?” as often as possible

Whenever counting comes up naturally, ask children to do it for you. How many plates do you need to set the table? How many books did you take from the shelf? How many pieces of candy do you have?

Emphasize the relationship between numbers and quantities


Play games that require children to understand the relationship between numbers and their corresponding quantities. For example, have children count out a certain number of beans; then ask them to add some or take some away. Have them figure out the new number and tell you if it is more or less.

Counting Numbers


Activity 17: In pairs. 

How many?


1.




2.



3.




4.




26

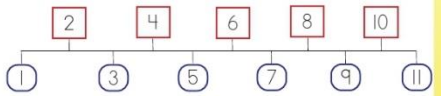
Odd and Even Numbers

Activity 23: In groups. 

Let us clap "even and odd".



1	2	3	4	5	6	7	8	9
↓	↓	↓	↓	↓	↓	↓	↓	↓
Odd	Even	Odd	Even	Odd	Even	Odd	Even	Odd



32

Activity 17: In pairs.

Guide learners to open up their hand and ask their partner to count how many fingers you are holding up. Let the learners to do this in turns.

1.3 Odd and Even numbers

The number line has two types of numbers.

These are odd numbers and even numbers.

1, 3, 5, 7, 9, 11 and so on are called odd numbers.

Odd numbers cannot be divided evenly into two groups.

2, 4, 6, 8, 10, 12 and so on are even numbers.

Even numbers are divisible by 2

Clap even numbers, 2 claps, 4 claps, 6 claps etc.







Clap odd numbers, 1 clap, 3 claps, 5 claps etc.

Can you tell what is happening?

Odd and Even Numbers

Activity 24: In pairs:

Odd or even? Tell your partner why you think so.

a)	
b)	
c)	
d)	
e)	
f)	

33

Odd and Even Numbers

Activity 25a: Individually

Count in 2s.

I	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

Count in 5s.

I	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

Activity 25b: In groups.

Orally count in two's and five's. Take turns as you count.

34

Activity 23: In groups.

Let us clap “even and odd”.

Activity 24: In pairs:

Odd or even? Tell your partner why you think so.

Walk around the school compound. Collect different things and group them in odd and even numbers. Visit the next group and

Activity 25a: Individually

Guide learners to copy these numbers in your exercise book. Skip a number and count the second one. Guide learners to copy these numbers in your exercise book. Skip four numbers and count the fifth one. That is counting in 5s.

Activity 25b: In groups.

Orally count in two's and five's. Take turns as you count.

Odd and Even Numbers

Activity 26: Individually.

Copy these numbers in your exercise book.
Circle all the even numbers and cross out all the odd numbers.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	62	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	

35

Place Value



Activity 27: Whole class.

Who is on the ones side?

36

Activity 26: Individually.

Guide learners to copy these numbers in their exercise book.

Circle all the even numbers and cross out all the odd numbers.

1.4 Place value

Activity 27: Whole class.

Two of you to stand in front of class. One on the left and one on the right. Say who is in the ones and who is in the tens place value.

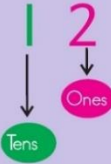
Activity 28: In groups.

Collect sticks and bottle tops from within the school compound or its surrounding.

Place Value

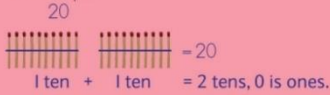
Place value is where a digit is in a number.

For example: 12



We can also know the value of a number by arranging it in groups of 10.

For example:

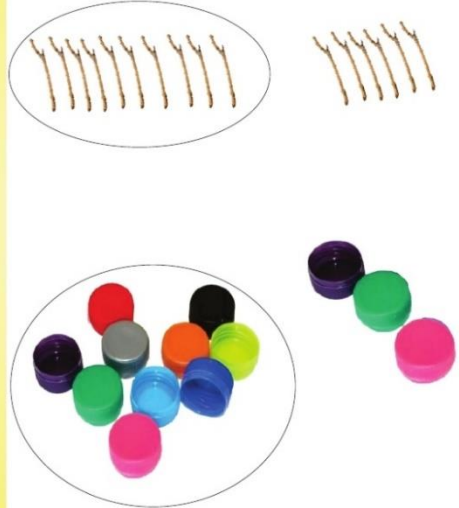


37

Place Value

Activity 28: In groups. 🧑🧑🧑

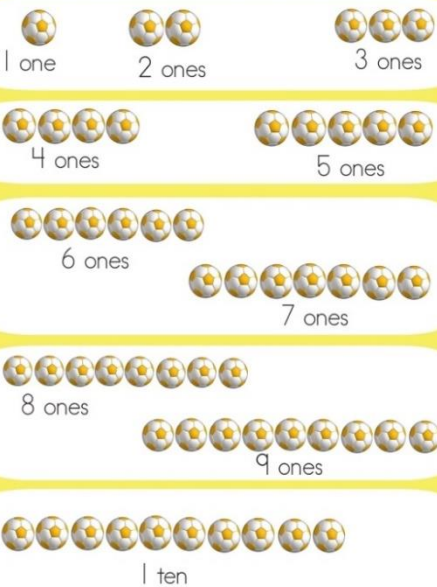
Collect different items from the school compound.



38

Place Value

Activity 29: In pairs. 🧑🧑



39

Place Value

Activity 30: Individually. 🧑

Count the balls and read their values.

Objects	Objects	Tens	Ones	Number
		1	1	11 Eleven
		1	2	12 Twelve
		1	3	13 Thirteen
		1	4	14 Fourteen

Objects	Objects	Tens	Ones	Number
		2	0	20 Twenty

40

Arrange them in tens. How many sticks were left after putting the ten together?

How many bottle tops were left after putting the ten together?

Group leader to present to the class, how many tens and how many ones they have.

Activity 29: In pairs

Count the balls and read their values. In pairs and in turns, touch the balls and your partner counts and says “how many ones”.

Activity 30: In pairs

Guide learners to collect safe objects like stones and use them to count.

Activity 31: In groups

Say how many tens, and how many ones.

Do this with different numbers. Your group leader can also write them on the blackboard and the group says how many tens and how many ones.

Place Value


Say how many tens, and how many ones.

21	2 tens and 1 one	twenty-one
23	2 tens and 3 ones	twenty-three
37	3 tens and 7 ones	thirty-seven
25	2 tens and 5 ones	twenty-five


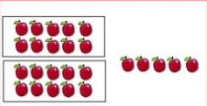
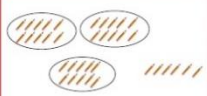
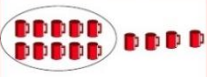




60	75	50
92	48	
67	38	73

41

Place Value

Activity 32: Individually 

How many tens and how many ones?
You can write the answer in your exercise book.

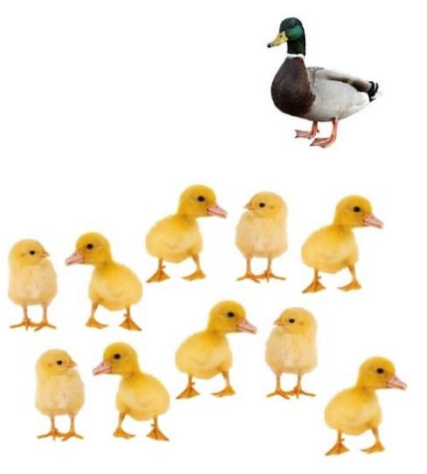
 1 ten and 2 ones = 12	
	
	
	

42

Place Value

Let us sing: Whole class.


Ten Little Ducks




43

Place Value

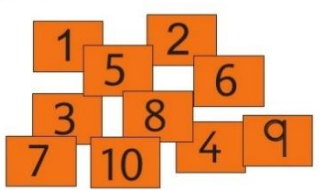
Ascending and Descending order.

Activity 34: In groups 

What do you notice?



Arrange them.



Ascending order

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Descending order

9	8	7	6	5	4	3	2	1
---	---	---	---	---	---	---	---	---

44

Let us sing: Whole class.

Ten Little Ducks

Ten little ducks went out one day, over the hills and far away.

Mother duck went quack –quack –quack.

And only nine little ducks came back.

REPEAT FOR

Nine Eight, Seven, Six, Five, Four, Three, Two, One.


Ascending order is when we arrange things from the smallest to the largest.

Descending order is when we arrange things from the largest to the smallest.

Activity 34: In groups

Form groups of four. Stand from the tallest to the shortest.

Place Value

Activity 35: Individually 

Ascending order

Numbers	Smallest	Biggest	Ascending order
7, 13, 15, 4, 8	4	15	4, 7, 8, 13, 15
11, 14, 6, 18, 5			
9, 7, 10, 16, 12			
3, 11, 1, 19, 6			
2, 10, 18, 5, 1			

Descending order.

