Ministry of Education
and Sports

THE REPUBLIC OF UGANDA

HOME-STUDY LEARNING

PRIMARY

5

NCDC
NATIONAL CURRICULUM
DEVELOPMENT CENTRE

Save the
Children®

HOME-STUDY LEARNING

PRIMARY FIVE

FOREWORD

Following the Outbreak of the CoVID-19 Pandemic, Government of Uganda closed all schools and other educational institutions to minimize the spread of the coronavirus. This has affected more than 36,314 primary schools, 3129 secondary schools, 430,778 teachers and 12,777,390 learners.

The COVID-19 outbreak and subsequent closure of all has had drastically impacted on learning especially curriculum coverage, loss of interest in education and learner readiness in case schools open. This could result in massive rates of learner dropouts due to unwanted pregnancies and lack of school fees among others.

To mitigate the impact of the pandemic on the education system in Uganda, the Ministry of Education and Sports (MoES) constituted a Sector Response Taskforce (SRT) to strengthen the sector's preparedness and response measures. The SRT and National Curriculum Development Centre developed print Home- Study Materials, radio and television scripts for some selected subjects for all learners from Pre-Primary to Advanced level. The materials will enhance continued learning and learning for progression during this period of the lockdown, and will still be relevant when schools resume.

The materials focused on critical competences in all subjects in the curricula to enable the learners to achieve without the teachers' guidance. Therefore effort should be made for all learners to access and use these materials during the lockdown. Similarly, teachers are advised to get these materials in order to plan appropriately for further learning when schools resume, while parents/guardians need to ensure that their children access copies of these materials and use them appropriately.

I recognise the effort of National Curriculum Development Centre in responding to this emergency through appropriate guidance and the timely development of these home study materials. I recommend them for use by all learners during the lockdown.

Alex Kakooza
Permanent Secretary
Ministry of EDUCATION AND SPORTS

ACKNOWLEDGEMENTS

National Curriculum Development Centre (NCDC) would like to express its appreciation to all those who worked tirelessly towards the production of home–study materials for Pre-Primary, Primary and Secondary Levels of Education during the COVID-19 lockdown in Uganda.

The Centre appreciates the contribution from all those who guided the development of these materials to make sure they are of quality; Development partners – SESIL, Save the Children and UNICEF; all the Panel members of the various subjects; sister institutions – UNEB and DES for their valuable contributions.

NCDC takes the responsibility for any shortcomings that might be identified in this publication and welcomes suggestions for improvement. The comments and suggestions may be communicated to NCDC through P.O. Box 7002 Kampala or email admin@ncdc.go.ug or by visiting our website at http://ncdc.go.ug/node/13.

Grace K. Baguma
Director,
National Curriculum Development Centre

ABOUT THIS BOOKLET

Dear learner, welcome to this home-study material which has been prepared for you. The material covers content for term 1, II and III.

The content covered has been carefully written covering the different topics in the syllabus. This is an addition to what you had learnt before schools were closed due to outbreak of COVID-19. The content is arranged using simple steps for your understanding. The activities provided in each topic are organised in such a way that they will enable you to relate with your local environment.

The content is organised into lessons. Each lesson has activities and summary notes that help you to understand the concepts. Some lessons have projects that you need to carry out at home during this period. You are encouraged to work individually as you do the practical and interactive activities.

Feel free to try out all the activities in this material.

Enjoy learning

Ministry of Education and Sports

THE REPUBLIC OF UGANDA

HOME-STUDY LEARNING

PRIMARY 5

MATHEMATICS

August 2020

NCDC
NATIONAL CURRICULUM DEVELOPMENT CENTRE

Save the Children

Term One

Topic: Operations on whole numbers

Lesson 1: Multiplication of 3 digit numbers by two digit numbers.

In this lesson, you will:
- Multiply 3 digit numbers by two digit numbers.
- Solve word problems involving multiplication.

You will need:
- Counters like sticks and bottle tops.
- Multiplication table found at the back of the exercise book.
- An exercise book and a pen.

Introduction:
In primary four, you learnt how to multiply **3 digit number** by one-digit number. This is going to guide you greatly while multiplying **3 digit numbers**
by 2-digit numbers.
It is helpful to know multiplication tables up to 12 because you can use them to multiply large numbers. You can also use counters when you get stuck.
Multiplication of whole numbers will help you when you are doing business as you grow up.

Step 1
Activity

You can use the multiplication tables when you get stuck.
- Work out:
    120 x 4
- Arrange the numbers vertically.

$$\begin{array}{r} 120 \\ \times\ \ 4 \\ \hline 480 \end{array}$$

- Multiply by Ones, Tens and Hundreds.
- 4x 0= 0
    4 x20= 80
    4x 100 = 400
- Now add the values.
    0 + 80 + 400 = 480
So 120 x 4 = 480

Step 2
Look at this example
Example 1
Work out: 234 × 12
You are going to multiply by the values of each digit in 12.
The value of 2 is 2 and the value of 1 is 10.
This means (234 × 2) + (234 × 10)

  234 × 2 =   468
234 × 10 =   + 2340
          2808

> Make sure you have arranged the digits according to the correct place value.

Example 2
Find the product of 124 and 23
The word product means the answer you get after multiplication.
This can be done using expanded form.
Method 1
This means (124 × 3) + (124 × 20)

     (100 × 3) + (20 × 3) + (4 × 3)   = 300 + 60 + 12   =   372
     (100 × 20) + (20 × 20) + (4 × 20) = 2000 + 400 + 80 = + 2480
                                                  2852

Method 2

           1 2 4
          × 2 3
(124 × 3) =   3 7 2
 (124 × 20) = + 2 4 8 0
           2 8 5 2

Exercise
Now do the exercise below in your exercise book.
Work out:

1) 1 2 1   2)   4 1 3

    ×1 3   × 1 1

3)   2 4 5   4) Find the product of 6 2 7 and 42.

     × 1 7

5) There are 245 rooms. Each room has 24 chairs. How many chairs are there altogether?
6) In a box there are 523 books. How many books are there in 24 boxes?

Lesson 2: Multiplication of 4 digit numbers by 2 digit numbers.

In this lesson, you will:
- Multiply 4 digit numbers by 2 digit numbers.
- Solve word problems involving multiplication.

You will need:
- Counters
- Multiplication table found at the back of the book.
- An exercise book and a pen.

Introduction:
In the previous lesson, you learnt how to multiply 3 digit numbers by 2 digit numbers. Remember to multiply correctly and to observe the correct place value of digits while adding. In this lesson, you are going to learn how to multiply 4 digit numbers by 2 digit numbers.

Step 1
Activity

- Collect many sticks/ straws.
- Make 15 bundles of 25 sticks each.
- How many sticks have you counted **altogether?**
- Write a multiplication sentence for the above activity.

Step 2
Now study these examples.
Example 1
Work out: 2031×15

$$
\begin{array}{r}
2\ 0\ 3\ 1 \\
\times \quad 1\ 5 \\
\hline
\end{array}
$$

Method 1
This means $(2031 \times 5) + (2031 \times 10)$

$(2000 \times 5) + (30 \times 5) + (1 \times 5)$ $= 10000 + 150 + 5 = 10155$

$(2000 \times 10) + (30 \times 10) + (1 \times 10) = 20000 + 300 + 10 = \underline{+20310}$

$\underline{\quad 30465}$

a) First multiply each value by 5
b) Then, multiply each value by 10.
c) Add the values together.

Method 2

$$
\begin{array}{r}
1 \\
2\ 0\ 3\ 1 \\
\times \quad 1\ 5 \\
\hline
\end{array}
$$

$(2031 \times 5) \quad = \quad 1\ 0,\ 1\ 5\ 5$

you are using table 5 and table 10

$(2031 \times 10) = + \underline{\quad 2\,0,\,3\,1\,0}$
$ \underline{3\,0,\,4\,6\,5}$

Example 2

The government gave out face masks to 23 health centres. If each health centre got 3147 face masks. How many face masks did government give out altogether?

(3147×23) masks

Method1

This means $(3147 \times 3) + (3147 \times 20)$

This can be expanded.

$(3000 \times 3) + (100 \times 3) + (40 \times 3) + (7 \times 3) = 9000+ 300+ 120+ 21 = \quad 9441$
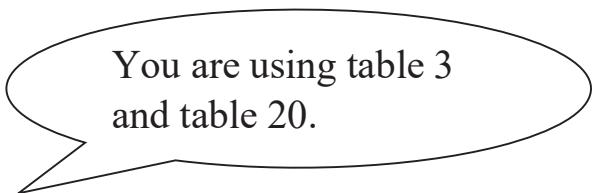
$(3000 \times 20)+(100 \times 20)+(40 \times 20)+(7 \times 20) = 6000+2000+800+140= \underline{+\ 62940}$
$ \underline{72381}$

Therefore, the government gave out 72381 face masks.

Method 2

$ 3\,1\,4\,7$
$ \underline{\times \quad 2\,3}$
$(3147 \times 3) = 9\,4\,4\,1$
$(3147 \times 20) = + \underline{6\,2,9\,4\,0}$
$ \underline{7\,2,\,3\,8}\,1$ face masks

> You are using table 3 and table 20.

Exercise

Work out:

1. 3419
   × 23

2. 1263
   × 32

3. 4262
   × 19

4. 2416
   × 15

5. What is the product of 1,723 and 15?
6. Multiply 3,419 by 23.
7. A factory produces 2,479 bottles of sanitizers every day. How many bottles does the factory produce in 31 days?

Lesson 3: Dividing by a two-digit number without a remainder.

In this lesson, you will:
- Divide numbers by a 2-digit number without a remainder.
- Solve word problem involving division.

You will need:
- Counters.
- An exercise book and a pen.
- Multiplication table at the back of your exercise book.

Introduction:
You already learnt, multiplication and division are related.
You actually noticed that 'multiplication tables' are very helpful in division.
Remember words like: **divide, divisor, dividend,** and **quotient**.
Step 1
Activity

- Count 50 sticks.
- Make 10 equal groups of using these sticks.
- How many sticks are in each group?
a) Now divide 50 by 10.
b) Also divide 50 by 5.
  Compare the divisors. You will notice that the answer in *a* when multiplied by 10 gives 50 and the answer in *b* when multiplied by 5 gives 50.
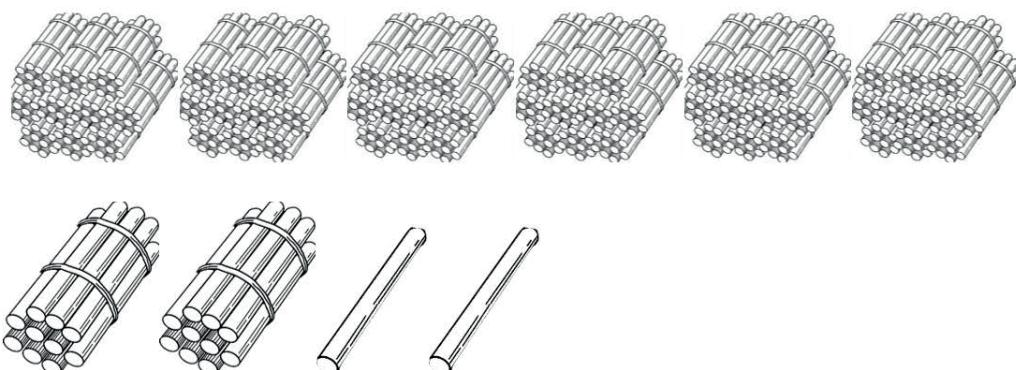
Remember: -
- A **dividend** is the number being divided by another number.
- A **divisor** is the number that is divided by.
- A **quotient** is the answer after dividing two numbers.

Step 2
Study the examples below
Example 1
Divide 612 by 18
In other words, we take 612 and share it with 18 equal groups.

Start with the hundreds. There are 6 hundreds. We cannot share 6 equally with 18 groups.
We need to break the hundreds into tens. 6 hundreds equal 60 tens. So with the 1 ten we started with, we now have 61 tens. We can start sharing. We can share 3 tens with each of the 18 groups.

We have used up 54 of our tens. We still have seven tens to share.
We need to break the tens into ones. 7 tens equal 70 ones. So with the 2 ones we started with, we now have 72 ones. We can share 4 ones with each of the 18 groups.

18 groups

```
          34
18 |  612
    -  54↓
       72
       72
        0
```

We have used up all 72 of our ones. There is zero left. We have finished. 612 shared equally with 18 groups, gives 34 in each group.

612 divided by 18 is 34.

$612 \div 18 = 34$

Example 2

Work out: $4,428 \div 36$
Arrange vertically

```
          1 2 3
36 |  4 4 2 8
   -   36↓
        8 2↓
   -    7 2↓
        1 0 8
      - 1 0 8
            0
```

Therefore $4,428 \div 36 = 123$

Divide

$44 \div 36 = 1$

$82 \div 36 = 4$

Example 3

Share equally 2058 oranges among 14 people.

```
          1 4 7
14 |  2 0 5 8
   -   14↓
        6 5↓
   -    5 6↓
        9 8
      -  9 8
            0
```

Therefore $2,058 \div 14 = 147$

Divide

$20 \div 14 = 1$

$65 \div 14 = 4$

Exercise

Now work out these.

1. $1,845 \div 15$
2. $3,645 \div 27$
3. $3,116 \div 19$
4. $8,996 \div 26$
5. $1,500 \div 12$
6. $2,880 \div 36$

7. Find the quotient of 1,806 and 21.

8. Share 7,583kg of maize flour equally among 53 families.

Lesson 4: Dividing by a two-digit number with a remainder.

In this lesson, you will:
- Divide numbers by 2-digit numbers with a remainder.
- Solve word problems involving dividing with the remainder.

You will need:
- Counters
- An exercise book and a pen.
- Multiplication table at the back of your book.

Introduction:
In the previous lesson, you learned how to divide by two-digit number, without a remainder.
In this lesson you are going to divide 4-digit numbers by two digit numbers leaving a remainder.
You will follow the same steps, but there will be a remainder.

Step 1: Activity

- Get 47 counters and arrange them in nines.
- How many groups of nines are there?
- How many counters remain?
  Now write a division sentence showing the remainder.

Step 2
Study the examples below.
Example 1
Work out 6,274 by 13

```
                    4 8 2 remainder 8
            13│6 2 7 4
  4 × 13      -52
              1 0 7
  8 × 13    -10 4
                3 4
  2 × 13    -   2 6
                  8
```

Therefore 6274 ÷ 13 = 482 remainder 8
Divide
62 ÷ 13 = 4
107 ÷ 13 = 8
34 ÷ 13 = 2 remainder 8

Example 2
In a county there are 48 stores for maize.
If the country puts 5,290 tonnes in the stores, how many tonnes remain?

```
                1 1 0 remainder 10
          48│5 2 9 0
  1 × 48= -48
              4 9
  1 × 48= -4 8
              1 0
  0 × 48 = -  0
              1 0
```

Exercise

Work out the following.

1. $527 \div 25$ 3. $1,528 \div 12$

2. $9,053 \div 37$ 4. $33,482 \div 31$

5. Share 41,384 seedlings among 29 farmers. How many seedlings remain?
6. 1,489 books were shared by 20 schools equally. How many books remained?

Lesson 5: Mixed operations on whole numbers.

In this lesson, you will:
- Read problems of mixed operations on whole numbers.
- Work out problems of mixed operations on whole numbers.

You will need:
- Counters
- An exercise book
- A pen.

Introduction:
Mathematics is a subject order. This is true in many ways, but one of them is the way you handle questions with 2 or more operations.
In this lesson, you are going to learn the order followed.
The word '**BODMAS**' is your guide.
B – Brackets.
O – Of (means x)
D – Division.
M – Multiplication.
A – Addition.
S – Subtraction.
The knowledge of mixed operations will help you to always have order in the way you do things in your life and to know which one comes first and why.

Step 1

Activity
- Count 30 sticks, then 12 more sticks.
- Put $\frac{1}{2}$ of the sticks aside.
- How many sticks do you remain with?

Step 2
Study the examples below.

Example 1
Work out: 7 + (4 × 3)
           First remove brackets.
             7 + 12
           Then add
             7 + 12 = 19

Example 2
Work out   4 - 7 + 12
           First arrange and add
             4 + 12 – 7 = 16 – 7
                      = 9

Exercise
Work out

1. 6 + 2 × 4

2. 7 – 2 × 3 + 1

3. 3 – 1 × 2

4. 30 ÷ 6 – 4 ÷ 2

5. 10 – 6 ÷ 2 + 1

6. 12 × 9 ÷ 3

7. 18 – (3 × 8) ÷ 6

8. $\frac{1}{2}$ 0f 20 + 9

9. 20 ÷ 4 – 2 + 1

10. 8 – 2 × 3 + 4

Lesson 6: Word problems involving mixed operations.

In this lesson, you will:
- Read word problems involving mixed operations.
- Solve word problems involving mixed operations.

You will need:
- Bottle tops.
- An exercise book.
- A pen.

Introduction:
You have **learnt** how to deal with mixed operations on whole numbers. It is important to remember the order BODMAS and how to follow it.
This will greatly help you to form and interpret mathematical sentences from the word problem.

Step 1

Activity
- Put 9 groups of 3 counters in a container.
- Take away 10 counters from the container.
- How many counters have remained in the container?
  Write the mathematical sentence formed.

Step 2

Now study this example

Example

Peter had 142 books, he gave 56 to Angelo. He then bought 17 more books. How many books does Peter have now?

Add   142 books – 56 books + 17 books

1 4 2   142 – 56 + 17

+1 7   (142 + 17) – 56 ⟶ Follow the order by re arranging

1 5 9

Subtract.   103 books

1 5 9

–5 6   Peter now has 103 books.

1 0 3

form a mathematical sentence

Exercise

Now work out the following in your exercise book.

1. A girl collected 46 oranges from the garden. She sold 29 to a market vendor. She later collected 15 more oranges. How many oranges did she remain with?
2. Sandra made 7 groups of 4 tomatoes and used 12 tomatoes for sauce. How many tomatoes remained?
3. Otim reared 40 rabbits. He sold $\frac{1}{4}$ of them. How many rabbits did Otim sell?
4. Natukunda had sh.4000 and her father gave her sh.6000 more. She bought a geometry set for sh.2500. How much money did she remain with?

Lesson 7: Grouping and counting in base five (fives)

In this lesson, you will:
- Make groups of five.
- Count in fives.
- Draw groups for numbers in base five.

You will need:
- Counters
- An exercise book.
- A pen.
- A ruler and a pencil.

Introduction:
In term one you learnt about grouping in tens, hundreds and thousands. In this lesson you are going to learn about grouping and counting in base five.
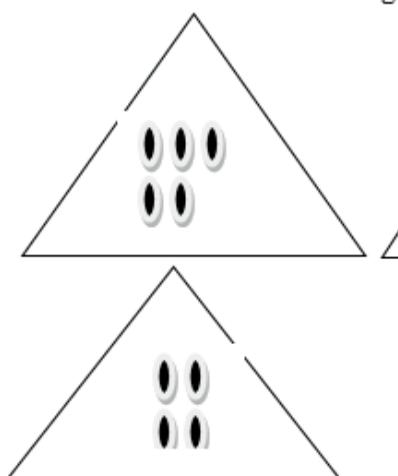
Your family might have bought tomatoes in heaps. Sometimes the tomatoes are in heaps of 5 (fives) that is base five in real life.

You also learned how to divide leaving a remainder. This is going to be helpful as you will notice in the activity and examples.

Step 1
Activity

- Get 19 counters and make groups of five.
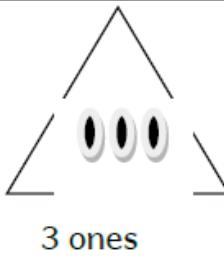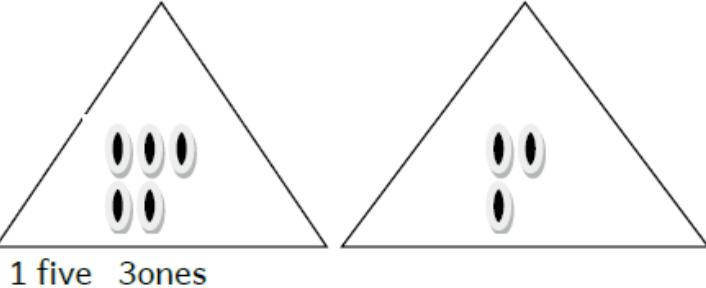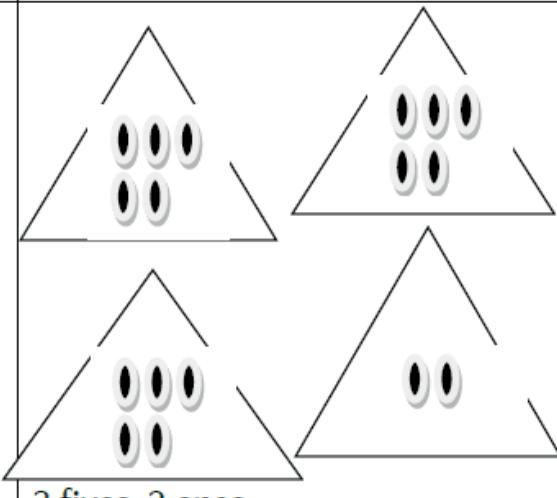
- How many groups have you made?
- How many counters remain?
 This can be written as 34_{five}.
  Read as three four base five.

Now study the example below.
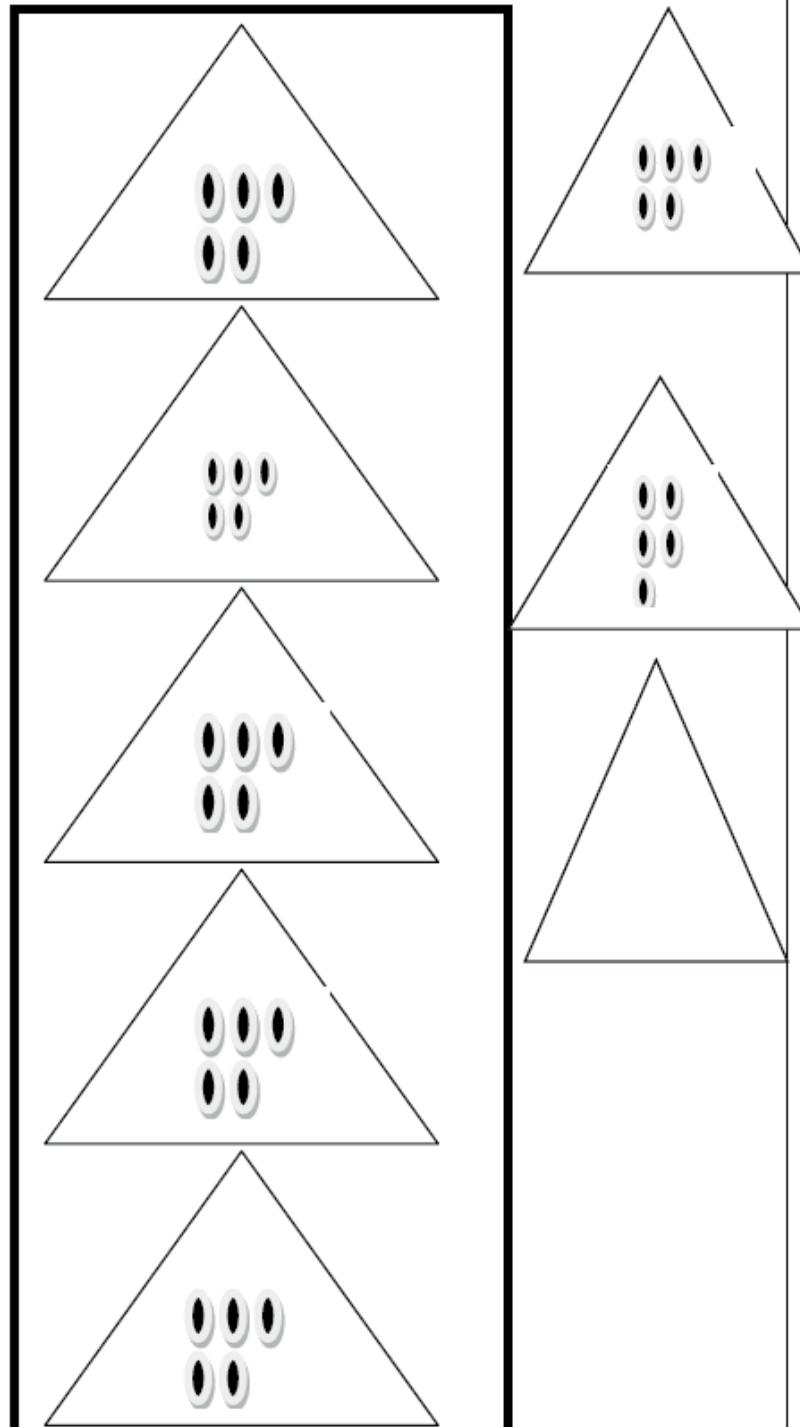
You are going to group numbers in fives using counters. Take note of the remainder. Don't worry even if its zero.

Step 2

Example

Number in base ten	Grouping in fives	Number in base five
3	3 ones	3five
8	1 five 3ones	13five.
17	3 fives 2 ones	32five.

35

1 five fives   2 fives 0 ones.

$120_{five.}$

Note: The digits used in base five are 0,1,2,3 and 4.
Exercise

1. Group the following in fives and write the number in base five.

Objects	Grouping in fives	Number in base five
⬭⬭⬭ ⬭⬭⬭		
⬭⬭⬭⬭ ⬭⬭⬭ ⬭		
⬭ ⬭ ⬭⬭		
⬭⬭⬭ ⬭⬭ ⬭⬭⬭⬭⬭		

1. Draw groups for the following numbers in base five.
a) 11_{five}
b) 21_{five}
c) 24_{five}

Lesson 8: Place value in base five.

In this lesson, you will:
- Identify the place value of digits in numbers in base five.
- Write the place values of digits in base five.

You will need:
- Cards with digits 0, 1, 2, 3, 4
- Counters

Introduction:

In the term one, you learned how to identify place value of digits in whole numbers. Remember words like ones, tens, hundreds.

In this lesson, you are going to identify place value of digits in base five.

Step 1

Activity
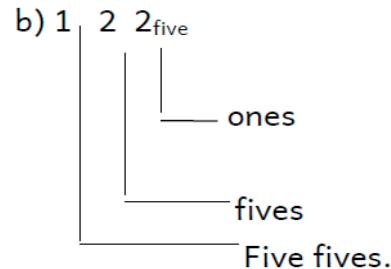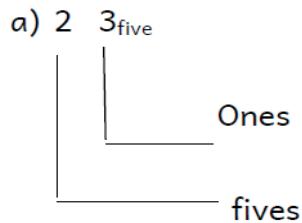
Make cards like the ones below.

0	1	2	3	4

Draw a table like the one below in your exercise book.

Five five fives	Five fives	Fives	Ones

- Place the cards in the table according to your choice. Do not begin with zero.
- Write the number you have formed.
- Read the number digit by digit in base five.

Step 2
Now study the example below

What is the place value of each digit in 23_{five}

a) 2 3$_{five}$

Ones

fives

b) 1 2 2$_{five}$

ones

fives

Five fives.

Exercise

1. Write the place value of each digits in the numbers below:
   a) $14_{five.}$ b) 102_{five} c) $231_{five.}$
2. Fill in the missing numbers.

a) 13_{five} = _____ fives _____ ones.

b) 103_{five} = _____ five fives _____ fives _____ ones.

c) 342_{five} = _____ five fives _____ fives _____ ones.

d) 134_{five} = _____ five fives _____ fives _____ ones.

e) 122_{five} = _____ five fives _____ fives _____ ones.

Lesson 9: Adding numbers in base five.

In this lesson, you will:
- Group numbers in base five
- Add numbers in base five.

You will need:
- Counters
- An exercise book and a pen.

Introduction:
In the previous lesson, you learnt about place Value in base five. Whenever you are adding, arrange the digits according to their place values vertically.
Any number above 4 should be regrouped.
You are going to carry out these steps in the activity.
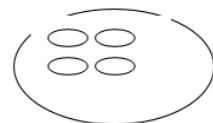
Step 1
Activity

- Get two sets of counters; one set contains 14 counters and another 17 counters.
- Now group 14 in fives
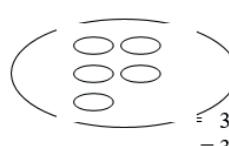
$=2_{fives}4ones.$
$= 24_{five.}$
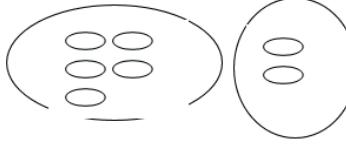
- Then group 17 in fives.
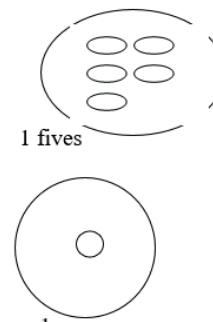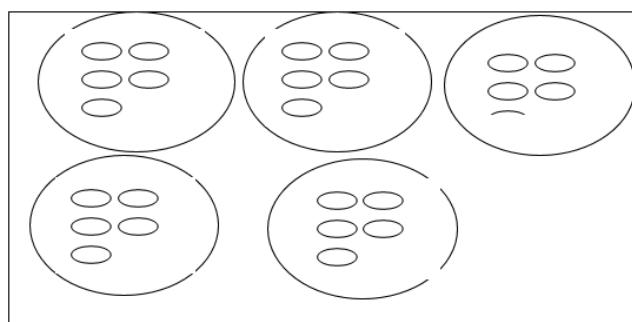
$= 3_{five}\ 2_{ones}$
$= 32_{five.}$

- Now join all the groups.

1 fives

1 ones

$= 111_{five}$

Step 2
Now study the examples below

Example 1	Example 2
Add $\ 13_{five}\ +\ 11_{five}$	Add $\ 122_{five}\ +114_{five}$

Example 1:

$1\ 3_{five}$
$+\ 1\ 1_{five}$
$2\ 4_{five}$

Example 2:

122_{five}
$+114_{five}$
241_{five}

$2+4=6$

$6 \div 5 = 1\ rem\ \_$

Exercise
Work out

1. $2_{five}\ +1_{five}$

2. $3_{five}+2_{five}$

3. $11_{five}+12_{five}$

4. $23_{five}\ +\ 22_{five}$

5. 103_{five}
   $+23_{five}$
   _____

6. 101
   $+234_{five}$

7. $2\ 4_{five}$
   $+2\ 3_{five}$

Lesson 10: Subtracting numbers in base five.

In this lesson, you will:
- Subtract numbers in base five.
- Regroup while subtracting

You will need:
- Counters
- An exercise book and a pen.

Introduction:
In the previous lesson, you learnt how to regroup while adding.

Subtraction in base five, too, requires the knowledge of regrouping.

In base ten, while regrouping, 1 contains 10.
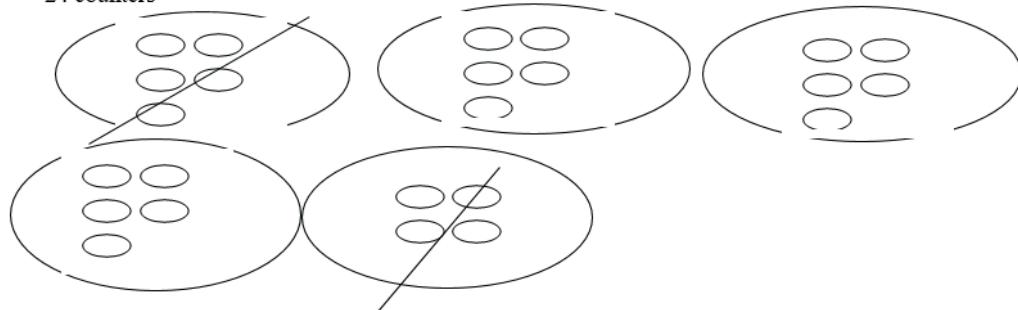
In base five while regrouping, 1 contains 5.

It is easier to subtract vertically, so you will arrange the digits properly according to their place values before you subtract.

The knowledge of subtracting in base five, helps people who sell in the market to know the number of heaps they have sold and how many they have remained.

Step 1 Activity

- Count 24 counters and subtract 9 counters.
- Group them in fives as shown below.
- Do you realize that 4 have remained.
- So you have 44 base five.
- Also regroup 9 counters in fives. You will realize that you have one five and four remain.
- So you have 14 base five.
- 24 counters

=4fives4ones.
- Take away 9 counters

= 1 five 4 ones.

Therefore
$$44_{five}$$
$$- 14_{five}$$
$$\overline{30_{five}}$$

You can now study these examples.

Example 1	Example 2
Work out: $123_{five} - 42_{five}$	Work out $431_{five} - 34_{five}$
$\quad\quad$ 0 7	$\quad\quad$ 3 8
$\quad\quad 1\,2\,3_{five}$	$\quad\quad 4\,3_{five}$
$\quad\quad - 4\,2_{five}$	$\quad\quad - 3\,4_{five}$
$\quad\quad\quad 3\,1_{five}$	$\quad\quad\quad\quad 4_{five}$

Exercise

Work out:

1. $34_{five} - 12_{five}$

2. $21_{five} - 14_{five}$

3. $100_{five} - 22_{five}$

4. $413_{five} - 44_{five}$

6. 3021_{five}
$\quad -410_{five}$
$\quad \underline{\quad\quad}$

7. 1030_{five}
$\quad - 221_{five}$
$\quad \underline{\quad\quad}$

8. 2341_{five}
$\quad - 410_{five}$

Topic: Patterns and sequences

Lesson 1: Types of numbers

In this lesson, you will:
1. Identify triangular numbers.
2. Identify square numbers
3. Identify composite numbers
4. Identify prime numbers.
You will need: a pen, a pencil, a book, counters.

Introduction
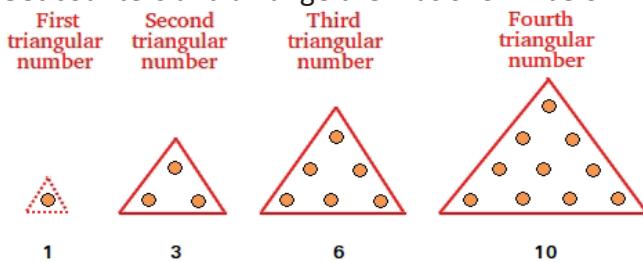
Patterns help you to learn sequences and make estimates. This brings order in what you do and make. For example, look at laying bricks while building a house, they make good patterns, Weaving among others. You have already seen in primary four that patterns and sequences can be made also using numbers. Number patterns and sequences are written in series. Knowing about number patterns will help you to learn how to make designs.

Triangular numbers

When you add consecutive counting numbers from 1, the sum is always a triangle number. To understand this better try the activity below.

Step 1

Get counters and arrange them as shown below.

Triangular numbers

- What shape have the counters formed? The shape is a triangle.
- The number of counters in each pattern is the sum of consecutive counting numbers from 1. That is to say:
  1 = 1
  1+2 = 3
  1+2+3 = 6
  1+2+3+4 = 10
- The sums form a set of triangle numbers.

Step 2

Look at the sequence of triangular numbers below

1	= 1
1 + 2	= 3
1 + 2 + 3	= 6
1 + 2 + 3 + 4	= 10
1+ 2 + 3 + 4 + 5	= 15

A set of triangle numbers include: 1, 3, 6, 10, 15,…

Look at the following examples

1. Find the 5th triangular number
    - First list the first 5 counting numbers
        1, 2, 3, 4, 5
    - Add the first 5 counting numbers
        1 + 2 + 3 + 4 + 5 = 15

    Therefore, the 5th triangular number is 15.

2. Write the next number in the sequence
    1, 3, 6, 10, 15, 21,------
    The sequence increases by adding consecutive counting numbers as shown below
    1 + 2   = 3
    3 + 3   = 6
    6 + 4   = 10
    10 + 5 = 15
    15 + 6 = 21
    21 + 7 = 28
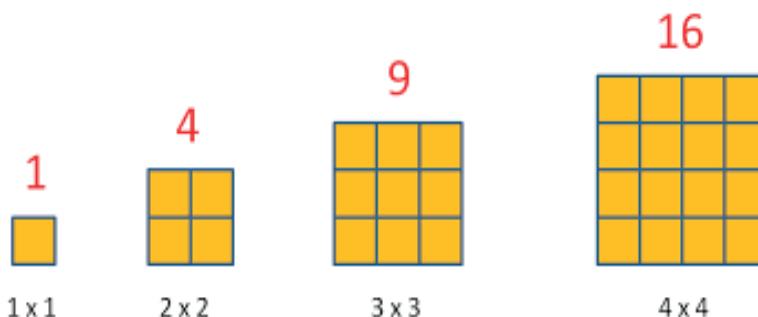
    The next number in the sequence is: 1, 3, 6, 10, 15, 21, 28

Exercise

1. Write down the first 4 triangular numbers.
2. What is the sum of the first and fifth triangular numbers?
3. Find the sum of the first three triangular numbers.

Square numbers

Step 1: Activity

- Draw many small squares.
- Arrange them to form different squares as shown below.

1 x 1   2 x 2   3 x 3   4 x 4

- Count the number of small squares in each of the given squares

  The small squares in each pattern are:
  First pattern   = 1 square
  Second pattern   = 4 squares
  Third pattern   = 9 squares
  Fourth pattern   = 16 squares
- How many small square pieces will the next square pattern have?
  The next square pattern will have: 5 X 5 = 25 squares

Note that square numbers are numbers obtained when a number is multiplied by itself.

Step 2

Look at the following examples:

1. Write the first 8 square numbers
   Square numbers are obtained by multiplying a number by itself.
   1 X 1 = 1
   2 X 2 = 4
   3 X 3 = 9
   4 X 4 = 16
   5 X 5 = 25
   6 X 6 = 36
   7 X 7 = 49
   8 X 8 = 64   The numbers are : 1, 4, 9, 16, 25, 36, 49, 64
2. Find the missing number in the sequence below
   1, 4, 9, 16, 25, 36, ------------

1	4	9	16	25	36	49
1 X 1	2 X 2	3 X 3	4 X 4	5 X 5	6 X 6	7 X 7

The missing number is 49.

**Exercise**

1. Write down the first 5 square numbers.
2. What is the sum of the third and seventh square numbers?
3. Find the sum of the first 4 square numbers.

Composite numbers

Step 1

- Write the following numbers on papers as shown below:

  | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |

- Pick any number, find and record its factors
  - Example: number   factors
                         7   1 , 7

- Group papers with numbers which have only two factors

  | 7 | 11 | 13 |

- Group papers with numbers which have more than two factors

  | 8 | 9 | 10 | 12 | 14 |

- Give a common name for each of the groups

Numbers with only 2 factors are called prime numbers and numbers with more than 2 factors are called composite numbers.

Note: composite numbers are numbers with more than 2 factors.

Step 2

Look at the following examples:

1. Write down the first 6 composite numbers
    The first 6 composite numbers are:
    4, 6, 8, 9, 10, 12.

2. List the factors of 24 and write composite or not composite.
    Think of two numbers whose product is 24.
    1 X 24 = 24
    2 X 12 = 24
    3 X 8   = 24
    4 X 6   = 24   The factors of 24 are: { 1, 2, 3, 4, 6, 8, 12, 24 }. 24 is a composite number.
    Or
    24 ÷ 1 = 24
    24 ÷ 2= 12
    24 ÷ 3 = 8
    24 ÷ 4 = 6
    24 ÷ 6 = 4

24 ÷ 8 = 3
24 ÷ 12 = 2
24 ÷ 24 = 1   The factors of 24 are: { 1, 2, 3, 4, 6, 8, 12, 24.}. 24 is a composite number.

Exercise.

1.   Write down the first four composite numbers.
2.   Find the sum of the first and fifth composite numbers.
3.   What is the sum of the first three composite numbers?

Prime numbers

Prime numbers are numbers with only two <u>different factors</u>, that is 1 and itself.

To learn more about prime numbers do the following activity.

Step 1

- Write numbers 1 to 100 as shown below:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- Cross out 1
- Leave 2, 3, 5 and 7 but cross all the multiples of 2, 3, 5 and 7.
- List all numbers which are not crossed/in a circle. What type of numbers are they?

Well, the expected answers are shown below:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Numbers which are not crossed: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97. These are prime numbers.

Step 2

Look at the following examples:

1. Write a list of prime numbers less than 50
   The expected answer is right here.
   2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47
2. Write a list of prime numbers between 0 and 10
   These include: 2, 3, 5, 7

Exercise

1. List all the triangular numbers less than 20
2. What is the 7th triangular number?
3. What is the sum of the first and third triangular numbers?
4. What is the sum of the first 10 counting numbers?
5. Fill in the next three missing numbers in the sequence: 1, 3, 6, 10, ------, ------, --------.
6. Find the missing numbers in the sequence: 1, 4, 9, 16, ---------,--------
7. Find the next number in the sequence: 100, 81, 64, 49, 36, ---------
8. List all the prime numbers less than 20
9. Write the prime numbers between 20 and 30
10. Find the next number in the sequences below:
    a) 2, 3, 5, 7, -------------
    b) 19, 23, 29, 31, --------
    c) 47, 53, 59,------------

Lesson 2: Factors and multiples of numbers

In this lesson, you will:
1. Find the factors of numbers.
2.Describe what factors are.
3. Find the multiples of numbers.
4. Describe multiples of numbers.
You will need: a pen, a book, a pencil

Introduction

Take about 20 seconds to think about the meaning of the word factor (s). Well compare your explanation with the one given below.

- Factor (s) is any number that **is** divisible by another number with a remainder of 0 or factors are the whole numbers you multiply to get another number. This topic helps you to predict the multiplication effect of an event, for example the number of people who may contract a disease.

To get the real meaning of this, do the following activity

Step 1

Think of any whole number. No matter which one you pick, there are two whole numbers you can multiply to get your number.

Suppose you picked 7.

1 X 7 = 7. The numbers 1 and 7 are called factors of 7.

- Some numbers have more than 2 factors.
- Find all the factors of 12

Step 2

Look at the following examples

Example 1. List the factors of 12

$1 \times 12 = 12$
$2 \times 6 = 12$
$3 \times 4 = 12$

Therefore the factors of 12 are: { 1, 2, 3, 4, 6, 12 }

Example 2. Find the common factors of 16 and 24
Factors of 16
$1 \times 16 = 16$
$2 \times 8 = 16$
$4 \times 4 = 16$

Therefore the factors of 16 are : { 1, 2, 4, 8, 16 }
 Factors of 24
1 × 24 = 24
2 × 12 = 24
3 × 8 = 24
4 × 6 = 24
The factors of 24 are: { 1, 2, 3, 4, 6, 8, 12, 24 }   **Check, underline the common factors.**

The factors of 16 are: { 1, 2, 4, 8, 16}

Common factors of 16 and 24 are: { 1, 2, 4}

Exercise.

1. List the factors of 5
2. Write down the factors of 16.
3. Find the common factors of 8 and 10.

Multiples of numbers

 Multiples of a number are the products of that number and any whole number. Multiples and factors help you to break down numbers to make multiplication and division easier.

Step 1: Activity.

Would you please count aloud in threes starting with 3 up to 36.

Now write down your answers. Am sure they must be similar to the ones below:

3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36.

Example 1. Find the first 6 multiples of 5

$$1 X 5 = 5$$
$$2 X 5 = 10$$
$$3 X 5 = 15$$

$$4 X 5 = 20$$

$$5 X 5 = 25$$

$$6 X 5 = 30;$$

Therefore the first 6 multiples of 5 are: { 5, 10, 15, 20, 25, 30 }

Exercise

1. Write **down** the first 7 multiples of each of the following:
a) 2   b)   4   c)   5   d) 6   e)   7   f) 8   g)   10
2. Find the multiples of 10 greater than 30 but less than 100.
3. Circle the multiples of 4 in the list below: 4, 10, 8, 14, 12, 18, 16, 22,24, 60
4. List the factors of 18

5. Write down the factors of 32
6. List the factors of 28
7. Find the common factors of 12 and 20
8. Find the common factors 18 and 15
9. Find the common factors of 90 and 120

Lesson 3: Lowest common multiple (LCM)

In this lesson, you will:
1. Work out the LCM of numbers.
2.Descibe what LCM is.
You will need: a paper, a book, a pen.

Introduction

In the previous lesson you learnt about multiples of numbers. In today's lesson you are going to learn about Lowest common multiple which is written as LCM in short form. The lowest common multiple of two or more numbers is the smallest number that is a multiple of two or more numbers. The knowledge of LCM will help you to develop critical thinking skills which will enable you to share items without remainders.

Step 1

1. Write the multiples of 4 and 5 on papers as shown below:

| 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 |

| 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 |

Pick all the papers with common multiples

| 20 | 40 |

2. What is the lowest of the multiples you have picked?

The lowest common multiple of 4 and 5 is 20.

Step 2

Look at the following examples

1. Find the lowest common multiple of 3 and 4
    Step 1: List the multiples of 3;   3, 6, 9, 12, 15.
    Step2:   List the multiples of 4;   4, 8, 12, 16.
    12 is a common multiple of 3 and 4, so it is the lowest common multiple of 3 and 4.
2. Find the lowest common multiple of 5 and 8

Multiples of 5:   5, 10, 15, 20, 25, 30, 35, 40, 45

Multiples of 8:   8, 16, 24, 32, 40, 48

40 is a common multiple of 5 and 8

Therefore the LCM of 5 and 8 is 40

Exercise

Find the lowest common multiple of the following:

a) 5 and 10   b) 3 and 9   c) 4 and 5   d) 5 and 9   e) 15 and 30 g) 8 and 12

Lesson 4: Greatest common factor(GCF)

In this lesson, you will:
1. Work out the greatest common factor (GCF) of numbers.
2. Describe what greatest common multiple (GCF) is.
You will need: a pencil, a pen, a book, cards

Introduction

You looked at factors of numbers in the previous lesson where we emphasized that a factor is any number that is divisible by another number. In today's lesson, we are going to learn about Greatest common factor which is written as GCF in short form. The greatest common factor (GCF) of two or more numbers is the largest number that is a factor of both numbers. Greatest common factor is also called Highest common factor (HCF). The knowledge of GCF will help you to develop creative thinking skills which will enable you to divide numbers without remainders.

Step 1

- Find the factors of 6 and 9
- Compare the factors and find the common factors.
- Find the highest common factor.

Factors of 6

$1 \times 6 = 6$

$2 \times 3 = 6$

Factors of 6: {1, 2, 3, 6.}

Factors of 9

1 × 9 = 9

3 × 3 = 9

Factors of 9: {1, 3, 9.} **Check, underline the common factors.**

Common factors of 6 and 9 are: {1, 3.}

The highest common factor of 6 and 9 is 3.

Step 2

Look at the following examples

1. What is the greatest common factor of 12 and 18?
   Step 1: List all the factors of 12
   1 × 12 = 12
   2 × 6 = 12

   3 × 4 = 12

The factors of 12 are :   {1, 2, 3, 4, 6, 12}

   Step 2: List the factors of 18

   1 × 18 = 18

   2 × 9 = 18

   3 × 6 = 18

The factors of 18 are: {1, 2, 3, 6, 9, 18}   **Check, underline the common factors.**

The factors of 12 are: {1, 2, 3, 4, 6, 12}

The common factors of 24 and 18 are: {1, 2, 3, 6}

Therefore 6 is the greatest common factor of 24 and 18

Step 3

Exercise

Find the greatest common factor of the following:

a) 8 and 12   b) 10   and 15   c) 18   and   24   d) 8   and 9   e) 28 and 42   g) 40 and 72

Lesson 6: Number patterns

In this lesson, you will:
1. Form patterns in increasing and decreasing progression.
2.Read patterns and sequences.
You will need: a pencil, a pen, a book.

Introduction

Number patterns and sequences are established by a common relationship between- numbers.

Number patterns whose next number is got by addition or multiplication are said to be in increasing progression.

Patterns whose next number is got by subtraction or division are said to be in decreasing progression. This topic will help you to develop problem solving skills which will enable you to Count easily when you see the number patterns for example you can use number patterns to count by tens, such as groups of 10 tomatoes.

To understand this better try the activity below.

Step 1

a)
- Draw a figure similar to the one below on a piece of paper.

1	2	3	4	5	6	7	8	9	10	11
*		*								

- Draw a star into the figure but keep on skipping one box.
- Record the number of boxes which have stars.
- What do you notice?

Well, the expected answer is shown below:

1	2	3	4	5	6	7	8	9	10	11
*		*		*		*		*		*

1, 3, 5, 7, 9, 11.

The numbers in the sequence are increasing by 2.

b) Write the following numbers on papers as shown below:

130	115	140	120	135	125

Arrange the numbers from the largest to the smallest, what do you notice?

Well, the expected answer is shown below:

140	135	130	125	120	115

The numbers are decreasing by 5.

Step 2

Look at the following examples

1. Find the missing number in the sequence below
   20, 30, 40, 50, 60, ------
   When you study the sequence carefully, you realize that it increases by 10. So keep adding 10 to get the next number as shown below
   20 + 10 = 30
   30 + 10 = 40
   40 + 10 = 50
   50 + 10 = 60
   60 + 10 = 70
   Therefore the sequence is :   20, 30, 40, 50, 60, 70
   Or
   Multiply consecutive counting numbers by 10 to get the next number.
   2 X 10 = 20
   3 X 10 = 30
   4 x 10 = 40
   5 x 10 = 50
   6 X 10 = 60
   7 x 10 = 70

   20, 30, 40, 50, 60, 70

2. Find the next number in the sequence below:

50, 45, 40, 35, 30, ------

The sequence decreases by 5. So keep subtracting 5 to get the next number as shown below.

50 – 5 = 45

45 – 5 = 40

40 – 5 = 35

35 – 5 = 30

30 – 5 = 25

Therefore the sequence is :   50, 45, 40, 35, 30, <u>25</u>

Step 3

Exercise

1. Find the next number in the following sequences
   a)   18, 20, 22, 24, 26,-----------
   b)   75, 80, 85, 90, 95,-----------
   c)   12, 15, 18, 21, 24,----------
   d)   20, 18, 16, 14, 12,----------
   e)   80,75, 70, 65, 60,-----------
   f)   52, 48, 44,40, 36,----------
2. Find the next two numbers in the sequence
   10, 30, 50, 70, 90, -----------, -----------

Topic: FRACTIONS.

Lesson 1: Addition of fractions with different denominators.

In this lesson, you will:
- Find the lowest common denominator of fractions.
- Add fractions with different denominators using LCD.

You will need:
- Sheets of paper and a ruler.

A pen and an exercise book.

Introduction:

In the previous lessons, you learnt how to find Lowest Common Multiples of numbers.

This is going to help you greatly to find the Lowest Common Denominators of fractions. In this lesson, Lowest Common Multiple is going to be used as Lowest Common Denominator.
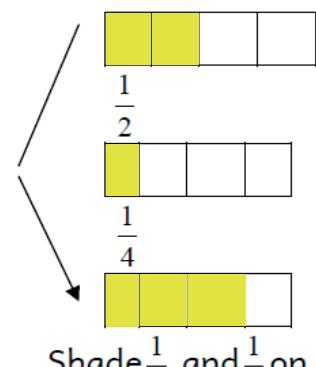
This will, in turn, help you find the equivalent fractions to ease addition.

The knowledge of adding fractions helps you to tell what part or how many parts of a whole you have used.

Step 1

Try this activity

Get three strip cards and divide them into 4 equal parts

$\frac{1}{2}$

Art work: Shade 2 squares out of 4.

Art work: Shade 1 square out of 4

$\frac{1}{4}$

Art work: shade 3 squares out of 4

Shade $\frac{1}{2}$ and $\frac{1}{4}$ on the third strip.

What fraction is shaded?

Therefore $\frac{3}{4}$ is shaded.

Step 2
Now study the examples below

Example 1

Work out $\dfrac{1}{2}+\dfrac{1}{3}$

Find the lowest common Denominator (LCD) of $\dfrac{1}{2}$ and $\dfrac{1}{3}$

Multiples of 2; (2, 4, 6, 8…)
Multiples of 3; (3, 6, 9,12…)
LCD is 6

$$\dfrac{(\dfrac{1}{2}\times 6)+(\dfrac{1}{3}\times 6)}{6 \qquad\qquad 6}$$

Divide

$6 \div 2 = 3$

$6 \div 3 = 2$

$$\dfrac{3}{6}+\dfrac{2}{6}=\dfrac{5}{6}$$

Add the equivalent fractions

Example 2
Work out

$$\dfrac{1}{12}+\dfrac{5}{6}$$

Find the LCD of $\dfrac{1}{12}$ and $\dfrac{5}{6}$

Multiples of 12; (12, 24, 36…)
Multiples of 6; (6, 12,18…..)
LCD = 12

$12 \div 12 = 1$
$1 \times 1 = 1$

$$\dfrac{(\dfrac{1}{12}\times 12)+(\dfrac{5}{6}\times 12)}{12}$$

$12 \div 6 = 2$
$5 \times 2 = 10$

$$\dfrac{1}{12}+\dfrac{10}{12}=\dfrac{1+10}{12}$$

$$=\dfrac{11}{12}$$

Add the equivalent fractions

Exercise

You can now do this exercise.

Work out.

1. $\dfrac{1}{2} + \dfrac{1}{3}$ 6. $\dfrac{1}{6} + \dfrac{2}{3}$

2. $\dfrac{1}{5} + \dfrac{1}{10}$ 7. $\dfrac{3}{4} + \dfrac{1}{2}$

3. $\dfrac{1}{2} + \dfrac{1}{5}$ 8. $\dfrac{1}{3} + \dfrac{2}{5}$

4. $\dfrac{2}{3} + \dfrac{3}{4}$

5. $\dfrac{3}{10} + \dfrac{2}{5}$

Lesson 2: Word problems involving addition of fractions.

In this lesson, you will:
- Read word problems involving addition of fractions.
- Solve word problems involving addition of fractions.

You will need:
- Sheets of paper.
- A ruler.
- An exercise book and a pen

Introduction:

In the previous lesson, you learnt how to add fractions of different denominators.

In this lesson, you are going to learn how this can be applied in everyday life.

You need to read carefully the sentence, interpret it and find out what you are required to do.

Step 1: Activity

- Work with a brother or sister.
- Draw a rectangle and divide it into 10 equal parts.
- Let the other person draw a rectangle and divide it into 10 equal parts.
- Now shade $\dfrac{2}{5}$ of the 10 parts while the other person shades $\dfrac{2}{10}$ of the parts.
- What is the sum of the two fractions?

Step 2
Now study the examples below

Example 1

A boy ate $\frac{1}{4}$ of his cake in the morning and $\frac{1}{3}$ in the evening. What fraction of the cake did he eat altogether?

Morning $\frac{1}{4}$ find the LCD of $\frac{1}{4}$ and $\frac{1}{3}$

Evening $\frac{1}{3}$

Multiples of 4; (4, 8, 12, 16…)
Multiples of 3; (3, 6, 12, 15…)
LCD = 12

Add the fractions.

$\frac{1}{4}$ and $\frac{1}{3} = \dfrac{(\frac{1}{4} \times 12) + (\frac{1}{3} \times 12)}{12}$

Divide

$12 \div 4 = 3$
$1 \times 3 = 3$

$= \frac{3+4}{12}$

$12 \div 3 = 4$
$1 \times 4 = 4$

$= \frac{7}{12}$

He ate $\frac{7}{12}$ of the cake

Example 2

A trader sold $\frac{3}{10}$ of the bag of sugar on Monday and sold $\frac{1}{4}$ on Tuesday. Find the total fraction he sold on the two days.

Monday $\frac{3}{10}$ find the LCD of $\frac{3}{10}$ and $\frac{1}{4}$

Tuesday $\frac{1}{4}$

$M_{10} = 10, 20, 30\ldots$

$M_4 = 4, 8, 12, 16, 20\ldots$

$\frac{3}{10} + \frac{1}{4} = \dfrac{(\frac{3}{10} \times 20) + (\frac{1}{4} \times 20)}{20}$ LCD = 20.

$20 \div 10 = 2$
$3 \times 2 = 6$

$= \frac{6+5}{20}$

Divide

$20 \div 4 = 5$
$5 \times 1 = 5$

$= \frac{11}{20}$

Exercise

Now do the exercise below.

1. What is the sum of $\dfrac{3}{7}$ and $\dfrac{6}{14}$?

2. A farmer dug of $\dfrac{1}{2}$ of his garden on Thursday and $\dfrac{1}{3}$ on Monday. Find the fraction of the garden he dug on the two days.

3. Obella read $\dfrac{1}{3}$ of his novel in the morning and $\dfrac{1}{4}$ of the same novel in the evening. What fraction of the novel did he read altogether?

4. Kintu gave out $\dfrac{1}{2}$ of his mangoes to his friends and $\dfrac{1}{4}$ of the same mangoes to his sister. What fraction of the mangoes did he give out altogether?

5. Our father used $\dfrac{1}{3}$ of his land for growing crops and $\dfrac{2}{5}$ of the same land for rearing goats. What fraction of the land did he use altogether?

Lesson 3: Adding mixed fractions.

In this lesson, you will:
- Convert mixed **fractions** to improper fractions.
- Add mixed **fractions.**

You will need:
- Sheet of paper.
- An exercise book and a pen.
- A ruler.

Introduction:

In primary four you learnt about mixed fractions and improper fractions.
You also learnt how to change from a mixed fraction to an improper fraction.
If you have forgotten, do not worry, you will be reminded in the examples.
In this lesson you are going to add mixed fractions. The idea of Lowest common denominator will still help you to add mixed fractions.

Now study the examples

Example 1

Add : $2\frac{1}{3} + 3\frac{1}{2}$

find the LCD of

$\frac{7}{3} + \frac{7}{2}$

$M_3 = (3, 6, 9, 12...)$

$M_2 = (2, 4, 6, 8...)$

Change the mixed fraction to improper fraction

$\frac{(2\times3)+1}{3} + \frac{(3\times2)+1}{2}$

$\frac{7}{3} + \frac{7}{2}$

$6 \div 3 = 2 \quad 7\times2 = 14$

$6 \div 2 = 3 \quad 7\times3 = 21$

$\frac{(\frac{7}{3}\times 6) + (\frac{7}{2}\times 6)}{6}$

The answer must be a mixed number.

$\frac{14}{6} + \frac{21}{6} = \frac{35}{6}$

$= 5\frac{5}{6}$

Example 2

Work out: $1\frac{1}{4} + 2\frac{1}{2}$

Change the mixed numbers to improper. $\frac{(1\times4)+1}{4} + \frac{(2\times2)+1}{2}$

$\frac{5}{4} + \frac{5}{2}$

Find the LCD of $\frac{5}{4}$ and $\frac{5}{2}$

$M_4 = (4, 8, 12 ...)$

$M_2 = (2, 4, 6 ...)$

LCD = 4

$4 \div 2 = 2$

$5 \times 2 = 10$

$4 \div 4 = 1$

$\frac{(\frac{5}{4}\times 4) + (\frac{5}{2}\times 4)}{4}$

$5 \times 1 = 5$

$\frac{5+10}{4} = \frac{15}{4}$

$= 3\frac{3}{4}$

Exercise.
Now try this exercise.

1. $1\frac{1}{2} + 1\frac{1}{4}$

2. $3\frac{1}{12} + 2\frac{1}{6}$

3. $2\frac{1}{5} + 1\frac{1}{2}$

4. $4\frac{1}{8} + 2\frac{1}{2}$

5. $2\frac{1}{5} + 1\frac{1}{3}$

6. $4\frac{1}{4} + 1\frac{1}{8}$

7. $2\frac{1}{6} + 1\frac{1}{3}$

8. $1\frac{1}{9} + 2\frac{1}{3}$

Lesson 4: Word problems involving addition of mixed numbers.

In this lesson, you will:
- Convert mixed fractions to improper fractions.
- Solve word problems involving addition of mixed numbers.

You will need:
- Sheets of paper.
- An exercise book and a pen.
- A ruler.

Introduction:
In the previous lesson you learnt how to add mixed fractions. In this lesson, you are going to learn how this knowledge can be applied in everyday life.
Adding mixed fractions helps people who work in the factory to measure capacity of liquids for example oil, paraffin and paint which sometimes can be measured in quantities of mixed fractions.

Step 1: Activity
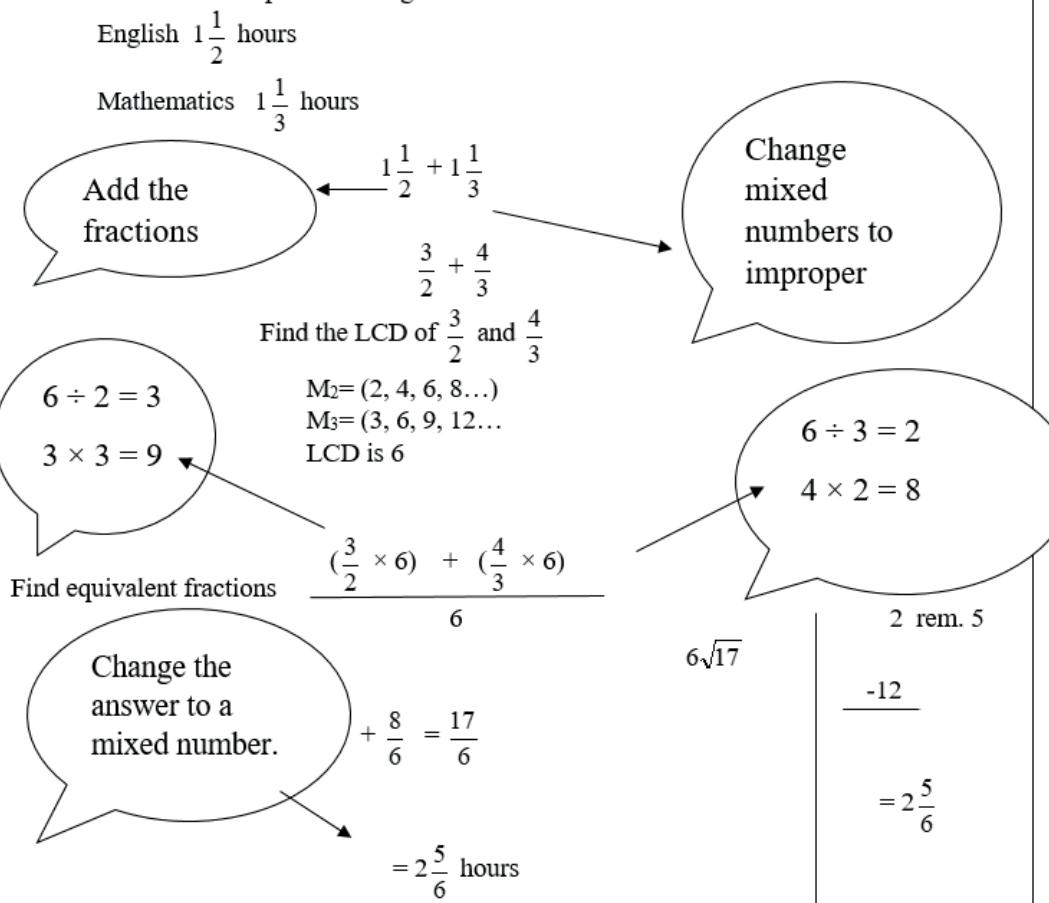
- Collect objects with regular shapes e.g. oranges.
- Divide some of them into halves and others into quarters.
- Pick $2\frac{1}{2}$ mangoes, then pick $1\frac{1}{4}$
- Put them together and count them.
- How many wholes are there?
- Count the fractions.

Now study the examples below.

Example 1

Monica spends $1\frac{1}{2}$ hours reading English and $1\frac{1}{3}$ hours reading Mathematics.

Find the total time she spends reading.

English $1\frac{1}{2}$ hours

Mathematics $1\frac{1}{3}$ hours

Add the fractions

$1\frac{1}{2} + 1\frac{1}{3}$

Change mixed numbers to improper

$\frac{3}{2} + \frac{4}{3}$

Find the LCD of $\frac{3}{2}$ and $\frac{4}{3}$

$6 \div 2 = 3$

$3 \times 3 = 9$

$M_2 = (2, 4, 6, 8\ldots)$
$M_3 = (3, 6, 9, 12\ldots$
LCD is 6

$6 \div 3 = 2$

$4 \times 2 = 8$

Find equivalent fractions

$$\frac{(\frac{3}{2} \times 6) + (\frac{4}{3} \times 6)}{6}$$

Change the answer to a mixed number.

$+\frac{8}{6} = \frac{17}{6}$

$= 2\frac{5}{6}$ hours

$6\sqrt{17}$

2 rem. 5

-12
___

$= 2\frac{5}{6}$

Exercise

1. Namusoke sold $1\frac{1}{4}$ kg of sugar to a woman and $1\frac{1}{2}$ kg of wheat flour to a man. Find the total fraction of items Namusoke sold.

2. My brother takes $2\frac{1}{3}$ hours to do work in his exercise book. He takes $1\frac{1}{2}$ hours to do domestic work. What fraction does he spend on the two activities?

3. Find the sum of $3\frac{1}{3}$ and $1\frac{3}{4}$.

4. Arthur ate $4\frac{1}{2}$ oranges. Julius ate $2\frac{1}{5}$ oranges. Work out the total fraction both ate.

5. What is the sum of $1\frac{5}{6}$ and $1\frac{3}{4}$?

Lesson 5: Subtracting fractions with different denominators.

In this lesson, you will:
- Find Lowest Common Denominators of fractions.
- Subtract fractions with different denominators using LCD.

You will need:
- Sheets of paper.
- An exercise book and a pen.
- A ruler and a pencil.
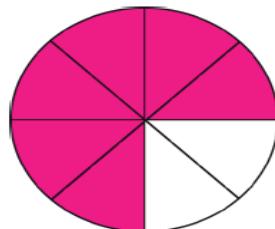
Introduction:

In the previous lesson you added fractions with different denominators. You also found the lowest common denominators of the given fractions. This helped you to find equivalent fractions.

In this lesson, you are still going to find LCD for fractions before you subtract. In order for you to subtract fractions more easily using equivalent fractions.

Step 1 Activity

- Get a circular cutout with 8 parts.
- Shade 6 parts out of 8 parts.
- Using a cutter or a pair of scissors, cut 2 out of the 6 parts.
- What fraction of the shaded part is remaining?

$$= \frac{6}{8} - \frac{2}{8}$$

$$= \frac{4}{8}$$

Step 2

Now study the examples

Example 1

Work out $= \frac{3}{4} - \frac{1}{2}$

The LCD of $\frac{3}{4}$ and $\frac{1}{2}$ is 4

$4 \div 2 = 2$
$2 \times 1 = 2$

$4 \div 4 = 1$
$3 \times 1 = 3$

$$\frac{(\frac{3}{4} \times 4) - (\frac{1}{2} \times 4)}{4}$$

Subtract

$$\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$$

Example 2

Work out $\dfrac{5}{6} - \dfrac{1}{4}$

Find the LCD of $\dfrac{5}{6}$ and $\dfrac{1}{4}$

$M_6 = (6, 12, 18 ...)$

$M_4 = (4, 8, 12...)$

LCD $= 12$

$12 \div 6 = 2$
$2 \times 5 = 10$

$= \dfrac{(\frac{5}{6} \times 12) - (\frac{1}{4} \times 12)}{12}$

$12 \div 4 = 3$
$1 \times 3 = 3$

Subtract

$\dfrac{10}{12} - \dfrac{3}{12} = \dfrac{7}{12}$

Exercise

Now try these.

1. $\dfrac{3}{7} - \dfrac{1}{14}$

2. $\dfrac{4}{5} - \dfrac{1}{10}$

3. $\dfrac{4}{9} - \dfrac{1}{3}$

4. $\dfrac{9}{10} - \dfrac{2}{5}$

5. $\dfrac{3}{4} - \dfrac{2}{3}$

6. $\dfrac{5}{6} - \dfrac{1}{4}$

Lesson 6: Subtracting mixed fractions with different denominators.

In this lesson, you will:
- Change mixed numbers to improper fractions.
- Subtract mixed numbers with different denominators.
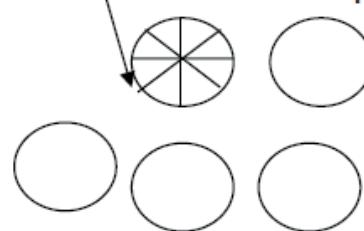
You will need:
- Sheets of paper.
- A pen and an exercise book.

Introduction:

You learnt how to add mixed fractions by first of all changing them to improper fractions. In this lesson, you are going to subtract mixed fractions by first changing them to improper fractions, then you subtract. Subtraction of mixed fractions helps people, for example, in the factories, to reduce or decrease amounts of liquids as they make mixtures. Such mixtures can be of paint and oil.

Step 1 : Activity

- Get 5 circular cutouts
- Use a cutter or a pair of scissors to cut one of the cutouts into 8 equal parts.
- Remove 2 wholes and $\frac{1}{8}$

How many wholes and eighths remain?

Therefore you remain with 2 wholes and $\frac{7}{8}$

Step 2

Now study this example

1. Work out $2\frac{1}{2} - 1\frac{1}{4}$

Change to improper fractions $\frac{5}{2} - \frac{5}{4}$

The LCD of $\frac{5}{2}$ and $\frac{5}{4}$ is 4

$4 \div 4 = 1$

$5 \times 1 = 5$

$4 \div 2 = 2$

$5 \times 2 = 10$

$$\frac{(\frac{5}{2} \times 4) - (\frac{5}{4} \times 4)}{4 \qquad 4}$$

Change to a mixed fraction.

$$\frac{10}{4} - \frac{5}{4} = \frac{5}{4}$$

Subtract

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

Exercise

Work out the following.

1. $2\frac{1}{2} - 1\frac{1}{6}$

2. $4\frac{1}{4} - 3\frac{1}{2}$

3. $4\frac{1}{8} - 2\frac{1}{4}$

4. $2\frac{1}{5} - 1\frac{1}{3}$

5. $5\frac{1}{5} - 1\frac{1}{3}$

6. $2\frac{3}{12} - 1\frac{1}{6}$

7. $2\frac{1}{4} - 1\frac{1}{2}$

8. $2\frac{3}{4} - 1\frac{1}{3}$

Lesson 7: Word problems involving Subtraction of mixed fractions.

In this lesson, you will:
- Read word problems involving subtraction of mixed **fractions.**
- Solve word problems involving subtraction of mixed **fractions.**

You will need:
- Sheets of paper.
- A pair of scissors or a cutter.
- An exercise book and a pen.
- A pencil.

Introduction:

Subtraction is the 'opposite' of addition.

Remember how you worked out word problems of addition of mixed fractions. You will use the same method except that the symbol will change to subtraction.

In this lesson, you will read the sentence, interpret then work out the problem.

Step 1: Activity

- Get circular cutouts.

- Cut one of them into 4 equal parts.
- Take away 3 wholes and $\frac{1}{4}$
- How many wholes and quarters remain?
- Therefore you will remain with 2 wholes and $\frac{3}{4}$

Step 2

Study the example below.

1. Juma had $3\frac{1}{2}$ water melons, he gave out $2\frac{1}{4}$

What fraction remained?

$3\frac{1}{2} - 2\frac{1}{4}$ $= \frac{7}{2} - \frac{9}{4}$ LCD = 4   Method 2

find the LCD of $\frac{7}{2}$ and $\frac{9}{4}$ $(3-2) + \frac{1}{2} - \frac{1}{4}$

$M_2 = (2, 4, 6, 8...)$ LCD = 4

$M_4 = (4, 8, 12....)$ LCD = 4 $1 + \frac{1}{2} \times 4 - \frac{1}{4} \times 4$
$$\frac{}{4}$$

$4 \div 2 = 2$

$7 \times 2 = 14$

$= \frac{(\frac{7}{2} \times 4) - (\frac{9}{4} \times 4)}{4}$

$= \frac{14 - 9}{4}$

$4 \div 4 = 1$
$9 \times 1 = 9$

$\frac{1 + (2 - 1)}{4}$

$= \frac{5}{4}$

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

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

Exercise
You can now do this exercise.

1. At a school, pupils use $4\dfrac{1}{2}$ bags of beans while other workers use $2\dfrac{1}{3}$. How many more bags do pupils use?

2. Subtract $1\dfrac{1}{2}$ from $3\dfrac{1}{4}$

3. Musoke had $2\dfrac{3}{4}$ cakes and ate $1\dfrac{1}{2}$ cakes. What fraction of the cake remained?

4. On a wall $3\dfrac{2}{3}$ was painted. When it rained, $1\dfrac{1}{9}$ of the paint was washed away. What fraction of **the paint** remained on the wall?

5. Subtract $7\dfrac{1}{3}$ from $10\dfrac{1}{2}$

Lesson 8: Multiplying a whole number by a fraction.

In this lesson, you will:
- Multiply a whole number by a fraction.
- Solve word problems involving multiplication of whole numbers by a fraction.

You will need:
- An exercise book and a pen.
- A ruler and a pencil.
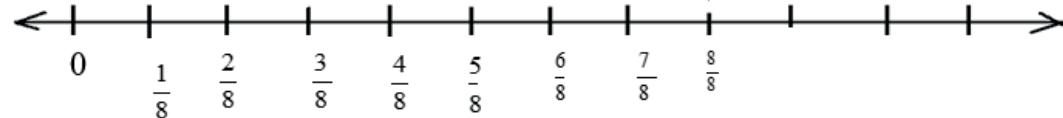
Introduction:
In the previous lessons of multiplication, you noticed that multiplication is repeated addition. In this lesson, you are going to multiply a whole number by a fraction. The whole number will tell you how many times the fraction
has been added.

When you multiply 4 by $\dfrac{1}{3}$. This means

$$4 \times \dfrac{1}{3} = \dfrac{1}{3} + \dfrac{1}{3} + \dfrac{1}{3} + \dfrac{1}{3}$$
$$= \dfrac{4}{3}$$
$$= 1\dfrac{1}{3}$$

Step 1

Activity

- Draw a number line and label it like the one below.

- Make 5 jumps of $\frac{1}{8}$ each.
- Where have you stopped?
- You will notice that you have stopped at $\frac{5}{8}$, this means $5 \times \frac{1}{8} = \frac{5}{8}$

Step 2

Now study the examples

Example 1

Work out: $\quad 7 \times \frac{1}{10}$

$$7 \times \frac{1}{10} = (\frac{7}{1} \times \frac{1}{10})$$

$$= \frac{7 \times 1}{1 \times 10}$$

$$= \frac{7}{10}$$

Example 2

Work out: : $\quad 6 \times \frac{2}{5}$

$$6 \times \frac{2}{5} = (\frac{6}{1} \times \frac{2}{5})$$

$$= \frac{12}{5}$$

$$= 2\frac{2}{5}$$

Exercise

Work out.

1. $6 \times \frac{1}{3}$

2. $4 \times \frac{1}{2}$

3. $6 \times \frac{2}{9}$

4. $12 \times \frac{3}{11}$

5. $10 \times \frac{3}{7}$

6. $7 \times \frac{2}{13}$

7. $4 \times \frac{1}{5}$

8. $16 \times \frac{3}{4}$

Lesson 9: Multiplying proper fractions by proper fractions.

In this lesson, you will:
- Multiply proper fractions by proper fractions.
- Reduce fractions to the lowest.

You will need:
- Rectangular sheets of paper.
- A ruler and a pencil.
- An exercise book and a pen.

Introduction:

In primary four, you learnt how to multiply a proper fraction by a whole number. In this lesson, you are going to multiply a proper fraction by a proper fraction.

Multiplication of fractions is important because it helps you to know what part of a fraction you need, for example, when baking a cake, what fraction of baking powder, milk, wheat flour and sugar you need.

Step 1: Activity

- Get a rectangular sheet of paper. Fold it into equal parts and shade a half.
- Fold the paper again vertically into three equal parts and shade $\frac{1}{3}$.
- What fraction of the shaded region is shaded twice?

$$\frac{1}{3} \text{ of } \frac{1}{2} = \frac{1}{6}$$

Step 2

Now study the examples below

Example 1

Work out $\frac{2}{7} \times \frac{1}{4}$

$$\frac{2}{7} \times \frac{1}{4} = \frac{2 \times 1}{7 \times 4}$$

Multiply numerators

$$= \frac{\overset{1}{\cancel{2}}}{\cancel{28}}_{14}$$
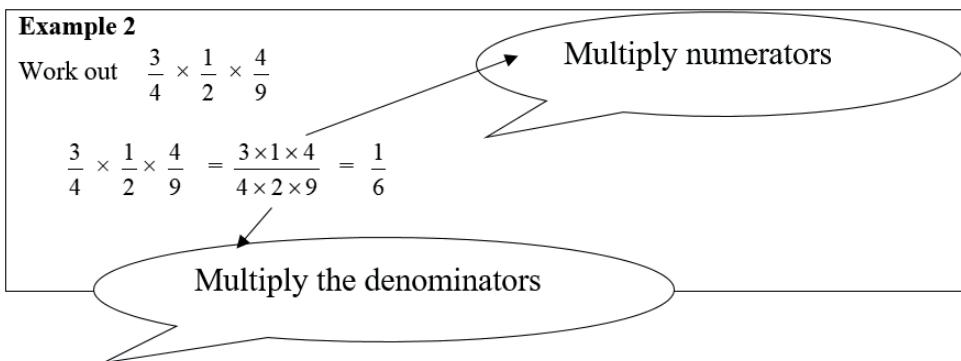
Multiply the denominators

Reduce to the lowest

$$= \frac{1}{14}$$

Example 2

Work out $\dfrac{3}{4} \times \dfrac{1}{2} \times \dfrac{4}{9}$

Multiply numerators

$$\dfrac{3}{4} \times \dfrac{1}{2} \times \dfrac{4}{9} = \dfrac{3 \times 1 \times 4}{4 \times 2 \times 9} = \dfrac{1}{6}$$

Multiply the denominators

Exercise

Work out:

1. $\dfrac{4}{5} \times \dfrac{1}{3}$

2. $\dfrac{1}{3} \times \dfrac{3}{8}$

3. $\dfrac{1}{3} \times \dfrac{1}{4}$

4. $\dfrac{7}{8} \times \dfrac{1}{14}$

5. $\dfrac{1}{2} \times \dfrac{2}{4} \times \dfrac{3}{4}$

6. $\dfrac{1}{4} \times \dfrac{2}{9}$

Lesson 10: Reciprocals.

In this lesson, you will:
- Find the reciprocal of numbers.

You will need:
- Sheet of paper.
- A ruler and a pencil.
- An exercise book and a pen.

Introduction:

Division is the opposite of multiplication for example you can find the answer to $8 \div 2$ by asking yourself 'what number when multiplied by 2 gives 8?

In other words, you should find the missing factor in $p \times 2 = 8$, which is 4.

In this lesson, you are going to find the reciprocal. In order to find reciprocal, you need to ask this question, what number do I need to multiply by the given number to get 1?

The reciprocal of 2 is $\dfrac{1}{2}$ because $2 \times \dfrac{1}{2}$ is 1.

Step 1

Activity

- Get a sheet of paper, a ruler and a pencil.
- Form cards and write the fractions on each.

A	B	C	D	E	F
$8 + \dfrac{1}{8}$	$8 \times \dfrac{1}{8}$	$4 + \dfrac{1}{4}$	$4 \times \dfrac{1}{4}$	$2 + \dfrac{1}{2}$	$2 \times \dfrac{1}{2}$

- Which cards have the same answer?
- Therefore cards B, D and F have the same answer 1.

Step 2

Now study the examples below.

Example 1

What is the reciprocal of $\dfrac{1}{4}$?

Let the reciprocal be k.

$$k \times \frac{1}{4} = 1$$

$$k \times \frac{1}{4} \times 4 = 1 \times 4$$

$$= 4$$

The reciprocal of $\dfrac{1}{4}$ is 4

Example 2.

Find the reciprocal of $2\dfrac{1}{2}$

Let the reciprocal be w.

$$w \times 2\frac{1}{2} = 1$$

$$w \times \frac{5}{2} = 1$$

$$\frac{5}{2} w \times 2 = 1 \times 2$$

$$\frac{5}{5} w = \frac{2}{5}$$

$$w = \frac{2}{5}$$

The reciprocal of $2\dfrac{2}{5}$ is $\dfrac{2}{5}$

Exercise

Now try this exercise.

A 1) $\dfrac{2}{1} \times \boxed{} = 1$ 2) $\dfrac{3}{10} \times \boxed{} = 1$

3) $\dfrac{4}{5} \times \boxed{} = 1$ 4) $\dfrac{7}{5} \times \boxed{} = 1$

B. Find the reciprocal of:

1) $\dfrac{3}{2}$ 2) 4   3) $\dfrac{3}{8}$ 4) 5   5) $\dfrac{3}{2}$

Lesson 11: Dividing whole numbers by fractions.

In this lesson, you will:
- Divide a whole number by a fraction.
- Solve word problems involving division of whole numbers by fractions.

You will need:
- Sheets of paper.
- An exercise book and a pen
- A ruler and a pencil

Introduction:

In the previous lesson, you learnt how to find the reciprocal of numbers.

It is this very idea that is going to help you divide a whole number by a fraction.

To divide a whole number by a fraction, you multiply by the reciprocal of a divisor.

Step 1: Activity
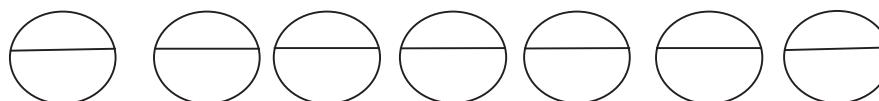
- Get 3 strips of paper.
- Cut them into quarters.
- Count the number of quarters got from the 3 strips of paper.
- How many quarters are in 3?
- You will notice that there are 12 quarters.