Numbers	Smallest	Biggest	Descending order
1, 18, 3, 12, 16	1	18	18, 16, 12, 3, 1
4, 6, 19, 10, 15			
14, 11, 18, 7, 19			
8, 13, 5, 12, 17			
7, 12, 4, 11, 16			

45

Say which is ascending and which is descending.

Write numbers 1 to 10 on a piece of paper or cardboard.

Mix them up and ask the group to arrange them from 1 to 10 and from 10 to 1.

Ascending order 1 2 3 4 5 6 7 8 9

Descending order 9 8 7 6 5 4 3 2 1

Activity 35: Individually

In your exercise book, write the 'smallest' and the biggest of the numbers given. Then write all the numbers.

In your exercise book, write the 'biggest' and the 'smallest' of the given numbers. Then write all the numbers.

1.5 Addition

Pupil's Book: Activity 36 – Activity 43

Use objects to demonstrate how addition works. Children respond well to visual tools that help them understand addition concepts. Any easily handled object may be used, from beads or blocks to buttons. Start with a small number of items and use a variety of tactics to demonstrate number relationships:

- Give children two small groups of items -- say, a group of two blocks and a group of three blocks. Have the children count the number of blocks in each group.
- Have children combine these two groups of objects and count the total number of blocks. Explain that they have "added" these groups together.

- Provide a set number of objects -- six buttons, for example -- and ask children how many ways they can combine groups of buttons to make six. They might create one group of five buttons, for example, and one group of one.
- Demonstrate how you can "add" to a group of objects by stacking. Start with a stack of three coins, for example, and add two more to the stack. Ask your child to count how many coins are now in the stack.

Group children and use their bodies as human "manipulatives."

In a classroom setting, take advantage of your young students' need to move around regularly by using them as human manipulatives. Utilize tactics similar to those you'd use with objects to group and combine students and have them count themselves in different configurations. (Stacking students is not recommended!)

Consider having children create their own manipulatives.

Use modeling clay to create manipulative objects, or combine your addition lesson with an art lesson in using scissors to create a collection of paper shapes.

Employ game pieces in new ways to create addition games.

Dice lend themselves easily to beginning addition games. Have children roll two dice and practice adding the resulting numbers. You may also use playing cards or dominoes.

When working with groups of children with varying abilities you may tailor this game to provide an extra challenge for quick learners. Instruct them to add the results of three or more dice or playing cards.

Addition

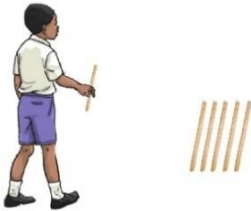
Addition is calculating the total of two or more numbers or amounts.

Activity 36: In groups

Deng, Taban, Kiden and Nyandeng.



Collect sticks from the school compound.



46

Addition

Activity 37: Individually

In your exercise book, add by putting together these items.

Put together



47

Math language

- Familiarize children with addition symbols. Teach them the meaning of the symbols "+" and "=". Then help them learn to write simple "number sentences" -- i.e. " $3 + 2 = 5$."
- Begin with horizontal number sentences. Young children are already learning that they are supposed to write words and sentences "across" paper. Following a similar practice with number sentences will be less confusing. Once children have mastered this concept you may introduce the concept of vertical sums.
- Teach children the words that signify "addition." Introduce terms such as "all together," "put together," "how many in all," "total," and "sum" that commonly indicate a child will need to add two or more numbers.

Memorizing basic facts

- Instruct children in "skip counting." Learning to count by twos, fives, and tens to 100 will improve children's understanding of number relationships and begin to provide easy reference points.
- Encourage children to memorize "doubles." "Doubles" are math facts such as " $3 + 3 = 6$ " or " $8 + 8 = 16$." Again, these facts provide easy reference points as children learn to add. A child who knows instinctively that " $8 + 8 = 16$," for example, can more easily figure out the sum of " $8 + 9$ " by simply adding one to the total.
- Use flash cards to stimulate memorization. Try grouping cards by fact families to emphasize the relationships among these numbers. While children should recognize how numbers interact with each other, rote memorization of basic math facts will provide a complementary foundation for moving on to more complicated arithmetic.

Addition is calculating the total of two or more numbers or amounts.

Addition

Activity 38: In pairs.

$5 + 3 = 8$

$4 + 2 = 6$

Do this in turns and with different number of fingers.

48

Addition

Activity 39: Individually

Do these sums in your exercise book.

Add

2

+

1

=

3

4

+

2

=

4

+

4

=

49

Addition

50

Activity 36: In groups

Deng is walking to join Taban, Kiden and Nyandeng.

How many will they be all together?

What do you think would happen if Kenyi also joined them?

In groups, collect sticks from around the compound and put the sticks in groups of five. Add a stick in each group.

How many sticks do you have?

Addition

Activity 40: Individually.

Do these sums in your exercise book.

1 + 2 = 3

3 + 4 =

10 + 12 =

15 + 5 =

51

Addition

Activity 41: Individually.

Do these sums in your exercise book.

a) 2 + 2 b) 16 + 13

c) 16 + 10 d) 12 + 25

e) 16 + 3 f) 22 + 14

g) 22 + 6 h) 23 + 11

i) 12 + 7 j) 23 + 13

52

Addition

Activity 42: Individually

Do these sums in your exercise book.

$$\begin{array}{r} 8 \\ + 5 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 13 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 25 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 11 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 0 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ + 0 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ + 8 \\ \hline \end{array}$$

53

Addition

Activity 43: Individually

What do you add to make sum total of the number in green?
Write in your exercise book.

- | | |
|---------------------------------|----------------------------------|
| 1. $9 = 4 + \underline{\quad}$ | 7. $5 = \underline{\quad} + 1$ |
| 2. $18 = 9 + \underline{\quad}$ | 8. $13 = \underline{\quad} + 7$ |
| 3. $17 = 9 + \underline{\quad}$ | 9. $16 = 9 + \underline{\quad}$ |
| 4. $12 = 8 + \underline{\quad}$ | 10. $14 = 6 + \underline{\quad}$ |
| 5. $10 = \underline{\quad} + 6$ | 11. $15 = \underline{\quad} + 8$ |
| 6. $7 = \underline{\quad} + 4$ | 12. $11 = \underline{\quad} + 5$ |

Copy the sums below in your exercise book and fill in the boxes.

$\begin{array}{r} \text{Tens} \text{ Ones} \\ 2 \quad 7 \\ + 1 \quad \square \\ \hline 3 \quad 7 \end{array}$	$\begin{array}{r} \text{Tens} \text{ Ones} \\ 1 \quad \square \\ + 1 \quad 0 \\ \hline 2 \quad 8 \end{array}$	$\begin{array}{r} \text{Tens} \text{ Ones} \\ \square \quad 1 \quad 4 \\ + \square \quad 1 \\ \hline 2 \quad 5 \end{array}$	$\begin{array}{r} \text{Tens} \text{ Ones} \\ 1 \quad \square \\ + 1 \quad \square \\ \hline 2 \quad 8 \end{array}$
---	---	---	---

$\begin{array}{r} \text{Tens} \text{ Ones} \\ 2 \quad 1 \\ + \square \quad 4 \\ \hline 3 \quad 5 \end{array}$	$\begin{array}{r} \text{Tens} \text{ Ones} \\ 1 \quad 6 \\ + 1 \quad \square \\ \hline 2 \quad 0 \end{array}$	$\begin{array}{r} \text{Tens} \text{ Ones} \\ \square \quad 3 \\ + \square \quad 2 \\ \hline 3 \quad 5 \end{array}$	$\begin{array}{r} \text{Tens} \text{ Ones} \\ \square \quad 1 \\ + \square \quad 1 \\ \hline 3 \quad 2 \end{array}$
---	---	---	---

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1.6 Subtraction (Taking away)


Pupil's Book: Activity 44 – Activity 51


- Ask them to subtract objects from the pile. Once they get the hang of adding to the pile of objects, have them remove objects to learn how to subtract. Show them the number on first flashcard and have them count out the objects. Then, show them another flashcard and say, "Now, what we would we get if we take away this number from the pile?" Give them time to subtract the right amount from the pile.
- For example, if you pull out a flashcard that says "5," have children count out five objects. Then, if you pull out a flashcard that says "2," have children remove two objects from the five objects. Finish by counting out the total number of objects in the pile together so it equals "3."


Subtraction is taking one number or amount away from another number.


Subtraction/ Take away

Subtraction is taking one number or amount away from another number.

Activity 44: In groups 




Activity 45: In groups. 

Practice take away using your fingers. 

55

Subtraction/ Take away

Activity 46: Individually. 

Do these sums in your exercise book.

Take away

$6 - 2 = 4$ ○○○○○	$5 - 3 = 2$ ○○○○○
$5 - 2 =$ ○○○○○	$3 - 3 =$ ○○○
$3 - 1 =$ ○○○	$6 - 3 =$ ○○○○○○
$8 - 4 =$ ○○○○○○○○	$10 - 5 =$ ○○○○○○○○○○

56

Activity 44: In groups

How many plants do they have in total?

They are about to plant five trees. How many are left in the in the wheelbarrow?

Activity 45: In groups.

Practice take away using your fingers.

Example; Five fingers take away two is three etc.

Subtraction/ Take away

Activity 47: Individually. 

Do these sums in your exercise book.

- | | | |
|-----------|-----------|-----------|
| 3 - 2 = | 10 - 3 = | 16 - 12 = |
| 6 - 3 = | 11 - 5 = | 13 - 9 = |
| 16 - 6 = | 17 - 4 = | 11 - 7 = |
| 15 - 10 = | 14 - 2 = | 18 - 8 = |
| 32 - 25 = | 18 - 6 = | 13 - 5 = |
| 5 - 1 = | 10 - 8 = | 14 - 7 = |
| 18 - 5 = | 18 - 9 = | 17 - 9 = |
| 23 - 13 = | 13 - 6 = | 15 - 10 = |
| 20 - 10 = | 13 - 11 = | 17 - 6 = |
| 13 - 2 = | 14 - 13 = | 16 - 7 = |
| 16 - 4 = | 15 - 12 = | 10 - 3 = |
| 17 - 3 = | 17 - 14 = | 13 - 9 = |
| 15 - 2 = | 18 - 14 = | 12 - 3 = |


57

Subtraction/ Take away

Activity 48: Individually. 

Do these sums in your exercise book.

$\begin{array}{r} 7 \\ -4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -6 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -10 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ -3 \\ \hline \end{array}$
$\begin{array}{r} 11 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ -16 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ -1 \\ \hline \end{array}$
$\begin{array}{r} 23 \\ -20 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ -11 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ -0 \\ \hline \end{array}$

Activity 49: In groups 

Solve a question written on the board in groups. One of you from a group to solve on the board.

58

Subtraction/ Take away

Activity 50: Individually. 

Do these sums in your exercise book.

$\begin{array}{r} -3 \\ 2 \\ \hline 1 \end{array}$	$\begin{array}{r} -5 \\ 2 \\ \hline 3 \end{array}$	$\begin{array}{r} -2 \\ 2 \\ \hline 0 \end{array}$
$\begin{array}{r} -4 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} -5 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} -6 \\ 4 \\ \hline \end{array}$
$\begin{array}{r} -5 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} -3 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} -6 \\ 1 \\ \hline \end{array}$
$\begin{array}{r} -3 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} -8 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} -6 \\ 5 \\ \hline \end{array}$

59

Subtraction/ Take away

Activity 51: Individually. 

Work out in your exercise book.

- | | | |
|--|---|---|
| 1. $6 - \underline{\quad} = 4$ | 11. $10 - 1 = \underline{\quad}$ | |
| 2. $\underline{\quad} - 3 = 6$ | 12. $10 - \underline{\quad} = 4$ | |
| 3. $7 - 1 = \underline{\quad}$ | 13. $18 - \underline{\quad} = 10$ | |
| 4. $\underline{\quad} - 5 = 3$ | 14. $\underline{\quad} - 3 = 13$ | |
| 5. $9 - \underline{\quad} = 3$ | 15. $17 - \underline{\quad} = 3$ | |
| 6. $8 - 6 = \underline{\quad}$ | 16. $\underline{\quad} - 14 = 4$ | |
| 7. $5 - \underline{\quad} = 0$ | 17. $15 - 12 = \underline{\quad}$ | |
| 8. $\underline{\quad} - 3 = 1$ | 18. $13 - 2 = \underline{\quad}$ | |
| 9. $\underline{\quad} - 4 = 4$ | 19. $20 - \underline{\quad} = 4$ | |
| 10. $\underline{\quad} - 2 = 5$ | 20. $12 - 7 = \underline{\quad}$ | |
| 21. $\begin{array}{r} 28 \\ -1\boxed{} \\ \hline \end{array}$ | 22. $\begin{array}{r} 39 \\ -1\boxed{} \\ \hline \end{array}$ | 23. $\begin{array}{r} 3\boxed{} \\ -1\boxed{}8 \\ \hline \end{array}$ |
| 24. $\begin{array}{r} 15 \\ -\boxed{} \\ \hline \end{array}$ | 25. $\begin{array}{r} 1\boxed{} \\ -1\boxed{}6 \\ \hline \end{array}$ | 26. $\begin{array}{r} 39 \\ -1\boxed{} \\ \hline \end{array}$ |

60

1.7 Ordinal numbers

Pupil's Book: Activity 52 – Activity 59

Point this out for the pupils;

Form

Spelling of Ordinal Numbers

Just add them to the cardinal number:

- four - fourth
- eleven - eleventh

Exceptions:

- one - first
- two - second
- three - third
- five - fifth
- eight - eighth
- nine - ninth
- twelve - twelfth

In compound ordinal numbers, note that only the last figure is written as an ordinal number:

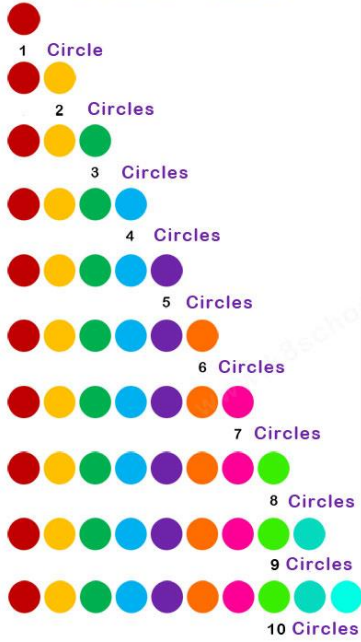
- 421st = four hundred and twenty-first
- 5,111th = five thousand, one hundred and eleventh

Figures

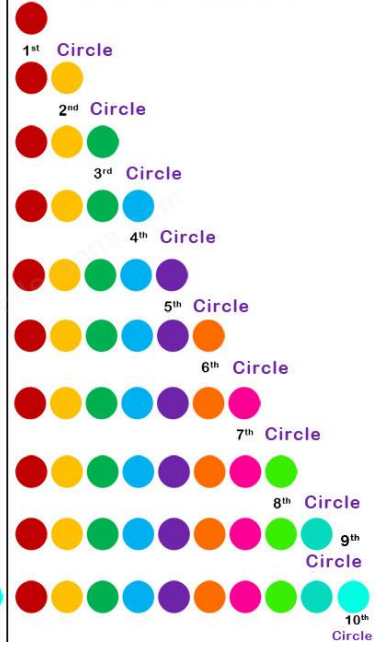
When expressed as figures, the last two letters of the written word are added to the ordinal number:

- first = 1st
- second = 2nd
- third = 3rd
- fourth = 4th
- twenty-sixth = 26th
- hundred and first = 101st

Cardinal Numbers

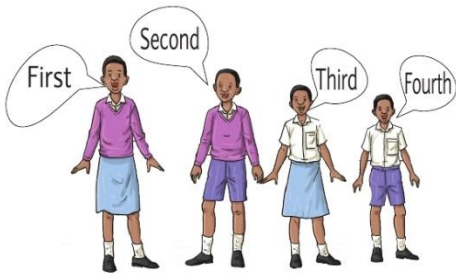


Ordinal Numbers



Ordinal Numbers

Activity 52: Ind groups.



Activity 53: Whole class.

Discuss and say who was first, second and third to get into the classroom today. Why do you say he or she was the first?

61

Ordinal Numbers

Activity 54a: Ind groups



Activity 54b: Whole class.

Compete in the field and record who was 1st, second third etc.

62

An ordinal number is a number which tells the position of an object or something in a list or in an activity. (First, second, third, fourth, etc.)

Activity 52: In groups.


Stand in a straight line.

From left to right, each student says which position he or she is in.

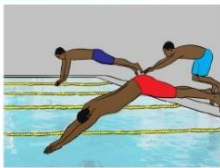
Activity 53: Whole class.

Discuss and say who was first, second and third to get into the classroom today. Why do you say he or she was the first?

Ordinal Numbers


Activity 55: In pairs. 

Who do you think will touch the water first?
Why do you think so?




Look at the red dot. Which position is it in?

First




1st

Second



2nd


Third



3rd


63

Fourth




4th

Fifth




5th

Sixth



6th

Seventh



7th

64

Activity 56: In groups

Who do you think will be first to step on to the road?
Why do you say so?

Who will be the second?

65

Ordinal Numbers

Activity 57: In groups.

Look at the pictures and discuss position.

1 st	first	
2 nd	second	
3 rd	third	
4 th	fourth	
5 th	fifth	
6 th	sixth	
7 th	seventh	
8 th	eighth	
9 th	ninth	
10 th	tenth	

66

Activity 58: In groups.