Step 2

Now study the examples below

Example 1

Work out:

$$7 \div \frac{1}{2}$$

How many halves are in 7

$$7 \div \frac{1}{2} = 7 \times \frac{2}{1}$$ Multiply by the reciprocal

$$= 14$$

Example 2

Namukwaya poured 15 litres of water into quarter litre bottles.
How many bottles did she fill?

$$15 \div \frac{1}{4} = 15 \times \frac{4}{1}$$ Multiply by reciprocal

$$= 60$$

Therefore she filled 60 bottles.

Exercise

Work out:

1. $7 \div \frac{1}{2}$
2. $9 \div \frac{2}{3}$
3. $10 \div \frac{1}{4}$
4. $36 \div \frac{2}{5}$
5. $24 \div \frac{1}{3}$

6. My mother packed 18kg of sugar into half kg packets. How many packets did she make?
7. Rajab poured 10 litres of honey into a third litre containers. How many containers did he fill?
8. How many quarters litre bottles can be filled from 20 litres?

Lesson 12: Dividing a fraction by a whole number.

In this lesson, you will:
- Divide a fraction by a fraction.
- Solve simple word problems involving division of fractions.

You will need:
- Rectangular pieces of paper.
- A pencil and a ruler.
- An exercise book and a pen. A ruler and a pencil

Introduction:

In the previous lesson you learned about reciprocal. In this lesson, the idea of a reciprocal is repeated because when you divide a fraction by a whole number, you multiply by the reciprocal of its divisor.

In the next step, you are going to use a rectangular piece of paper to practically see how a fraction can be divided by a whole number.

Step 1

Activity

- Fold a rectangular piece of paper into halves.
- Shade one of the halves and fold it again into halves.
- Again fold it into halves.
- Now unfold the paper.
- You will notice that half the paper is divided into 4 equal parts. Each part is equal to $\frac{1}{8}$ of the whole sheet.

  This shows that $\frac{1}{2} \div 4 = \frac{1}{2} \times \frac{1}{4}$
  $$= \frac{1}{8}$$
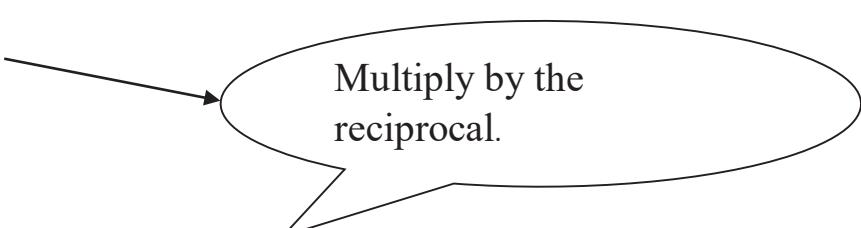
Step 2: Now study the examples

Example 1

Work out: $\frac{1}{3} \div 4$

$\frac{1}{3} \div \frac{4}{1} = \frac{1}{3} \times \frac{1}{4}$

$= \frac{1 \times 1}{3 \times 4}$

$= \frac{1}{12}$

Multiply by the reciprocal.

Example 2
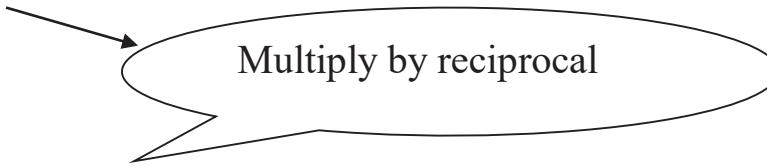
Adeke was given $\dfrac{1}{2}$ of sugarcane and shared it equally among 3 brothers. What fraction did each get?

$$\frac{1}{2} \div \frac{3}{1} = \frac{1}{2} \times \frac{1}{3}$$

Multiply by reciprocal

$$= \frac{1 \times 1}{2 \times 3}$$

$$= \frac{1}{6}$$

Each got $\dfrac{1}{6}$

Exercise

Work out:

1. $\dfrac{1}{4} \div 2$

2. $\dfrac{2}{5} \div 10$

3. $\dfrac{3}{4} \div 8$

4. $\dfrac{1}{2} \div 6$

5. A boy shared $\dfrac{1}{2}$ of an orange equally among 4 children. What fraction did each child get?

6. Divide $\dfrac{1}{4}$ of a water melon equally among 3 friends. What fraction does each get?

7. Share $\dfrac{2}{3}$ of a sugarcane equally between 2 girls. What fraction does each get?

Lesson 13: Dividing a fraction by a fraction.

In this lesson, you will:
- Divide a fraction by a fraction.
- Solve word problems involving dividing a fraction by a fraction.

You will need:
- An exercise book and a pen.
- A ruler and a pencil.
- Sheets of a paper.

Introduction:

In the previous lesson you **learnt how** to divide a fraction by a whole number.
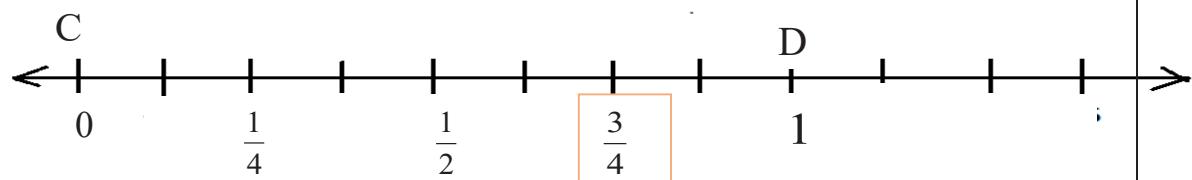
You noticed how the idea of reciprocal was used to get the quotient.

In this lesson, you are going to learn how to divide a fraction by a fraction.

It is easier to do this practically before you work out by calculation.

Step 1: Activity

- Draw a line CD similar to the one below:

C   D

$$0 \qquad \frac{1}{4} \qquad \frac{1}{2} \qquad \frac{3}{4} \qquad 1$$

- Mark $\frac{1}{4}$, $\frac{1}{2}$ $1\frac{1}{4}$ points.
- Also mark the points between:

i)   0 and $\frac{1}{2}$ ii) $\frac{1}{4}$ and $\frac{1}{2}$ iii) $\frac{1}{2}$ and $\frac{3}{4}$

- Make a small strip of paper that is half of line CD.
- Find the number of half strips of paper that can be obtained in a length of $\frac{3}{4}$ of a line CD.
- Work out : $\frac{3}{4} \div \frac{1}{2}$

Step 2

Now study the examples

Example 1	Example 2
Work out: $\frac{1}{4} \div \frac{1}{2}$	How many $\frac{3}{5}$ litres of juice are in $\frac{2}{3}$ litres of juice?
$\frac{1}{4} \div \frac{1}{2} = \frac{1}{4} \times \frac{2}{1}$ Multiply the reciprocal by the divisor.	$\frac{3}{5} \div \frac{2}{3} = \frac{3}{5} \times \frac{3}{2}$
$= \frac{2 \times 1}{4 \times 1}$	$= \frac{3 \times 3}{5 \times 2}$
$= \frac{2}{4} = \frac{1}{2}$	$= \frac{9}{10}$

Exercise

1. $\dfrac{1}{5} \div \dfrac{1}{3}$

2. $\dfrac{2}{7} \div \dfrac{1}{14}$

3. $\dfrac{8}{9} \div \dfrac{4}{5}$

4. $\dfrac{2}{3} \div \dfrac{4}{9}$

5. Divide $\dfrac{1}{9}$ by $\dfrac{1}{6}$

6. How many $\dfrac{1}{4}$ litres of water are in a $\dfrac{1}{2}$ litre of water?

7. Find how many $\dfrac{1}{2}$ kg packets of sugar can be made from $\dfrac{3}{4}$ kg of sugar?

Term Two

TOPIC: Fractions

Lesson 1: Identify the decimal fractions

In this lesson you will:

1. Find the shaded fraction.

2. Identify the shaded decimals.

You will need: a pencil, a pen, a paper, and a book

Introduction

In the previous classes (P.4 – p.1), you learnt about fractions where a bar is used to separate the numerator from the denominator. In today's lesson, you are going to learn about decimal fractions where a whole number is separated by a dot.

You will notice that when you write decimal fractions you use a dot, called a decimal point, to separate the whole number part from the part less than one. The places to the right of the decimal point are called decimal places. Numbers that are written with a decimal point are called decimal fractions. This topic will help you to develop effective communication skills which will enable you to describe parts of a whole such as parts of a sack of posho among others.

To understand this better try the activity below

Step 1

Get a piece of paper and divide it into 10 equal parts.

Shade 2 parts out of 10.

Write the shaded part as a fraction. The shaded part as a fraction is $\frac{2}{10}$.

Now divide the numerator by the denominator. You will notice that 2 ÷ 10 is as shown below

$$\begin{array}{r} 0.2 \\ 10\overline{)2} \\ -0 \\ \hline 2\,0 \\ -2\,0 \\ \hline 0\,0 \end{array}$$

$2 \times 10 = 10$
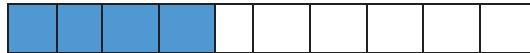
2 ÷ 10 = 0 ones. Write a point after 0 and then we add a 0 after 2 to make it 20

20 ÷ 10 = 2

Therefore $\frac{2}{10}$ as a decimal fraction is 0.2

Step 2: Look at these examples:

Example 1. Name the shaded decimal.

You can see that 4 parts have been shaded out of 10.
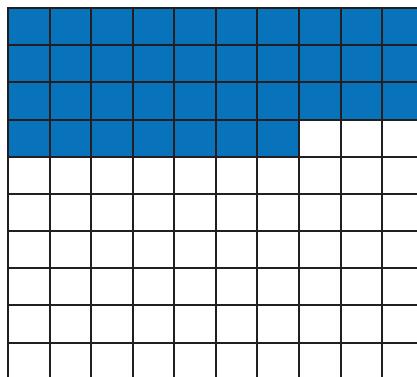
This means that the shaded fraction is $\frac{4}{10}$

Now $\frac{4}{10}$ in decimal is worked out as shown below.

$$
\begin{array}{r}
0.4 \\
10{\overline{)}}\,4 \\
-0 \\
\hline
40 \\
-40 \\
\hline
00
\end{array}
$$

0 X 10 = 0

4 X 10 = 40

$4 \div 10 =$ 0 ones. Write a point after 0 and then we add a 0 to 4 to make it 40

$40 \div 10 = 4$

Therefore the shaded decimal is 0.4

Example 2. Name the shaded decimal

You can see that 37 parts have been shaded out of 100

This means that the shaded fraction is $\frac{37}{100}$

Now we change $\frac{37}{100}$ to a decimal using long division as shown below

$$
\begin{array}{r}
0.37 \\
100{\overline{)}}\,3\,7 \\
-0\,0 \\
\hline
3\,7\,0 \\
-3\,0\,0 \\
\hline
7\,0\,0 \\
-7\,0\,0 \\
\hline
0\,0\,0
\end{array}
$$

0 X 100 = 0

3 X 100

7 X 100

$37 \div 100 = 0 \; ones$. Write a point after 0 and then we add 0 after 37 to make it 370

$370 \div 100 = 3 \; remainer \; 70$. Then we add 0 after 70 to make it 700.

$700 \div 100 = 7$

Therefore the shaded decimal is 0.37

Example 3: Change $\frac{7}{10}$ to a decimal fraction

$$
\begin{array}{r}
0.7 \\
10 \overline{)\ 7} \\
\end{array}
$$

$0 \times 10 = 0$ $\quad -0$

$7 \div 10 = 0\ 0nes.$ Write a point after 0 and then we add a 0 after 7 to make it 70

$7 \times 10 = 70$ $\quad -70$

70

$70 \div 10 = 7$

00

Therefore $\frac{7}{10}$ as a decimal fraction is 0.7

Step 3
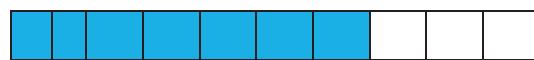
Exercise

Identify the shaded decimals.
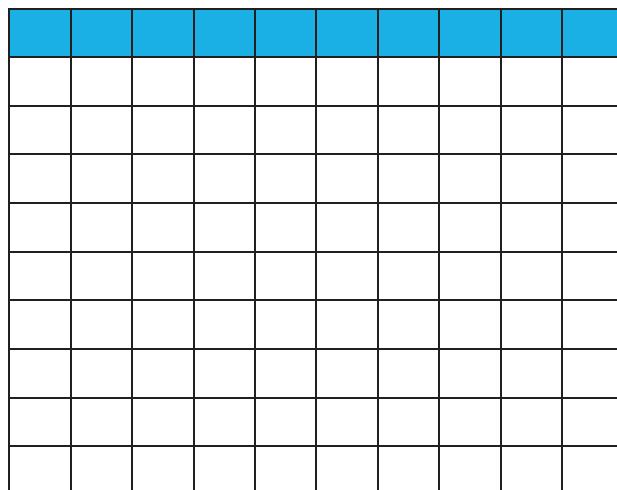
1.

2.

3 .

4. Change $\frac{58}{100}$ to a decimal fraction

5. Change $\frac{9}{10}$ to a decimal fraction.

Lesson 2:   Place value and value of decimals up to hundredths.

In this lesson you will:

  1. Identify and name the place values of decimals up to hundredths.

  2. Read and write the values of digits in decimals.

   You will need: a pen, a ruler, a pencil, a book

Introduction

Decimals have place values different from those of whole numbers. With whole numbers the place values start from: ones and go on. Now decimal place values start from tenths, hundredths and so on. For our class, we shall stop at hundredths. Place values help us to tell the value of each digit in a number.

Step 1.

Get a sheet of paper, write ones, separate with a point and write tenths, hundredths. Write 0.23 in the right places. You will notice that the number will appear like this below. Ones, tenths, hundredths.

Ones	.	Tenths	Hundredths
0	.	2	3

Try this with different numbers.

Step 2

Look at the following examples:

Example 1. Write the place value of each digit in the number   1.98

The place value of each digit can be identified in the table as shown below.

Ones	.	Tenths	Hundredths
1	.	9	8

From the table we can say that:

The place value of 1 is ones.

The place value of 9 is tenths.

The place value of 8 is hundredths.

Example 2. Write the place value 5 in 0.25

Using the table, the place value of 5 can be identified as indicated below.

Ones	.	Tenths	Hundredths
0	.	2	5

The place value of 5 is hundredths.

Example 3. What is the place value of 7 in the number 64.72?

Tens	ones	.	Tenths	Hundredths
6	4	.	7	2

The place value of 7 is tenths.

Example 4. Find the value of each digit in the number 98.24.

Note:

a) Tenths = $\frac{1}{10}$

b) Hundredths = $\frac{1}{100}$

First award the place value of each digit

Tens	Ones	.	Tenths	Hundredths
9	8	.	2	4

Remember to find the value, multiply the digit by its numerical place value

Value of 9

9 X 10 = 90.   The value of 9 is 90.

Value of 8

8 X 1 = 8. The value of 8 is 8.

Value of 2

$2 \times \frac{1}{10} = \frac{2}{10}$

Now 2 ÷ 10 is worked out as shown below

$$\begin{array}{r} 0.2 \\ 10\overline{)2} \\ 0 \times 10 = 0 \underline{} \\ -0 \\ 2 \times 10 = 20 \quad 20 \\ \underline{-20} \\ 00 \end{array}$$

2 ÷ 10 = 0 ones. Write a point after 0. Then add a 0 after 2 to make it 20.

20 ÷ 10 = 2

Therefore the value of 2 is 0.2

Value of 4

$4 X \frac{1}{100} = \frac{4}{100}$

Now 4 ÷ 100 is worked as shown below

```
                      0.04
          100 ) 4
  0 X 100 = 0    -0
                  4 0
  0 X 100 = 0    -0 0
                  4 0 0
  3 x 100 = 300  -4 0 0
                  0 0 0
```

4 ÷100 = 0 ones. Write a decimal point after 0 and then add a 0 after 4 so that it becomes 40.

40 ÷ 100 = 0. Add a 0 after 40 so that it becomes 400.

Now 400 ÷ 100 = 4

Therefore the value of 4 is 0.04

Exercise

    A. What is the place value of each digit in the following numbers?
        1) 0.5   2) 0.73   3) 71.86

    B. What is the place value of 6 in each of the following numbers?
        1) 0.68   2) 0.96   3) 5.61

    C. Find the value of each digit in the numbers below:
        a) 8.3   b) 47.6   c) 298. 51   d) 0.78.

Lesson 3: Writing decimals in words and vice versa.

In this lesson you will: 1. Write decimals in words

                    2. You will read decimals

                    3. Write decimals in figures

 You will need: a pencil, a pen, a book and a ruler

Introduction

To write decimals in words the following must be noted:

    1. Write the place value of each digit
    2. Read the number formed before the decimal point separately from the number formed after the decimal point.
    3. Read the decimal point as single digits "and"
    4. Read the rest of the digits as a whole number and say the place value of the last digit. This topic will help you to develop effective communications skills which will enable you to describe parts of a whole among others.

Step 1

Use the place value chart shown below and write the place value of each digit.

Place value	Ones	.	---------------	---------------
Number	8	.	5	7

The expected answers are shown in the table below

Place value	Ones	.	Tenths	Hundredths
Number	8	.	5	7

Step 2

Look at the following examples:

Example 1. Write 0.5 in words

First write the place value of each digit as shown below

Ones	.	Tenths
0	.	5

The number in words is;   Five tenths

People often read decimals in a shorter way. You can read 0.5 as: zero point five

Example 2. Write 0.72 in words

Ones	.	Tenths	Hundredths
0	.	7	2

0.72 is read as;   seventy two hundredths

Or

Zero point seven two

Example 3.   Write 3.7 in words

Ones	.	Tenths
3	.	7

3.7 is read   as;   Three and seven tenths

Or

Three point seven

Example 4.   Write 25.84 in words

Tens	Ones	.	Tenths	Hundredths
2	5	.	8	4

25.84 is read as; Twenty five and eighty four hundredths

Or

Twenty five point eight four.

Example 5. Write five tenths in figures

Note:

Decimals are written and read according to the digits in their place values. Secondly a number which ends in the place value of tenths has one decimal place and a number which ends in the place value of hundredths has two decimal places.

Draw a place value table and position digits according to their place values as shown below

Ones	.	Tenths
0	.	5

Five tenths = 0.5

Or

Five tenths means 5 out of 10, which is written as $\frac{5}{10}$ in fraction form

Now change $\frac{5}{10}$ to a decimal

$$
\begin{array}{r}
0.5 \\
10 \overline{)\ 5} \\
-0 \\
\hline
50 \\
-50 \\
\hline
00
\end{array}
$$

5 X 10 = 50

5 ÷ 10 = 0 ones. Write a point after 0 and then add a 0 after 5 to make it 50

50 ÷ 10 = 5

Example 6. Write seven and nine tenths in figures

Note that the word "and "in this case represents the decimal point. Secondly it separates the whole number from the decimal number. The place value table will be of help as shown below

Ones	.	Tenths
7	.	9

Seven and nine tenths = 7.9

Example 7. Write twenty four and seventy three hundredths in figures

Separate the whole numbers from decimal numbers as shown in the table below. Remember the word "and" stands for the decimal point

Tens	Ones	.	Tenths	Hundredths
2	4	.	7	3

Twenty four and seventy three hundredths = 24.73

Step 3

Exercise

A. Write each of the following in words

1) 0.4   2) 0.9   3) 2.8   4) 9. 2   5) 0.26   6) 0.43   7) 85.4   8) 32.92

B. Write the following in figures

1. Three tenths

2. Six tenths

3. Eight and five tenths

4. Forty six and two tenths

Lesson 4: Comparing decimals using a number line

In this lesson you will:

1. Compare decimals using a number line

2. Read decimals on a number line

3. Arrange decimals in ascending order or descending order

You will need: a pen, a pencil, a book.

Introduction.

Note that a decimal to the right of the other is greater than the decimal on its left on the number line.

We can therefore say that decimals become bigger as you move the right of the number line or decimals become smaller as you move to the left of the number line. We compare numbers to see if they are the same or to see which is greater or less. This topic will help you to compare decimal amounts when building or cooking.
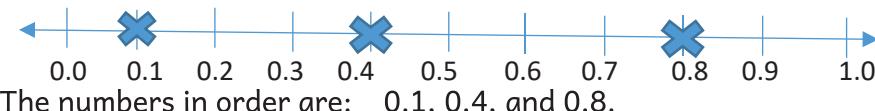
Step 1

Look at this number line below with units between 0 and 1

0.0   0.1   0.2   0.3   0.4   0.5   0.6   0.7   0.8   0.9   1.0

Draw a star at the following numbers on the number line: 0.8, 0.1, and 0.4. Now arrange the numbers starting with the smallest.

Well the expected answer is right here:
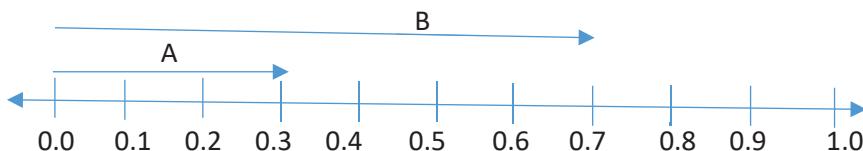
The numbers in order are: 0.1, 0.4, and 0.8.

Step 2

Now look at the following examples

Example 1. Use the symbols < *or* > to compare A and B

Note.
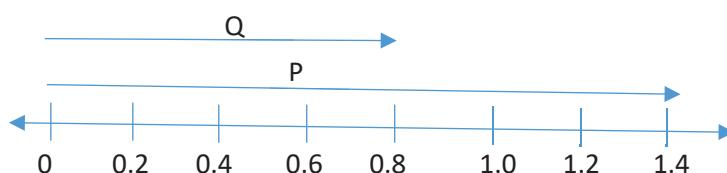
< , is a less than sign which means something smaller

> , is a greater than sign which means something bigger

   Arrow A = 0.3 and arrow B = 0.7

   Therefore 0.3 < 0.7   or   0.7 > 0.3.

Example 2. Use the symbols < *or* > to compare P and Q

   Arrow P = 1.4 and arrow Q = 0.8

   Therefore 1.4 > 0.8   or   0.8 < 1.4

Example 3. Arrange the following from the lowest to the highest: 0.9, 0.1, and 0.3

We show our working on the number line as indicated below

The order from the lowest to highest is: 0.1, 0.3, and 0.9

Example 4. Arrange 0.04, 0.09, and 0.06 from the highest to the lowest.

The order from the highest to the lowest is : 0.09, 0.06, 0.04.

Example 5. Arrange the following starting from the lowest to the highest: 0.47, 0.5, 9.8, 0.12.

We can do this number without using a number line. The question is, how can it be done?

1. Change the decimals to fractions
2. Identify the highest denominator
3. Multiply each fraction by the highest denominator and write the answer got in each working.
4. Compare the values and then arrange
   Here is the working, study it carefully

$0.47 = \frac{47}{100}$, $0.5 = \frac{5}{10}$, $9.8 = \frac{98}{10}$, $0.12 = \frac{12}{100}$

The highest denominator is 100. Multiply each fraction by 100 as shown below

$\frac{47}{100} \times \overset{1}{\cancel{100}} = 47$, $\frac{5}{\underset{1}{\cancel{10}}} \times \overset{10}{\cancel{100}} = 50$, $\frac{98}{\underset{1}{\cancel{10}}} \times \overset{10}{\cancel{100}} = 980$, $\frac{12}{\underset{1}{\cancel{100}}} \times \overset{1}{\cancel{100}} = 12$

Compare the answers with the decimals and then arrange accordingly

The order from the highest to the lowest is: 9.8, 0.5, 0.47, and 0.12

Note.
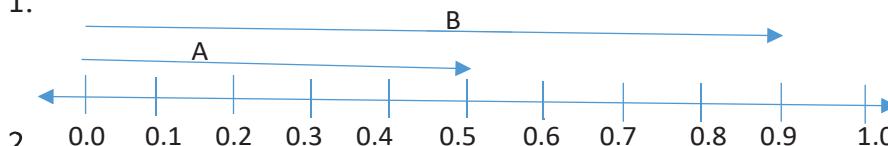
Ascending order is the arranging of numbers from the smallest to the biggest and descending order is the arranging of numbers from the biggest to the smallest.

Step 3.
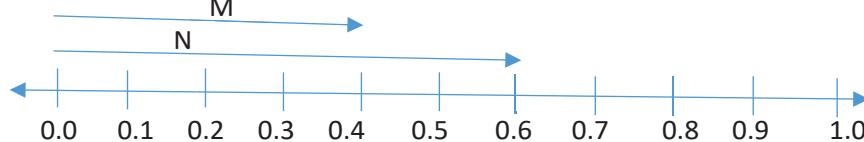
Exercise.
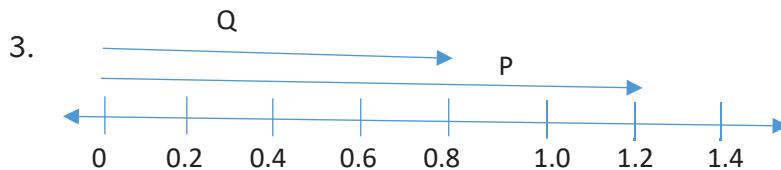
Use the symbols < _or_ > to compare the following.

1.

2.

3.

A. Arrange the following from lowest to highest

1. 0.8, 0.1, 0.6
2. 0.3, 0.9, 0.4, 0.7

3. 0.04, 0.07, 0.02
4. 0.08, 0.06, 0.03

B. Arrange the following from highest to lowest

1. 0.1, 0.9, 0.3
2. 0.02, 0.08, 0.04, 0.05

3. 0.6, 0.98, 0.24, 0.8
4. 1.2, 4.7, 0.53, 0.4

Lesson 5: Changing fractions to decimals and vice versa

In this lesson you will: 1. Change fractions to decimals.

2. Change decimals to fractions.

You will need: a pen, a pencil, a book

Introduction

You have already seen normal fractions and decimal fractions. To change a fraction to a decimal, divide the numerator by the denominator until there is no remainder. You can use the knowledge of fractions to share things fairly, for example sharing one pancake by 4 children.

Step 1

Make two strips and divide each of them into 10 equal parts.

Write fractions from $\frac{1}{10}$ to $\frac{10}{10}$ on one of the strips and 0.1 to 1.0 on the other as shown below

0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0

$\frac{1}{10}$	$\frac{2}{10}$	$\frac{3}{10}$	$\frac{4}{10}$	$\frac{5}{10}$	$\frac{6}{10}$	$\frac{7}{10}$	$\frac{8}{10}$	$\frac{9}{10}$	$\frac{10}{10}$

a) Write a fraction equivalent to 0.7

The expected answer is $\frac{7}{10}$

b) Write a decimal equivalent to$\frac{8}{10}$.

The expected answer is 0.8

67

Step 2

Now look at the following examples

Example 1. Change 0.5 to a fraction in its lowest form.

The place value of the last digit is tenths, tenths means 1 out of 10 which is written as $\frac{1}{10}$

Therefore 0.5 as a fraction is $\frac{5}{10}$

Reduce $\frac{5}{10}$ to the lowest term. This is done by dividing both the numerator and denominator by a common factor.

$\frac{5 \div 5}{10 \div 5} = \frac{1}{2}$

Example 2. Change 0.24 to a fraction in its lowest term.

The place value of the last digit is hundredths, hundredths means 1 out 100 which is written as $\frac{1}{100}$

Therefore 0.24 as a fraction is $\frac{24}{100}$

Reduce $\frac{24}{100}$ to the lowest term

$\frac{24 \div 2}{100 \div 2} = \frac{12}{50}$ $\frac{12 \div 2}{50 \div 2} = \frac{6}{25}$

Example 3. Change $\frac{7}{10}$ to a decimal

$$10 \overline{)7} \quad 0.7$$

$7 \div 10 = 0$ ones. Then add 0 after 7 to make it 70

$70 \div 10 = 7$

$7 \times 10 = 70$

Therefore $\frac{7}{10}$ as a decimal is 0.7.

Example 4. Change $\frac{4}{5}$ to a decimal

```
          0.8
      5 ) 4
          -0
8 X 5 = 40  40
          -40
          0 0
```

4 ÷ 5 = 0 ones. Then add a 0 after 4 to make it 40

40 ÷ 5 = 8

Exercise

A. Change the following decimals to fractions

1. 0.2   2. 0.8   3. 0.22   4. 0.48   5. 0.98

B. Change the following fractions to decimals

1. $\frac{5}{10}$ 2. $\frac{3}{5}$ 3. $\frac{49}{100}$ 4. $\frac{1}{4}$ 5. $\frac{1}{2}$

Lesson 6:   Adding decimals

In this lesson you will: 1. Add decimals

2. Arrange decimal fractions according to their place values.

3. Solve word problems.

4. Read and interpret word problems.

**You will need:** a pen, a pencil, a book

Introduction
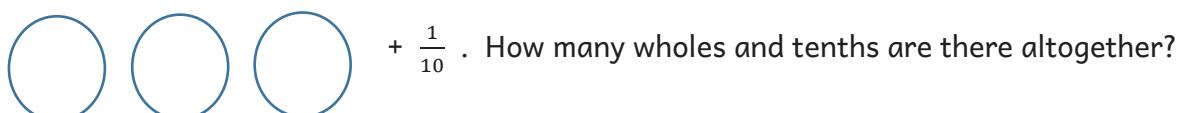
In addition of decimals, the following need to be noted:

1. Arrange the decimals according to their place values and then add normally.
2. Make sure that the decimal points are under the same line from top to the answer.

This topic will enable you to develop problem solving skills which will help you to share decimals fairly.

Step 1

Study the illustration below

+ $\frac{1}{10}$. How many wholes and tenths are there altogether?

Well the expected answer is $3\frac{1}{10}$.

Step 2

Now look at the following examples

1. Work out: 43.7 + 25.1.

Arrange the numbers vertically according to their place values

```
   4 3. 7
 + 2 5. 1
   6 8.  8
```

2. Work out :   53.24 + 4.8

Arrange the numbers vertically according to their place values

```
   5 3. 2 4
 + 4. 8 0
   5 8. 0 4
```

3. Work out 4 + 0.25

Arrange the numbers vertically according to their place values

Change 4 to a decimal by adding a decimal point and 2 zeros as shown below

```
   4. 0 0
 +0. 2 5
   4. 2 5
```

4. What is the sum of 0.53 and 7.45
    Note that the word sum means addition.
    Arrange the numbers according to their place value like we did earlier.

```
   0. 5 3
 +7. 4 5
   7. 9 8
```

5. Adeke prepared 4.3 litres of juice on Saturday and 8.67 litres of juice on Sunday. How many litres of juice did she prepare altogether?

On Saturday ....4. 3 0 litres Add a 0 after 3 on 4.3 to make the number of

On Sunday ......+ 8. 67 litres   decimal places the same.

12. 9 7 litres

Altogether she prepared 12.97 litres 0f juice.

Exercise

Work out the following:

1. 7 + 0.4   2. 24.7 + 14.2   3.   82.6 + 7.2   4. 67.14 + 0.28   5.   0.12 + 0.6
6. Odong got 6.72 litres of milk from his cow in the morning and 5.28 litres in the evening. How much milk did he get that day?
7. A hen weighs 2.56 kilograms and a cock weighs 3.21 kilograms. Find the total weight of the two birds

Lesson 7: Subtraction of decimals
In this lesson, you will:

1. Subtract decimals

2. Solve word problems involving subtraction of decimals.

You will need: a pencil, a pen, a book.

Introduction

In the previous lesson, you learnt about addition of decimals. In today's lesson, you are going to learn how to subtract decimals. This topic will help you to develop problem solving skills.

Step 1: Work out: 6.4 – 2.1.

Well, the expected answer is 4.3

Step 2

Look at the following examples:

Note

- When subtracting decimals, first arrange the digits according to their place values, and then carry out the subtraction process.

- Always arrange the numbers vertically.

1. Work out: 0.6 – 0.4.

$$\begin{array}{r} 0.6 \\ -0.4 \\ \hline 0.2 \\ \hline \end{array}$$

2. Work out: 17.3 – 5.12.

$$\begin{array}{r} 1\,7.3\,\cancel{0}^{2\,10} \\ -5.1\,2 \\ \hline 1\,2.1\,8 \\ \hline \end{array}$$

Exercise

Work out the following:

a) 59.7 – 4.2   b) 18.7 – 4.05

c) Subtract 7.5 from 10.12

d) Akullo's baby weighs 8.7kg and Naigaga's baby weighs 7.93kg.

i) Whose baby is heavier?

ii) By how much?

## TOPIC: LINES, ANGLES AND GEOMETRIC FIGURES

Lesson 1: Parallel lines
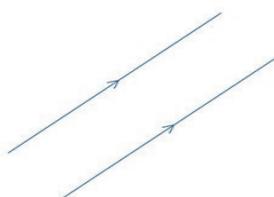
In this lesson, you will:

1. Identify parallel lines.

2. Draw parallel lines.

You will need: a sharp pencil, a pen, a book, a ruler, sticks, a set square

Introduction

Parallel lines are lines which do not meet because they have the same distance apart (away from each other) at every point. The pair of lines shown below shows an example of parallel lines.

 Parallel lines are useful in understanding the relationship between paths of objects and sides of various shapes. For example, squares, rectangles and parallelograms have sides

across from each other that are parallel. The knowledge of parallel lines helps us to plant our crops in straight rows.

Step 1

The symbol for parallel is a pair of vertical lines. If line segment AB ($\overline{AB}$) is parallel to line segment $\overline{DC}$ (DC), we write it in short form as $\overline{AB} \parallel \overline{DC}$.

How do you tell that some lines are parallel?

To show that some lines are parallel we use signs (arrows) as shown below

1   Line 1 is parallel to line 2 (1 // 2)

2   Line 2 is parallel to line 3 (2 // 3)

3   Line 1 is parallel to line 3 (1 // 3)

Step 2

Look at the following examples

Example 1 Draw 4 parallel lines in your book.

Well, you may have drawn lines similar to the ones below:

Example 2
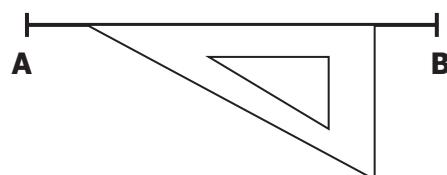
Using a ruler, a set square and a pencil only, draw a line parallel to line segment AB in the space provided.

A ————————————— B
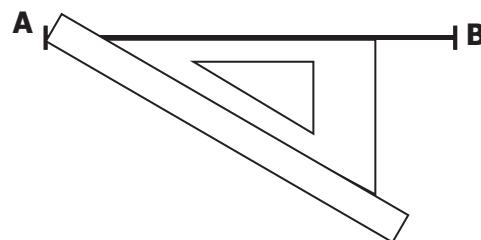
Draw line segment AB as shown below

A ————————————— B
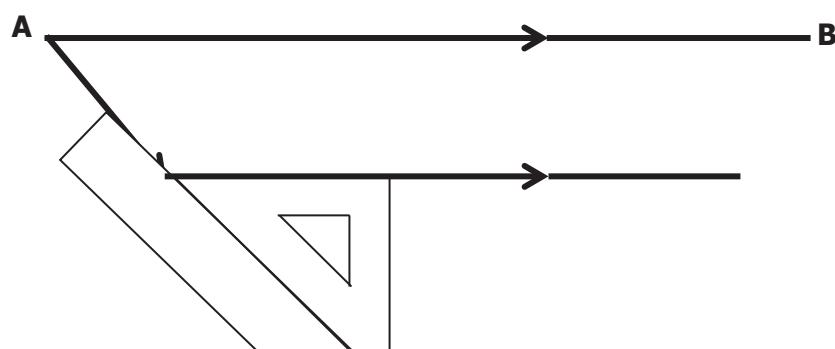
(a) Place the set square along the line AB as shown below

A   **B**
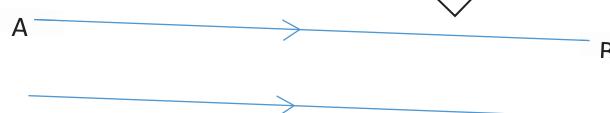
(b) Place the ruler firmly along the set square as shown below.

(c)Slide the set square downwards and draw the line on top of the set square as shown below.
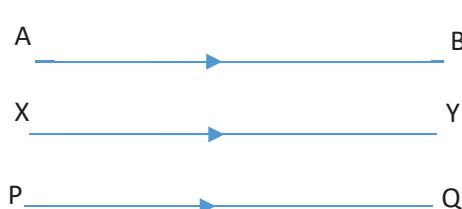
(d) The two lines are parallel to each other.
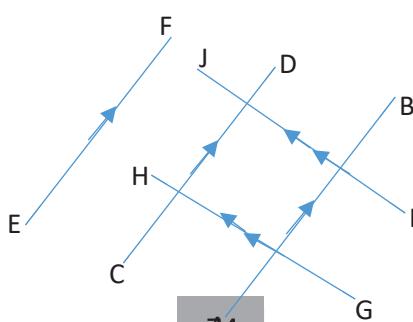
Exercise

1. Write true or false
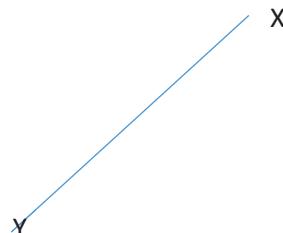
a) Line AB is parallel to line XY

b) Line XY is parallel to line PQ

c) Line AB is parallel to line PQ

2. Name the parallel lines in the diagram below

3. Draw a line parallel to line segment XY using a ruler, a set square and a pencil in the space provided.

X

Y

Lesson 2: Identifying perpendicular lines

In this lesson you will:
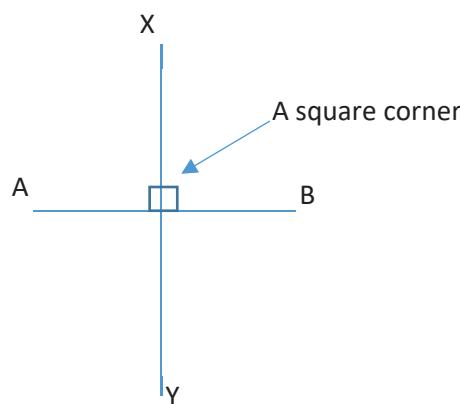
1. Draw perpendicular lines.

2. Identify perpendicular lines.

You will need: a pencil, a pen, a book, a piece of paper, a ruler.

Introduction.

In the previous lesson, we looked at parallel lines as lines which do not meet. In this lesson, we are going to look at lines that cross each other and meet to form a square corner. These lines are called perpendicular lines. A square corner is basically 90^0.

 Look at the diagram below for better understanding of perpendicular lines.

X

A square corner

A   B

Y
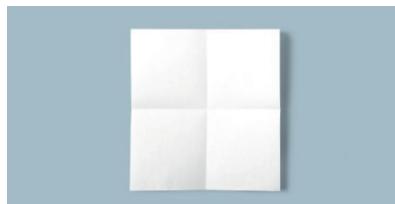
In the diagram above line AB is perpendicular to line XY. Perpendicular lines help builders to make building drawings.

Step 1
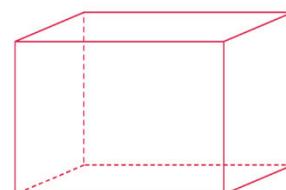
Get a sheet of paper. Fold the paper in half and in half again to make straight edges, and then unfold. What do you notice after unfolding?

Well, you will see something like this below. These lines are called perpendicular lines.

Step 2.
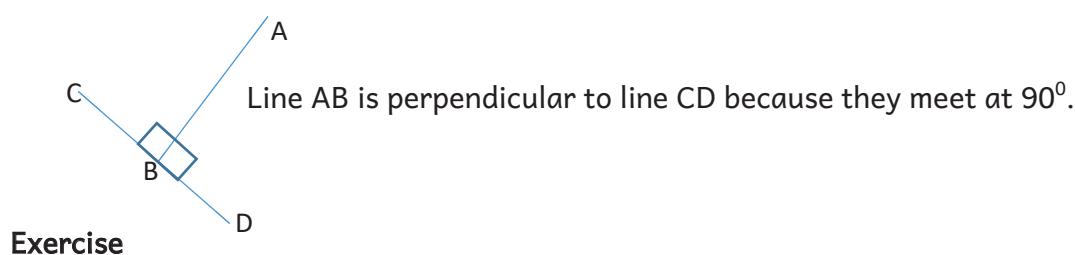
Identify objects at home with perpendicular lines.

Well, you may have thought of objects like the ones below:

Step 3

Look at the following examples

1. Name the perpendicular lines in the diagram below

Line AB is perpendicular to line CD because they meet at 90^0.