1. In groups of 10, make a straight line. Let each one say their position in the line.
2. Draw these shapes in your exercise book. Colour


Ordinal Numbers

1 st	First	11 th	Eleventh	21 st	Twenty first
2 nd	Second	12 th	Twelfth	22 nd	Twenty second
3 rd	Third	13 th	Thirteenth	23 rd	Twenty third
4 th	fourth	14 th	Fourteenth	30 th	Thirtieth
5 th	fifth	15 th	Fifteenth	40 th	Fortieth
6 th	Sixth	16 th	Sixteenth	50 th	Fiftieth
7 th	Seventh	17 th	Seventeenth	60 th	Sixtieth
8 th	Eighth	18 th	Eighteenth	70 th	Seventieth
9 th	Ninth	19 th	Nineteenth	80 th	eightieth
10 th	tenth	20 th	twentieth	90 th	ninetieth








67

1 st first	11 th eleventh	21 st twenty-first	31 st thirty-first
2 nd second	12 th twelfth	22 nd twenty-second	40 th fortieth
3 rd third	13 th thirteenth	23 rd twenty-third	50 th fiftieth
4 th fourth	14 th fourteenth	24 th twenty-fourth	60 th sixtieth
5 th fifth	15 th fifteenth	25 th twenty-fifth	70 th seventieth
6 th sixth	16 th sixteenth	26 th twenty-sixth	80 th eightieth
7 th seventh	17 th seventeenth	27 th twenty-seventh	90 th ninetieth
8 th eighth	18 th eighteenth	28 th twenty-eighth	100 th one hundredth
9 th ninth	19 th nineteenth	29 th twenty-ninth	1,000 th one thousandth
10 th tenth	20 th twentieth	30 th thirtieth	1,000,000 th one millionth

Ordinal Numbers


Activity 58: In groups. 

Draw and colour the ordinal numbers.








8th	
2nd	
6th	
7th	
3rd	
5th	
10th	

67

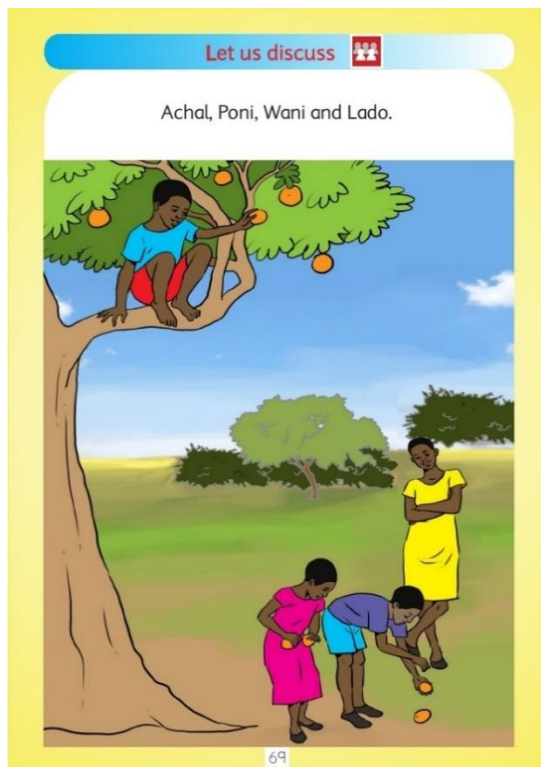
Ordinal Numbers

Activity 59: In groups. 

Look at the coloured pictures. Say which position the shape is in.

A.		5th
B.		
C.		
D.		
E.		
F.		
G.		

68



Let us discuss

How many mangoes can you see?

Deng has harvested 4.

How many are left on the tree?

What if Achal and Poni each ate one mango, how many would be left?

Let us discuss

How many boys do you think they are?

How many girls do you think they are?

Can you arrange them in ascending order from the shortest to the tallest? How would you do this?

How many tens and ones in the prices of the items above?

UNIT 2: MEASUREMENT

Math Primary 1		Unit 2: Measurement
Learn about		Key inquiry questions
<p>Learners should engage in a wide range of practical activities throughout the year to estimate and compare length, capacity, and weights using a variety of containers and objects of different sizes and lengths. They should measure objects to understand arbitrary units (hand span, strides, length of the foot).</p> <p>Learners should work in groups to investigate the use of local currency as a medium of exchange (buying and selling) and identifying their currency values (1SSP, 5SSP, 10SSP, 20SSP, 50SSP). They should solve simple problems involving money in buying and selling through role-play shopping.</p> <p>Learners should know the time of the day (morning, noon, evening and night), days of the week and months of the year and read and tell the time in hours and half hours using the analogue clock face.</p>		<ul style="list-style-type: none"> • What is the distance from your home to school? • How do we measure length? • How do we compare capacity and weight of different objects? • What do you use for buying things? • What are the different note values of your bank notes? • How do you solve simple problems (add or subtract) involving money? • What are the times/ variations of the day? • How many days are in a week? • What are the days of the week? • How many months are there in a year? • What are the months of the year?
Learning outcomes		
Knowledge and understanding	Skills	Attitudes
<ul style="list-style-type: none"> • Know the days of the week and months of the year • Recognise the common notes in local currency 	<ul style="list-style-type: none"> • Estimate and compare length, capacity, and weights using arbitrary units 	<ul style="list-style-type: none"> • Appreciate and value their local currency • Value the importance of time • Cooperation and team work

	<ul style="list-style-type: none"> • Solve simple problems related to money • Tell the time on the clock face in hours and half hours 	<ul style="list-style-type: none"> • Confidence to investigate using maths and to take responsibility for their own learning
<p>Contribution to the competencies: <u>Critical thinking</u>: ability is developed in making judgement, for example when using different objects and containers to estimate weight and capacity <u>Communication</u>: discussion and practical activities for example in mini shopping activity and in telling the time <u>Co-operation</u>: in shopping role play</p>		
<p>Links to other subjects: <u>Peace Education</u>: engage in common activities that bring pupils together <u>Environment and sustainability</u>: Identify things in their surroundings</p>		

Note to the teacher:

In this unit, the learners are expected to complete a lot of practical activities. These activities have been provided in the Pupil's Books and are simple and easy to follow. The role of the teacher in these cases is to provide facilitation and guidance for the activities to be performed. There is a lot of pair work and group work. Encourage learners to share their observations and opinions while carrying out the various tasks.

This unit covers the following sub-units:

- Length
- Mass
- Capacity
- Currency
- Time – daily routine, days of the week and months of the year.

It is important to ensure that every sub-unit is covered exhaustively before moving on to the next. More activities can be provided for learners to better understand concepts and make learning fun.

2.1 Length

Below are some ideas for your consideration.

Pupil's Book: Activity 1 – Activity 5

- Provide standard and nonstandard measurement materials both indoors and outdoors (e.g., unit blocks, inch cubes, rulers, cups, buckets, balance scales, water and sand tables).
- Invite children to compare and order objects according to measurable attributes (e.g., length, height, weight, area).
- Listen for and extend children's conversations about long and short, longer and shorter, short and tall, shorter and taller, etc.
- Use digital photography to record children's measurement activities so that students can revisit, think more about, and discuss their strategies with adults and classmates.
- Use every day experiences to foster understanding of spatial sense (e.g., talk about locations in the school, map the classroom by learning/interest

area, invite children to use blocks to create simple scenes or locations [e.g., the park, the zoo] ask children to describe and/or draw how to get from the classroom block area to the easel).

- Provide materials that can be put together and taken apart indoors and outdoors that help children to develop spatial and geometric sense (e.g., puzzles of varying complexity, items to fill and empty, fit together and take apart, or arrange and shape; materials that move; tunnels to crawl through).
- Introduce vocabulary describing two- and three-dimensional shapes and constructions (e.g., circle, sphere, square, cube, triangle, rectangular prism, pyramid; side, point, angle) and use that vocabulary when interacting with children and materials in learning centers, small groups, and individual settings.
- Provide opportunities for children to compose and decompose pictures and designs with two-dimensional shapes (e.g., tangrams, in collage arrangements, two-dimensional manipulative shapes, computer and interactive whiteboard software, handheld device [such as a tablet] applications).
- Provide opportunities for children to compose and decompose with three-dimensional shapes (e.g., unit blocks, hollow blocks, three-dimensional manipulative shapes, boxes, balls, three-dimensional styrofoam shapes).
- Provide opportunities for children to talk about their two- and three-dimensional designs with other children and with adults.
- Provide opportunities for children to explore and describe the differences and similarities between attributes of two- and three-dimensional shapes (e.g., “It’s like a can.” “It has 3 sides and 3 points, so it’s a triangle.”) and constructions (e.g., faces of attribute blocks, balls, blocks of all shapes, boxes, beads).

UNIT 2

Measurement

Length

Activity 1: In groups

Estimate how long it takes to walk from your home to school. Who takes more time to reach school from their home?



Why do you take longer to reach school than your partner?

72

Length

In small groups, walk to the following places, Headteacher's office, toilet block and school gate.



How many steps did you take to reach?

73

Length

Activity 2: Individually

Which is longer?



74

Activity 1: In groups.

In small groups, walk to the following places.

How many steps did you take to reach?

Each group tells the class how many steps they took to reach their different locations.


Why do the groups have different numbers of steps?

Activity 2: Individually.



Which is longer and which is shorter?

Can you say how much longer or shorter they are? How will you say this?

Length


Activity 3: In groups. 





Discuss these pictures. Use the words, taller than, shorter than.

75

Length

Activity 4: In groups. 

1. Measure the length of your desk. 
2. Count the number of steps it will take you to walk round the play field. 
3. Count the length of the teacher's table using your arm. 
4. Use your feet to count the length of one wall of your classroom. 

Compare the results of the group next to yours. Are they the same?
Why do you think you have differences?

76

Activity 3: In groups.

Discuss these pictures. Use the words, taller than, shorter than.

Look at the different buildings. Say which is taller and which is shorter.

Form groups of four and stand in a line. Say who is taller and who is shorter.

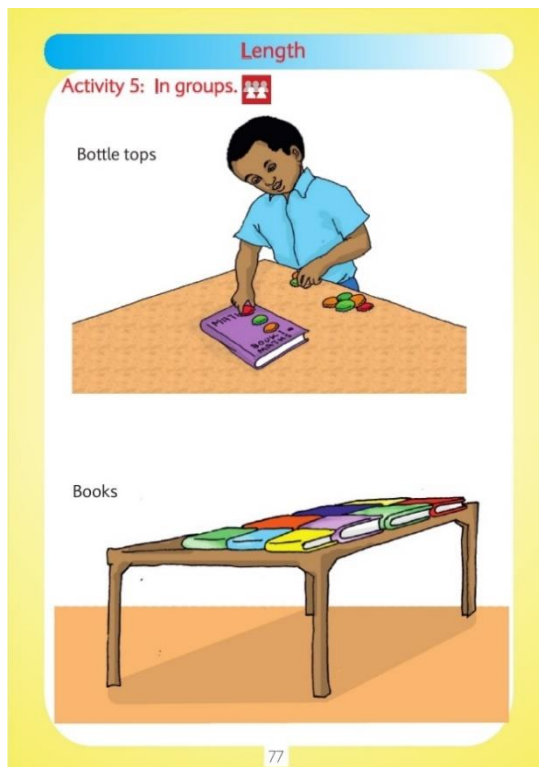
How do you say this?

Activity 4: In groups.

1. Measure the length of your desk using hand span
2. Count the number of steps it will take you to walk round the play field.
3. Count the length of the teacher's table using your arm.
4. Use your feet to count the length of one wall of your classroom.

Compare the results of the group next to yours. Are they the same?

Why do you think you have differences?



Activity 5: In groups.

Collect as many bottle tops as you can.

Arrange them on top of your Mathematics book.

How many bottle tops can cover the front of your

Mathematics book?

How many of your Mathematics books can cover the top of your desk?

2.2 Mass

Pupil's Book: Activity 6 – Activity 11

1. What objects can you find that weigh less than your water bottle?
2. What objects can you find that weigh more than your water bottle?

To introduce this concept, simply practice comparing weights by holding different objects in your hands. Of course, some objects are a little too heavy to actually pick up.

Have the children use their water bottles and find objects that weigh less and weigh more. You can record their answers on the blackboard, and you make a class chart, as well.

The interesting part comes when they find an object that is fairly close in weight to the water bottle. How can we know for sure which one weighs more?

How does an object's size affect its weight? Does bigger always mean heavier?

Pull out several objects specifically for this conversation--a feather, a marble, and a ball. First, ask the children:

1. Which ones are bigger? Both the feather and the ball are bigger.


Then ask:

2. Which ones are heavier?







The marble is heavier than the feather, even though it is bigger.

Don't get too technical and risk the formation of misconceptions. Have the children see that size and weight are not always related and that big objects can sometimes be light and that small objects can sometimes be heavy.

Mass

Activity 6: In groups. 

Can you lift these things?
Why do you think you can lift some and not others?





	
	
	

78

Mass

Activity 7: In groups. 

Do you think it is heavy or light?
Why do you think so?

79

Using a shoebox balance, what objects can you find that weigh the same?

WHAT is a "shoebox" balance?

You will need: a cylindrical object of some sort (a can works); a long, flat object (like a shoebox lid); and some playdoh/plastacine.

Place a blob of playdoh/plastacine on the table and place the can into it. This is so the can will not roll away. The can needs to be as straight as possible, so be careful to push the can down into the playdoh evenly.

Now, balance the lid on top of the can. Do not use playdoh to stick the lid on the can. That's cheating. Just balance it. It takes practice. Let the children practice balancing the lid with nothing in it until they get the hang of it. They are learning that the lid has to be centered on the can for it to work. Why? Because then, the same amount of lid is on each side--so each side "weighs" the same.

After a while, let the children start placing objects on each side of the "balance". Give them an assortment of mixed math tools--cubes, counters, etc. Do not tell them how to do it-- let them figure it out on their own! If one side falls down, they figure out that they have to add something to the other side. If that side then falls down, they might take that object out and try something lighter. It's all about trial and error. They are problem-solving!

Mass



Activity 8: In groups and Whole class.

Visit shops or market that are near you and ask them what they use to weigh things.
Each group to present to the rest of the class.

80

Mass

Activity 9: In groups.

Who do you think is heavier?
Kenyi in blue dress or Nyandeng in green dress?
Why do you say so?



In pairs, say who is heavier between the two of you.
Why do you say so?

81

They are gaining a solid understanding of how a balance works.


So as the children are exploring, ask them---Does this remind you of anything? Usually, someone will say a teeter-totter, or see-saw. Ask them how a see-saw works--and how that is like our shoebox balances? The light side goes up...the heavy side goes down! And what has to happen to make it balance? Both sides have to be the same weight--or equal.

Would it be fun to play on a see-saw with an elephant? No--because the elephant is so much heavier, you would be stuck in the air all the time. This is something that most children can relate to--connecting their new learning to what they already know.













Which object in your basket weighs the most?

After children have had lots of time to play with their shoebox balances, bring out the "real" balances. Collect a variety of objects for them to explore with.

Mass


Activity 10: In groups. 

Which one can you lift?
Why do you think you are not able to lift some of them?













 	 
 	 
 	 

82

Mass

Activity 11: In groups. 

Which one would you say is heavier?

83

The first activity is to compare objects to see which weighs more using the balance. Again--do not tell the children how to do it. Guide them through questioning, but do not model it.

For a challenge, have the children figure out which of the objects they compare weighs the most. That's true problem-solving! Watch to see what strategies the children use to keep track of the objects they weigh. This is definitely a challenge. Always have them work together in a group for this problem.

What objects can you find that weigh the same as a rubber?

This is just more practice using a balance. Give each group an eraser and a variety of objects. They see how many different combinations of objects they can find to balance the eraser.

2.3 Capacity

Pupil's Book: Activity 12 – Activity 15

The concepts of volume and capacity are often taught together and the terms are used interchangeably. At this level, lessons are simple and hands-on. Activities that teach estimation, comparison -- greater than and less than -- and basic measurement can be set up as centers, cooperative learning or individual desk work.

Estimation

Fill three dramatically different-sized jars with the same quantity of jelly beans, rice, buttons or sand. Ask the children to guess or estimate which one contains the most. Discuss how much each container could hold and compare the capacity of each jar. Pour the contents of each jar into measuring cups to show children how the capacity can trick us into thinking that the actual quantity is different. This activity can be used as a lead into a lesson about measurement.

Comparison

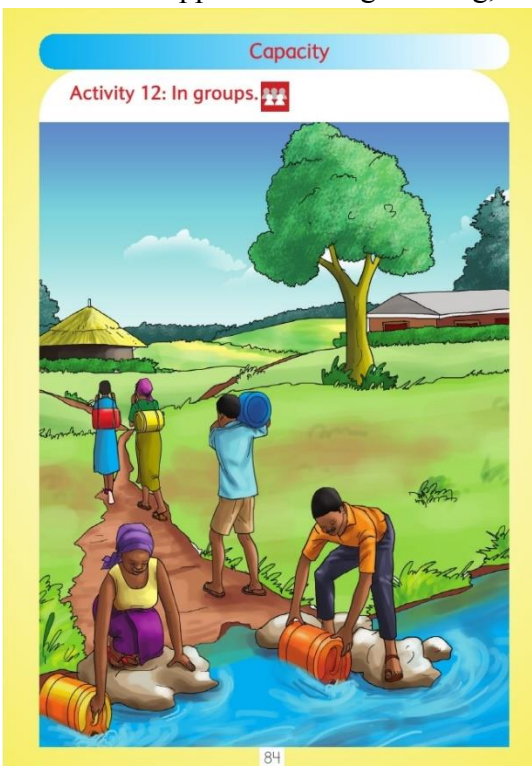
Teach the language of mathematic comparison and quantity -- "greater than," "less than" and "equal to" -- by letting children pour water into same-sized liquid measuring cups -- containers with identical capacity -- labeled with letters. Ask them to show you comparisons. For example, they should be able to demonstrate what it looks like if container "A" contains more water than container "B." Ask them to show you what it looks like if the two containers contain an equal amount.