Exercise

1. Which angle is formed by perpendicular lines?
2. 2.Use the figure below to identify the pairs of perpendicular lines on the figure

3. Identify objects at home with perpendicular lines

Lesson 3: Drawing angles using a protractor

In this lesson, you will:
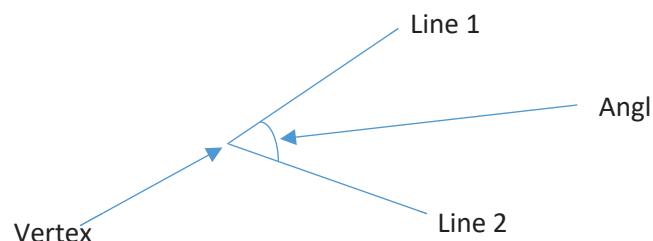
1. Draw angles using a protractor.

2. Name angles.

You will need: a sharp pencil, a protractor, a ruler, a pen
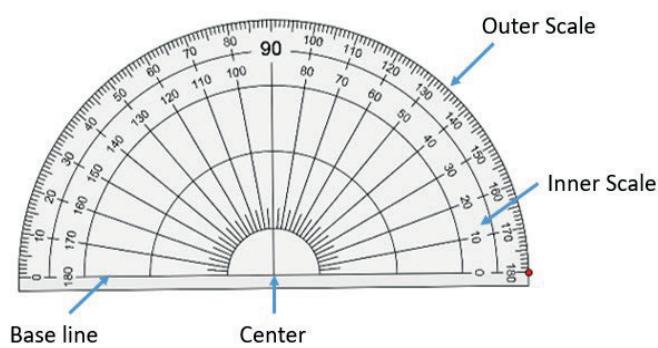
Introduction

In the previous lesson, we looked at perpendicular lines which meet at 90^0. Where they meet is an angle of 90^0. An angle is the gap between two meeting lines measured in degrees. In this, lesson we are going to learn the sizes of different angles. The point where two or more lines meet is a vertex.

Look at the diagram below.
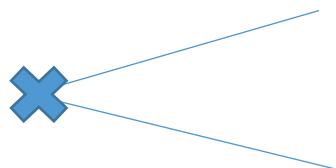
Learning about angles will help you to make accurate construction plans of buildings when you grow up. In this lesson you will need to use a protractor. A protractor is an instrument like this found in your geometry set.

Step 1: Activity

Get 2 sticks of equal length and a string. Tie the sticks with the string to make an angle like the one shown below. Trace the angle on the paper. Measure the angle you have traced using a protractor
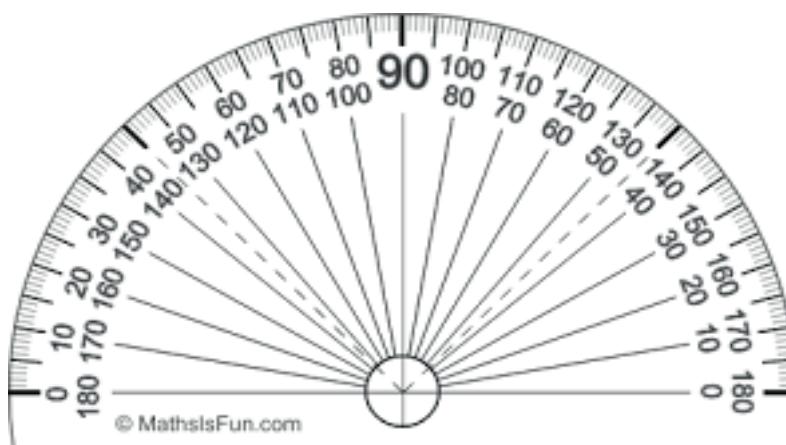
Step 2: Using a protractor to draw angles

Look at the following example

1. Using a ruler, a protractor and a pencil, only draw an angle of 60^0 in the space below

    Step 1

    1. Draw a straight line and mark a point to be used as the vertex
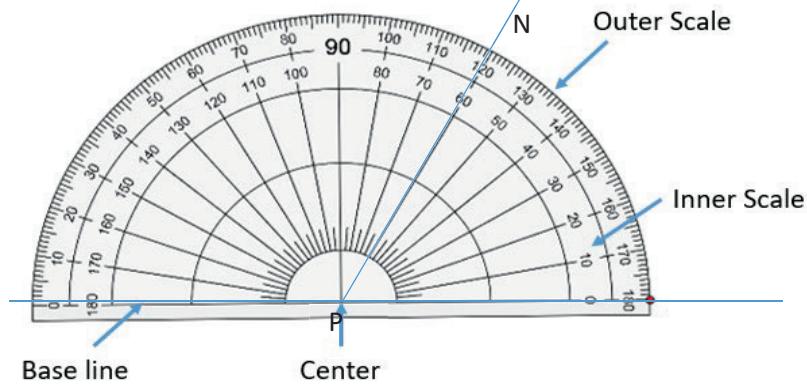
    Step 2.

    2. Place the protractor on the line such that its Centre exactly covers point P. The protractor has the inner scale and the outer scale, decide on the one to use. For this example we are Going to use the inner scale.
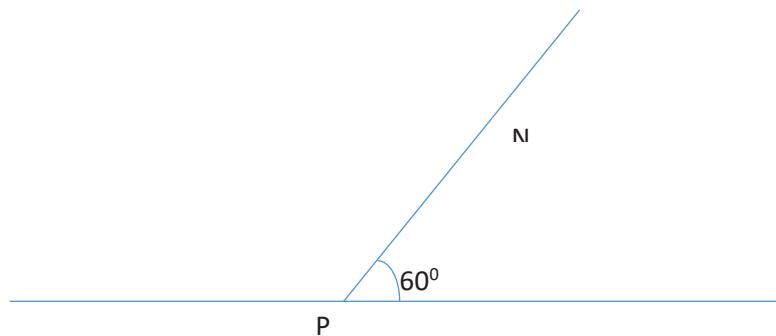
Step 3

1. Starting from zero, on the side you want your angle to be, read up to the line where your angle passes and mark it point N. (For this example we are using the inner scale)

Step 4

4 Remove the protractor and join the marked point N to the vertex P and label the angle

Exercise

Using a protractor, a ruler and a pencil only draw, the following angles:

1. 40^0 2. 50^0 3. 80^0.   4. 100^0 5. 110^0.   6. 125^0

Lesson 4: Measuring angles using a protractor

In this lesson, you will:

1. Measure angles using a protractor.

2. Name angles.

You will need: a protractor, a ruler, a pencil, a pen, a book
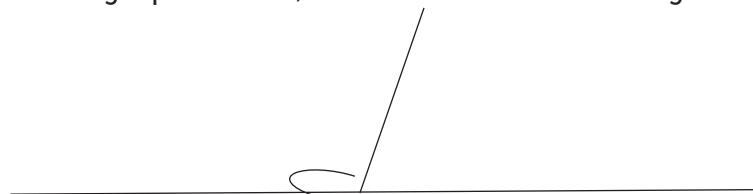
Introduction

You have already learnt how to draw angles using a protractor. In this lesson you will measure different angles using the protractor. The knowledge used when drawing angles using the protractor will be useful in this lesson. This topic will enable you to gain creative thinking skills which will help you to make accurate construction plans for buildings.
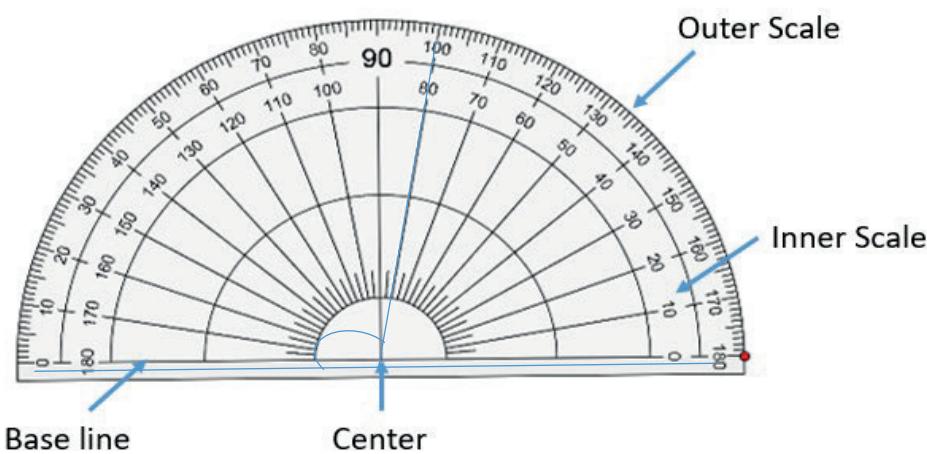
Step 1

Look at the following examples

1. Using a protractor, measure the size of the angle below.
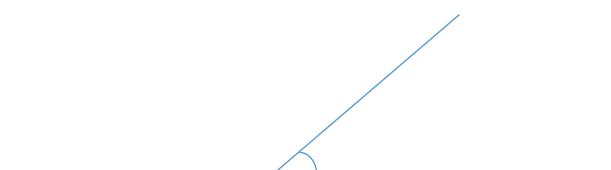
You measure an angle using a protractor. You place the protractor's Centre on the vertex of the angle and the zero mark along one line. Then you can measure the number of degrees in the angle where the second line crosses the protractor. For this example we are going to use the outer scale.
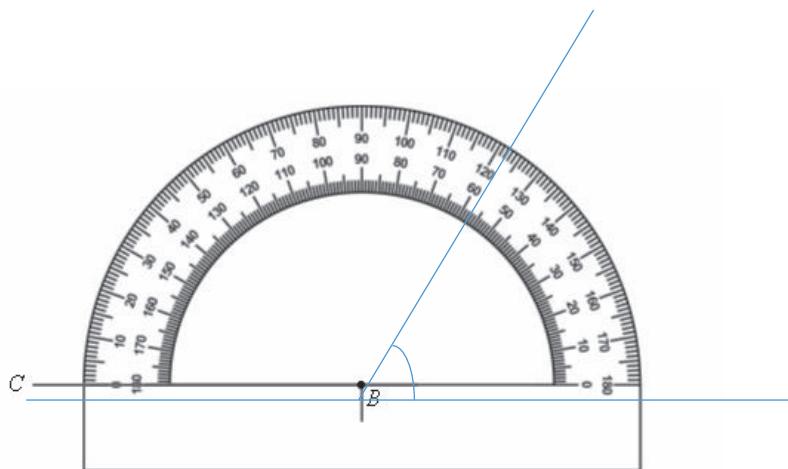
Well, the size of the angle is 100^0

2.Using a protractor, measure the value of the angle shown below

To measure the angle, place the protractor on the line such that its Centre exactly covers the vertex of the angle and measure the angle using the scale of your choice as shown below. For this case use the inner scale.

The angle is 60^0

Exercise

Measure the angles shown below using a protractor

1.   2.   3.

Lesson 5: Construction of circles

In this lesson, you will:

1. Name parts of a circle.

2. Construct circles.

You will need: a sharp pencil, a pair of compasses, a ruler, a book, a pen.

Introduction
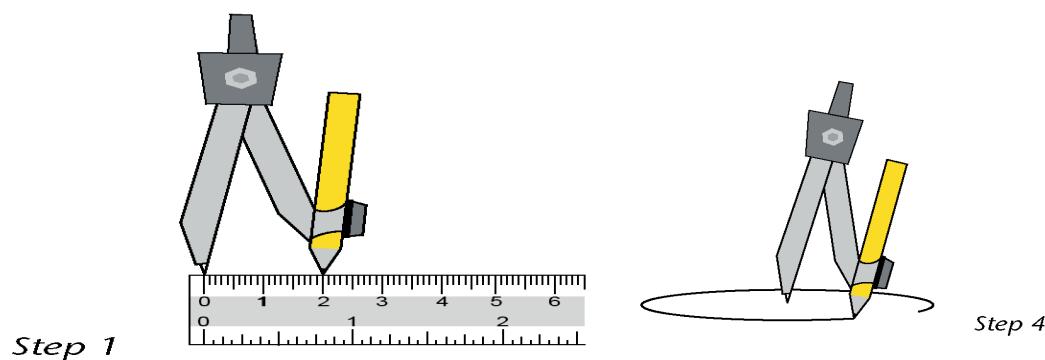
In primary four you learnt how to draw a circle, in this lesson, you are going to learn about how to construct a circle and name the different parts of a circle. The knowledge of circles helps us to construct houses with a circular base and also to make circular designs.

Step 1: Activity.

You are going to construct a circle of radius 2cm.
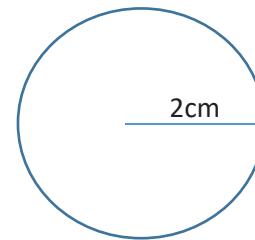
Place the pointed tip on the zero line of your ruler. Carefully widen the angle between the arms. Move the pencil tip until it is exactly at 2cm.

Make sure that the pointed tip is still on zero. Be careful not to change the gap once it is set to 2cm.

Step 1

Step 4

Gently push the pointed tip into point P. let the pencil tip drag over the paper. Push down lightly on the pointed arm as you draw. The pencil tip must move smoothly and lightly.

Step3: Twist the handle between your thumb and the forefinger. Let the pencil tip drag over the paper. Push down lightly on the pointed arm as you draw. The pencil tip must move smoothly and easily.

2cm
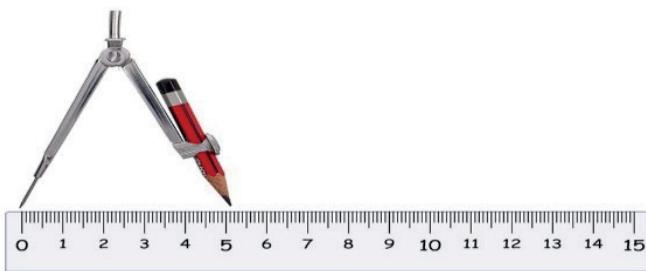
Now this is a complete circle.

Step 2: Activity
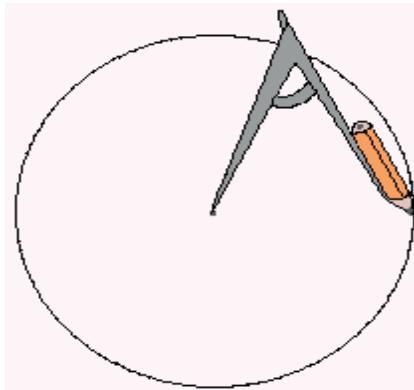
Using a ruler, a pair of compasses and a pencil only, construct a circle whose radius is 5cm.

Place the pointed tip on the zero line of your ruler. Carefully widen the angle between the arms. Move the pencil tip until it is exactly at 5cm. Make sure that the pointed tip is still on zero. Be careful not to change the gap once it is set to 5cm.

Gently push the pointed tip into point P. let the pencil tip drag over the paper. Push down lightly on the pointed arm as you draw. The pencil tip must move smoothly and lightly.
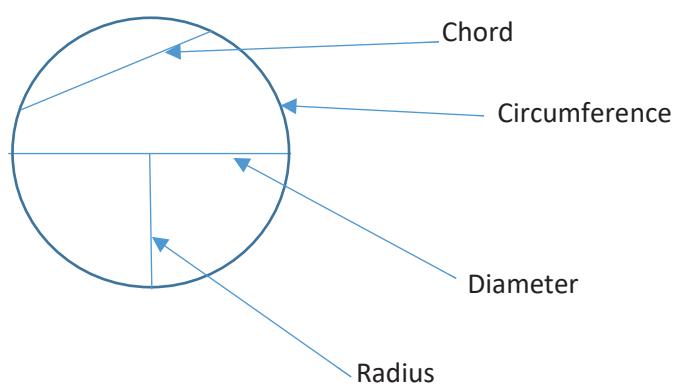
Twist the handle between your thumb and the forefinger. Let the pencil tip drag over the paper. Push down lightly on the pointed arm as you draw. The pencil tip must move smoothly and easily.

This is a complete circle.

Example 3. Draw and name the parts of a circle

Well, the diagram below shows the expected answers

Circumference is the distance round a circle

- A radius is any line segment from the Centre to the circumference

- A chord is a line segment from any point to another point on the circumference of the circle
- A diameter is a line segment from the circumference passing through the Centre of the circle to the next circumference.

  Note
  - The plural of the word radius is radii
  - The diameter of a circle has two radii

Example 1 The diameter of a circle is 14cm. Find its radius

Radius   = Diameter ÷ 2

Radius   = 14cm ÷ 2

Radius   =   7cm

Example 2 Find the diameter of a circle whose radius is 5cm

Diameter = 2 X radius

Diameter = 2 X 5cm

Diameter = 10cm

Or
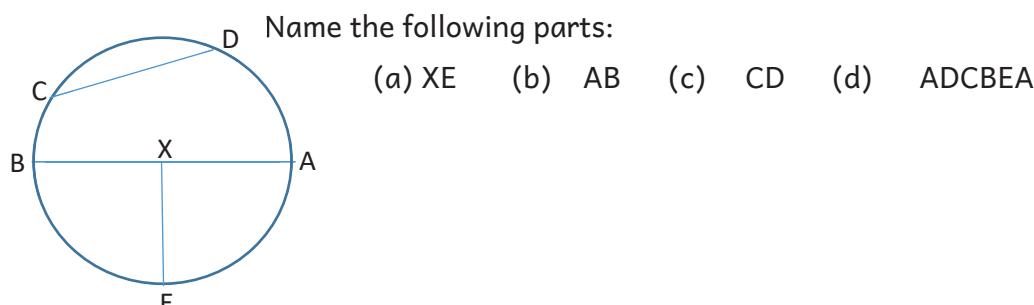
Diameter = r + r

Diameter = 5cm + 5cm

Diameter = 10cm

Exercise

1. Using a ruler, a pair of compasses and a pencil only construct a circle whose radius is:

   (a) 4cm   (b)   3cm   (c)   5cm

2. Using a ruler, a pair of compasses and a pencil only construct a circle whose diameter is :

   (a) 10cm   (b)   12cm   (c)   8cm

3. Name the following parts on the circle below

   Name the following parts:

   (a) XE   (b)   AB   (c)   CD   (d)   ADCBEA

Lesson 6: Describing lines of folding symmetry

In this lesson, you will:

1. Describe lines of symmetry.

2. Identify lines of symmetry.

You will need: a pencil, a ruler, a pen, a book, a square paper

Introduction

A line of symmetry is that line that divides a plane figure into two equal parts. Humans, animals and insects have one line of symmetry. An easy way to check whether the figure has a line of symmetry is to fold it half. If the two halves match exactly, the figure is symmetric about the fold. Symmetry is very important because it allows you to understand the things you see every day in different context. This topic will help you to recognize symmetry in nature, in art and in common objects and symbols.
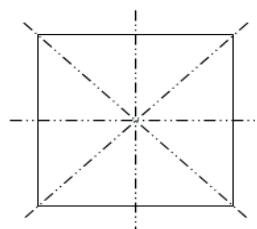
Step 1

- Get a square paper.
- Fold it such that the two halves cover each other without overlapping.

How many folds can allow the halves of a square to cover each other?
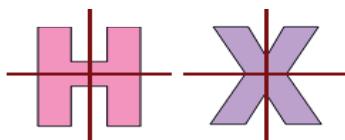
Great! The answer is right here:

4 folds only.

Step 2: Look at the following examples

1. Count the lines of symmetry in the following figures:
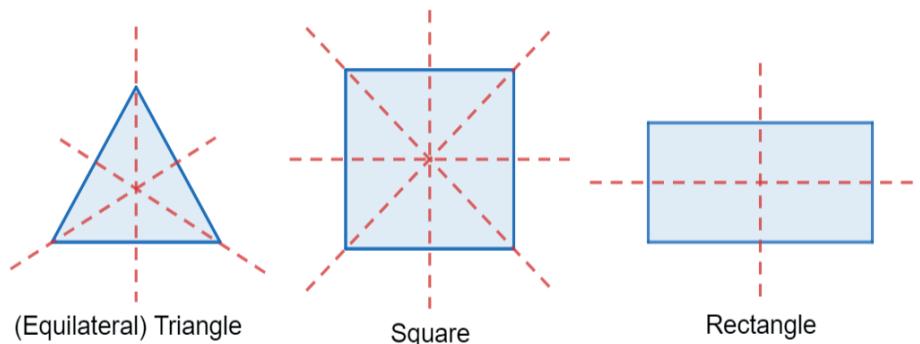
Letter H has 2 lines of folding symmetry.

Letter X has 2 lines of folding symmetry.

Can you think of other letters which have folding lines of symmetry?

b)

(Equilateral) Triangle   Square   Rectangle
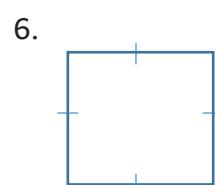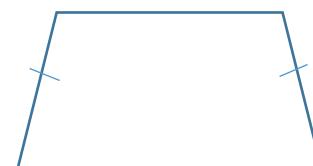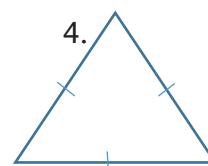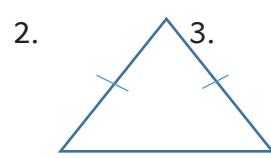
1. An equilateral triangle has 3 folding lines of symmetry.
2. A square has 4 folding lines of symmetry.
3. A rectangle has 2 folding lines of symmetry.

Exercise

1. Draw a line of symmetry in each of the diagrams below.

2. Find the number of lines of folding symmetry in the figures shown below:

1.   2.   3.   4.

5.   6.

Lesson 7: Rotation and revolution

In this lesson, you will:

1. Find rotations and revolutions

2. Follow instructions to draw rotations and revolutions.

You will need: a pencil, a pen, a book, a pen

Introduction.
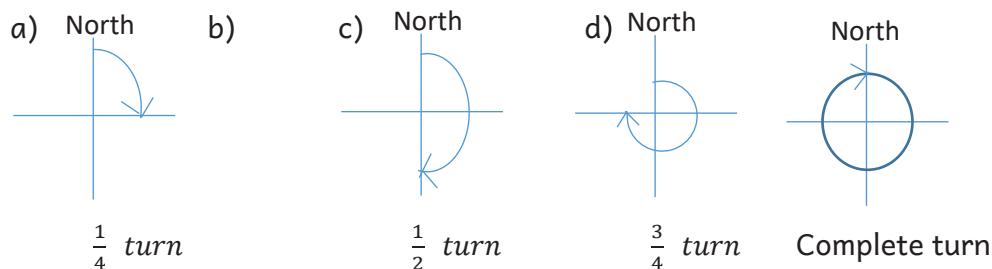
Rotations make things turn in a cycle around a definite Centre point. A rotation is a turn from a fixed point. The amount of rotation is described in terms of degrees. In rotation, the figure will not change size, or shape but will change direction. Therefore in today's lesson, we are going to learn about revolution or rotation. That is understanding the angles you make in the different turns.

Step 1: Activity

Let us look at an example.

Fix your heel at one point. Use your first toe to mark another point. Move your foot with the first toe until you come back to the original point. The complete turn you have made is called a revolution or rotation or turn.

You will notice that the move you make looks like below:

a) North $\frac{1}{4}$ turn b) $\frac{1}{2}$ turn c) North d) North $\frac{3}{4}$ turn North Complete turn.

This topic trains you to get ready for a match pass. That is understanding the angles you make in the different turns.

The following activity will help you to understand this topic very well

Step 2

Move or turn round once at a central fixed point. The turning you make is called a rotation or revolution

Step 3

Look at the following examples

Take note of the following:

- One complete turn or revolution is equal to 360^0. This is the same angle made by a minute hand of a clock to make 60 minutes or one complete turn.
- A half turn or a straight angle is equal to 180^0
- Three quarter turn is equal to 270^0

- A quarter turn is equal to 90^0

1. How many degrees are there in a quarter turn?

   1 complete turn = 360^0

   $\frac{1}{4}$ Of a turn $\quad = \quad \frac{1}{4} \times \cancel{360^0}^{\,90^0}$

   $\qquad\qquad = 90^0$ 1

1. Find the number of degrees in $\frac{1}{2}$ of a turn

   1 complete turn = 360^0

   $\frac{1}{2}$ Of a turn $\quad = \frac{1}{2} \times \cancel{360^0}^{\,180^0}$

   $\qquad\qquad = \quad 180^0$.

2. Find the number of degrees in $\frac{2}{3}$ of a revolution

   1 complete revolution = 360^0

   $\frac{2}{3}$ Of a revolution $\quad = \frac{2}{3} \times \cancel{360^0}^{\,120^0}$

   $\qquad\qquad\qquad\qquad 240^0$
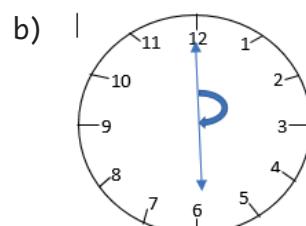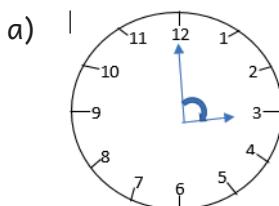
3. What turn is made in an angle of 120^0?

   $360^0 \quad = 1$ complete revolution

   $120^0 \quad = \quad \frac{1}{360^0} \text{ X } 120^0$

   $\qquad = \frac{1}{3}$

Step 3

Exercise

1. How many degrees are there in :

   a) $\frac{1}{4}\ turn$ (b) $\frac{3}{4}\ turn$ (c) $\frac{2}{3}\ turn$ (d) $\frac{1}{6}\ turn$

2. Find the fraction of a revolution representing these degrees

   a) 180^0 (b) 90^0 (c) 270^0 (d) 360^0

3. Write the fraction and degrees shown on the diagrams below

a)   b)

Lesson 8 : Drawing diagrams to show rotations and revolutions

In this lesson, you will:

1. Follow instructions to draw rotations and revolutions.

2. Find angles on a compass.

3. Make clockwise and anti-clockwise turns.

You will need: a pencil, apen, a book.
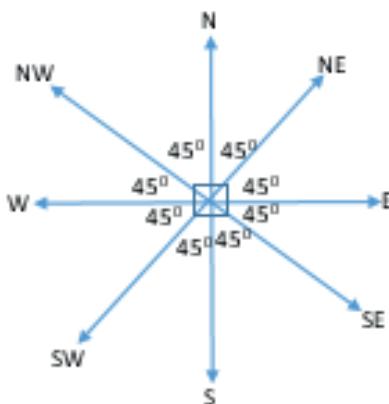
Introduction

An instrument used to show direction is called a magnetic compass. A magnetic compass has 8 main directions namely: North (N) , North East (NE), East (E), South East (SE), South (S), South West (SW), West (W), North West (NW). This topic prepares you to develop creative thinking skills which will enable you to locate the direction of one place from another.

To understand this better look at the diagram below;

Step 1

Study the angles between the compass direction. The small angle between North and East is 90^0. 90^0 divided by 2 equals to 45^0. Then what is the small angle between North and North East?
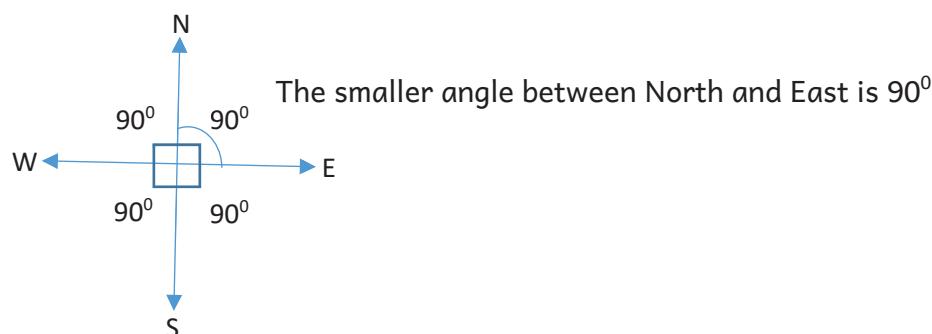
Well, 45^0 is the small angle between North and North East.

Step 2: Look at the following examples
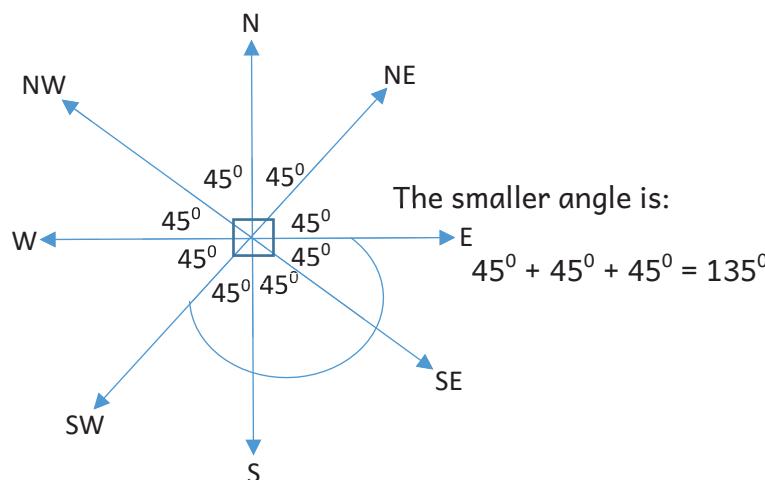
Example 1. What is the smaller angle between North and East?

Draw a 4 point compass like the one shown below. The smaller angle is represented by the shortest curve between North and East.

The smaller angle between North and East is 90^0

Example 2. What is the smaller angle between East and South west?
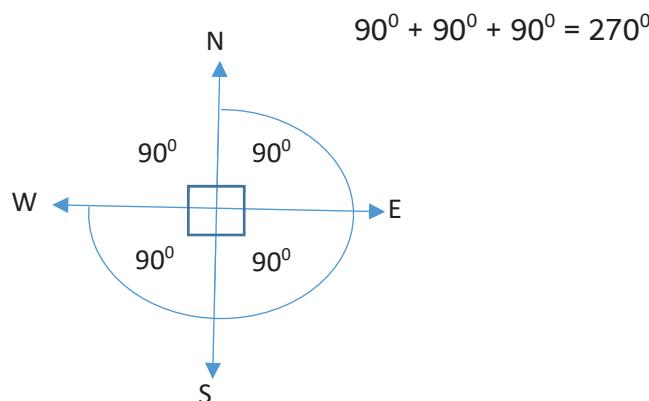
Draw an 8 point compass like the one shown below. The smaller angle is represented by the shortest curve between East and South West

N
NW   NE
45^0 | 45^0
45^0 45^0 The smaller angle is:
W   E
45^0 45^0 $45^0 + 45^0 + 45^0 = 135^0$
45^0 45^0
SE
SW
S

Example 3. What is the larger angle between North and West?

Draw a 4 point compass like the one shown below. The larger angle is represented by the longest curve between North and West

The larger angle is

$90^0 + 90^0 + 90^0 = 270^0$
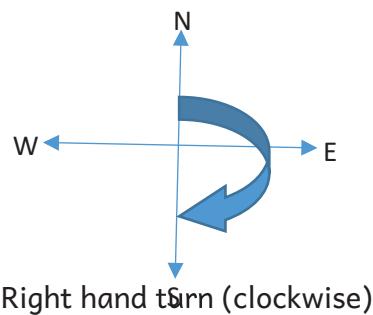
N
90^0 90^0
W   E
90^0 90^0
S
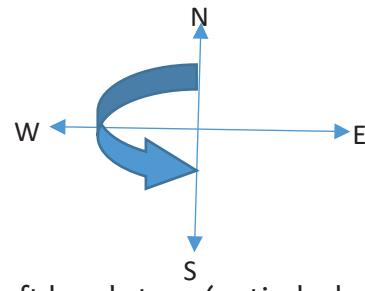
Example 4. Bangi was facing North. She turned clockwise to face south east. What angle did she make?

Note:

The direction to which clock hands move is called clockwise. The opposite direction to which the clock hands move is called anti- clockwise. Look at these diagrams to make you understand it better.
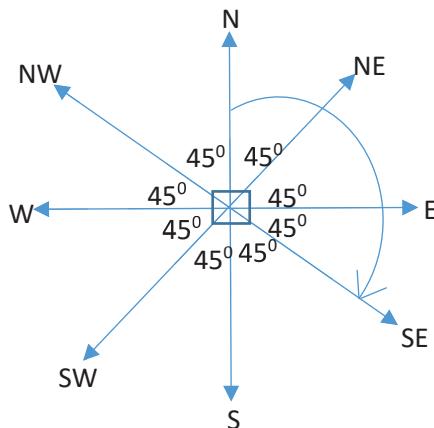
Right hand turn (clockwise)   Left hands turn (anti-clockwise)

You have to draw an 8 point compass as indicated below.
First locate North on the compass, then move in clockwise direction until you reach South East direction. Finally add all the angles within the range.

The angle is;

$45^0 + 45^0 + 450 = 135^0$
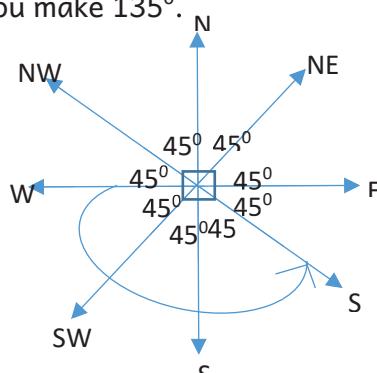
Example 4. Mutesi was facing west. She turned anti- clockwise through an angle of 135^0. In which direction did she face?

You have to draw an 8 point compass as shown below.

First locate West on the compass, then add the groups of 45^0 in anti-clockwise direction until you make 135^0.

The new direction is South East.

Exercise

1. What is the smaller angle between:
   a) North and West?   c) North west and South East?
2. What is the larger angle between :
   a) East and North?   c) East and North east?
3. Mary is facing North. What angle will she make if she turns clockwise to face South?
4. Amina was facing East. She turned clockwise through an angle of 180^0. In which direction did she face?
5. Peter is facing South. What angle will he make if he turns anti-clockwise to face East?
6. Salim was facing West. He turned anti-clockwise through an angle of 90^0. In which direction did he face?

TOPIC: DATA HANDLING

Lesson 1: Scales on the horizontal and vertical axis
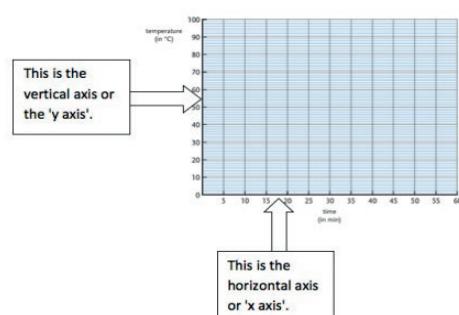
In this lesson, you will:

1. Draw and recognize scales on the horizontal and vertical axes.
2. Read scales on the horizontal and vertical axis.

You will need: a pencil, a pen, a book, a ruler

Introduction.

You have been already introduced to handling data using pictographs where the horizontal and vertical axes were not used. In P.5 you are going to look at graphs that will require you to have the knowledge of horizontal and vertical axes. The axes are the horizontal and vertical lines used to frame a graph or chart. The horizontal axis is the line running from left to right (think of the lines on your writing paper). The vertical axis is the upright line (think of your writing paper turned sideways). This will help you when handling large data of different categories.

Look at this graph below
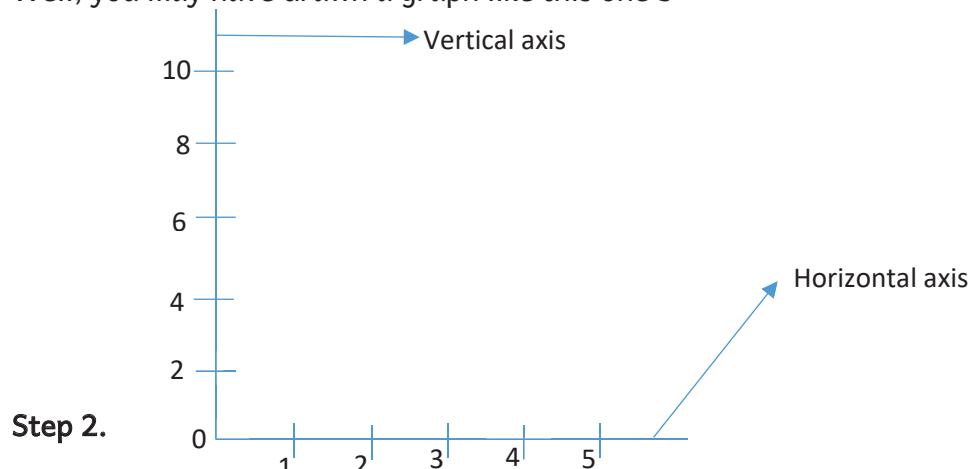
- The horizontal axis shows what one small square on the horizontal axis stands for.
- The vertical scale shows what one small square on the vertical axis stands for.
- The plural of axis is axes.

This topic will enable you to develop critical thinking skills which will help you to read and interpret graphs in magazines and News- papers.

Step 1: Activity

- Draw a left – to – right straight line
- Mark and write numbers 0 to 5 at equal distances
- Draw an upright line to the left of the line you drew at first
- Mark and write numbers 0 to 10 at equal distances with 1 small division equal to 2.
- Name the left to right straight line you have drawn
- Name the upright line you have drawn

Well, you may have drawn a graph like this one b

Step 2.

Look at the following example.

1. Draw horizontal and vertical axes. On the vertical axis show the number of pupils with 1 square representing 10 pupils. On the horizontal axis show the days of the week with 1 square representing 1 day.
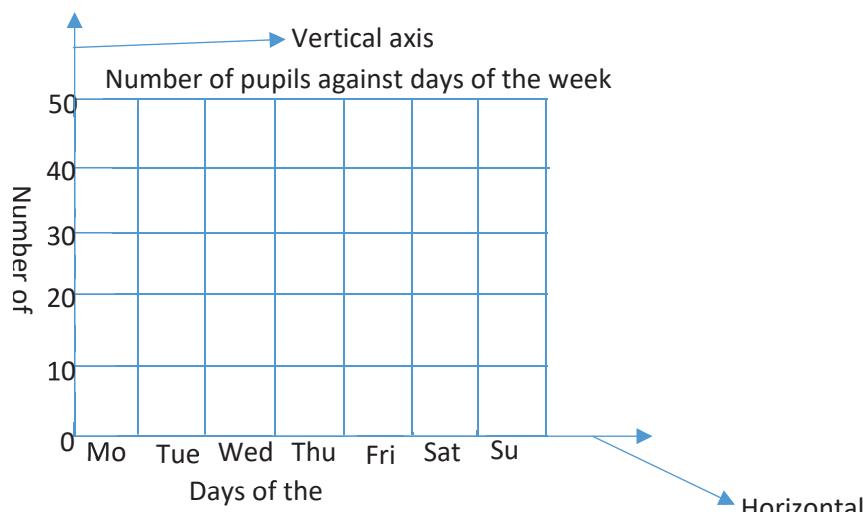
Vertical scale.

1 square represents 10 pupils. This means that we are going to count in tens from 0 so as to complete the vertical axis that is: 0, 10, 20, 30, 40, 50 …

Horizontal scale.

1 square represents 1 day. This means that in every square there will be only 1 day.

Note that 0 lies on both axes.

Exercise

1. Draw the vertical and horizontal axes
a) On the vertical axis show number of pupils with one small square representing 5 pupils
b) On the horizontal axis show days of the week with 1 small square representing 1 day
2. Draw the vertical and horizontal axes
   a) On the vertical scale show rain in millimetres, with one small division representing 20 millimetres.
   b) On the horizontal axis show the first six months of the year with one small division representing 1 month.
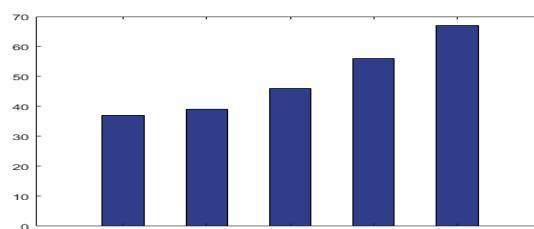
Lesson 2: Bar graphs

In this lesson, you will:

1. Draw bar graphs.

2. Read and interpret information on bar graphs.

You will need: a pen, a pencil, a book

Introduction: A bar graph makes it easy to compare sets of data between different groups. It looks like a bar of soap. Look at this graph.

Bar graphs or bar diagrams are helpful in representing the data visually. The length of each bar represents the required information. Choosing a right scale for a bar is important. Scale means the number used to represent one unit length of a bar. For example 1 unit length represents 100 children. Like any other graph a bar graph should have:

a) A title to explain what the graph is about.

b) The scale to show the units used on the bar graph.

c) Labels to tell what kind of data is shown on both axes.

The height of each bar represents a number.

This topic will help you to interpret bar graphs in News-papers and magazines.

Step 1: Example.

Look at the following example.

1. The table below shows the sacks of maize which were produced in a week by a milling company. Use it to answer the following question.