Measurement

Set up a display of liquid measuring cups -- those with clearly visible markings - - containing varying amounts of water. Ask children to write down the quantity of each container. Set up an area with various measurement containers of varying capacity -- beakers, plastic measuring cups and liquid measuring cups -- and dry items such as beans, beads, sand or buttons, that can be scooped or poured in and out of the containers. Discuss the measurement markings on the side of the cup and ask students questions about the capacity of each container. Challenge the children to use the markings on the side of the containers to show you specific measurements and answer questions about the capacity of each container.

Outdoor experiments

Let children use buckets, wagons and flower pots to experiment with capacity. Allowing them to take lessons from the classroom and apply them to everyday, outdoor activities gives them a chance to transfer information from one context to another. Let them pour wood chips, water, dirt or sand and discuss the capacity of each vessel. Discuss how understanding measurement and capacity has real life applications in gardening, building and excavating.



Activity 12: In groups.

Guide learners to look at the picture.

Do you think there are other containers they can use to fetch water? Would you know why they are using these kind of containers?

Activity 14: In groups.

About how many blue buckets of water will fill the red bucket?

Why do you say so?

Capacity

Activity 13: In groups.



1. How many glasses will fill the bucket?

2. How many full cups do you get from a full jug?



3. How many small buckets will fill the big bucket?

Do this at home.

1. How many cups fill a big bottle?
2. How many cups fill a small bottle?
3. How many cups fill a jug?

Which one do you think you will need more to fill the big bucket?
The glasses or the jug?
Why do you think this is so?

85

Capacity

Activity 14: In groups.



86

Guide learners to work in pairs, ask each other these questions.

The water jug can hold 8 glasses of water.

The capacity of the jug = _____ glasses.

The kettle can hold five cups of tea.

The capacity of the kettle = _____ cups.

The bucket can be filled completely with 16 mugs of water.

The capacity of the bucket = _____ mugs.

The can of milk can hold 25 bottles of milk.

The capacity of the can = _____ bottles.

Capacity

Activity 15: In groups.

Which one can hold more? Why do you say so?

1.



2.



3.



4.



5.



6.



87

Currency

Activity 16: In groups.

What is happening in these pictures?

1



2



3



88

2.4 Currency/Money

Pupil's Book: Activity 16 – Activity 20

Counting money is a critical functional skill for all children. Money not only gives them access to things they want to purchase, it also builds a foundation for understanding the base ten system of numeration. Counting money is one of the skills they will need for self-determination and creates the opportunity to live independently in the community. Like all skills, counting and using money needs to be scaffolded, building on strengths and teaching the "baby steps" that will lead to independence.

Before children can count money, they have to be able to correctly identify at least the most common denominations.

Role play: Buying and selling

Pre-activities

1. Discuss the idea that we have to know the names of foods in order to tell a “store keeper” what we would like to buy.
2. Explain that to buy anything you have to see how much it costs and if you have enough money to buy it.
3. Show the children food items they will be able to purchase, the colored chips they will be using as money, and a pretend price card (the index cards with colored dots).

Activities

1. Introduce the activity by explaining that each child may choose a handful of “money” colored chips.
2. Have the items to be “sold” displayed on the table at which the children are sitting and put a price card in front of each item randomly.
3. Explain that the teacher will be the grocer (the store person who sells food), and that the children will be the customers (the people who come to the store to buy the food).
4. Model possible carrier phrases a student could use to ask for an item: “I would like to buy some _____”, or “Do you have any _____?”
5. Then proceed by allowing the first child to engage the teacher in a dialogue of asking for a particular food, and explain that either you don’t have any _____ for sell or that the tomatoes will cost them “2 blues and 1 red,” for example.
6. After each transaction, it will be the next student’s turn.
7. Encourage verbal reasoning and group problem solving when problems occur, such as the grocer doesn’t have that item or the customer doesn’t have the correct money.
8. Continue this process until all items have been purchased.
9. If no one in the group knows the name of a particular food item, the teacher will name the item and allow the next customer to buy it if he/she can remember the item name.
10. Children must match the correct number and color of the chips indicated on the price card in order to purchase an item.

Assessment

1. During the activity, keep track of correct and incorrect naming of target items, understanding and use of basic language concepts, and the child's ability to orally explain solutions to problems.
2. Record performance of the above areas for each child.

Saving activity

Materials

- Plastic or metal cylinders with a plastic fitted lid
- Assorted stickers, stamps, and gummed labels
- Masking tape
- Colored markers

Directions

1. Completely cover the outside of the cylinders with stickers, stamps, and labels.
2. Use white glue to attach, if necessary.
3. Make a small slit in the plastic lid big enough for coins to fit through.
4. Put the lid on and tape it down securely.
5. Use colored markers to decorate or conceal the tape.
6. There will be more incentive to save coins when the bank has been self-constructed.
7. When the can begins to fill, ask children to have parents open a bank savings account so your child can deposit his coins.

Here are some things you may want to do with children to help develop their financial savvy and independence:

1. Shopping lists - Ask children to help you compile a shopping list of needed items for home/school.
2. Research purchases - Work with children to research online or shop around to find the best price for an item they want.

3. Set goals - Help children to set a goal and track their savings through a chart (for example, they could colour in coins on a chart to show their progress).
4. Plan an event - Involve children in planning and budgeting for special occasions such as field trips or birthdays. If you are going on an field trip work through all the costs including transport and food as well as any admission prices.
5. Needs vs wants - Help children avoid spontaneous purchases and set goals to think about whether they want an item before parting with their money. Discuss the difference between needs and wants and encourage children to think about this before spending.
6. Criticise ads - Get children to review advertising on TV and in catalogues with you. Ask them what the ads are trying to sell, how they try to sell it to you and if they need the product they are advertising.



Activity 16: In groups.

What is happening in these pictures?

By the end of the day, do you think these pictures will remain the same? What will have happened?

Let us sing: Whole class

Grandmother Pussycat
 Knock, knock, knock,
 Who is that?
 Grandmother pussycat.
 What do you want?
 A packet of milk.
 Where is the money?
 In my pocket.
 Can I have it?
 Oh! I lost it !
 You silly pussycat,
 Go away, go away.
 Meow, meow.

Currency

Activity 19: In groups. 



92

Currency

Activity 20: Individually 



93

Activity 19: In groups.

Have you ever bought any of these items?

Discuss how much you bought them. How much do think each of these items should cost? Why do you say so?

Guide learners to role play selling to each other. One student can act as a shopkeeper, and the others buy from him or her.

Activity 20: Individually

Read for the learners and let them write the answer in their exercise book.

1. What is the cost of a loaf of bread?
2. What is the cost of a pair of socks?
3. What is the cost of a rubber?
4. What is the cost of a bottle of ink?
5. What is the total cost of a rubber and a pen?
6. Which item can we buy with 15SSP?

2.5 Time (Daily routines)

Pupil's Book: Activity 21 – Activity 29

Time is a hard concept for children. It isn't something that they can touch, feel and explore. Without the ability to tangibly interact with time, children need adults who understand the concept to help them learn about time.

Learning a song with the days of the week is one way. Children love to sing! Learning becomes fun and easy through music and rhyme. Children soon learn, when noted on a calendar, that Mondays are the days we go to the library. Tuesdays are the days that we draw and Saturdays and Sundays are the days I stay home and don't go to school.

Teach them the general concept of time.

General concepts of time are the morning, noon, the evening, and nighttime. Familiarize children with these concepts by associating each concept with certain activities. Then quiz children by asking them when certain things happen.

For example, “In the morning we eat breakfast and brush our teeth. At noon, we eat lunch and take a nap. At night, we read a book and go to sleep.”

You can ask children, “What happens in the morning?” and “What happens at night?”

Use “Timely” Words

Use words to indicate time such as yesterday, today and tomorrow when you are talking with children. When these words are used in context, especially in conjunction with a calendar, it helps make the concept of time more concrete. Talking with children about their weekly schedule (for example, “We go to gymnastics on Tuesday and that is tomorrow”) and then showing them the day on the calendar will be helpful. “Definitions of time such as "next year" become more difficult because it is too long of a time for a child to wait. Words that explain 'next year,' such as 'when you turn 6' or 'when you are in Mrs. Duku's class' help stage a framework that makes sense to a preschooler.”

Make a clock for telling the time

You will need per child/per clock:

- one paper plate
- brad fastener
- card to make hands
- felt-tipped marker or crayons

Method

1. Cut out the hands of the clock and make a hole in the centre of the plate and at the base of the hands for the children beforehand.
2. Show them how to fasten the hands onto the clock using the brad.
3. Write the numbers on the clock face.

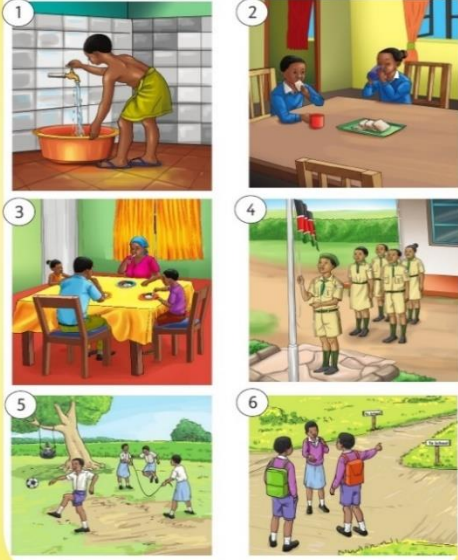
Study shadows

- Measure children's shadows at different times of the day.
- Tape a long line.
- Ask the children to print their name in front of the line with sidewalk chalk.
- Have the children stand on the tape while you mark the end of their shadow.
- Measure early, midday, and late afternoon marking their shadow on the pavement.
- Tell the children to observe where the sun is during these times.
- The children will notice the shadow's length early, then shrink back at midday, then grow on the other side of the line in the afternoon.
- To extend this activity, children could draw each other's shadows with sidewalk chalk then fill in their shadow.

Time

Activity 21: In groups

What time do you think it is?
Why do say so?



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Time

Activity 22: In groups

What time of the day do you do these activities?



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Time

Activity 23: In groups

What is the time?



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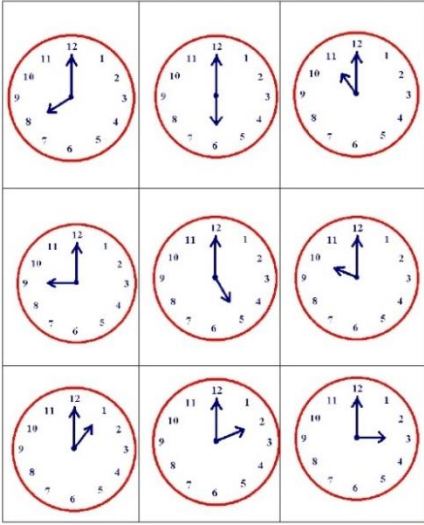
Activity 23: In groups

1. Can you see the clock?
2. What is Deng and Nyandeng doing?
3. What time do you think it is?
4. Why do you say so?

Time

Activity 24: In groups

Look at the clocks below.
Each group to present to the class what they normally do at these times.



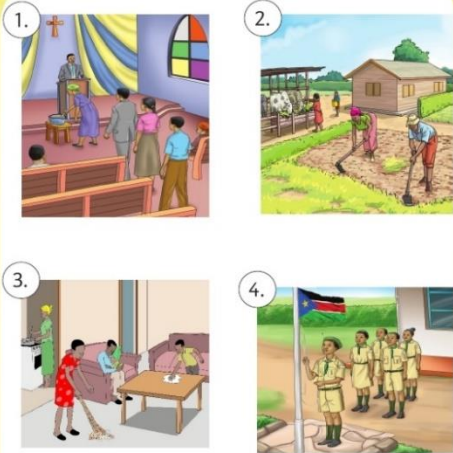
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Activity 26: In groups

In groups of four, ask each other these questions.

- What day comes after Monday?
 - What day comes after Wednesday?
 - What day comes before Friday?
 - What day comes after Tuesday?
 - What day comes before Thursday?
 - What day comes after Thursday?
 - What days comes before Monday?
 - What day comes before Saturday?
 - What day comes after Friday?
 - What day comes before Tuesday?
- Did you get all the answers? Correct each other.

Days of the week



Activity 25: In groups

Which day of the week do you think it is in each of these pictures?
Why do you think so?

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Days of the week

Activity 26: In groups

- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

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2.6 Days of the week

Days of the week
Activity 27: In groups and in turns. 

Monday 

Saturday 

Sunday 

Tuesday 

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Activity 27: In groups and in turns.

Guide learners to form groups, ask each other these questions.

Discuss what they are doing in each picture.

1. Today is Monday.

What day is tomorrow?

What day was yesterday?

2. Today is Saturday.

What day is tomorrow?

What day was yesterday?

3. Today is Sunday

What day is tomorrow?

What day was yesterday?

2.7 Months of the year

Activity 28: In pairs.

Guide learners to cover each card with their hand and ask their partner to say which month of the year they have covered.

Activity 29: In pairs

Cut out 12 pieces of paper. Write the twelve months of the year in each paper. Jumble them up.

Ask your Learners to arrange them from the first month of the year to the last one. Let learners do this in turns.

Time

Months of the year

Activity 28: In pairs. 

January 1st	July 7th
February 2nd	August 8th
March 3rd	September 9th
April 4th	October 10th
May 5th	November 11th
June 6th	December 12th

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Time

Activity 29: In pairs. 

Make the cards.



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UNIT 3: GEOMETRY

Math Primary 1		Unit 3: Geometry
Learn about		Key inquiry questions
<p>Learners should recognize identify simple geometrical shapes (square, rectangle, triangle and circle) and discuss their properties. They should look for shapes in their immediate surroundings (<i>desktops, books, windows etc</i>) and should observe and draw the shapes they see. They should count sides and angles, and sort by these properties.</p> <p>They should investigate some irregular shapes and distinguish straight and curved lines. They should observe the shapes made when lines meet and intersect.</p> <p>They should work in groups to describe shapes to the class (<i>eg “My shape has three sides” etc</i>) to see if they can guess the shape.</p> <p>Learners should explore the ways 2-D shapes can fit together to make new shapes and patterns</p> <p>Learners should investigate 3-D shapes (<i>cube, cylinder, pyramid</i>) make models using clay.</p>		<ul style="list-style-type: none"> • What are the names of shapes we see around • What patterns can be made by using lines and shapes • How do different shapes fit together?
Learning outcomes		
Knowledge and understanding	Skills	Attitudes
<ul style="list-style-type: none"> • Recognise simple geometrical shapes 	<ul style="list-style-type: none"> • Observe shapes and patterns • Draw geometrical lines and shapes • Make patterns and model of triangular and square-based pyramids • Group objects with similar characteristics 	<ul style="list-style-type: none"> • Appreciate the use of lines and patterns in daily life situation • Have the confidence to investigate maths and to take responsibility for their own learning

Contribution to the competencies:

Critical thinking: grouping and sorting by property

Communication: describe shapes to the class

Co-operation: work in groups to make models

Links to other subjects:

Peace Education: Engage in common activities that bring pupils together

Environment and sustainability: Identify things in their surroundings

3.1 Lines

Activity 1

1. This activity should be completed in groups or as a whole class.
2. Have learners form lines with their bodies. Let learners discuss what sort of line have been formed. What are the characteristics of the lines?
3. Give guidance where needed.

Activity 2

1. This activity is to be completed individually.
2. Guide the learner in copying the lines in the textbook.
3. Guide placement of the exercise book on the desk and the proper way to hold a pencil when drawing.
4. There are four types of lines on the page. The learner should practice top-bottom strokes, left-right strokes, curved strokes and circular strokes.
5. Allow the learner ample time to practice drawing the lines.

UNIT 3

Geometry

Activity 1: In groups of five. Lines



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Lines

Activity 3: Individually.

For this activity, you'll need:

- a piece of paper.
- a pencil.
- a ruler.
- some coloured pencils or pens.

Using your pencil and ruler, draw some straight lines on your piece of paper to make an interesting pattern. You can draw as many or as few as you like.



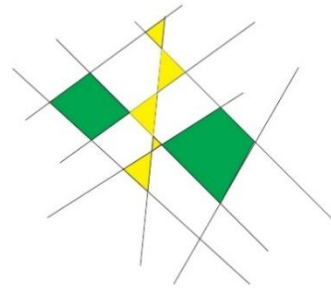
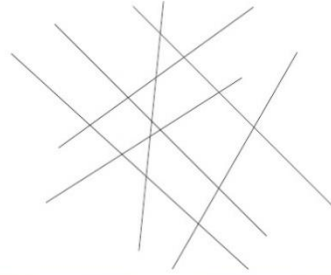
1. Can you describe what you see in your own pattern?
2. Can you find any shapes which have three sides?
3. How about any with four sides?
4. Which shape or shapes have the most sides?

Using your coloured pencils or pens, decorate all the three-sided shapes in some way. You could colour them all in using a particular colour or you could cover them with a special design or pattern.