Days of the week	Mon	Tue	Wed	Thur	Fri
Number of sacks	20	25	30	15	10

Draw a bar graph to show the above information.
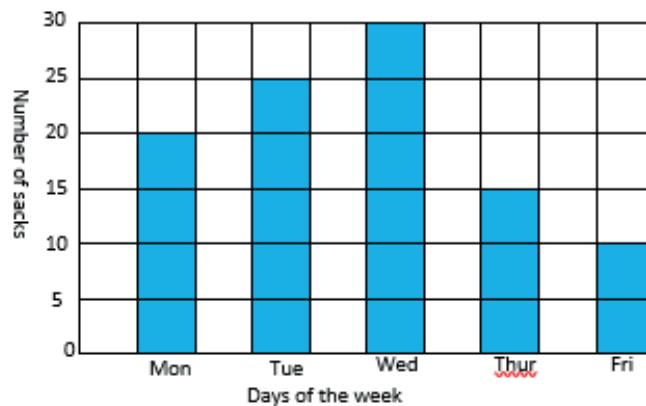
The vertical scale

1 small square represents 5 sacks

Horizontal scale

1 small square represents 1 day

A bar graph showing the sacks of maize produced by a milling company in a week

Exercise

1. The table below shows the ages of pupils in a school. Use it to answer the following questions
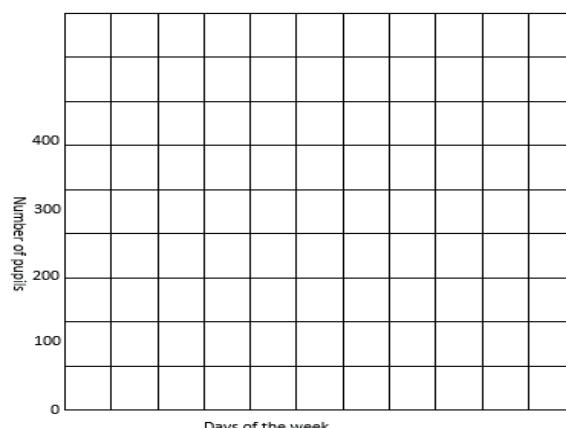
Age in years	12	10	8	6	4
Name of pupils	Angel	Ali	Dorcus	Mary	Amina

Draw a bar graph to represent the above information.

2. The table below shows the number of pupils who visited Entebbe airport in a week. Use it to answer the following questions:

Days of the week	Mon	Tue	Wed	Thur	Fri
Number of pupils	300	350	200	150	400

Draw a bar graph in the graph provided to show the above information

Lesson 3: Bar graphs

In this lesson, you will:

1. Interpret information on bar graphs.

2. Read information on bar graphs.

You will need: a pencil, a pen, a ruler, a book

Introduction
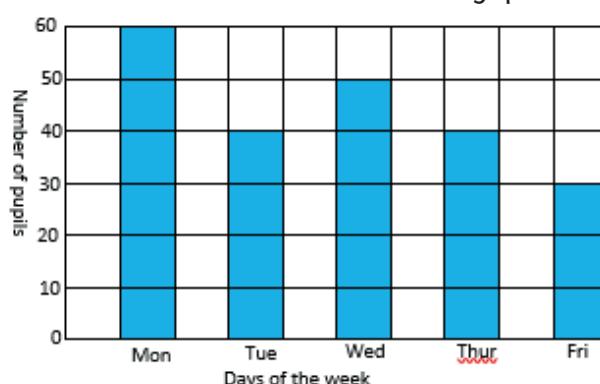
In the previous lesson we learnt how to draw bar graphs, in today's lesson, we are going to learn how to read and interpret information on a bar graph. This topic will help you to interpret bar graphs that you see in magazines and News-papers.

Step 1: Example.

Look at the example below.

1. The bar graph below shows the number of pupils who attended school in a week. Use it to answer the following questions

What does the vertical axis show?

The vertical axis shows the number of pupils.
 a) What does the horizontal axis show?
     The horizontal axis shows the days of the week.
 b) Find the number of pupils who attended on Monday
     Find Monday on the horizontal axis. Follow up the bar up to the end. Where it ends,
     read the figure which corresponds to it on the vertical axis, in this case 60 is our
     target number.

     60 pupils attended on Monday.

 c) Which day had the highest attendance?
     Monday had the highest attendance
 d) What is the vertical scale?
     From 0 the next number is 10. This implies that the range (highest – lowest) is 10.
     Therefore 1 small square represents 10 pupils.
     1 small square represents 10 pupils
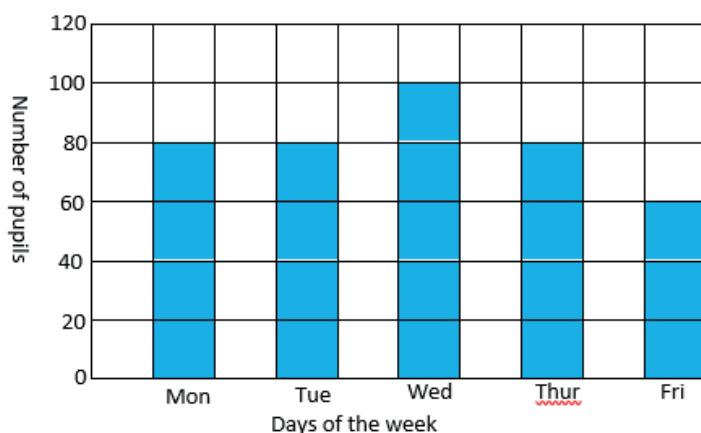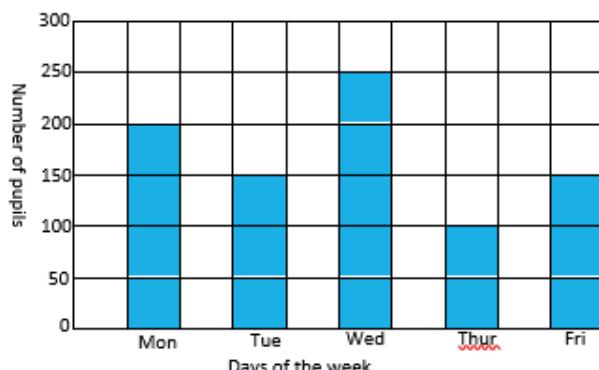
Exercise

1. The bar graph below shows the number of pupils who attended school in a week. Use
it to answer the following questions

 (a) What does the horizontal axis show?
 (b) How many pupils attended on Wednesday?
 (c) Which day had the lowest attendance?
 (d) What is the vertical scale

2. The graph below shows the number of eggs which were sold in a week. Use it to answer the following questions.

a) Which day had the highest number of eggs sold?

b) On which days were the same number of eggs sold?

c) How many eggs were sold on Monday?

d) What is the vertical scale?

Lesson 4: Line graphs

In this lesson, you will:
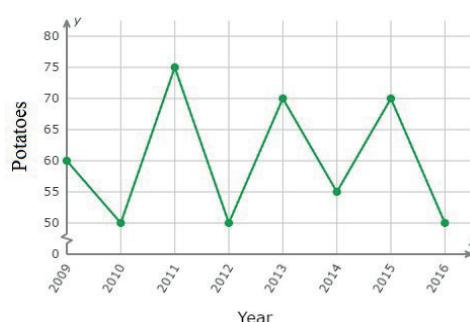
1. Draw line graphs.

2. Read information on line graphs

3. Read scales on the horizontal and vertical axis

You will need: a pencil, a pen, a book

Introduction

Line graphs are often called broken line graphs. Line segments connect the points on the graph. The segments joined end- to – end look like a broken line.

Look at the graph below.

Like any other graph a line graph should have:

a) A title to explain what the graph is about.

b) The scale to show the units used on the graph

c) Labels to tell what kind of data is shown on the axes.

The knowledge of line graphs helps a Doctor to draw immunization health charts for children who are taken for immunization.
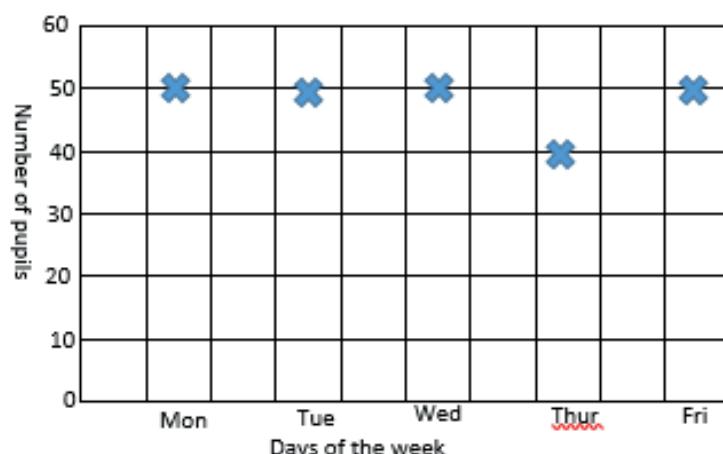
Step 1

The following table shows the number of pupils who attended class in a week

Days of the week	Mon	Tue	Wed	Thur	Fri
Number of pupils	50	50	50	40	50

Now, instead of drawing bars, mark with stars where the number of pupils corresponds with the day of the week.

Well, compare what you have drawn with this one below;

Step 2: Look at the following example

Example 1. The table below shows the goals which were scored by netball team during the league. Study and answer the following question.

Rounds	1st	2nd	3rd	4th
Number of goals	18	12	24	15

Draw a line graph to represent the above information

Vertical scale: **Horizontal scale**
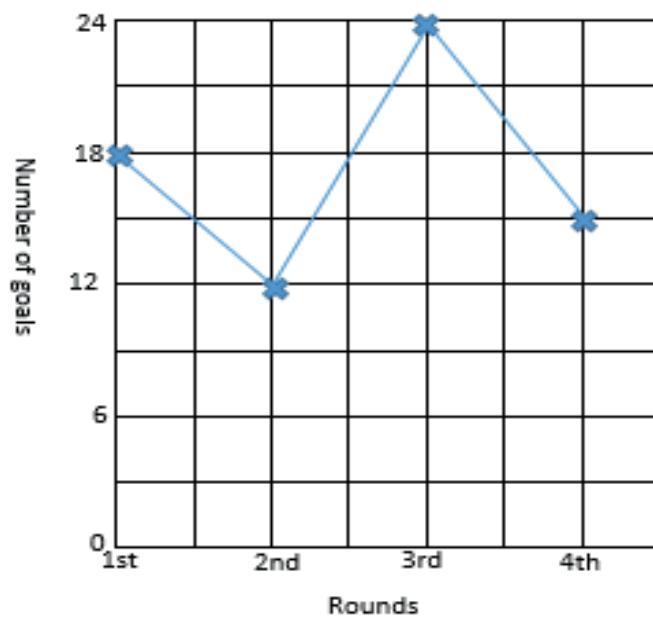
2 squares represent 6 goals.   2 squares represent 1 round.

1 square represents $\frac{6}{2}$ goals

1 square represents 3 goals

A line graph showing the goals scored by a netball team in a league
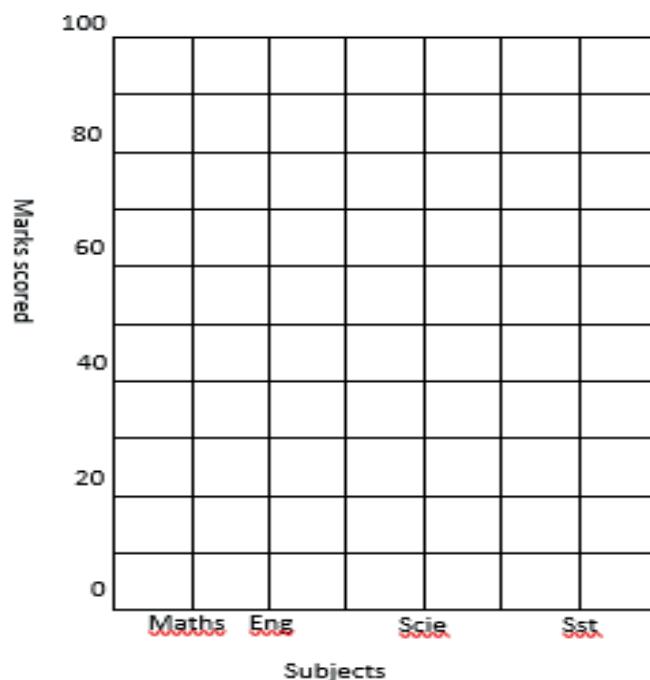
Exercise

1. The table below shows the marks scored by a P.5 pupil in a test. Use it to answer the following question

Name of subject	Maths	Scie	Eng	Sst
Marks scored	100	90	70	80

Draw a line graph in the graph below to represent the above information

2. The table below shows the temperature of a place recorded in a week. Use it to draw a line graph for the information.

Day of the week	Mon	Tue	Wed	Thur	Fri
Temperature (^{0}c)	21	24	18	21	18

Lesson 5: Line graphs

In this lesson, you will:

1. Read and interpret information on line graphs.

2. Read scales on the vertical and horizontal axis.

You will need: a pencil, a pen, a book.

Introduction.

In the previous lesson, we learnt how to draw line graphs. In today's lesson we are going to learn how to read and interpret information on line graphs. Line graphs show how something has changed over a period of time.

Step 1
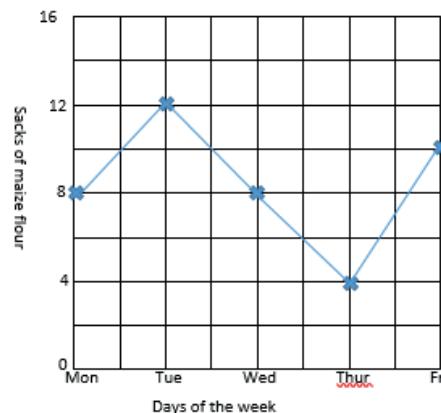
What is the difference between a line graph and a bar graph?

Well, the answer is right here: Line segments connect points on a line graph whereas bars are used to show information on a bar graph.

Step 2

Look at the following example:

1. The graph below shows the sacks of maize flour which were sold in a week by Okello. Use it to answer the following questions.
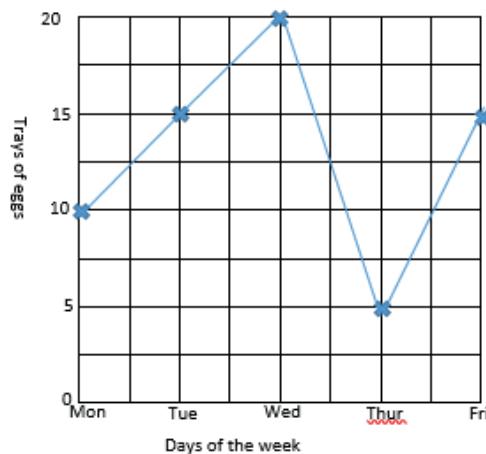
a) How many sacks were sold on Monday?

Look at the horizontal axis on Monday. Follow up the line from Monday vertically up to the star. Where the star is, read the number of sacks which corresponds to it on the vertical axis. For this case the wanted number is 8

8 sacks were sold on Monday

b) On which day did Okello sell 4 sacks

Look at 4 on the vertical axis. Move horizontally from 4 until you meet the star which corresponds to 4. From the star, move vertically downwards and read the day which corresponds to it. For our case the wanted day is Thursday.

4 sacks were sold on Thursday

c) How many sacks did he sell on Friday?

Look at the horizontal axis on Friday. Follow up the line from Friday vertically up to the star. Where the star is, read the number of sacks which correspond to it on the vertical axis. For this case the wanted number is between 8 and 12 and this must be 10.

10 sacks were sold on Friday

Exercise
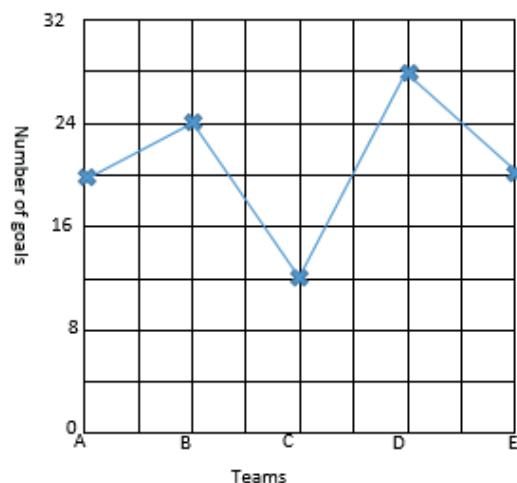
1. The graph below shows the trays of eggs which were sold by a farmer in a week. Use it to answer the following question:

Days of the week

a) How many trays of eggs were sold on Tuesday?

b) On what day did the farmer sell 10 trays of eggs?

c) Which day had the highest sales?

2. The graph below shows the goals scored by different teams in a competition. Use it to answer the following questions

Teams

a) How many goals were scored by team A?

b) Which team scored the highest number of goals?

c) Which teams scored the same number of goals?

d) Which team scored 12 goals?

Lesson 6: Average

In this lesson you will:

1. Find average

2. State the uses of average.

3. Find the average on bar graphs.

You will need: a pen, a pencil, a book, counters

Introduction

Average is used in everyday life to show a central value of amount for a group of people or things. The average is the value that can replace every existing item, and have the

same result. The average is calculated by adding up all of the numbers in the data given and then dividing by the number of items. Averages are useful because they summarize a large amount of data into a single value. Average is sometimes called mean.

Find the mean do the following:

Step 1

- Get 8 counters
- Arrange the counters one at a time into 4 groups
- Count the counters in each group.

Well, each group has 2 counters.

- The sum of all the counters divided by the number of groups gives you the average or mean

$$\frac{\overset{2}{\cancel{8}}}{\cancel{4}} \text{ Counters} = 2 \text{ counters}$$

Step 2

Look at the following examples

Example 1. Find the average of 10, 8, 12, and 18.

$$\text{Average} = \frac{Total}{Number\ of\ items}$$

Add the numbers: 10 + 8 + 12 + 18 = 48

$$\text{Average} = \frac{10 + 8 + 12 + 18}{4}$$

Divide the sum by the number of items: 48 ÷ 4

$$\text{Average} = \frac{48}{4}$$

$$\text{Average} = 12$$

Example 2. Daphine scored the following marks in a series of tests: 96, 92, 80, 84, 98.

Find her average score.

$$\text{Average} = \frac{Total}{Number\ of\ items}$$

Add the numbers: 96 + 92 + 80 + 84 + 98 = 450

$$\text{Average} = \frac{96 + 92 + 80 + 84 + 98}{5}$$
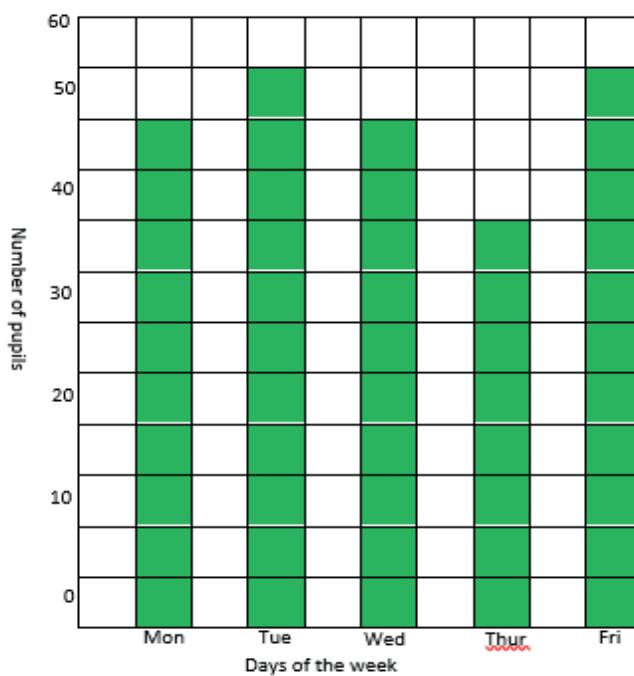
Divide the sum by the number of items: 450 ÷ 5

$$\text{Average} = \frac{450}{5}$$

$$\text{Average} = 90$$

Example 3.

1. The graph below shows the number of pupils who attended school in a week. Use it to answer the following questions

a) How many pupils attended school on Monday?

Look at the horizontal axis on Monday. Follow the bar for Monday up to the end. Where it ends read the number that corresponds to it on the vertical

50 pupils attended on Monday.

b) Which day had the lowest attendance?

The lowest bar represents the day and this was on Thursday.

c) Find the average attendance for the week

Write down the attendance for each day as follows:

Mon: 50 pupils, Tue: 55 pupils, Wed: 50pupils, Thur: 40 pupils, Fri: 55 pupils.

Average = $\frac{Total}{Number\ of\ items}$

Add all the numbers: 50 + 55 + 50 + 40 + 55 = 250

Average = $\frac{50 + 55 + 50 + 40 + 55}{5}$

Divide the sum by the number of items: 250 ÷ 5
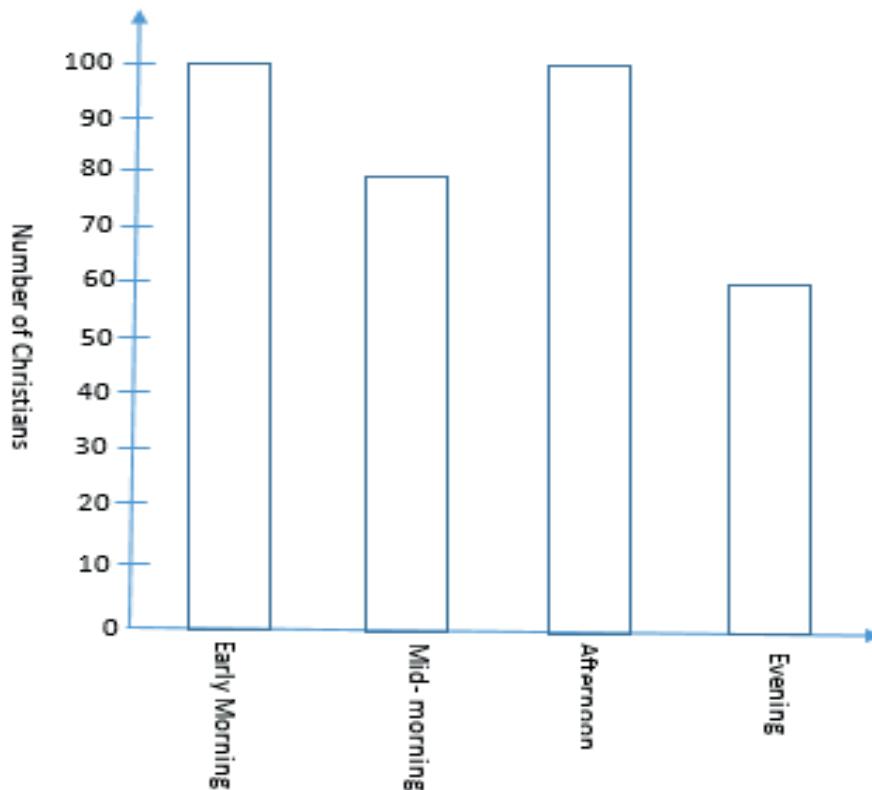
Average = $\frac{250}{5}$

Average = 50

Exercise

Try the following numbers

1. Find the average of the following numbers
   a) 4, 6, 2, 8, 5
   b) 25, 5, 15, 10,20
   c) 8,10, 12, 6, 9, 15
2. Adek scored the following marks in a test: 98%, 91%, 75%, and 74%. Find her average score.
3. Find the average age of 4 pupils whose ages are: 11 years, 13 years, 12 years and 8 years
4. Find the average height of 5 pupils whose heights are: 127cm, 135cm, 100cm, 130cm and 128cm.
5. The bar graph below shows the number of Christians who went for prayers in a day. Use it to answer the following questions.

a) Find the number of Christians who attended the first service.
b) Which service had 80 Christians?
c) Which service had the lowest attendance?
d) Find the average attendance for the day.

TOPIC: TIME

Lesson 1: Time on the 12 hour clock

In this lesson, you will:

1. Tell time on the 12 hour clock.

2. Recognize minutes and seconds

You will need: a pencil, a pen, a book, a pair of compasses.

Introduction

Knowing how to tell time can help you to determine whether you're running late or whether you have time to spare. For example, you can catch a train, bus or plane on time.

In lower classes you were telling time using natural events. In this class you are going to tell time using a clock or a watch.

A clock face is made up of 3 hands. The hour hand (the shortest) and the minute hand which is usually longer than the hour hand. The third hand is the longest and rotates at a high speed.

On a clock face when the minute hand moves from one number to the next, 5 minutes have passed. You can count by fives for each new number on a clock face to find out how many minutes have passed since the hour. The 12 hour clock runs from 1a.m to 12 noon and then from 1p.m to 12midnight.

Step 1

Do you remember what a.m. and p.m. mean?

- The a.m. times are the hours from 1a.m after midnight to 11:59a.m before noon. These are morning hours. "a.m." means before noon.
- Time after noon is called p.m. The p.m. hours are from noon to 11:59p.m before midnight. These are a combination of both afternoon and evening hours. "p.m." means after noon.
- So in each day there 12 a.m. hours and 12 p.m. hours. Which make 24 hours in a day.

Step 2

Look at the following examples

1. What morning time is shown on the clock face below?

.

On this clock face the minute hand is on the 12 which means 00 minute past the hour. The hour hand is pointing to 3 which means that it is 3 o'clock.

Therefore the time is 3: 00a.m

2. What afternoon time is shown on the clock face below?

- On this clock the minute hand is on the 10. How many minutes have passed since the hour? Count by fives starting by 1 on the clock (touch each number on the clock face as you count aloud) 5, 10, 15, 20, 25, 30, 35, 40, 45, 50. So when the minute hand is on the 10, 50 minutes have passed since the hour.
- Now look at the hour hand, it is between 1 and 2. That means the time is after 1 o'clock but it is not yet 2 o'clock.

    Therefore the time is 1: 50p.m
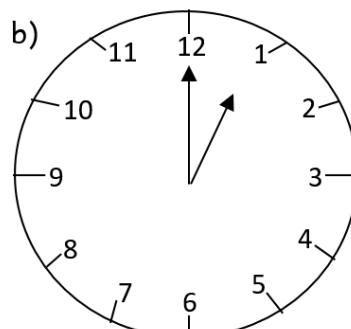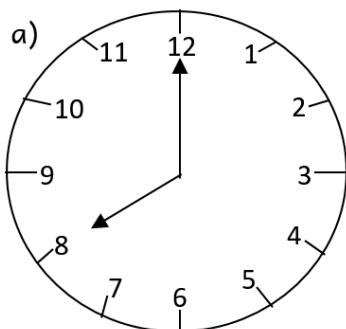
3. What evening time is shown on the clock face below?

The time is   10: 10p.m

Exercise
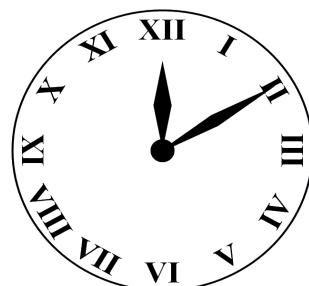
1. Write the morning time shown on the clocks below:

a)

b)
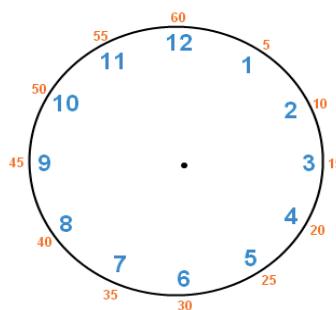
2. The time is 40 minutes past 4 o'clock. Show the time on the clock face below.

3. Write the afternoon time shown on the clock face below (write your answer in Hindu- Arabic numerals)

4. The time is" a quarter to 1 o'clock. " Show the time on the clock face below

Lesson 2: Telling time up to seconds

In this lesson, you will:

1. Recognize minutes and seconds.

2. Read and tell time verbally on the 12 hour clock.

You will need: a pencil, a pen, a book, a pair of compasses, a circular object

Introduction

In the last lesson, you learnt how to tell time from a clock face where emphasis was put on the hour and minutes past the hour. In today's lesson you will include the seconds past the hour. This will help you to tell the exact time based on the smallest unit of time.

Step 1 Activity.

Note:

It takes about 1 second to jump up in the air or to snap your fingers. A second is a very short period of time. 1 minute = 60 seconds. A second hand goes around a clock face once every minute.

- Draw a clock face.
- Show 4: 00: 40 (40 seconds, 00 minutes past 4 o'clock) on the clock face

    Your clock face should look like the one below:

Step 2

Look at the following example.

Write the time shown on the clock face below up to seconds

The time is 2: 55: 31 (31 seconds, 55 minutes past 2 o'clock)

2. What time is shown on the watch below?

The time is 7:51:04 (4 seconds, 51 minutes past 7 o'clock.)

Exercise.

Write the time shown using hour, minutes and seconds.

2. What time is shown on the watch below?

Lesson 3: Expressing hours as minutes

In this lesson, you will:

1. Convert hours to minutes.
2. Construct sentences involving phrases of time.
3. Convert minutes to hours.

You will need: a pencil, a pen, a book.

Introduction

In the previous lesson you learnt how to read and tell time using the 12- hour clock. In today's lesson, you are going to learn how to change hours to minutes and vice versa.

This topic will enable you to develop effective communication skills which will help you to use what you know about minutes and hours to tell time.

Step 1

Think about the following:

✓ How many minutes are in 1 hour?

✓ How many seconds are in 1 minute?

✓ How many hours are in 1 day?

Well, we know that you must have got the following answers:

- 1 hour = 60 minutes
- 1 minute = 60 seconds
- 1 day = 24 hours.

Step 2

Look at the following examples

1. How many minutes are there in 5 hours?

1 hour   = 60 minutes

5 hours   = 60 minutes X 5

          = 300 minutes

Therefore there are 300 minutes in 5 hours

2. Change $2\frac{1}{4}$ hours to minutes

In this number you need to change $2\frac{1}{4}$ hours to an improper fraction

$\frac{(4 \times 2)+1}{4} = \frac{8+1}{4}$

$\qquad = \frac{9}{4} hours$

1 hour = 60 minutes

$\frac{9}{4} hours = \overset{15}{\cancel{60}} minutes \times \frac{9}{\cancel{4}}$

         = 135 minutes

Recall!

When changing hours to minutes, just multiply the given hours by 60 minutes.

3. Change 180 minutes to hours.

60 minutes   = 1 hour

180 minutes = $\frac{180}{60}$ minutes

      = 3 hours

$\frac{\overset{3}{\cancel{180}}}{\underset{1}{\cancel{60}}}$

Note: When changing minutes to hours simply divide the given minutes by 60 minutes

Step 3

Exercise

1. Express the following hours as minutes

  a) 3 hours   b) 4 hours   c) 8 hours   d) $3\frac{1}{2}$ hours   e) $5\frac{1}{3}$ hours

  2. The village meeting lasted for $2\frac{2}{3}$ hours. How many minutes did it last

  3. A Mathematics examination lasted for $2\frac{1}{2}$ hours. Express the time in minutes.

  4. Change the following minutes to hours

  a) 120 minutes   b) 240 minutes   c) 360 minutes   d) 90 minutes

  5. A Mathematics examination lasted for 150 minutes. Express the time in hours

Lesson 4: Finding duration

In this lesson, you will:

1. Work out the duration if given two points

2. Construct sentences involving phrases of time.

You will need: a pencil, a book, a pen

Introduction

Duration is the time spent on something.

To find duration, subtract the time an activity started from the time an activity ended. This topic will help you to plan ahead when you know about how long something will take.

Step 1: Example 1

- A village meeting started at 8:00a.m and ended at 10:00a.m. What was the duration of the meeting?

Subtract the time the meeting started from the time it ended.

Ending time	10:00a.m
Starting time	−8:00a.m
	2h 00min.

The duration of the meeting was 2 hours.

Example 2

It started raining at 7:00a.m and ended at 10:00a.m. For how long did it rain?

Subtract the starting time from the ending time

Ending time	10: 00a.m
Starting time	−7: 00a.m
	3h 00min Therefore it rained for 3hours.

Example 3

A farmer went to the garden at 3: 30p.m and went back at 6: 45p.m. For how long was the farmer in the garden?

Ending time – starting time

6: 45p.m

−3: 30p.m

3h 15min therefore the farmer dug for 3 hours 15 minutes.

Example 4

Achan went to school at 7:00a.m and went back at 4:00p.m. How long was she at school?

- This duration crosses midday. So first subtract 7: 00a.m from midday and then add 4 hours as shown below

12: 00		5: 00
−7: 00		+ 4: 00
5h 00min		9h 00min

Therefore Achan was at school for 9 hours.

Step 2

Exercise

1. A meeting started at 8: 00a.m and ended at 11:00a.m. How long did the meeting last?
2. The national prayers started at 2:00p.m and ended at 5:00p.m. For how long did it last?
3. A football match started at 4:00p.m and ended at 5:30p.m. For how long did it last?
4. A bus left Arua for Kampala at 5:00a.m and arrived at 6:00p.m. How long was the journey?
5. A p.5 pupil started digging at 7:30a.m and finished at 10:30a.m. Find the time the pupil took digging.

Lesson 5: Time, distance and speed.

In this lesson, you will:

1. Solve problems related to time, speed and distance.
2. Calculate speed, distance and time using simple word problems.

You will need: a pen, a pencil, a book

Introduction.

You have already learnt about time in the previous lesson. The distance travelled by a person, body or vehicle in a unit of time uses a particular speed. In this lesson you are going to learn about the relationship between these three ideas: speed, distance and time. Speed is basically how fast someone is moving.

In this lesson you are going to learn about the relationship between these three words: speed, distance and time.

- Distance means the part of the journey you cover while walking or running.
- Time is how long you take to travel a particular distance

Step 1

Opio walked a distance of 2km in 1 hour.

a) What distance did he walk in 2 hours?
b) What distance did he walk in 3 hours?
c) What distance did he walk in 4 hours?

Well the answers are shown in the table below:

Distance in 1 hour	Time taken walking	Total distance
2km	1 hour	2km
2km	2 hours	4km
2km	3 hours	2 X 3 = 6km
2km	4 hours	2 X 4 = 8km

Step 2

From the above table to find distance, multiply speed by time that is:

Distance = speed X time (D = S X T)

Look at the following examples

1. Angel drove a car at a speed of 80km per hour for 3 hours. Find the distance she covered.

   Note km/h can also be written as $\frac{km}{h}$

   Distance = speed X time

   Distance = $80\,\frac{km}{h}$ X 3 h̶ we cancel the hours, this leaves us with kilometres (km)

   Distance = 240 km

2. Peter rode a bicycle at a speed of 20km per hour for $2\frac{1}{2}$ hours. What distance did he cover?

   You have to change $2\frac{1}{2}$ hours to an improper fraction

   $\frac{(2 \times 2) + 1}{2} = \frac{5}{2}h$

   Distance = speed X time

   Distance = 20km/h X $2\frac{1}{2}$ h

   Distance = $\overset{10}{\cancel{20}}\frac{km}{\cancel{h}}$ X $\frac{5}{\cancel{2}^{1}}$ h̶   Divide 20 by 2:   20 ÷ 2 = 10,

   Distance = 50km   10km X 5 = 50km

3. A bus travelling at a speed of 70km per hour left town X at 8:00a.m and reached town Y at 10:00a.m. Find the distance between the two towns

   First find the time taken

   $\quad\quad$ 10: 00a.m

   $\quad\quad$ −8: 00a.m

   $\quad\quad$ ─────────

   $\quad\quad$ 2h   00min

   $\quad\quad$ ─────────

   Time = 2hours

   Distance = speed X time

   Distance = $70\frac{km}{\cancel{h}}$ X 2 h̶

   Distance = 140km

Exercise

1. A cyclist rode at a speed of 20km per hour for 4 hours. What distance did the cyclist cover?

2. A bus travelled from town X to town Y at a speed of 80 km per hour for 6 hours. What distance did it cover?

3. Mugisha travelled for $3\frac{1}{2}$ hours at a speed of 60km per hour. What distance did he cover?

4. A bus travelling at a speed of 70km per hour left town M at 1:00p.m and arrived at town N at 6:00p.m. Find the distance between the two towns.

Lesson 6: Finding time

In this lesson, you will:

1.Solve problems related to speed, time and distance.

2. Construct sentences involving phrases of time.

You will need: a pen, a book, a pencil

Introduction

In the previous lesson you learnt about finding distance, in today's lesson you are going to learn about finding time.

Step 1:

The distance between two towns is 24km. Akena travelled between the two towns using different means as shown in the table below.

Means	Distance	Speed	Time
Foot	16km	2km/h	8 hours
Bicycle	16km	8km/h	2 hours

From the table;

On foot:

2km are covered in 1 hour

16km are covered in (16 ÷ 2) = 8 hours

By bicycle

8km are covered in 1 hour

16km are covered in (16 ÷ 8) = 2 hours

From the above working, we note that to find time, just divide distance by speed, that is

Time = Distance ÷ speed. (T = $\frac{D}{S}$)

This topic will help you to learn to plan a head when you know about how long something will take. To understand this better, try the activity below.

Step 2

A cyclist travels 20km in 1 hour. At this rate how long will the cyclist take to travel 60km?

Well, no matter what method you use, you must get the answer shown below.

     20km   represent 1 hour
     20km   represent 1 hour
    20km   represent 1 hour
    60 km   represent 3 hours

The cyclist will take 3 hours

Step 3.

Look at the following example

1. Mary travelled a distance of 100km at a speed of 50km per hour. What time did she take?

    Time = Distance ÷ speed

    Time = 100km ÷ 50km/h (km ÷ km = 1)

    Time = $\dfrac{\overset{2}{\cancel{100}}}{\cancel{50}}$ hours

    Time = 2 hours

Exercise

1. The distance from town X to town Y is 240 km. How long will a car take to travel the distance at a speed of 80 km per hour?
2. A motorist covered a distance of 140 km at a speed of 70km per hour. How long did the journey last?
3. Find the time that is needed to cover a distance of 600km at a speed of 100km per hour
4. Shafik travelled a distance of 180km at a speed of 60km per hour. Find the time taken to travel the distance

Lesson 7: Finding speed

In this lesson, you will:

1. Solve problems related to speed, time and distance.

2. Construct sentences involving phrases of time.

You will need: a pencil, a pen, a book

Introduction

In the previous lessons you learnt about finding distance and time. In today's lesson you are going to learn how to find speed.

Step 1

- The distance between Jinja and Kampala is 80 km. A tractor took 2 hours to travel the distance.
- Divide the distance covered by the time taken.
- 80km ÷ $2h$ = 40 km/h.
- The distance (80km) divided by the time (2h) gives you the speed of the tractor.

    To find speed, divide distance by time, that is:

    Speed = Distance ÷ Time. (S = $\dfrac{D}{T}$)

The knowledge of speed helps you to estimate the travelling time between two places so that you are not late.

Step 2

Look at the following example

1. Nabirye covered a distance of 150km in 3 hours. Find her speed

   Speed = Distance ÷ Time

   Speed = 150km ÷ 3h

   Speed = $\dfrac{\overset{50}{\cancel{150\ km}}}{\cancel{3\ h}}$

   Speed = 50km/h

2. At what speed should a driver travel to cover a distance of 280km $3\frac{1}{2}$ hours?

   Change $3\frac{1}{2}$ *hours to an improper fraction*

   $\dfrac{(2 \times 3)+1}{2} = \dfrac{7}{2}$ hours

   Speed = Distance ÷ Time

   Speed = 280km ÷ $3\frac{1}{2}$ h

   Speed = 280km ÷ $\dfrac{7}{2}$ h

   Speed = $\overset{40}{\cancel{280}}$ km $\times \dfrac{2}{\cancel{7}}$ h

   Speed = 80 km/h

Exercise

1. A car took 5 hours to travel a distance of 400km. At what speed was it travelling?
2. A cyclist takes 3 hours to cycle a distance of 60km. Find the cyclist's speed.
3. The distance between town P and town Q is 250km. Find the speed of a motorist who travelled the distance in 5 hours
4. Nabufu travelled a distance of 200km in $2\frac{1}{2}$ hours. Find her speed?
5. Namono took 4 hours to travel a distance of 280km. What was her speed?

Term Three

TOPIC: MONEY

LESSON 1: Completing tables of bills

In this lesson, you will;
- Find the unit price of items using total cost and quantity.
- Find the cost using quantity and unit cost.
- Work out the quantity using total cost and unit cost.
- Complete a shopping bill.

You will need:

An exercise book, a pen, a pencil and a ruler.

Introduction:

In primary four you were introduced to bills. Sometimes you need to prepare your bill in table form. This makes it easy for you or your parents to understand the shopping bill. In order to know how much has been spent on an item.

Always remember.

In order to get the total cost, we multiply the quantity (number of items) by the unit cost (Cost of one item).

To get the unit cost, we divide the total amount by the quantity.

To get the quantity, we divide the total amount by the unit cost.

Step 1

Activity

Prepare a bill for the items below.

2 books at sh 1,000 each.

3 kilogrammes of sugar at sh 30000 each.

5 pens at sh 500 each.

2 geometry sets for sh. 1,500 each.

(a) Draw a table similar to the one below.

ITEM	QUANTITY	UNIT COST	TOTAL COST
Books	2	Sh. 1,000	………………
Sugar	3kg	Sh. 3,000	………………
Pens	5	Sh. 500	………………
Geometry set	2	Sh. 1,500	………………
		TOTAL	………………

(b) To find the total cost for each item, multiply the quantity by the unit cost as shown below:

Books	2×1000	$=$ sh.2000
Sugar	3×3000	$=$ sh.6000
Pens	5×500	$=$ sh.1000
Geometry set	$2 \times 1,500$	$= +$ sh. 3000

c) Enter the total cost in the table.

Step 2

Study the example below

1. The bill below was prepared by a primary five pupil. Use it to answer the questions that follow.

a) Complete the bill

ITEM	QUANTITY	UNIT COST	TOTAL COST
Omo	2 sachets	Sh. 1,000 each	Sh. 2000
Maize Flour	3kg	Sh. 3,000 per kg	Sh. 9,000
Chicken	2 birds	Sh. 15,000 per bird	Sh. 30,000
		Total	Sh. 41,000

(a) Omo   quantity   × unit cost   = Total

            2   ×   sh. 1,000   = sh. 2,000

Maize flour   quantity   = Total cost   =   sh, 9,000

                    Unit cost   sh. 3,000   = 3

Chicken   unit cost   = Total cost =sh. 30,000

                    Quantity   2   = sh. 15,000

(b) After all the above working, complete the table above.

Exercise

Study and complete the shopping bill below.

ITEM	QUANTITY	UNIT PRICE	AMOUNT
Bananas	3 bunches	Sh. 10,000 each	_____
Cassava Flour	5 kg	_____	Sh. 5,000
Beans	_____kg	Sh. 3,000 per kg	Sh. 9,000
Irish Potatoes	2 tins	Sh. 15,000	_____
		TOTAL	sh. _____

Lesson 2: Buying and Selling using Ugandan money.

In this lesson, you will:

Find the cost of more than one item.

Work out total cost of items bought.

You will need:

An exercise book, a pen and a pencil.

Introduction:

In primary four you have learnt about shopping bills. A shopping bill helps you to know how much money you have spent on an item and the total cost.

In this lesson, you are going to learn buying and selling using Uganda money.

Remember Uganda money consists of notes of sh.1, 000, sh, 2,000, sh.5, 000, sh.10, 000, sh.20, 000 and sh.50, 000. It also consists of coins of sh.100, sh.200, sh.500 and sh.1000.

Step 1:

Study the following example

Okello went to a shop and bought the items below:

2kg of sugar at sh. 3200 per kg

3kg of rice at sh. 4000 per kg

1 litre of cooking oil at sh. 3000 per litre.

a) How much money did Okello spend altogether?

ITEM	UNIT COST	TOTAL COST
2kg of sugar	sh. 3200	2 ×sh. 3200 = sh. 6,400
3kg of Rice	Sh. 4,000	3 × sh. 4,000 = sh. 12,000
1 litre of cooking oil	Sh. 3,000	Sh. 3,000
		Sh. 21,400

Example 2

Kataike had sh. 20,000 and bought items for sh.11, 400. How much money did she take back home?

Sh. 20,000

Sh. 11,400

Sh.   8,600

The money which Kataike took back home is called change.

Exercise

Jalia went to a shop and bought the following items.

2 trays of eggs at sh. 10,000 each tray.

3 bars of soap at sh. 3,000 per bar.

1 kg of sugar at sh. 3,200 per kg.

A) How much money did Jalia spend altogether?

b) If she went with sh. 50,000, how much money did she take back home?

Lesson 3:   Finding profit and loss

In this lesson, you will:

- Find profit when buying and selling price is given.
- Find loss when buying and selling price is given.

You will need:

A Pen, a pencil, an exercise book and a ruler.

Introduction:

Sometimes traders get a loss or a profit when they sell the items.

A profit is the money you get when the selling price is higher than the buying price.

A loss is the money you get when the buying price is higher than the selling price.

Learning Profit and loss helps you to manage your business properly when you grow up.

So you notice that when you buy an item at a lower price and sell it at a higher price, you get a profit

Step 1:

Activity
   a)   Arafat buys sugar at sh. 2,800 and sells it at sh. 3,000.
   b)   Asia buys sugar for sh. 3,000 and sells it at sh. 2,500.
   Who got a profit? (Give a reason)
   Who made a loss?

Step 2

Study the example below.

A trader bought a pen for sh.1,000 and sold it at sh.1,500. Find his profit.

Cost price (buying price) is sh. 1,000

Selling price is sh. 1,500

Profit   = selling price – cost price.

=   sh. 1,500

- sh. 1,000

Sh   500

Therefore his profit was sh.500.

Example 2

Kalete bought a handkerchief for sh. 2,000 and later sold it at sh. 1,800. Find his loss.

Cost price (buying price) is sh. 2,000.

Selling price   is sh. 1,800.

Loss   =   cost price – selling price.

= sh. 2,000

-   Sh. 1,800

Sh.   200

Therefore the loss was sh.200.

Exercise

1. Jacinta bought a dress for sh. 80,000 and sold it at sh. 85,000. What was her profit?
2. Agaba bought a goat for sh. 95,000 and sold it at sh. 107,000. What profit did he get?
3. A shopkeeper sold a bag of sugar at sh.50, 000. If he bought it at sh.40, 000, Find his profit.
4. A pair of shoes cost sh. 25,000. It was later sold at sh. 16,500. What was the loss?

5. A trader bought items for sh.560, 500 and sold them at sh.549, 000. Find the loss.

Lesson 4: Finding the selling price when the loss or the profit is given.
In this lesson, you will:
- Find the selling price when the loss and the cost price is given.
- Find the selling price when the profit is given.

You will need:
An exercise book, a pen and a ruler.
Introduction:
In the previous lesson, you learnt how to find profit and loss. You know the meaning of profit and loss. In this lesson, you are going find selling price or cost price when profit or loss is given. This will help you to find out whether you are making progress in a business or not. It helps you to take action early enough when you find a business is not progressing.
Step 1

Activity:
A boy bought a ball at sh.12000. He sold it at a loss of sh. 2000.
What do you do to find the price at which he sold the ball?

Step 2:
- You notice that in order to get the selling price when given the loss, you subtract the loss from the buying price.
- If you have got profit, add it to the buying price in order to get the selling price.

Step 3:
Study the example below.
(a) Wasswa bought a sweater for sh.20,000 and sold it at a loss of sh.2,000.
    Find the selling price of the sweater.
    Loss   = sh.2,000
    Buying price = sh.20,000
    Selling price =   Buying price – loss
                  =   sh. 20,000
              -   Sh.   2,000
                  Sh. 18,000

(b) Nakate bought a tin of millet flour for sh.36,000. She then sold the millet and made a profit of sh.3,500. At what price did Nakato sell the millet Flour?
                Profit = sh.3, 500
          Buying price = sh.36,000
          Selling price = buying price + profit.
                    = sh. 36,000
                +sh.   3,500
                Sh. 41,500

Exercise

1. A man bought a radio at sh.15,000. He then sold it at a loss of sh.2,000. What was the selling price?
2. Odyeke bought a goat at sh.125,000 and sold it at a loss of sh. 5,000. Find the selling price.
3. Mugisha bought a calf at sh.450,000 and sold it at a profit of sh.40,000. Find its selling price.
4. A girl bought a phone at sh.70,000 and sold at a loss of 15,000. Find the selling price of the phone.
5. Find the selling price of a cup which was bought at sh.15,000 and sold at a profit of sh.1,000.

Lesson 5: Find buying price when profit or loss is given
In this lesson, you will:
- Find the buying price when profit is given.
- Find the buying price when loss is given.

You will need:
- An exercise book and a pen.

Introduction:
In the previous lesson, you learnt how to find selling price when given loss or profit. In this lesson, you are going to learn how to find the buying price when profit or loss is given.

Step 1

Activity
A shopkeeper made a loss of sh.3000 after selling face masks for sh.14000.
What do you do to find the price at which the shopkeeper bout the face masks?

- You notice that in order to get the buying price when given the loss, you add the loss to the selling price.
- If you have got profit, then subtract it from the selling price in order to get the buying price.

Step 2:
Study the example below.
(a) Kasim sold a crate of soda for sh.24,000 and made a loss of sh.2000. Find how much he bought the soda.

Selling price   sh.24,000
Loss   + sh. 2,000
Buying price   Sh. 26,000

(b) Asio sold a cow for sh.700,000 and made a profit of sh.250,000. Find the cost price of the cow.

Selling price   sh. 700,000
Profit   - sh. 250,000
Cost Price   sh. 450,000

Now try this exercise
1. A shopkeeper sold items for sh.70,000 and made a loss of sh.8,000. Find the buying price of the items.
2. Chemtai sold a cupboard for sh.90,000 and made a profit of sh.12,000. Find the cost price of the cupboard.
3. Nankinga sold 6 cartons of books for sh.320,000 and made a loss of sh.7,000.Calculate the cost price of the books.
4. A trader sold a table for sh.100,000 and made a profit of sh.20,000. Work out the buying price of the table.
5. Tusabe sold a cock for sh.45,000 and made a loss of sh.7,000. Find the price at which Tusabe bought the cock.

TOPIC: LENGTH, MASS AND CAPACITY

LESSON 1: Converting metres to centimeters and centimeters to millimeters.

In this lesson, you will:
- Convert metres to centimeters.
- Convert centimetres to millimeters.

You will need:
A string, a ruler, an exercise book and a pen.

Introduction:
In primary four, you estimated length. You also learnt the units for measuring length, for example, metres, centimetres and millimetres.
In this lesson, you are going to change metres to centimeters and centimeters to millimetres.
Centimetres and metres are used to measure short length, for example, the length of a book, length of a desktop, height of a person. On the other hand, metres are used to measure longer lengths, for example, the length of a playground, and courtyard.

Step 1

Activity

- Stand beside the wall of your house and mark where your head has stopped. That is your height.
- Use a string to measure your height.
- Now measure the length of the string in centimeters.
- You have now got your height in centimeters.

Step 2

Study the examples below

Example 1
Change 7m to cm.
1m = 100cm
7m = (7 × 100) cm
7m = 700 cm

Example 2.
Express 9 centimetres as millimetres
1cm = 10mm
9cm = 9 × 10mm
9cm = 90mm

Example 3.
The length of our courtyard is 0.7m. Change the length to cm.
1m = 100cm
0.7m = ($\underline{7}$ ×100) cm
10
0.7m = 70cm

<u>**Exercise**</u>

1. Change 2 metres to centimeters.
2. Change 15m to cm.
3. Express 19cm as mm.
4. Musoke bought a piece of wood of length 8metres. Convert the length to centimeters.
5. The height of our table in 90cm. Change this to millimeters.
6. Express these as cm.
   a) 15m   b) 7.8m

LESSON 2: Converting centimeters to metres and millimetres to centimetres

In this lesson, you will:

- Change centimeters to metres.
- Change millimeters to centimeters.

You will need:

- A string or a stick , a ruler , an exercise book and a pen.

Introduction:

In the previous lesson, you learnt how to change from metres to centimetres and from centimetres to millimeters. You multiplied metres by 100 to get centimetres, and multiplied centimetres by 10 to get millimeters.

In this lesson, you are you are going to learn how to change from smaller units to bigger units by dividing. When you are changing from centimetres to metres you divide by 100 and when are changing millimeters to centimetres we divide by 10.

Step 1
Activity
Use a rectangular sheet of paper to fill the table below.

Estimate in	Actual length
_____ centimetres	_____ metres
_____ millimetres	_____ centimeters

Remember 100cm = 1m
10mm = 1 cm

Step 2
Study the examples below
Example 1

Change 700cm to metres.

$$100cm = 1 \text{ metre.}$$
$$1cm = \frac{1}{100} \text{ metres}$$
$$700cm = (700 \times \frac{1}{100} \text{ metres.}$$
$$\underline{700cm} = 7m$$

Example 2.

Convert 5,700cm to m.

100cm = 1 m

1cm = $\underline{1}$ m
      100

5,700cm = $\underline{1}$ × 5700 m̶
            100 m̶

5,700 cm = 57m

Example 3.

The length of an exercise book is 200mm. Find the length in cm.

10mm = 1 cm

1mm = $\underline{1}$ cm
       10

200mm = $\underline{1}$ × 200 c̶m̶
         10 c̶m̶

200mm = 20 cm.

Exercise

You can now do this exercise.

1. Change 400cm to m.
2. Express 900cm as metres.
3. Solome used 300cm of cloth to make masks to prevent spread of covid 19. Change this to metres .
4. Change 50mm to cm.
5. A carpenter measured 600mm of wood to make a stool. Change this to centimeters.
6. Convert 200 millimetres to centimetres.

Lesson 3. Finding the perimeter of rectangles and squares.

In this lesson, you will:

- Find the perimeter of rectangles and squares.
- Solve word problems involving perimeter of rectangles and squares.

You will need:

- Cut outs of rectangles, a ruler, a string, an exercise book, a pencil and a pen.

Introduction:

In Primary four, you learnt about perimeter of shapes. Perimeter refers to the distance round a given closed figure.

Perimeter can be measured in millimeters, centimetres or metres.

In this lesson, you are going to find the perimeter of rectangles and squares.

Perimeter of rectangles is important because it is perimeter which we use when we are constructing perimeter walls around houses or even putting a fence around our gardens.

Step 1

Activity

- Look around your home. You can see a rectangular object. Get near it and measure the distance round it using a ruler.
- Record the measurements in a table like the one below.

Length	width	length	width	Total
_____ _	_____ _	_____ _	_____ _	_____ _

- When you add the measurements of that shape, then you have got its perimeter.

Step 2.

Study the examples below.

Example 1

Find the perimeter of the figure below.

5cm

12cm

Perimeter = L + W + L + W

Perimeter = 12cm + 5cm + 12cm + 5cm

=   17cm   + 17cm
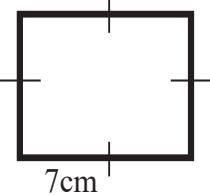
= 34cm.

Example 2.

Find the perimeter of a square of side 7cm.

Step 1:

Draw a sketch of a square with 7cm.

7cm

Step 2: Write the formula

Perimeter of a square = sum of all its 4 sides.

Step 3:

Work out the perimeter.

Perimeter   = S + S + S + S

= 7cm + 7cm + 7cm + 7cm

= 28cm.
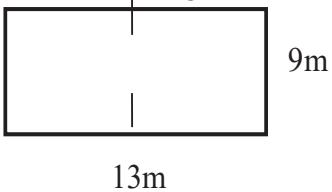
Example3

A rectangular playground has a length of 13metres and a width of 9metres.
Work out its perimeter.
Step 1:
Draw a rectangle measuring 13metres by 9metres.

9m

13m

Step 2:
Write the formula.
Perimeter = L + W + L + W
Step 3:
Work out the perimeter
Perimeter = 13m + 9m + 13m + 9m
        P   = 22m + 22m
        P   = 44m
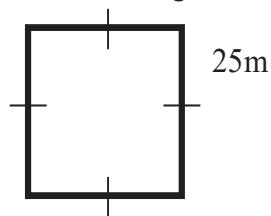
Example 4

The side of a square garden is 25metres.
Work out the perimeter of the garden.
Step 1:
Draw a sketch of the garden.

25m

Step 2
We write the formula
Perimeter = 4 × side
Step 3
Work out the perimeter.
        Perimeter = (4   × 25) m
        Perimeter = 100m.
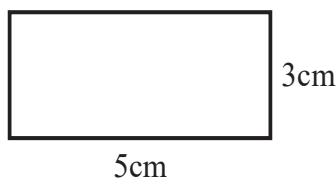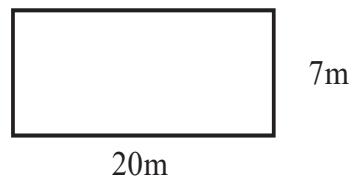
Exercise.

1. Work out the perimeter of the figures below.
    a)   b)

3cm   7m

5cm   20m

2. Find the perimeter of the figures below.

   a)

   6cm

   b)

   14cm
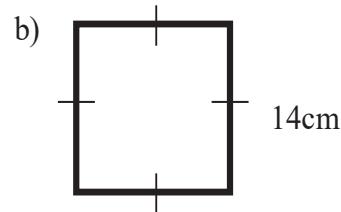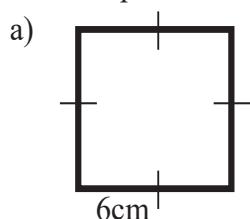
3. Find the perimeter of a rectangular box top of length 64cm and width 35cm.
4. A rectangular flour garden has a length of 15metres and a width of 8metres. Work out its perimeter.

Lesson 4. Find the perimeter of thetriangles.
In this lesson, you will:
- Work out the perimeter of triangles.
- Solve word problems involving perimeter of triangles.

You will need:
- Cut outs of triangles, a ruler, a string, an exercise book, a pencil and a pen.

Introduction:
In primary four, you learnt about shapes and a triangle was one of them. Using a triangular cutout, you notice that a triangle has 3 sides. In order to find the perimeter of a triangle, you will add the lengths of the 3 sides. The total of the 3 sides is the perimeter of that triangle.

Step 1
Activity
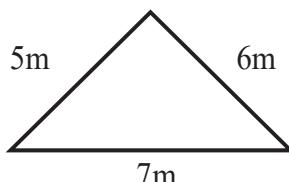
- Get a cutout of a triangle and a ruler.
- Measure the three sides of the triangular cutout using your ruler.
- Record the measurements.
- Add to the measurements.
- The total of the measurements is the perimeter of that triangle.

Step 2
Study these examples.
Example 1

Find the perimeter of the triangle below.

5m   6m

7m
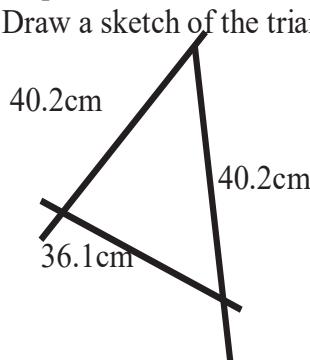
Perimeter = sum of the 3 sides.
           = 7m + 6m + 5m
           = 18m.

Example 2

Martin measured their triangular table top and recorded the measurements; 34.3cm, 40.2cm and 36.1cm. Find the perimeter of the table top.

Step 1:

Draw a sketch of the triangle.   **Step 2**: write the formulae.

                                                Perimeter   = side + side + side.

40.2cm   **Step 3**: Work out the perimeter.

                                      P = 34.3cm + 40.2cm + 36.1cm
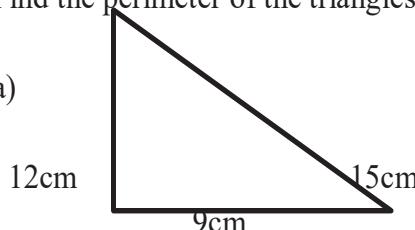
                 40.2cm   Perimeter   = 34.3cm

                                          40.2cm

  36.1cm   + 36.1cm

                                      110.6cm

Therefore the perimeter of the table top is 110.6cm
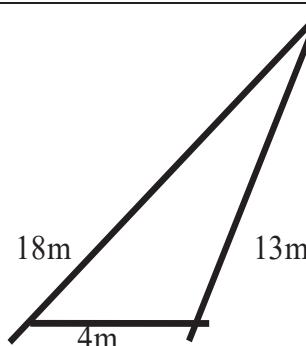
Exercise:

1. Find the perimeter of the triangles below.

a)   b)

                                                        18m   13m

12cm   15cm

        9cm   4m

2. Work out the perimeter of a triangular flower garden of side 11metres, 18metres and 7metres.
3. A triangular tray measures 60cm, 50cm and 44cm. Find the perimeter of the tray.
4. Work out the perimeter of an equilateral triangle of side 7.5cm.
5. A triangular carpet measures 17m by 12m by 15m. Find the perimeter of the carpet.

Lesson 5: Area of a rectangle.

In this lesson, you will:

- Find the area of a rectangle.
- Solve word problems involving finding area of a rectangle.

You will need:

- An exercise book, cutouts of rectangles, mats, a pen and a pencil.

Introduction:

In primary four you learnt about finding the area by counting squares in a plain figure.

Remember the space occupied by a plain figure is its area.

Area helps you to know, for example, the size of land you will use for building and farming.

In this lesson, you will find area of a rectangle without counting the squares.
Remember area is measured in square units.

Step 1
Activity

- Find the area of the figure below.

- By counting there are 12 square units.
- 6 square along the length and 2 squares along the width.
- If multiply 6 squares by 2 square you get 12square units.
  6 squares × 2 square = 12 square units.

You are now going to find the area without counting squares.
Step 2
Study the examples below.

Example 1
Find the area of a rectangle whose length is 8cm and width 4cm.

4cm

8cm

Area = length × width
    = 8cm   × 4cm
    = 32cm^2

You notice that in order to find area of a rectangle, multiply the length by the width.

Example 2
A rectangular compound is 100m long and 70m wide. Work out the area of the compound.

70m
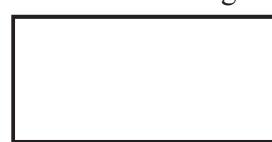
100m

Area = length × width
    = 100m × 70m
    = 7000cm^2

Exercise
1. Find the area of the figure below.
   a)   b)

   5m   9cm

   20m.   13cm

2. Find the area of a rectangle whose length is 19cm and width 10cm.
3. Find the area of a carpet of length 12m and width 8m.
4. The tabletop in our dining room is 120cm long and 75cm wide. Find the area of the tabletop.
5. Rita made a mat of length 180cm and width 60cm. Find the area of a mat.

Lesson 6: Area of a square

In this lesson, you will:
- Work out the area of squares.
- Solve problems involving finding the area of a square.

You will need:
- Cut out squares, an exercise book, a pen and a pencil.

Introduction:
You were introduced to shapes in primary four and a square is one of the shapes. You notice that a square has 4 equal sides. You also learnt how to find the area by counting the squares in a big square. In this lesson, you will work out the area of a square without counting the squares.

Step 1
Activity
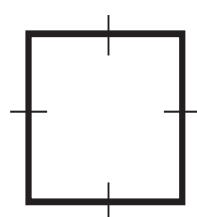
- Get a sheet of paper.
- Cut it into a square of side 4cm.
- Cut small squares of side 1cm.
- How many of them can cover the big square?
- You will notice that there are 16 small squares which will cover the big square.
- That is the area of the big square.

Step 2
Study the examples below.
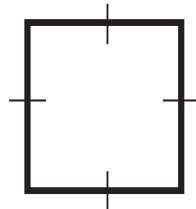
Example 1
Find the area of the figure below.

$$\text{Area} = \text{side} \times \text{side}$$
$$= 9\text{cm} \times 9\text{cm}$$
$$= 81\text{cm}^2. \text{ (read this as square centimeters)}$$

Example 2
The side of a square field is 24metres.
Work out the area of the field.
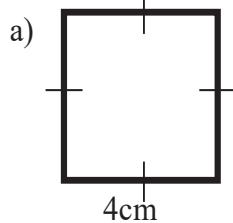
Show detailed working.

$$Area = side \times side$$
$$= 24m \times 24m$$
$$= 576m^2$$

```
  24
 ×24
  96
+48
 576
```
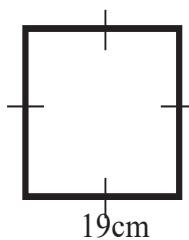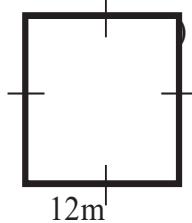
Exercise

1. Find the area of the figures below.

   a)   b)

   4cm   12m   19cm

2. The side of a square garden is 27m. Find its area.
3. Work out the area of a square blackboard whose side is 70m.
4. The side of a square is 50m. Find its area.
5. A square piece of paper has a side of 23cm. find its area.

Lesson 7: Find the area of a triangle.

In this lesson, you will:

- Find the area of a triangle.
- Solve word problems involving area of a triangle.

You will need:

- A cutout of a rectangle, a cutter, a ruler, a pencil, an exercise book and a pen.
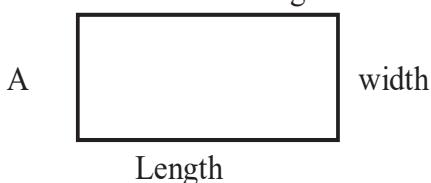
Introduction:

You learnt about shapes and a triangle was one of them. Using a rectangular cutout, you notice that when you divide the rectangle diagonally you will get two triangles which are equal. In order to find the area of a triangle, you will multiply the area of a rectangle by a half. In this lesson, you will find the area of a triangle using the formula of a triangle ½ × base × height. Area of a triangle helps welders and designers to know how much material they need to make, for example, clothes and crafts.
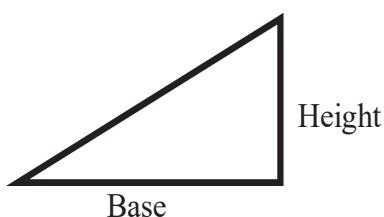
Step 1:
Activity
Look around and get a piece of a rectangular paper.

- Call it A
- Measure the length and width

A   width

Length

Cut it through its diagonal as shown below, call it B

Height

Base

You will notice that triangle B is $\frac{1}{2}$ of rectangle A.

If the area of the rectangle is 30cm^2

Then the area of the triangle is $\frac{1}{2}$ the area of the rectangle
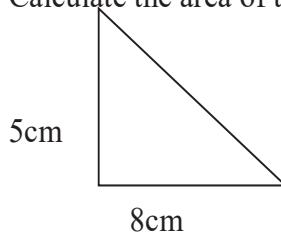
Area of a triangle B = $\frac{1}{2} \times 30$ cm^2

         = 15 cm^2.

Since area of a rectangle = Length × width

Then Area of a triangle = $\frac{1}{2} \times$ base × height

         = 15cm^2

Example 1

Calculate the area of the triangle below

Area of a triangle = $\frac{1}{2} \times$ base × height

5cm

         = $\frac{1}{2} \times$ 8cm × 5cm

8cm

         = 20cm^2
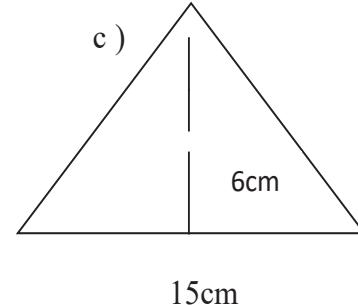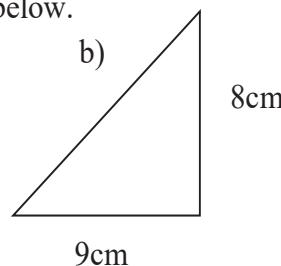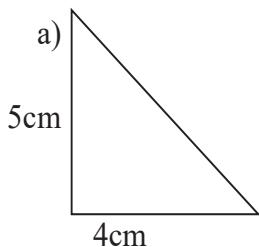
Step 2
Example 2
Find the area of a triangle whose base is 13cm and height 6cm.

Area of a triangle = $\frac{1}{2}$× base × height

$= \frac{1}{2}$ × 13cm × 6cm

$= (13 \times 3) \text{ cm}^2$

$= 39\text{cm}^2$

Exercise
1. Find the area of the triangles below.

a)
5cm
4cm

b)
8cm
9cm

c)
6cm
15cm

2. Find the area of a triangle whose base is 5cm and height 8cm.
3. The base of a triangular garden is 14m and height 7m. Find the area of the garden.
4. Work out the area of a triangle with the base 27m and height 5m.
5. Work out the area of a triangular board of base 14cm and height 8cm.
6. Diego made a triangular carpet of height 15cm and base 10cm. Find the area of the carpet.

Lesson 8: Converting kilogrammes to grammes and vice versa

In this lesson, you will:
- Change kilogrammes to grammes
- Change grammes to kilogrammes

You will need:
- An exercise book and a pen

Introduction:
Shop keepers sell essential items like salt, sugar, maize flour, cassava flour.
They use weighing stones to find the mass of the items.
You will notice that the common weighing stones used are for 1kg, 500g, 50g and 100g.

You can do this by observing some of the items your family buys from the shops.
You will notice that 1kg = 1000g and $\frac{1}{2}$ kg = 500g.

Step 1
Activity

- Look around your home and write the items that your family buys from the shop.
- Identify those that are measured in kilogrammes and those that are measured in grammes.
- Write the mass of the weighing stones you know.
- You will notice that 1kg, 2kg, 500g and 250g are common in our shops.

Step 2
Now study the examples below.

Example 1
Express 5kg as grammes.
1kg = 1000g
5kg = (5 × 1000)g
    = 5000g.

Example 2
A boy bought 2000g of salt. What is this mass in kilogrammes?
    1000g = 1 kg
    1 g   = $\frac{1}{1000}$ kg
    2000g = $\frac{1}{1000}$ × 2000 kg
           = 2kg

Exercise
1. Convert   a) 7kg to grammes.   b) 2½kg   to grammes.
2. Change 30kg to grammes.
3. How many grammes make 15kg?
4. Opio bought 25kg of rice. How many grammes did he buy?
5. How many kilogrammes are in 4700grammes?
6. Joshua bought 9kg of meat. How many grammes did he buy?

Lesson 9: Converting litres to milliliters and vice versa.

In this lesson, you will:
- Convert litres to milliliters.
- Change milliliters to litres.

You will need:
- A half litre cup, a bucket and water.

Introduction:
In primary four, you were introduced to capacity. Capacity helps you to know the amount of something, for example, water, milk and other liquids a container can hold. In this lesson, you are going to change litres to milliliters and milliliters to litres.

Learning about capacity helps you to always use the right container for any amount, for example, jerrycans, plastic cups and bottles of water have different capacities.

Step 1
Activity

- You might be having a big jerrycan which you use for fetching water.
- The capacity of that jerrycan is 20litres.
- Write the capacity of the other jerrycans or containers you use at home.

Step 1

Study the examples below.

Example 1
Convert 9litres to milliliters.
1 litre = 1000 millilitres.
9 litres = 9 × 1000 millilitres
        = 9000millilitres.

Example 2
Jamada bought 7000 millilitres of edible oil.
How many litres did he buy?
1000ml = 1 litre
   1ml = $\underline{1}$ litre
       1000
      = $\underline{1}$ × 7000 litres
        1000
     = $\underline{7 \text{ litres.}}$

Exercise
1. Convert these to milliliters.
   a) 3 litres.   b) 6 litres.   c) 5 litres
2. A mother uses 4 litres of water every day.
   How many milliliters of water does she use?
3. A trader sells 120litres of paraffin a week.
   Express this capacity as milliliters.
4. Catherine produces 15litres of pineapple juice for sale. Change the capacity to milliliters.
5. Change 2200millilitres to litres.
6. Express 5000ml as litres.

TOPIC: INTEGERS

Lesson 1: Positive and negative integers

In this lesson, you will:
- Draw a number line showing both negative and positive integers.
- Describe positive and negative integers.

You will need:
- Exercise book, pen and a pencil, and a ruler.

Introduction:

In everyday life we sometimes move forward and sometimes move backward. Moving forward is positive while moving backward is negative. There are other words which we use everyday like borrowing, subtracting, taking away, and removing which stand for negative. Then we also use words like profit, gain, adding, more, which stand for positive.

In this lesson, you are going to draw a number line and write positive and negative integers. An integer is a whole number which is either negative or positive.

You will notice that all negative integers are less than zero and all positive integers are greater than zero. Zero is the starting point and it is neither negative nor positive.
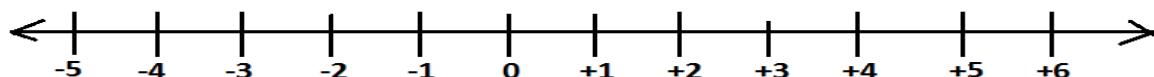
Step 1

Activity

Move outside your house. Move 5 steps forward, then move 5 steps backwards.

Forward movement is positive (+) $^{+}5$

Backward movement is negative (-) $^{-}5$

Draw a number line like the one below to show the 5 positive steps and the 5 negative steps.

Left (backward)   Right (forward)
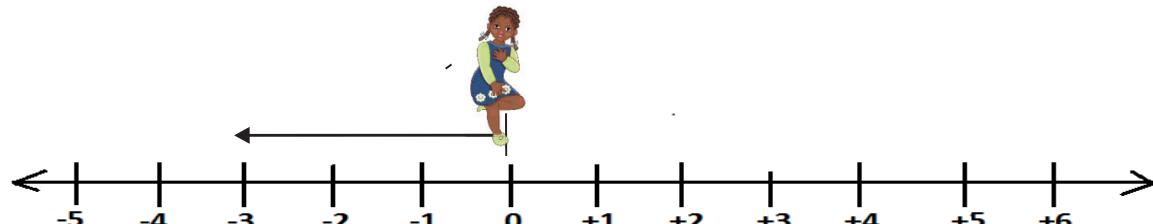
This is a number line. It is a line with numbers.

- The right has positive integers.
- The left has negative integers.

  0 is neither positive nor negative. It is the starting point.

- Using the number line that you have drawn, move 5 steps to the right of 0. Name the integer where you have stopped.

  Then now stand at 0 and move 5 to the left. Name the integer where you have stopped.

Step 2

Study this example

Which integer is 3 steps to the left of zero?
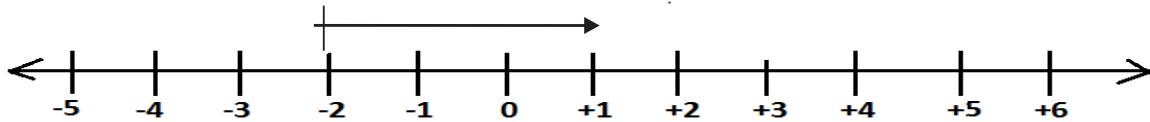
You will stand at zero facing your right. Then move backwards 3 steps from zero. You will now be at -3.

So the integer is $^{-}3$.

Start from zero and count 3 steps backwards.

1.   On the number line below, which integer is 3 steps to the right of ⁻2?

When you stand at -2 and move 3 steps forward, you will be at ⁺1. Therefore the integer 3 steps to the right of ⁻2 is ⁺1.

+1 (count 3 steps from ⁻2)

Exercise

Use a number line to answer the questions below.

1.   What name is given to integers which are to the left of zero?
2.   Name the integers to the right of zero.
3.   Which integer is five steps to the left of +5?
4.   Write the first 5 negative integers.
5.   Write the first 4 positive integers?
6.   Which integer is three steps to the right of ⁻3?
7.   How many integers are there from negative ⁻3 to ⁻7?
8.   Write the integers between 0 and ⁺4.

Lesson 2: Ordering and comparing negative and positive integers on a number line.

In this lesson, you will:
- Arrange integers in ascending order
- Compare negative and positive integers.

You will need:
- An exercise book, a pen and a pencil.

Introduction:
In the previous lesson, you learnt about positive and negative integers. You noticed that positive integers are greater than negative integers.

All negative integers are less than zero and positive integers are greater than zero. In order to compare integers, you will use a number line.

Integers to the left are always less than integers to the right. In this lesson, you are going to compare integers in order of size.

Today you are going to use the word <u>descending order</u> to mean from greatest to the lowest and <u>ascending order</u> to mean from lowest to greatest.

Remember the symbols

< is less than
> is greater than
= is equal to.
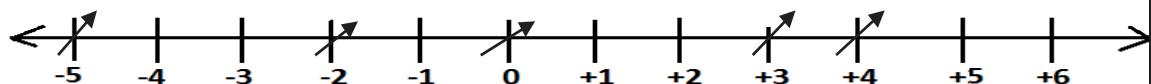
Step 1

Activity

> - Note that integers to the left are less than those to the right.
> - Integers to the right are greater than those to the left.
>
> Let us study the number line below and arrange $^+4$, $^-2$, 0, $^-5$, $^+3$ in descending order.
>
>
>
> a) Compare the integers before you arrange them.
> b) You will notice that positive 4 is greater than positive 3 and positive 3 is greater than 0.
> c) 0 is greater than $^-2$.
> d) Therefore the answer in descending order, from the right to the left is $^+4$, $^+3$, 0, $^-2$, $^-5$
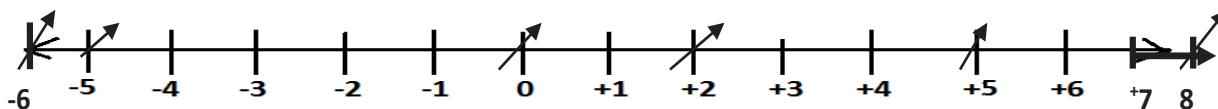
Step 2

Now you are going to arrange in ascending order.

Example 2

Arrange $^+2$, $^-5$, $^+5$, $^-6$, $^+8$, 0 in ascending order.

List from left to right $^-6$, $^-5$, 0, $^+2$, $^+5$, $^+8$.

Be careful not to miss any number.

Example 3

> Compare $^+8$ and $^-10$
> $^+8$ is on the right of $^-10$
> So $^+10 > ^-8$

Example 4

> Use <, > or = to compare
> $^-15 < ^+10$
> $^-15$ is on the left of $^+10$
> Therefore $^-15$ is less than $^+10$.

Exercise

1. Arrange these from the lowest to the greatest
   a) $^-4$, $^+3$, $^-10$, 2   b) $^+7$, $^-5$, $^-3$, 0, $^+5$

2. Arrange these integers in descending order.

    a) $^{+}7$, $^{+}6$, $^{-}8$, $^{-}3$ b) $^{-}1$, 0, $^{-}4$, $^{+}4$, $^{+}7$

3. Which is greater $^{-}3$ or $^{+}1$?

4. Which is less than the other $^{-}9$ or $^{-}5$?

5. Arrange these integers in ascending order.

    0, $^{+}4$, $^{+}7$, $^{-}3$, $^{-}2$

6. Use symbols **<, >** or = to compare integers correctly.

a) $^{+}4$ _ _ _ $^{-}10$

b) $^{-}17$ _ _ _ $^{-}17$

c)   0 _ _ _ $^{-}15$

d) $^{-}15$ _ _ _ $^{+}3$

e) $^{+}20$ _ _ _ $^{-}20$

Lesson 3: Addition of positive and negative integers using a number line

In this lesson, you will:

- Add integers using a number line.
- Solve simple word problems involving integers.

You will need:

- An exercise book, a pencil and a pen and a ruler.
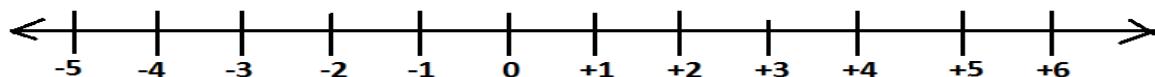
Introduction:

You have already learnt about forward and backward movement. In this lesson, you will add integers using a number line. Arrows moving to the left show negative integers while arrows moving to the right show positive integers.

Step 1
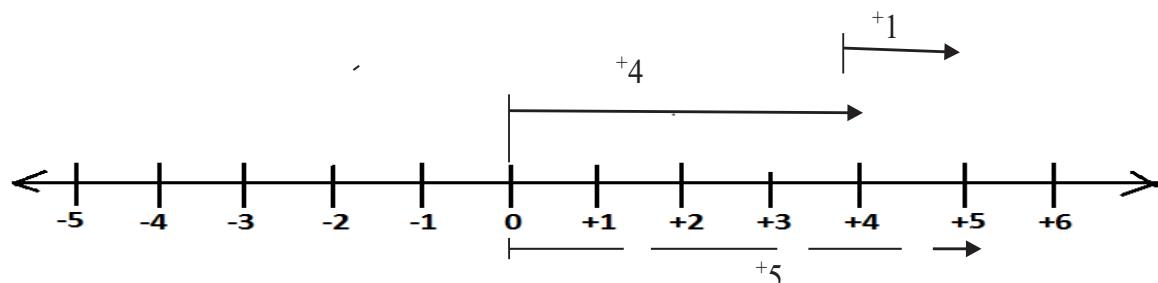
Work out $^{+}4 + {}^{+}1$ using a number line.

    a) Draw a number line like the one below.

- Walk four steps ($^{+}4$) to the right of zero, then draw the arrow
- Continue from $^{+}4$ and move 1 step forward.

- Count all the steps from 0 to where you stopped in the second movement.
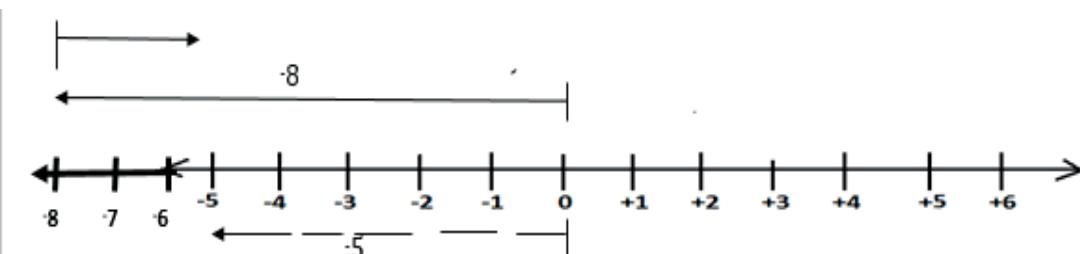
$^+4 + {}^+1 = {}^+5$

You will notice that the movement from zero to where the second arrow has stopped covers $^+5$

Therefore $^+4 + {}^+1 = {}^+5$

Step 2

Work out $^-8 + {}^+3{}^+3$

- Start from zero
- Move $^-8$ steps to the left of zero.
- Then move $^+3$ steps to the right from $^-8$

The answer is from zero to the last arrow.