5. Can you decorate all the four-sided shapes in another, different, way?
6. How about the five-sided/six-sided ... shapes?

Lines

Draw and colour













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Activity 3

1. This presents a hands on activity. Guide learners in collecting the materials required to complete the exercise.
2. Have the learners follow the instructions set on the page. Short breaks are allowed.
3. Have the learners describe the shapes and patterns that he/she can see after completing the activity.


Shapes

Activity 4: In groups. 

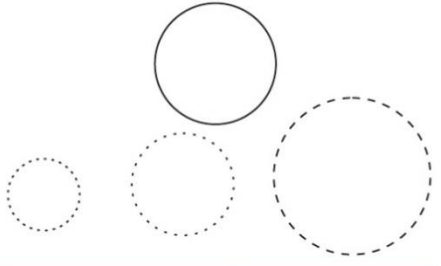
		
		
		


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Geometrical shapes

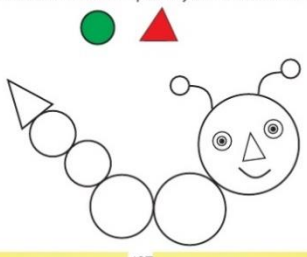
Activity 5: Individually. 

Draw these shapes in your exercise book.



Activity 6: Individually. 

Draw and colour these shapes in your exercise book.



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3.2 Shapes


Activity 4

1. Before completing this activity, learners should be encouraged to look around the classroom and point out the shapes of items found in the classroom.
2. In groups, have the learners complete the activity by identifying the shapes of the objects and giving their reasons.

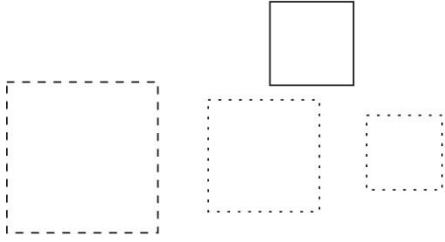
Activity 5

1. The learner should draw as many circles as possible. Not ovals but circles.
2. The learner can identify other circular objects found in the school compound or at home.
3. Let the learner draw the identified items and name them.
4. Drawings can then be presented to the rest of the class.


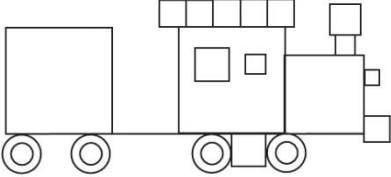
Shapes

Activity 7: Individually. 

Draw these shapes in your exercise book.




Draw and colour these shapes in your exercise book.

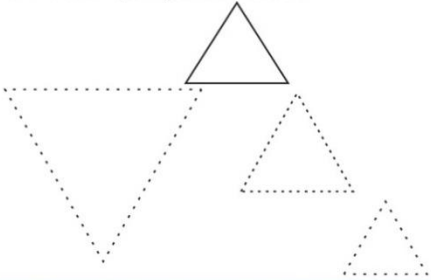



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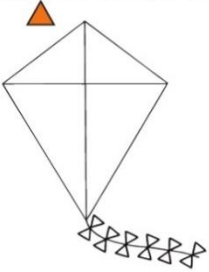
Shapes

Activity 8: Individually. 

Draw these shapes in your exercise book.



Draw and colour these shapes in your exercise book.



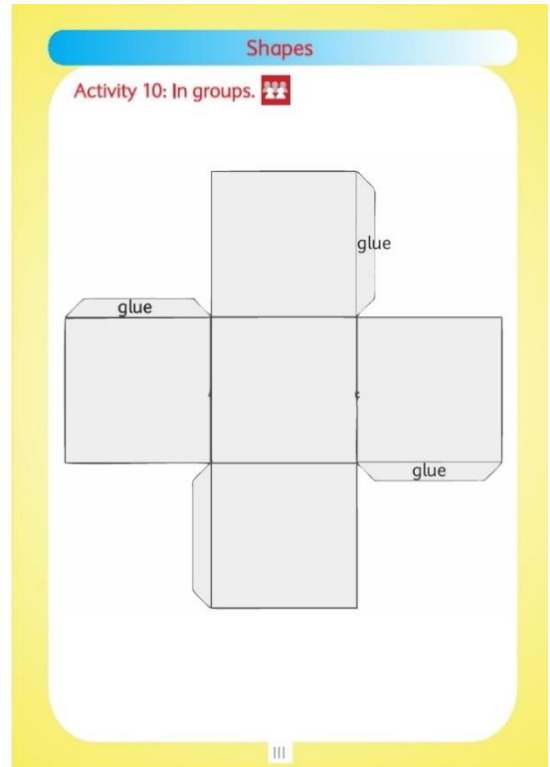
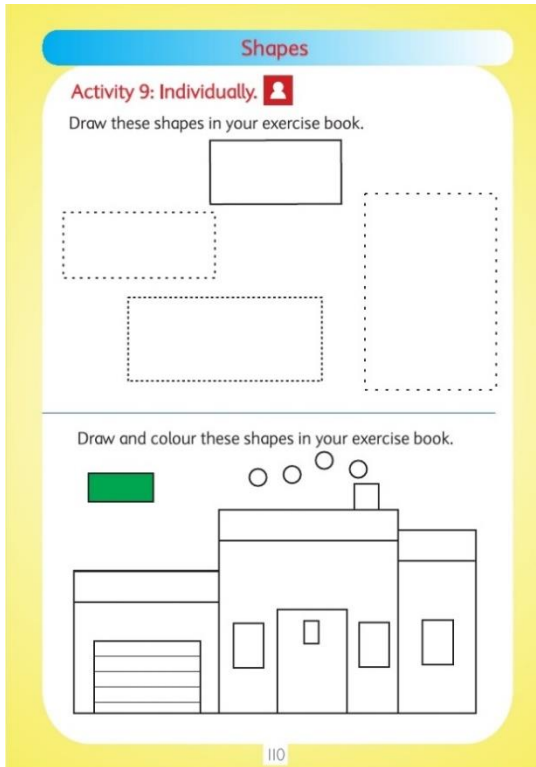
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Activity 7

1. The learner should draw as many squares as possible. Not rectangles but squares. Can they identify characteristics of a square?
2. The learner can identify other squared objects found in the school compound or at home.
3. Let the learner draw the identified items and name them.
4. Drawings can then be presented to the rest of the class.

Activity 8

1. The learner should draw as many triangles as possible.
2. The learner can identify other triangular objects found in the school compound or at home.
3. Let the learner draw the identified items and name them.
4. Drawings can then be presented to the rest of the class.




Activity 9

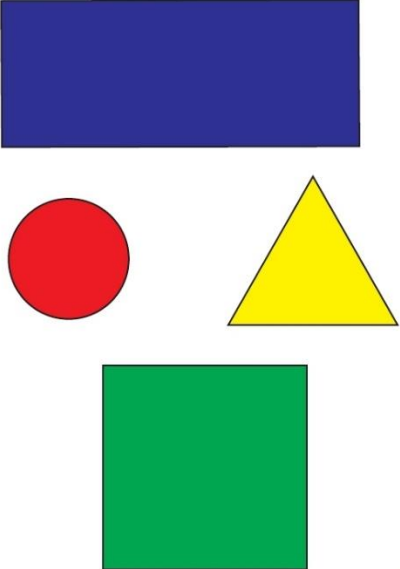
1. The learner should draw as many rectangles as possible. Not squares but rectangles. How are rectangles different from squares?
2. The learner can identify other rectangular objects found in the school compound or at home.
3. Let the learner draw the identified items and name them.
4. Drawings can then be presented to the rest of the class.

Activity 10

1. Prepare the learners for group work.
2. Have the learners assemble all the materials needed to complete this activity.
3. Guide the learners in constructing the object.
4. Let the learners describe the end products of their activity.

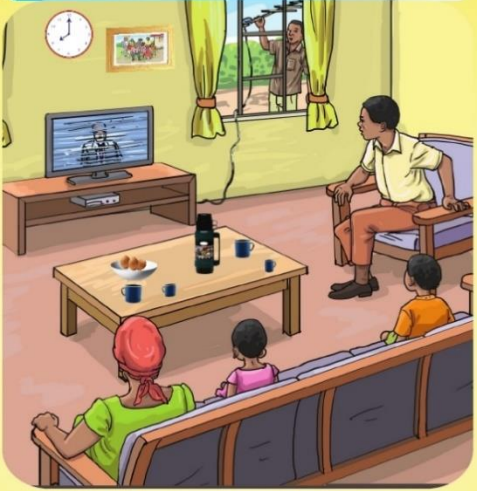
Shapes


Activity 11: In groups. 



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Shapes



Activity 12: In groups. 

How many different shapes can you see in the picture?

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Activity 11

1. Let learners name the common geometric shapes.
2. Guide learners in describing the characteristics of the shapes they have named. How many sides do they have? How many corners?
3. Have the learners record their observations and later make a class presentation.