Therefore $^-8 + {}^+3 = {}^-5$

Exercise

Work out using number lines.

1. $^+4 + {}^+3$ 4. $^-3 + {}^-5$
2. $^-7 + {}^+4$ 5. $^-2 + {}^-3$
3. $^+9 + {}^-3$ 6. $^+6 + {}^-4$

Lesson 4: Adding integers without using a number line.

In this lesson, you will:

- Add integers without using a number line.
- Solve word problems involving addition of integers.

You will need:

- Counters, a pen, a pencil, a ruler and an exercise book.

Introduction:

In the previous lesson, you learnt about adding positive and negative integers using a number line. You noticed that all arrows to the right of zero were representing positive integers and all arrows to the left of zero were representing negative integers.

In this lesson, you will add integers without a number line. Words like debt and borrow can represent a negative idea. Words like profit, gain, more can represent a positive idea.

Step 1

Activity
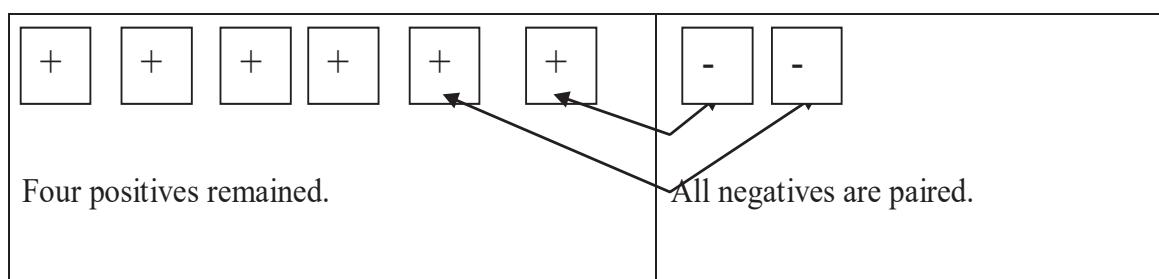
Work out $^-7+^+4$

Positive	Negative
+ ←———————— −	
+ ←———————— −	
+ ←———————— −	
+ ←———————— −	
All positives are paired	−
	−
	−
	Three negatives remained

You will notice that after pairing, three negatives remained ($^-3$), therefore $-7+^+4 = ^-3$.

Step 2

Example 1.

Work out $^+6 + ^-2$

+ + + + + +	- -
Four positives remained.	All negatives are paired.

Therefore $^+6 + ^-2 = ^+4$

Example 2
Shanita had 10 books and gave 6 books to a friend. How many books did Shanita remain with?
10 books represent $^+10$ (because she had them)
6 books represent $^-6$ (she gave them to a friend)
Therefore she remained with 4 books.
$^+10 + {}^-6 = {}^+4$ or $^+10 - 6 = {}^+4$

Example 3
A boy borrowed sh.2,000. His mother gave him sh.5,000. If the boy paid the money how much did he remain with?
Sh.2,000 represent $^-2000$
Sh.5,000 represent $^+5000$
Therefore, $^-2000 + 5000$ is the same as sh.5000 – sh.2000 = sh.3000.

Exercise
Work out.

1. $^+7 + {}^-3$
2. $^+5 + {}^-4$
3. $^-10 + {}^+3$
4. $^-9 + {}^+7$
5. Joshua had 4 books and gave away 4 books. How many books did he remain with?
6. In a basket there were 8 rotten mangoes. If there were 14 mangoes altogether, how many good mangoes were there?
7. Martha had 9 pens. She was given another 12 pens. How many pens did she have altogether?

Lesson 5: Subtracting integers using a number line.
In this lesson, you will:
- Subtract integers using a number line

You will need:
- An exercise book and a pen, a ruler and a pencil.
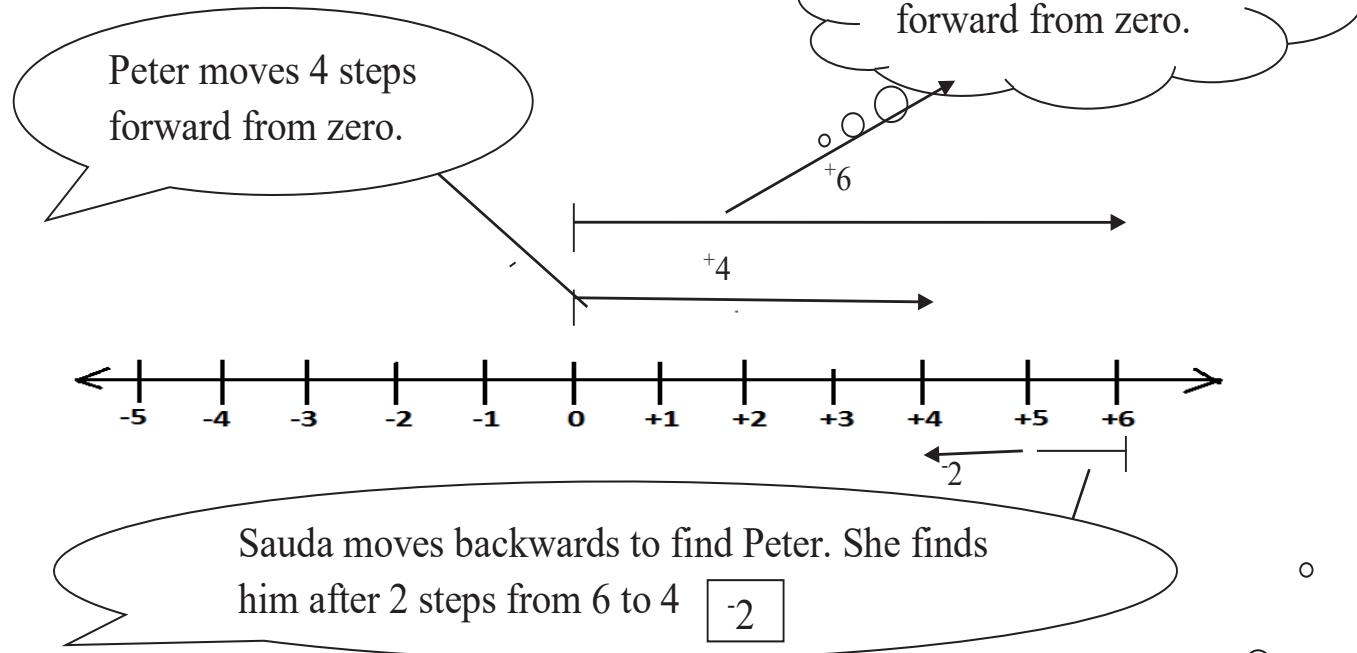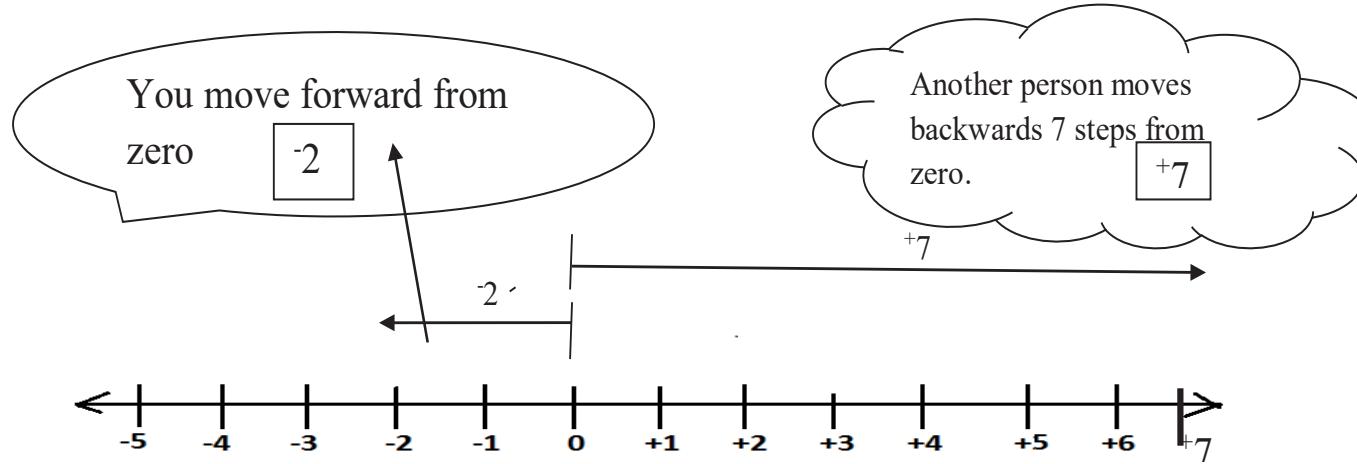
Introduction:
You were introduced to adding integers using a number line. The idea of forward and backward movement will still help you to work out subtracting integers.

Note:
- When subtracting integers, both arrows start from zero
- The gap between the arrow heads represents the answer
- The gap should begin from the second to the first arrow head.

Step 1: Activity

Work out $^+4$- $^+6$ using a number line.

Sauda moves 6 steps forward from zero.

Peter moves 4 steps forward from zero.

$^+6$

$^+4$

-5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6

$^-2$

Sauda moves backwards to find Peter. She finds him after 2 steps from 6 to 4 $\boxed{\text{-2}}$

Therefore $^+4$- $^+6$ = $^-2$

Step 2

Example 1

Workout -2- $^+7$ using a number line. This time it is you and another person at your home.

You move forward from zero $\boxed{\text{-2}}$

Another person moves backwards 7 steps from zero. $\boxed{^+7}$

$^+7$

-2

-5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 $^+7$

Therefore $^-2$- $^+7$ = 9

Exercise

Work out the following using number lines.

1. $^+2$- $^+4$
2. $^+5$- $^+3$
3. $^+4$- $^-3$

4. $^-6$- $^+2$
5. $^-3$- $^+3$
6. $^-4$- $^-2$

Lesson 6: Subtracting integers without using a number line.

In this lesson, you will:

- Subtract integers without using a number line
- Solve word problems involving subtraction of integers.

You will need:

- Counters, an exercise, a pen, a pencil and a ruler.

Introduction:

You were introduced to subtracting integers using a number line. In this lesson, you are going to subtract integers without a number line and solve word problems involving addition.

The words we saw in the previous lessons like, borrow, lend, debt, gain, profit, loss are going to help us work out these problems.

Step 1

Example 1

Workout $^-4-7$

This means you have <u>a debt</u> of 4 and another debt of 7

Therefore $^-4-7=^-11$

Step 2

Example 2

If a friend is demanding you 5 books and you have 7 books. How many books do you remain with?

7 books represent $^+7$

5 books represent $^-5$

Therefore $(^+7)-(^+5)$

$(^+7)-(^+5)=^+2$

Therefore you remain with 2 books.

<u>Exercise</u>

Work out the following without using number lines.

1. $^-3-^+7$
2. $^-4-^-4$
3. $^-5-6$
4. $^-4-7$
5. A man has a debt of sh.1,000. If he has sh.5000, how much money will he remain with?
6. Brenda was given 40 apples and she gave away 25 to her friends. How many apples did she remain with?
7. Subtract $^+3$ from $^+6$.
8. Robert had sh.3,000 and gave out sh.1,800. How much money did she remain with?

TOPIC: ALGEBRA

Lesson 1: Algebraic expressions

In this lesson, you will:
- Read sentences that require algebraic expressions.
- Write algebraic expressions for the given sentences.

You will need:
- An exercise book and a pen.

Introduction:

Writing algebraic expressions is like writing a sentence in your language. It helps us to think creatively and critically.

It also helps us to break down a problem and find its solution, for example, when we use words like **more than**, **less than**, **twice**, **three times**, **older**, **younger** in our conversations.

Such words are algebraic expressions and you are going to use them along with the four major operations, +, - , × and ÷.

Step 1

Activity
Try these by writing an expression for each

•   Cate has 8 hens. Sarah has 2 more hens than cate.
        Then sarah has (8+ 2)
     •   4 more than $p = p + 4$
     •   3 subtracted from $x = x - 3$
     •   Twice x   = $2x$

Step 2

Now you can study these examples.

1.   Musa is 4 years older than Arthur, who is p years old.
        How old is Musa?
        $(p + 4)$ years.
    2.   Multiply p by 7
        $= p × 7$
        $= 7p$
    3.   When k is added to 9 the answer is 12.
        $9 + k = 12$.

Remember all the algebraic expressions involve all the major mathematics operations + , - , × , ÷

Exercise

1. Subtract 5 from k
2. John is 6 years older than Ann, who is X years old.

3. The sum of p and 4 is 11
4. 7 divided by k.
5. q divided by 10.

Lesson 2: Like terms.

In this lesson, you will:
- Collect like terms.
- Simplify expressions.

You will need:
- Books, sticks ,pens and an exercise book.
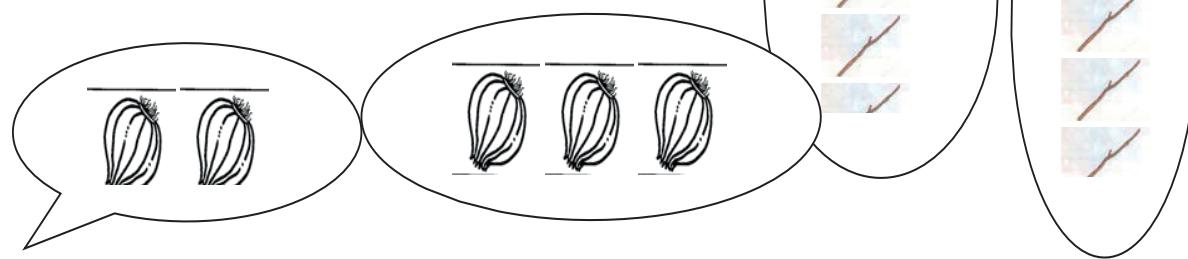
Introduction:

Collecting like terms helps us to be organized in life, for example, at home we learn to put same things together, that is, cups separate from plates and clothes separate from shoes. In this lesson, you will collect terms that are the same. These are called like terms.

Step 1

Activity
- Make a group of 3 onions, 4 sticks, 2 onions and 5 sticks.
  Write the expression
  3 onions + 4 sticks + 2 onions + 5 sticks
- Now put similar things together.
  3 onions + 2 onions + 4 sticks + 5 sticks.
  5 onions + 9 sticks.

Step 2

Study these examples.

Example 1

Juma has 13 cows; he has 3 goats and bought another 5 cows.
How many animals does he have altogether
        13 cows + 3 goats + 5 cows
         13cows + 5cows + 3 goats
      = 18 cows + 3 goats.

Example 2

Simplify: 3b + 2p + 4b + 6p.

3b + 4b + 2p + 6p

<u>7b + 8p.</u>

Collect like terms.

Simplify

Exercise

Collect like terms and simplify

1. 4 bottles + 2 shirts + 2 bottles + 3 shirts
2. 10 hens + 5 ducks – 3 hens
3. 9 cups + 7 hats + 2 cups + 4 hats
4. 1 pot + 3 clocks + 1 pot
5. 4 books + 2 cups + 3 books + 2 cups

6. 20 sheep + 5 ducks – 2 sheep
7. 1a + 2s + 1a
8. 2k + 7k – 3k
9. 3p + 15b – 1p
10. 17c – 5c + 6s + 2s.

Lesson 3: Solving equations by subtracting

In this lesson, you will:

- Solve simple equations by subtracting from both sides.
- Solve word problems involving equations by subtracting from both sides.

You will need:

- A pencil, sticks, strings, a paper, a pen and an exercise book.

Introduction:

An equation has two sides, the left hand side and the right hand side.

Solving equations helps us to know that some things are equal to others in our everyday life, for example, two notes of 5000 shillings equals' sh.10,000. That is already an equation. In this lesson, you will balance the equation by subtracting from both sides.

When the two sides balance, then you have solved the equation.

Step 1

Activity

- Make a simple weighing scale using sticks, strings and hard paper.
- Weigh soil and stones on the scale.
- Keep adding and subtracting until the two sides balance.

Step 2
Now study these examples.

Example 1
Solve : $r + 3 = 10$
$r + 3 - 3 = 10 - 3$
$n = 7$

Subtract 3 from both sides

Example 2
Solve $11 + w = 14$
$11 - 11 + w = 14 - 11$
$w = 3$

Subtract 11 from both sides.

Example 3
When 5 is added to a number, the answer is 7. What is the number?
Let the number be k
$k + 5 = 7$
$k + 5 - 5 = 7 - 5$
$k = 2$

Exercise
Solve the equations below.

1. $x + 2 = 5$
2. $r + 7 = 13$
3. $p + 15 = 13$
4. $m + 14 = 30$
5. When 17 is added to y the answer is 20. Find the value of y
6. What number do you add to 11 to get 15?
7. The sum of w and 10 is 21. What is w?
8. If I add 6 to a, I get 18. Find the value of a.

Lesson 4: Solving equations by adding to both sides.

In this lesson, you will:
- Solve equations by adding to both sides.
- Solve word problems involving equations by adding to both sides.

You will need:
- Counters, an exercise book and a pen.

Introduction:
In the previous lesson, you learnt how to solve equations. You will also solve word problems that involve equations. You need to read the word problem, interpret it and form an equation then solve it. As you noticed in the previous lesson, in order to solve an equation, the two sides must balance.
In this lesson, we are going to balance the equation.

Step 1
Activity

- Get a family member.
- Put a number of counters in your hand. Give some to your family member.
- Now count the remaining counters and let the family member count his or hers.
- Assuming you gave away 12, and 18 remained. How many counters did he have?
  An equation can be $k - 12 = 18$
  $$K - 12 + 12 = 18 + 12$$
  $$k = 30.$$
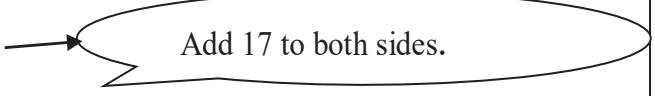
Step 2

Study the examples below.

Example 1
Solve form: $m - 17 = 14$
$$m - 17 + 17 = 14 + 17$$
$$m = 31$$
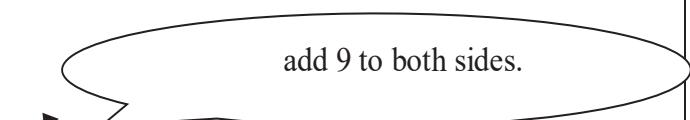
Add 17 to both sides.

Example 2
When Kirunda ate 9 oranges, he remained with 3 oranges. How many oranges did he have at first?

If he had k oranges.
$$k - 9 = 3$$
$$k - 9 + 9 = 3 + 9$$
$$k = 12$$

add 9 to both sides.

Exercise :
1) Solve the equations below:
   a) $p - 2 = 5$ b) $r - 7 = 10$ c) $k - 4 = 8$
   d) $f - 20 = 16.$ e) $x - 3 = 15$ f) $y - 5 = 7$
2) When 7 is subtracted from a number, the answer is 13. What is the number?
3) I think of a number, take away 4, the answer is 9. Find the number.
4) A girl removed 15 mangoes from a basket and 12 remained. How many mangoes were in the basket altogether?

Lesson 5: Solving equations by dividing

In this lesson, you will:
- Solve simple equations by dividing.
- Solve word problems involving equations by dividing.

You will need:
- Tins, counters and an exercise book.

Introduction:

As you earlier learnt, solving an equation means balancing both sides.

When solving an equation, it is possible to balance both sides by dividing both sides by the same number.

In this case, you must have good knowledge about multiplication tables.

In this lesson, you are going to solve equations which involve dividing both sides of the equation.

Step 1

Activity
- Get two containers and 12 counters. Put the counters, one at a time, in each container.
- How many counters will you put in each container?
- This can be found quickly by dividing 12 by 2.
- What answer have you got?

A picture of two baskets.

A picture of 12 bottle tops.

Step 2

Study the examples below.

Example 1

Solve for q: 3q = 15

$$\frac{3q}{3} = \frac{15}{3}$$

Divide both sides by 3

q = 5

Example 2

The product of 2 numbers is 24. The first number is 8. Find the second number.

Let the second number be h.

$8 \times h = 24$

Multiply 8 by h

$$\frac{8h}{8} = \frac{24}{8}$$
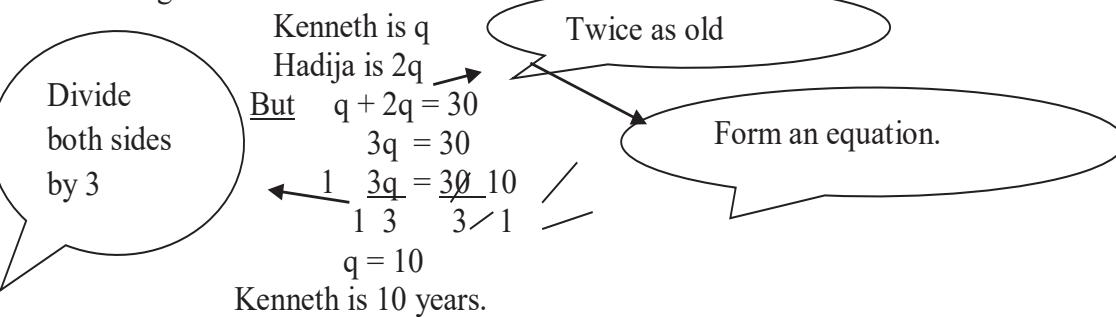
Divide both sides by 8

h = 3

154
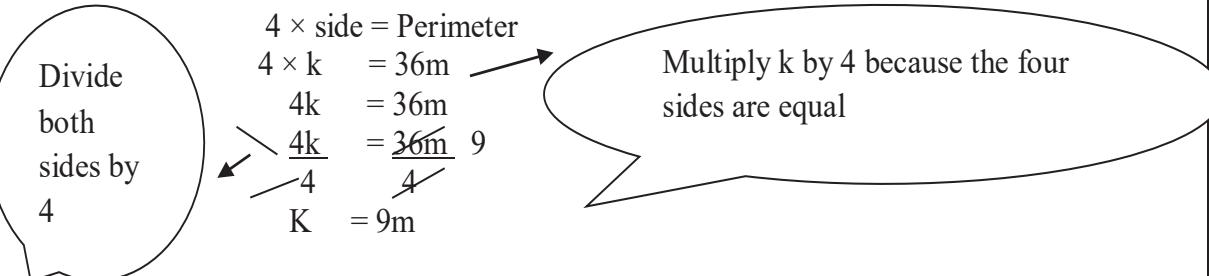
Example 3
Kenneth is q years old and Hadija is twice as old as Kenneth. If their total age is 30 years, find Kenneth's age.

Kenneth is q
Hadija is 2q

Twice as old

Divide both sides by 3

But   q + 2q = 30
            3q = 30

Form an equation.

$\frac{1}{1}$ $\frac{3q}{3}$ = $\frac{30}{3}$ $\frac{10}{1}$

q = 10
Kenneth is 10 years.

Example 4
The perimeter of a square garden is 36m.
One side is k. Find k.

4 × side = Perimeter
4 × k   = 36m
      4k   = 36m

Divide both sides by 4

$\frac{4k}{4}$ = $\frac{36m}{4}$ 9

K   = 9m

Multiply k by 4 because the four sides are equal

Exercise
1. Solve the equations below
   a) 2x = 14   b) 4k = 28   c) 5m = 50   d) 7y = 35
2. What number when multiplied by 9 gives 54?
3. The area of a rectangle is 40cm^2. Its length is 8cm. find its width.
4. The perimeter of a square is 24cm. Find its side in centimetres.
5. Chemtai is m years old and Ngobi is twice as old as Chemtai. If their total age is 36years, how old is each of them?
6. The area of a rectangle is 24cm^2. Its length is 8cm. Find its width?

Ministry of Education
and Sports

THE REPUBLIC OF UGANDA

HOME-STUDY LEARNING

P R I M A R Y

5

SCIENCE

August 2020

NCDC
NATIONAL CURRICULUM
DEVELOPMENT CENTRE

Save the Children

THEME: HUMAN HEALTH
Topic: Immunisation
Lesson 1: Immunity

Dear learner, you are aware that all schools are closed and you are now at home because of the Corona Virus Disease (COVID – 19). The disease is already within your communities and you need to protect yourself from it. You can do this through; washing hands regularly with clean water and soap, keeping distance of at least 2 metresfrom other people and not touching your soft parts on the face (eyes, nose and mouth)

By the end of this lesson, you should be able to;
i)   mention the types of immunity.
ii)   give the types of vaccines.
iii)   state the importance of immunization.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, in your class, and even at home, you realisethat some of your friends and family members suffer from common diseases.
Can you mention any three of these diseases?
Your body has soldiers that help to protect you from getting diseases. This ability of the body to protect itself against diseases is called immunity.
There are two types of immunity depending on the way the body gets it;
•   Natural immunity
•   Artificial immunity
Natural immunity: This is the type of immunity that the body gets through natural ways such as through breastfeeding, from the mother to the unborn baby in the womb, and after suffering and recovering from a disease.
Artificial immunity: This is the type of immunity that is got by introducing vaccines into the body.
Vaccines are drugs used for immunisation. Vaccines are introduced into the body through;
•   Injection method
•   Oral method (through the mouth)
The common vaccines include;
•   BCG vaccine
•   Polio vaccine
•   DPT vaccine
•   Measles vaccine
•   Hep B vaccine
•   Hib vaccine
Immunisationis the introduction of vaccines into the body to boost immunity.
Importance of immunisation

- It makes the body resistant to diseases.
- It reduces the rate at which children below 6 years die.
- It protects children against the childhood immunisable killer diseases.

Activity
1. Define the term immunity.
2. Mention the two types of immunity.
3. Give one way the body gets natural immunity.
4. Write down two examples of vaccines.
5. Why do parents take their children for immunisation?

Lesson 2: Childhood Immunisable Diseases

By the end of this lesson, you should be able to;
i) mention the childhood immunisable diseases.
ii) state the signs and symptoms of immunisable diseases.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello learner, in this lesson, you will learn about the childhood immunisable diseases, their causes, signs and symptoms, and their prevention.

Disease	Cause	Signs and symptoms	Prevention and treatment
Tuberculosis	Bacteria	• Chronic cough •Loss of weight •A lot of sweating at night •Pain in the chest •General body weakness •Pain in joints, bones and backache	•Immunise with BCG vaccine on the right upper arm by injection at birth •Isolate sick people • Take the sick person to the hospital for treatment

Measles	Virus	• Sores in the mouth •Skin rash •Runny nose •Dry cough •Red eyes •High temperature •Loss of appetite •Weakness of the body •Itching rash	•Immunise with measles vaccine on the left upper arm by injection at nine (9) months •Isolate sick people •Take the sick person to the hospital for treatment
Whooping cough (pertussis)	Bacteria	• Severe cough •Vomiting •Gasps for breath •Runny nose	•Immunise with DPT vaccine on the left upper thigh by injection at; –6 weeks –10 weeks –14 weeks •Treat with antibiotics
Tetanus	Bacteria	•Spasms when touched •The baby stops breastfeeding •High fever •Loss of appetite •Stiff body muscles	•Immunise with DPT vaccine on the left upper thigh by injection at; –6 weeks –10 weeks –14 weeks •Cover wounds and cuts properly

Activity
1. Mention any four childhood immunisable diseases.
2. Complete the following table below.

Age	Disease	Vaccine	Site
	Tetanus		Left upper thigh
At birth	Tuberculosis		
	Measles		Left upper arm
6weeks, 10weeks, 14 weeks	Whooping cough		

3. Mention the germ that causes tetanus.

Lesson 3: Childhood Immunisable Diseases

By the end of this lesson, you should be able to;

i)   mention the childhood immunisable diseases.

ii)   state the signs and symptoms of immunisable diseases.

You will need the following materials

Pens, notebook, pencils

Introduction

Hello learner, this is a continuation of the last lesson. In this lesson, you will learn about the childhood immunisable diseases, their causes, signs and symptoms, and their prevention.

Disease	Cause	Signs and symptoms	Prevention and treatment
Polio	Virus	• Paralysis of limbs •A person becomes lame	•Immunise with polio vaccine orally at birth •Drink clean boiled water •Proper disposal of faeces
Diphtheria	Bacteria	• Sore throat •Swollen neck •Difficulty in swallowing	• Immunise with DPT vaccine on the left upper thigh by injection at; –6 weeks –10 weeks –14 weeks •Isolate the sick person
Hepatitis B	Virus	•Eyes turn yellow •Dark urine •Loss of appetite	•Immunise using Hep B vaccine on left upper thigh by injection at; –6 weeks –10 weeks –14 weeks •Take a lot of fluids
Haemophilus InfluenzaType B	Bacteria	•High temperature •Body weakness •Vomiting	•Immunise using Hib vaccine on left upper thigh by injection at; –6 weeks –10 weeks –14 weeks

Activity

1.   Mention any twoimmunisable diseases caused by a virus.

2.   Name vaccines given to babies at birth.

3.   Mention diseases which are immunised at birth.

4.   List diseases which are immunised using DPT vaccine.

5.   How is polio vaccine given to babies?

Lesson 4: Other Immunisable Diseases

By the end of this lesson, you should be able to;
i)   mention examples of other immunisable diseases.
ii)   give vaccines of some of the these immunisable diseases.

You will need the following materials
Pens, notebook,pencils

Introduction
Hello, welcome for today's lesson. You have been looking at childhood immunisable diseases. Today you are going to look at other diseases that are immunisable.
Think of other diseases that are immunisable apart from the childhood immunisable diseases.
Other immunisable diseases include;

•   Meningitis
•   Cholera
•   Typhoid
•   Yellow fever
•   Cervical cancer
•   Rabies
•   German measles or rubella
•   Small pox
•   Mumps
•   Plague

The following table shows the cause, signs and symptoms, prevention and treatment of other immunisable diseases.

Disease	Cause	Signs and symptoms	Prevention and treatment
Meningitis	Bacteria	•Convulsion in children •Child does not breastfeed •Headache •Fever •Pain in the neck and limbs •Vomiting •Stiffness of the neck	•Isolate infected people •Take infected people to a recognised hospital as soon as possible •Immunisation of other people in case of an outbreak

Cholera	Bacteria	•Watery diarrhoea •Vomiting •Cramps in the stomach •Dehydration •Weakness, collapse and death	•Drink clean boiled water •Cover all food to avoid houseflies •Proper use of latrines to dispose faeces and urine •Wash hands before eating food and after visiting the latrine or toilet •Warm leftover food before eating it
Yellow fever	Virus	• Vomiting •Bleeding of gums •Sudden failure •Headache •Backache •Nausea •Muscle aches •Loss of appetite •Dizziness	•Sleep under mosquito nets •Immunisation against yellow fever •Spray adult tiger mosquitoes with insecticides •Drain away stagnant water •Apply oil on stagnant water
German measles or Rubella	Virus	• Skin rash •Enlargement of lymph nodes •Minimal fever	•Immunisation with rubella vaccine •Pregnant mothers should avoid contact with infected people
Rabies	Virus	•Violent behaviour •Paralysis of limbs •Muscle spasms •Pain in wounds •Fear of water	•Immunisation with anti-rabies vaccine •Regular immunisation of dogs and cats every 3 years •Killing of mad dogs and cats from our environment

Activity
1.   Apart from the 8 childhood immunisable diseases, mention three other immunisable diseases.
2.   Name a domestic animal that spreads rabies to people.
3.   Mention signs of meningitis.
4.   Name the type of mosquito that spreads yellow fever.
5.   Mention ways of controlling the spread of cholera at home.

Lesson 5: Child Health Card

By the end of this lesson, you should be able to;
i)   mention important information found on a child heath card.
ii)   give the importance of a child health card.
You will need the following materials
Pens, notebook, child health card, pencils
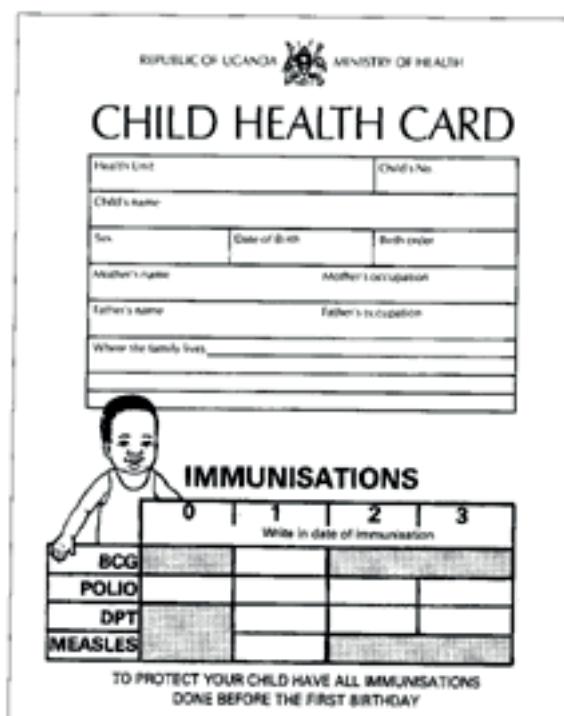
Introduction
Hello, when you were taken for immunisation, some information was written and the date when you wereimmunised. Where is this information written?
A child health card is a document used to monitor the health of the child.
Get your child health card and write the information found on it in your notebook.Think of the importance of a child health card.

Important information on a child health card

i)   Child's name
ii)   Parent's names
iii)   Age of the child
iv)   Child's sex
v)   Date of birth
vi)   Birth order
vii)   Birth weight
viii)   Immunisation schedule
ix)   Parent's occupation

Importance of a child health card
i)   It helps parents to monitor the growth of the child.
ii)   It reminds the parent the next date of immunization.
iii)   It helps the doctor to know the vaccines given and the ones remaining.

Activity
1.   Get a child health card and write down all the important information contained on it. Find out the vaccines you have not yet received on that card.

2.   Write some of the information that you can see on a child health card.
3.   Ask your parent or guardian to give you a child health card and compare the information on both cards.
4.   Think of the uses of a child health card and discuss with your parent or guardian.
5.   Write UNEPI in full.

THEME: HUMAN BODY
Topic 4: The Digestive System
Lesson 1: Digestion

By the end of this lesson, you should be able to;
i)   explain what digestion is.
ii)   name the parts of the digestive system.

You will need the following materials
Pens, notebook, pencils
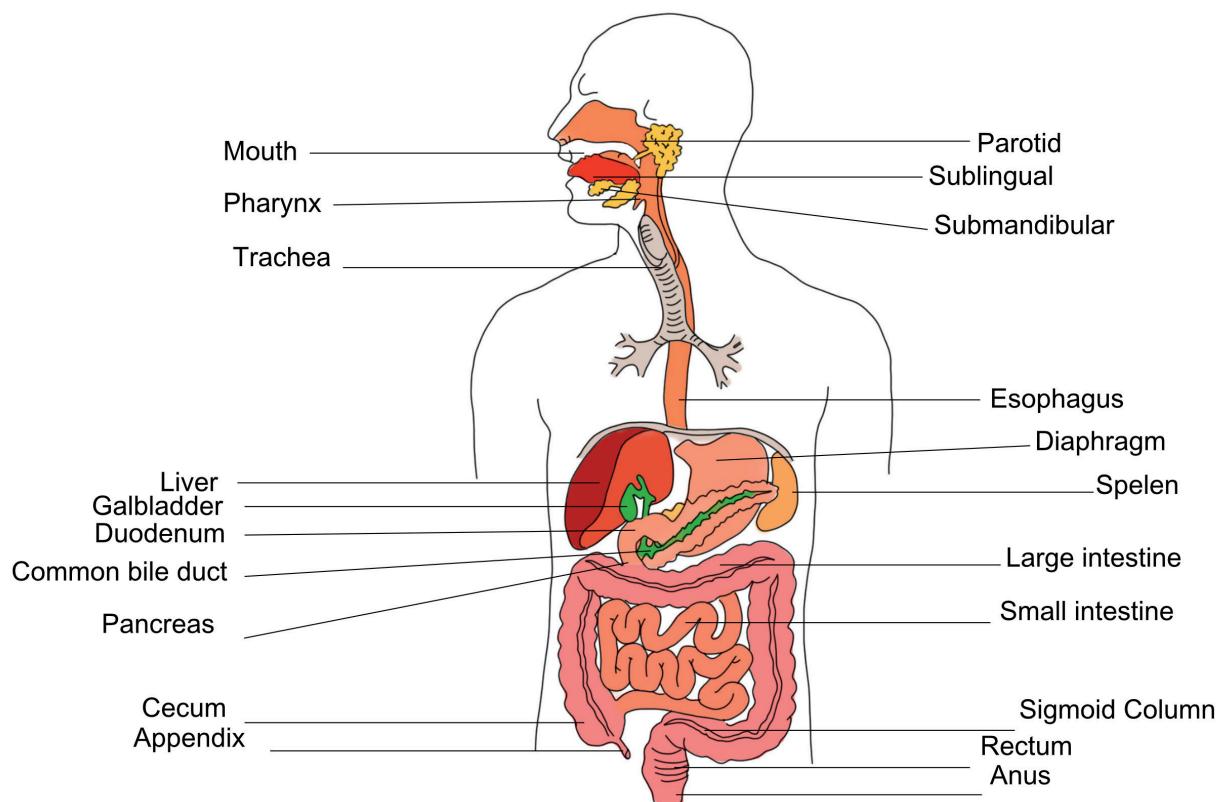
Introduction
Hello, we often eat big, hard, rough and solid food. However, when you go to the latrine, thefeaces that you pass out is soft, smooth and small. What happens to the food inside your body? Why is what you pass out smaller in size than what you take in? In this topic, you are going to learn what happens to food when you take it into the body.

Digestion
Digestion is the process by which food is broken down into small particles that can be absorbed into the body.Digestion begins in themouth and ends in the ileum.

Parts of the human digestive system

Mouth
Pharynx
Trachea
Parotid
Sublingual
Submandibular

Esophagus
Diaphragm
Liver
Galbladder
Duodenum
Common bile duct
Pancreas
Spelen
Large intestine
Small intestine

Cecum
Appendix
Sigmoid Column
Rectum
Anus

Activity
1.   Define the term digestion.
2.   Where does digestion of food;
i)   Begin?
ii)   End?
3.   Draw the digestive system and name any 8 parts.

Lesson 2: Functions of the Parts of the Digestive System

By the end of this lesion, you should be able toexplain the functions of each part of the digestive system.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, in the previous lesson, you learnt about the parts of the digestive system. Today you will learn about the functions of the parts of the digestive system.
Mouth
i)The mouth has teeth that break down food into smaller particles.
ii)The mouth also contains salivary glands that produce saliva. Saliva mixes with food to make it soft.
Gullet (oesophagus)
•It is a passage of food from the mouth to the stomach
Stomach
i)The stomach walls produce a digestive juice called gastric juice. This helps to digest food.
ii)The stomach walls also produce an acid which kills germs that come along with food.
iii)Alcohol is absorbed in the stomach.

The liver
i)The liver produces bile.Bile is stored in the gall bladder.
ii)Bile helps in the digestion of food.
The pancreas
•The pancreas produces pancreatic juice.
Duodenum
•This is the first part of the small intestine.
Ileum
i)Digestion of food ends here.
ii)Digested food is absorbed into the blood stream.
The large intestine
•This is the part where water is absorbed in the colon.
The rectum
•This prepares undigested food into feaces. It also storesfeaces.
Anus
•This consists of muscles that can open and close. This controls the out movement of feaces and gases.
Activity
1.   Give the use of the teeth during digestion.
2.   Mention the digestive juice produced by the liver.
3.   Identify the part of the digestive system where alcohol absorbed.
4.   State the importance of hydrochloric acid during digestion of food.

Lesson 3: Disorders and Diseases of the Digestive System

By the end of this lesson, you should be able to;
i)   give the disorders of the digestive system.
ii)   mention the diseases of the digestive system.

You will need the following materials
Pens, notebook,pencils, rubber

Introduction
Hello, today you are looking at conditions that prevent the digestive system from performing its function properly. These conditions are called disorders. Think of such disorders that can affect the digestive system.

Table showing disorders and diseases of the digestive system

Disease/ disorder	Cause	Signs and symptoms	Prevention/control
Vomiting	•too much alcohol •diseases like malaria, •food poisioning •food allergy •worms •pregnancy	•Throwing up of food from the stomach through the mouth	•Take the patient to a healthcentre for treatment
Indigestion	Not chewing food properly	•A lot of discomfort in the stomach •Burning feeling in the chest cavity •Heart burn •Tiredness	•Chew food properly •Eat what is enough at a go
Constipation	lack of enough roughage in the diet	•Passing out dry and hard faeces •Difficulty in passing out faeces	•Feed on foods rich in roughages e.g. cabbages, spinach, etc. •Drink a lot of fruit juice and water regularly

Diarrhoea	Virus, bacteria or protozoa	•Passing out watery stool	•Give oral rehydration solution (ORS) •Give a lot of fluids •Seek medical attention as soon as possible
Dysentery	Bacteria, protozoa	•Diarrhea with blood stains •Vomiting •Abdominal pain •Headache •Body weakness	•Seek medical attention as soon as possible
Typhoid	Bacteria	•Diarrhoea with mucus •Inflammation of the intestine • Frequent defecation with a lot of pain in the lower abdomen • Headache • Drink clean boiled water • Wash hands with soap and clean water before eating food • Wash hands after visiting the latrine or toilet	• Seek medical attention as soon as possible
Cholera	Bacteria	•Severe and frequent vomiting •It can lead to dehydration and death within 48 hours	•Drink clean boiled water •Drink clean boiled water •Wash hands with soap and clean water before eating food •Wash hands after visiting the latrine or toilet

Appendicitis	Stonesand other indigestible solids get trapped in the appendix	• Inflammation of the appendix leading to pain in the lower abdomen	• Seek medical attention for a surgical operation
Peptic ulcers	Bacteria • Taking long without eating	• Sores in the stomach • Chronic sharp pain in the stomach • Frequent heart burn	• Seek medical attention • Chew magnesium to stop heart burn • Avoid foods that have a lot of acid

Self-testingexercise

1.   Think of what will happen to you if you do not chew food properly.
2.   Suggest a reason why you need to drink enough water after eating food.
3.   Think of a digestive disorder that someone who has no teeth is likely to get.
4.   Think of what will happen if you don't eat food on time.
5.   Why is it good to first sort rice at home before cooking?
6.   Prepare the ORS locally at home using the following materials; salt, sugar, clean cool boiled water

Steps to be followed;

i)   Wash hands with clean water and soap
ii)   Get a clean container and pour one litre of clean cool boiled water
iii)   Measure one levelled teaspoonful of salt.
iv)   Measure eight levelled teaspoonful of sugar
v)   Stir and make a solution
vi)   Taste the solution

Lesson4: Keeping the Digestive System Healthy

By the end of this lesson, you should be able to;
i)   give the behaviours and habits of maintaining proper functioning of the digestive system.
ii)   explain why such behaviours and habits should be maintained.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, today you are going to look at the behaviours and habits you can do to maintain the proper functioning of the digestive system. Mention some of these habits that you can do.
i)   Always prepare and serve food in clean places and using clean containers.
ii)   Wash hands with clean water before handling food.
iii)   Always eat well-cooked food which has been kept in clean utensils.
iv)   Have daily physical exercises to improve the performance of the digestive system.
v)   Donot drink alcohol and avoid smoking.
vi)   Avoid eating stale or rotten food.
vii)   Chew food properly before swallowing it.
viii)   Eat food that make up a balanced diet.
ix)   Have regular and enough meals.
x)   Always eat what is enough at a time.
xi)   Avoid eating leftover food without first warming it.
xii)   Wash fruits and vegetables before eating them raw.
xiii)   Eat well cooked food for easy digestion.
xiv)   Do not eat food that has dropped on the floor.

Self-testing exercise
1.   Why are we advised to prepare food in clean places?
2.   Think of what can happen you eat food with unwashed hands.
3.   Think of the need for performing physical exercises to the body
4.   Today you should participate in preparing food and washing utensils at home
5.   Why should meat or pork be cooked well before eating it?

THEME: THE ENVIRONMENT
Topic: Components of the Environment (Soil)
Lesson 1: TypesofSoil

By the end of this topic, you should be able to;
i)   mention the types of soil.
ii)   givethe characteristics of each type of soil.
You will need the following materials
Pens, notebook,pencils, loamsoil, clay soil and sand soil

Introduction
Hello, in Primary Three,you learnt about soil.
1.   What is soil?
2.   What are the components of soil?
3.   What is soil profile?
4.   Give the types of soil and their uses to people.
Soilis the upper layer of the earth in which plants grow.

Types of soil
The three types of soil include;
i)   Sandy soil
ii)   Loam soil
iii)   Clay soil

Characteristics of the types of soil

Loam Soil	Clay Soil	Sandy Soil
•It is dark in colour •It is well aerated •Contains all soil components in balanced amounts •Contains balanced particles of sand and clay •Good for crop growing because it contains a lot of humus	•It has smooth fine particles and little humus •Holds (keeps) a lot of water •It is sticky when wet and hard when dry	•It allows water to pass through it easily •Its particles are big and rough •Well aerated because of the large air spaces •Lack humus and mineral salts

Uses of soil
i)   Loam soil is used for growing crops because it has a lot of humus.
ii)   Clay soil is used to make bricks, tiles, pots, cups, flower vessels.
iii)   Sandy soil is used to construct or build houses.
iv)   Sandy soil is used to make glass.
v)   Soil is a home to some living organisms like earthworms, termites, squirrels, etc.

Activity
1. Name the type of soil that has big particles.
2. State one importance of each of the following types of soil.
i) Sandy soil
ii) Loam soil
iii) Clay soil
3. Why is sand soil not good for crop growing?
4. Which type of soil holds water for a long time?

Lesson 3: Soil Erosion

By the end of this lesson, you should be able to;
i) identify the agents of soil erosion.
ii) givethe causes of soil erosion.

You will need the following materials
Pen, notebook, pencil

Introduction
Hello, in most cases when it rains heavily, soil is removed from its original place to other places.
How do we call this?
The things that carry this soil are called agents of soil erosion. Soil erosion is the removal of top soil from one place to another.

Agents of soil erosion
i) Strong wind
ii) Fast flowing water
iii) Moving animals

Causes of soil erosion
i) Overgrazing
ii) Deforestation
iii) Over-cultivation
iv) Monocropping
v) Planting crops along the slope
vi) Bush burning

Types of soil erosion
i) Sheet erosion
ii) Rill erosion
iii) Gully erosion
iv) River bank erosion
v) Splash erosion or rain drop erosion

Effects of soil erosion

i)   It causes silting (mud settling in lakes, rivers)
ii)   It makes soil lose fertility (causes soil exhaustion)
iii)   It causes blockage of drainage system
iv)   It washes away plants

Activity
1.   Explain the term soil erosion.
2.   Identify any three agents of soil erosion.
3.   Mention the causes of soil erosion common in your community.
4.   Give two types of soil erosion common in your community.
5.   How does soil erosion affect food production in your community?

Lesson 4: Prevention and Control of Soil Erosion

By the end of this lesson, you should be able to;
i)   State the ways of controlling and preventing soil erosion.
ii)   demonstrate how to control soil erosion.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, today you will learn about how you can control and prevent soil erosion in your community.Soil erosion can be controlled and prevented by practicing the following;
i)   Terracing
ii)   Contour ploughing
iii)   Planting wind breaks
iv)   Cover cropping
v)   Strip cropping
vi)   Afforestation
vii)   Re-afforestation
viii)   Mulching
ix)   Agro forestry
x)   Crop rotation
xi)   Avoiding burning vegetation
xii)   Intercropping (mixed cropping)

Activity
1.   Mention any four ways of controlling soil erosion in your community.
2.   How can soil erosion be controlled in your home compound?
3.   State two ways of controlling soil erosion in hilly areas.
4.   Why do people plant trees in their compounds?

Lesson 4: Soil Conservation

By the end of this lesson, you should be able to;
i)   describe soil conservation.
ii)   discussthe different methods of soil conservation.
You will need the following materials
Pens, notebook,pencils

Introduction
Hello, today you will learn about the good use,management and preservation of soil with its resources. You are looking at the different ways of keeping soil safe without losing fertility. Mention some of these practices.
The methods of conserving soil include; mulching, afforestation, terracing, intercropping (mixed cropping), growing cover crops, planting wind breaks, alley cropping, contour ploughing, strip cropping, crop rotation, mixed farming, agro forestry, controlled grazing.

Mulching

It is the covering of top soil with dry vegetation or plant materials e.g. grass cuttings, maize stalks, dry leaves,etc.

Advantages of mulching
i)   Mulching controls the growth of weeds.
ii)   Mulching improves soil fertility.
iii)   Mulching controls soil erosion by reducing the speed of fast flowing water.
iv)   Mulching maintains water in the soil.

Crop rotation

This refers to the growing of different crops on the same piece of land season after season.

Advantages of crop rotation
i)   It improves soil fertility.
ii)   It controls pests and diseases.
iii)   It controls soil erosion.

Activity
1.   Define the term mulching.
2.   Mention the advantages of mulching.
3.   As a local farmer, think of what you can do to prevent water from getting lost from the soil.
4.   How does mulching control soil erosion?
5.   Carry out those practices that will help your crop grow well like watering the crop, manuring, spraying, weeding, gap filling and others.

Lesson 5: Making Compost Manure

By the end of this lesson, you should be able to:
•   name materials used to prepare compost manure.
•   preparecompost manure.

You will need the following materials
Pens, notebook, pencils, leaves, hoe, stick, water, spade, garden fork, wheel barrow

Introduction
Hello, in this lesson, you will learn the steps that will help you be able to prepare compost manure. Follow the guidelines shown below to prepare compost manure.
Project Work
Making compost manure
1.   Mark an area of 1.5 x 1.5 metres on a flat well drained place.
2.   Dig a hole of about 60cm deep to enable air to pass through freely.
3.   Get materials like household refuse, leftover food, plant materials,
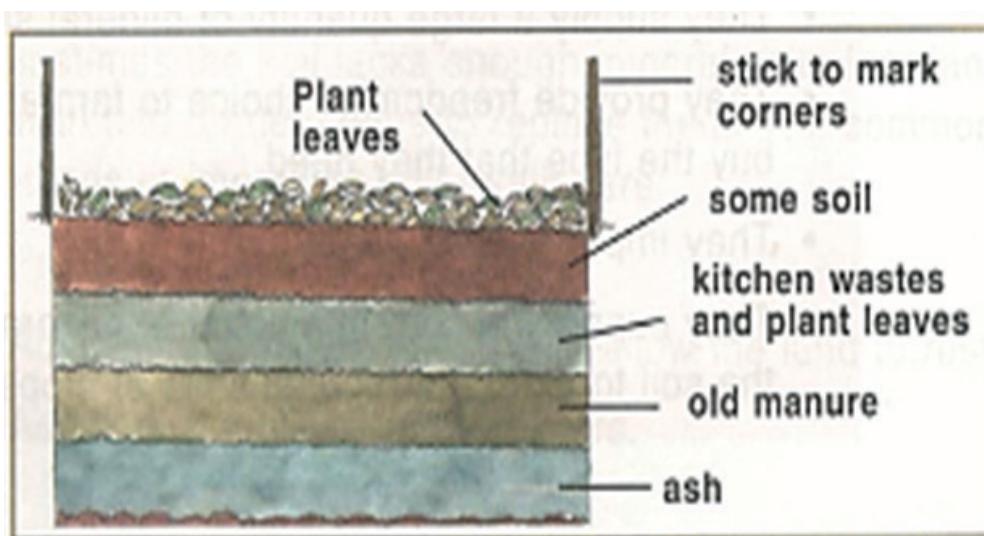
kitchen wastes and spread them evenly over the marked area to a height of about 15cm.

4. Spread some top soil or ash over the layer and water slightly.

5. Continue to spread layers of 15cm thickness and repeat the above process `until the height of the heap is 1.2 metres to 1.5 metres.

6. You will dig three other pits aside for transferring the manure during the turning process.

7. Allow the heap to rot for two weeks.

8. You should keep watering the heap so that it doesnot dry.

9. After two weeks, the heap is turned over. Use a garden fork to remove the top layer and place it inside another marked ground close to the heap.

10. Repeat the procedure until the whole heap has been turned over.

A compost pit

THEME: MATTER AND ENERGY
Topic: Heat Energy
Lesson 1: States of Matter

By the end of this lesson, the learner should be able to:
i)   define matter.
ii)   mention the states of matter.

You will need the following materials
Pens, pencils, notebook, stone, water, balloon, brick, cooking oil

Introduction
Hello, in Primary Four,you learnt about air and properties of air. In this topic,you will learn about things that have weight and occupy space. How do we call anything that has weight and occupies space?
Matter is anything that occupies space and has weight.Matter is made up of small particles called atoms.

States of matter
Matter exists in three states namely;
i)   Solid state
ii)   Liquid state
iii)   Gaseous state

Solidstate
Examples of solids include; stones, tables, chairs, ruler, ice, bricks, wood, books, iron,etc.

Characteristics of solids
i)   Molecules are closely packed together.
ii)   There are strong forces between particles.
iii)   Solids have a definite shape.
iv)   Solids have a fixed volume.

Liquidstate
Examples of liquids include; water, paraffin, milk, soda, urine, blood, cooking oil,petrol, juice, beer,etc.

Characteristics of liquids
i)   Molecules are loosely packed.
ii)   There are weak forces between particles.
iii)   Liquids do not have a definite shape. (Liquids take the shape of a container in which they are).
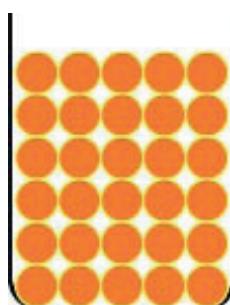
Gaseous state
Examples of gases include; oxygen, nitrogen, carbon dioxide and rare gases.
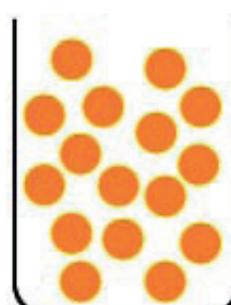
Characteristics of gases
i)   Molecules are far apart.
ii)   There are no forces between particles.
iii)   Gases have no definite shape.
iv)   Molecules move freely.
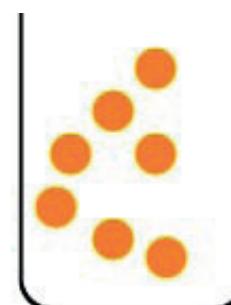
Arrangement of molecules in the states of matter

Solid state   Liquid state   Gaseous state

Activity
1.   Define matter.
2.   Write down the three states of matter.
3.   Why is air regarded as matter?
4.   Draw the arrangement of molecules in solid state, liquid state and gaseous state.

Lesson 2:Energy
By the end of this lesson, you should be able to;
i)   mention the types of energy.
ii)   give the forms of energy.

You will need the following materials
Pens, pencils, notebook

Introduction
Hello, today you will learn about energy. For you to do any work, you need energy. What is energy?Energy is the ability to do work.

Forms of energy
Examples of forms of energy
i)   Heat energy
ii)   Sound energy
iii)   Light energy
iv)   Electric energy
v)   Solar energy
vi)   Chemical energy
vii)   Magnetic energy

viii)   Mechanical energy

Types of mechanical energy
There are two types of mechanical energy. These are;
•   Kinetic energy
•   Potential energy
Kinetic energy
Kinetic energy is the type of energy possessed by an object that is moving.
Examples of objects that have Kinetic energy include;
i)   A ball thrown in air
ii)   An aeroplane flying
iii)   Moving vehicles on the road
iv)   A ball rolling on the ground
v)   Leaves falling to the ground from a tree, etc.

Potential energy
Potential energy is the energy possessed by an object at rest. It can also be defined as the energy possessed by an object by being in a certain position.
Examples of objects having potential energy are;
i)   A pupil sitting on a chair.
ii)   A baby sleeping on the bed above the ground.
iii)   A box placed on the table.
iv)   A teacher standing on a raised stand.
v)   A stone raised above the ground.
vi)   Books in the cupboard.
vii)   A mango fruit on the tree

Heat energy
It is a form of energy that increases the temperature of an object.The sources of heat energy are the sun, burning candle, hot flat iron, burning firewood, electricity.
Uses of heat energy
i)   Heat energy is used for cooking food.
ii)   Heat is used for ironing clothes.
iii)   Heat is used for boiling water
iv)   Heat from the sun is used to dry harvested crops.

Activity
1.   Define energy.
2.   Mention two types of energy.
3.   What type of energy is possessed by a cup placed on a table?
4.   Define heat.
5.   Write two forms of heat energy.
6.   What is the main source of heat on earth?

Lesson 3: Heat Transfer

By the end of this lesson, you should be able to;
i)   mention the ways how heat travels in different states of matter.
ii)   defineconduction, convection and radiation.

You will need the following materials
Pens, pencils, notebook
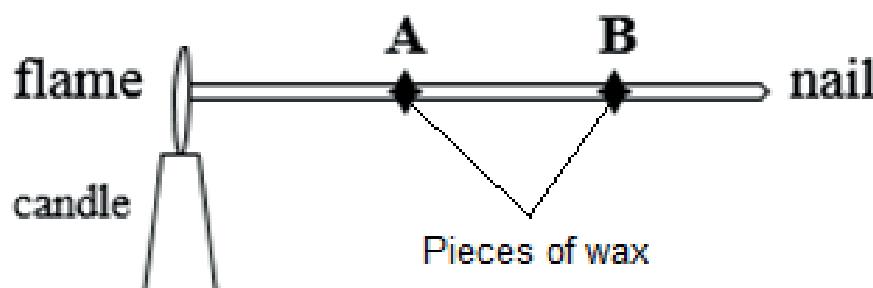
Introduction
Hello, in this lesson, you will learn about how heat moves in different states of matter.There are three ways through which heat travels. They include;
i)   Conduction - solids
ii)   Convection – liquids and gases
iii)   Radiation – space and vacuum

Conduction is the process by which heattravels through solids.
Experiment to show conduction of heat

Convection is the process by which heat travels through liquids and gases.
Experiment to show convection in liquids and gases

1.   Draw a kettle with boiling water
2.   Draw smoke coming out of the kitchen through the chimney

Radiation is the process by which heat travels through space and vacuum.
Examples of radiation in nature

1.   Draw clothes drying under sunshine
2.   Draw a person drying harvested crops
3.   Draw a person warming himself /herself on a fire place

Comparison of heat transfer
•   Heat travels fastest in gases because the molecules are far apart.
•   Heat travels slowest in solids because the molecules are closely packed.

Activity
1.   Name three ways through which heat travels.
2.   In which state of matter does heat travel by conduction?
3.   In which state of matter does heat travel;

i)   slowest
ii)   fastest
4.   By what process does heat from the sun reach the earth?
5.   By what process does heat move through liquids?

Lesson 3: Temperature

By the end of this lesson, you should be able to:
i)   define temperature.
ii)   give units for measuring temperature.

You will need the following materials
Pens, pencils, notebook

Introduction
Hello, in Primary Four,you learnt about temperature as an element of weather.
What is temperature?
Temperature is the degree of hotness or coldness of an object.Temperature
is measured in units called degrees.A thermometer is an instrument used to
measure temperature.

Temperature scales
There is thecentigrade scale or Celsius scale and the Fahrenheit scale,

Heat
Heat is the form of energy that rises the temperature of an object. It makes an
object warm or hot.

Activity
1.   Define temperature.
2.   Mention the units used to measure temperature.
3.   Name the instrument used to measure temperature.
4.   Write down onedifference between heat and temperature.
5.   Mention two temperature scales.

Lesson 4: Thermometers

By the end of this lesson, you should be able to;
i)   name the types of thermometers.
ii)   give the liquids used in thermometers.

You will need the following materials
Pens, pencils, notebook
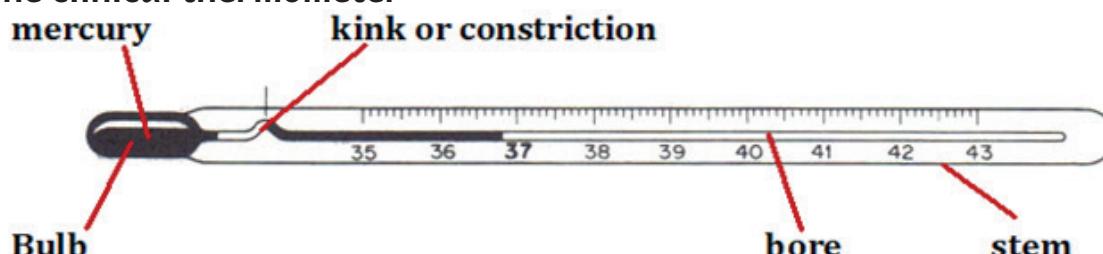
Introduction
Hello, today you will learn about thermometers.A thermometer is an instrument
used to measure temperature.Alcohol and mercury are the two liquids used in
thermometers.

Types of thermometers
i)   The clinical thermometer
ii)   Minimum and maximum thermometer
iii)   Wall thermometer

The clinical thermometer

Importance of each part
Kink / Constriction – Prevents the backflow of mercury before the reading is taken.
Bulb – Stores mercury.
Bore –Allows expansion and contraction of mercury.
Stem –Provides the scale where the temperature is read.

Reasons why mercury is used in the thermometer
i)   Mercury can easily be seen in a glass.
ii)   Mercury is a good conductor of heat.
iii)   Mercury does not stick on the walls of the thermometer.

Activity
1.   Mention two types of thermometers.
2.   Name two liquids used in thermometers.
3.   Why is mercury commonly used in thermometers?
4.   Name the instrument used to measure the human body temperature.
5.   State the use of a kink in a clinical thermometer.

Lesson 4: Converting Temperature
By the end of this lesson, you should be able to;
i)   change from Celsius to Fahrenheit.
ii)   convert from Fahrenheit to Celsius.

You will need the following materials
Pens, pencils, notebook

Introduction
In the previous lessons,you have learnt about temperature scales; the Celsius scale (oC) and Fahrenheit scale (oF). In this lesson, you will learn how to change from one scale to another.
Changing temperature from Celsius scale to Fahrenheit scale
Formula   OF = (OC x 9/5) + 32

Example
Change 20°C to °F
Formula   °F = (°C x 9/5) + 32°
                = (20° x 9/5) + 32°
                = (4 x 9) + 32°
= 36° + 32°
= 68°F
Therefore 20°C = 68°F

Activity 1
Work out the following.
1.   Change 10°C to degrees (°F) Fahrenheit.
2.   Convert 25°C to (°F) Fahrenheit.
3.   Change 50°C to (°F) Fahrenheit.
4.   Change 100° to (°F) Fahrenheit.

Changing temperature from Fahrenheit scale to Celsius scale
Formula °C = (°F – 32) x 5/9
Example.
Change 68° to °C (Celsius)
Formula °C = (°F – 32°) x 5/9
              = (68° –32°) x 5/9
              = 36 x 5/9
              = 4 x 5
            = 20°C
Therefore, 68°F = 20°C

Activity 2
Work out the following.
1.   Convert 32°F to °C (Celsius)
2.   Change 50°F to °C (Celsius)
3.   Convert 77°F to °C (Celsius)
4.   Change 212°F to °C (Celsius)

THEME:SCIENCE IN HUMAN ACTIVITIES AND OCCUPATIONS

Topic: Crop Growing
Lesson1: Tuber Crops

By the end of this lesson, you should be able to;
i)   mentionexamples of tuber crops.
ii)   givethe characteristics of common tuber crops.

You will need the following materials
Pens, pencils, notebook, cassava tuber, potato tuber, yam tuber

Introduction
inPrimary Four,you learnt about growing crops. Mention the different kinds of crops grown in your community. In this topic, you will learn about tuber crops. Tuber crops are crops that store food in the swollen underground stems or roots.
There are two types of tuber crops:
i)   Root tubers
ii)   Stem tubers
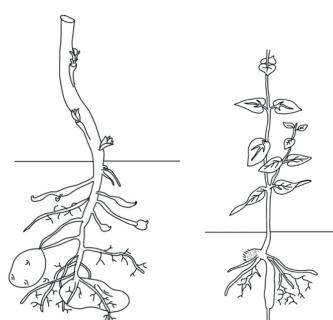
Root tubers
Root tubers are crops which store food in their swollen underground roots. Examples of root tubers include sweet potatoes, carrots, cassava and turnips.

Stem tubers
Stem tubers are crops which store food in the swollen underground stems. Examples of stem tubers include Irish potatoes and yams.

Activity
1.   What are tuber crops?
2.   Name the food value we get from eating tuber crops.
3.   Write down three examples of tuber crops.
4.   State the meaning of stem tubers.
5.   Identify any two examples of stem tubers.

Lesson2: Growing and Caring for Tuber Crops

By the end of this lesson, you should be able to;
i)   mention the ways of growing tuber crops.
ii)   givethe ways of caring for tuber crops.

You will need the following materials
Pen, pencil, notebook, cassava cutting

Introduction
Hello, in this lesson you will learn about how to grow and care for tuber crops.

Growing cassava
Cassava is grown by planting Stem cuttings.Part of the cassava stem is cut and placed in the ground.

Growing sweet potatoes
Sweet potatoes are grown by planting stem cuttings or vines.The vines are planted on ridges or mounds.

Growing carrots and turnips
•Carrots and turnips are grown from seeds.
•Seeds for carrots and turnips can be planted in a nursery bed.
•After some days, seedlings are removed from the nursery bed and taken to the main garden.
•A trowel is a garden tool used for transplanting seedlings.

Growing Irish potatoes
•Irish potatoes are stem tubers.
•The stem tubers have buds or eyes.
•The new plants develop from the buds or eyes.
•Irish potatoes are grown by planting stem tubers.

Growing white yams
•The top part of the stem is cut off and planted in the soil.
•White yams usually grow well in swampy areas.

Ways of caring for tuber crops
•By weeding crops. It is the removal of unwanted plants from the garden.
•By pruning crops. It is the removal of excess branches and leaves from a plant.
•By thinning crops. It is the removal of excess seedlings from the garden.
•By watering crops.

Activity
1.Give one example of root tubers.
2.How are the following tuber crops planted?

Tuber crop	Method of propagation
Cassava	Using stem cuttings
Carrots	
Irish potatoes	
Sweet potatoes	

2.   Mention four ways of caring for tuber crops.
3.   Name the garden tool used for transplanting seedlings.
4.   In which season do farmers plant crops?

Lesson 3:Common Pests and Diseases of Tuber Crops
By the end of this lesson, you should be able to;
i)   mention the common pests that attack tuber crops.
ii)   givethe ways of controlling pests and diseases of tuber crops.

You will need the following materials
Pens, pencils, notebook

Introduction
Hello, in Primary Four,you learnt about crop pests and diseases. In this lesson, you will learn about pests and diseases of tuber crops.
The following are examples of common tuber crop pests;

•   Monkeys
•   Rats
•   Wild pigs
•   Moles
•   Nematodes
•   Squirrels
•   Caterpillars
•   Locusts
•   Army worms
•   Aphids
•   Eelworms

Methods of controlling pests to tuber crops
- By practicing crop rotation to break the life cycle of pests.
- By putting scarecrows in the garden.
- By spraying crops with pesticides to kill pests.
- By building fences around the garden to control big animals. e.g. wild pigs, elephants,etc.
- By using poison
- By trapping animals e.g. rat traps.

Diseases of tuber crops

Cassava	Sweet potatoes	Carrots and turnips
•Cassava mosaic	•Potato blight	•Bacterial wilt
•Leaf spot	•Bacterial wilt	•Leaf spot
•Bacterial blight		•Leaf rust
•Brown streak		

Methods of controlling diseases in tuber crops
- By spraying and dusting crops with pesticides.
- By practicing crop rotation.
- By planting crops which are resistant to diseases.
- By uprooting and burning infected crops.
- By early planting to prevent pests and diseases to multiply.

Effects of pests and diseases on tuber crops
- They reduce on crop yield.
- They cause rotting of tubers.
- Tubers developoholes and leaves.
- The leaves turn yellow.
- The leaves start curling.

Activity
1. What are crop pests?
2. Write down four examples of crop pests.
3. Mention any two ways of controlling pests of tuber crops.
4. Give one sign of pest and disease attack on tuber crops.
5. State two effects of pests and diseases on tuber crops.

Lesson 4: Practices of Growing Tuber Crops (project)

By the end of this lesson, you should be able to plant and care for any tuber crop of your choice.

You will need the following materials

Pens, pencils, notebook, hoe, watering can, poles, grass, carrot and turnip seeds

Introduction

Hello, in this project, you will plant and care for any tuber crop of your choice; cassava, carrots, sweet potatoes,turnips, Irish potatoes, yams. Remember that the crops take different amounts of time to mature.

What is required?

i)   Identify a place where to plant your tuber crop.

ii)   Prepare the place where to plant the tuber crop.

iii)   Apply compost manure that you prepared earlier.

iv)   Plant your tuber crop.

v)   Keep watering in case there is no rain.

vi)   Weed your crops.

vii)   Remove excess seedlings where need be(thinning).

viii)   Control pests and diseases e.g. uprooting infected crops.

ix)   Remove excess branches or leaves from the crop (pruning).

x)   Monitor and care for your crop until harvesting time.

xi)   Harvest your crops.

THEME: THE WORLD OF LIVING THINGS
Topic: Bacteria and Fungi
Lesson 1: Characteristics of Bacteria
By the end of this lesson, you should be able to;
i)   describe the nature of bacteria.
ii)   explain how bacteria reproduce.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, you are going to learn about the very small living organisms that cannot be seen by our naked eyes and have one cell. How do we call these organisms?

Characteristics of bacteria
i)   Bacteria are made up of one cell.
ii)   Bacteria can live in water, air, soil, plants, animals, etc.
iii)   Bacteria don't have a uniform shape and size.
iv)   Bacteria can't be seen with our naked eyes.
v)   A microscope is used to see tiny living organisms like bacteria.
vi)   Bacteria need moisture, food and warmthin order to grow.
vii)   Bacteria reproduce by dividing themselves into parts (by cell division/ binary fission).

Activity
1.   What are bacteria?
2.   How do bacteria reproduce?
3.   Why are bacteria called single celled organisms?
4.   Name the instrument used by doctors to see bacteria.
5.   Mention any one place where bacteria can be found.
6.   Identify one condition needed by bacteria to multiply.

Lesson 2: Useful and Harmful Bacteria
By the end of this lesson, you should be able to;
i)   describe the importance of useful bacteria.
ii)   give the dangers of harmful bacteria.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, in this lesson, you are going to learn about how bacteria are useful in the environment. And also how these bacteria are harmful.
Bacteria are useful in the following ways;
i)   Bacteria cause decay of dead plants and animals in the environment.
ii)   Bacteria reduce the volume of faeces in pit latrines by feeding on it.

iii)   They help in the production of milk products like cheese and yoghurt.
iv)   Nitrogen fixing bacteria found in the root nodules fix nitrogen in the soil.
v)   Bacteria are used in making of vaccines.

Bacteria are harmful or dangerous in the following ways;
i)   They cause diseases to people, animals and plants.
ii)   They make food to go bad (food poisoning).
iii)   Bacteria make milk turn sour.

Activity
1.   State two ways how bacteria are useful in the environment.
2.   Mention two ways how bacteria are harmful.
3.   How are bacteria useful during formation of soil?
4.   Think of a way how bacteria are useful in pit latrines.
5.   Why is it not good to pour chemicals like acids in pit latrines?
6.   Mention any four diseases caused by bacteria in human beings.
7.   Mention one disease in plants caused by bacteria.

Lesson 3: Fungi
By the end of this lesson, you should be able to;
i)   mention the examples of fungi.
ii)   give the uses of fungi.
You will need the following materials
Pens, notebook, pencils

Introduction
Hello, today you are going to learn about a different group of organisms. At first, these organisms were thought to be plants. However, today, we know that they are completely different from plants. These are the fungi.
Fungi
i)   Fungi are not plants because they do not have chlorophyll.
ii)   They do not have true roots.
iii)   They feed by absorbing nutrients from decaying matter and others feed on living things.
iv)   Fungi grow where there is moisture.
v)   Their bodies are made of branched threads called hyphae.
vi)   Some fungi reproduce by means of spores.

Examples of fungi include the following:
Mushrooms, toadstools, yeast, puffballs and moulds
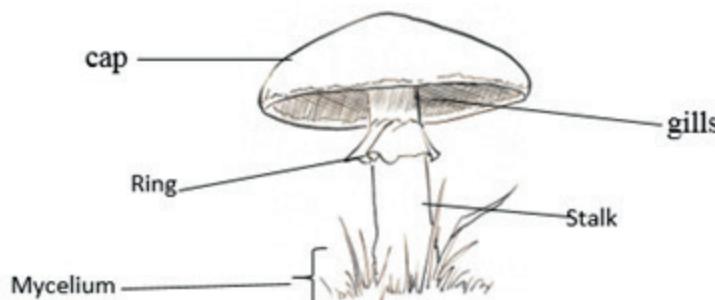
Mushrooms
Mushrooms are examples of useful fungi
•   They reproduce by means of spores.
•   They feed by absorbing nutrients from decaying matter.
•   Some mushrooms are eaten as food.

Structure of a mushroom

Functions of the parts
- Cap:It holds and protects the gills
- Gills: They produce and store spores
- Stalk:It holds the cap in an upright position
- Ring: It holds the cap when it is still young

Uses of fungi
i)   Some fungi are eaten as food e.g. mushrooms.
ii)   Yeast is used to bake bread.
iii)   Yeast is used to ferment alcohol.
iv)   Used in making antibiotics.
v)   They help in the rotting of the remains of dead plants and animals.

Dangers of fungi
i)   Some cause disease to humans, animals and plants.
ii)   Some fungi are poisonous if eaten e.g. toadstools.
iii)   Some fungi cause food to go bad e.g.moulds on bread and food.
iv)   Diseases caused by fungi in plants include; potato blight, maize rust, tomato blight, blast in rice.
v)   Diseases caused by fungi to humans include; ring worm, athlete's foot, candidiasis, jock, itch, thrush, eczema

Activity
1.   Give a reason why fungi are unable to make food.
2.   Mention at least four examples of fungi in the environment.
3.   Draw a mushroom and label all the parts.
4.   How do mushrooms obtain food?
5.   Give two importance of fungi in the environment.
6.   Mention one disease caused by fungi in human beings.

Lesson 4: Prevention and Control of Bacterial/ Fungal Diseases

By the end of this lesson, you should be able to;
i)   mention the ways of controlling diseases caused by bacteria / fungi.
ii)   give the diseases caused by bacteria and fungi.

You will need the following materials

Pens, notebook, pencils

Introduction

Hello, in this lesson, you are going to learn about the ways of controlling and preventing diseases caused by bacteria and fungi.

Ways of preventing and controlling bacterial and fungal diseases

i)   Sterilizing surgical instruments and injection needles using heat from steam or boiling.
ii)   Boiling milk before drinking.
iii)   Cooking food properly before eating.
iv)   Drinking clean boiled water.
v)   Covering and cleaning wounds using antiseptics.
vi)   Spreading beddings and plates under sunlight.
vii)   Washing hands, clothes, the body and brushing teeth, etc.
viii)   Proper ventilation of houses.

Activity

1.   Name one fungus eaten as food.
2.   Give two ways of preventing diseases caused by bacteria and fungi.
3.   Mention two diseases caused by fungi in human beings.
4.   State one difference between bacteria and fungi.
5.   State one reason for boiling water fordrinking.
6.   Explain why we should put ventilators on houses.
7.   Name two diseases caused by fungi to plants.

THEME: MANAGING CHANGES IN THE ENVIRONMENT
Topic: Changes in the Environment
Lesson 1: Types of Changes in the Environment

By the end of this lesson, you should be able to;
i)   give the types of changes in the environment.
ii)   mentionexamples of each type of change in the environment.

You will need the following materials
Pens, notebook,pencils, salt, sugar, water

Introduction
Hello, you are going to learn about changes in the environment. There are several types of changes that take place in the environment. They include;
i)   Biological changes
ii)   Physical changes
iii)   Chemical changes

Biological changes
These are changes that take place in the life of living things.

Characteristics of biological changes
i)   They take place in living things.
ii)   They cannot be reversed (irreversible).

Examples of biological changes

i)   Growth
ii)   Flowering
iii)   Reproduction
iv)   Shedding leaves
v)   Moulting
vi)   Sweating
vii)   Transpiration
viii)   Ripening of fruits

Chemical changes
These are changes that form new substances. They are changes that cannot be reversed (irreversible).

Characteristics of chemical changes
i)   They cannot be reversed (irreversible)
ii)   They form new substances

Examples of chemical changes
i)   Burning
ii)   Decay of matter
iii)   Digestion
iv)   Rusting
v)   Respiration
vi)   Milk turning sour
vii)   Fermentation
viii)   Boiling an egg

Physical changes
These are changes that do not form new substances. They are changes that can be reversed (reversible).

Characteristics of physical changes
i)   They can be reversed (reversible)
ii)   They do not form new substances.

Examples of physical changes
i)   Evaporation
ii)   Condensation
iii)   Deposition
iv)   Sublimation
v)   Freezing
vi)   Melting
vii)   Stretching a rubber band
viii)   Dissolving a solute in a solvent
ix)   Expansion
x)   Contraction

Activity
1.   Name the three types of changes in the environment.
2.   How do we call changes that take place in living things?
3.   Give two examples of biological changes in plants.
4.   Give one difference between physical changes and chemical changes.
5.   Why is rusting regarded as a chemical change?
6.   Mention one characteristic of physical changes.

Lesson 2: Effects of Changes in the Environment
By the end of this lesson, you should be able to;
i)   give the positive effects of changes in the environment.
ii)   mention the negative effects of change in the environment.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, today you are going to learn about the effects or results of the changes you learnt about in the previous lesson. These effects/ results can be good or bad.

Positive (good) effects of changes in the environment
i)   Young organisms are born to replace old ones.
ii)   Old organisms die to create room for younger ones.
iii)   Planting of trees controls soil erosion.
iv)   Planting of trees increases amount of rainfall in the environment.
v)   Houses protect people and their property from bad weather.
vi)   Houses protect people from dangerous animals.
vii)   Roads help to improve transport.

Negative (bad) effects of changes in the environment
i)   Burning pollutes the environment.
ii)   Burning can destroy life and property.
iii)   Over population leads to destruction of forests for farming.
iv)   Rusting makes sharp tools blunt.
v)   Rusting makes tools weak.
vi)   Environmental degradation.
vii)   Natural disaster e.g. floods, earthquakes.

Activity
1.   State one reason why people plant trees in the environment.
2.   Mention one danger of burning bushes in the environment.
3.   Give any two good effects of changes in the environment.
4.   Mention any two bad effects of changes in the environment.
5.   Suggest one way how roads are important in the community.

THEME: SCIENCE IN HUMAN ACTIVITIES AND OCCUPATIONS

Topic: Keeping Goats, Sheep and Pigs
Lesson 1: Breeds of Goats and Sheep
By the end of this lesson, you should be able to;
i)   describe the characteristics of breeds of goats and sheep.
ii)   givethe examples of local and exotic breeds of goats and sheep.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, in Primary Four,you learnt about keeping rabbits. In this topic, you will learn about keeping goats, sheep and pigs.

Breeds of goats and sheep
There are two main breeds of goats and sheep;
i)   Local breeds or indigenous breeds.
ii)   Exotic breeds.

Local or indigenous breeds
These are breeds which have been kept in Uganda for manymany years.
Examples of local breeds

Goats	Sheep
•Mubende goat	•Blackhead
•The small East African goat	•Persian sheep

Exotic breeds
Exotic breeds are breeds which are imported to Uganda from other countries.
Examples of exotic breeds

Goats	Sheep
•Saanen goat	•Hampshire down
•Toggenburg goat	•Corriedale
•Angora goat	•Merino sheep
•Boar goats	•Romney marsh
•Anglo–Nubian goats	•Dorper

Characteristics of breeds of goats/ sheep

Exotic breeds	Local breeds
•They have a specific colour	•They have different colours
•They grow and mature very fast	•They grow and mature slowly
•They are less resistant to diseases	•They are more resistant to disease
•They need good pasture and a lot of water to drink	•They can survive on poor pasture and little water
•They produce a lot of milk, wool and soft meat	•They produce little milk, wool and hard meat
•They cannot withstand harsh weather conditions	•They can withstand harsh weather conditions

Local breeds of animals can be improved by cross breeding.

Activity
1. Mention any two breeds of goats and sheep.
2. Give two examples of local breeds of goats
3. Mention two examples of exotic breeds of sheep.
4. State one reason why people rear goats at home.
5. Name one product got from sheep.
6. Mention one breed of sheep kept for wool production.

Lesson 2: Diseasesof Goats and Sheep
By the end of this lesson, you should be able to;
i) mention diseases of goats and sheep.
ii) givethe ways of controlling diseases of goats and sheep.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, in this lesson, you will learn about the causes, signs and symptoms, prevention/ control of diseases of goats and sheep.

Disease	Cause	Signs and symptoms	Prevention/ control/ treatment
Pneumonia	Bacteria or virus	•Difficulty in breathing •Coughing •Loss of appetite •Discharge from the nose	•Isolate and treat infected animals •Treat early cases with antibiotics
Foot rot	Bacteria	•Limping •Pus comes from the hooves •Bad smell from the hooves	•Clean the animal hooves regularly •Regular hoof trimming •Treat sick animals with antibiotics
Foot and mouth disease	Virus	•Loss of appetite •Lameness •Loss of milk production •Hooves develop pus •Wounds on the tongue	•By regular cleaning of the animal house •Clean the animal feet with an antiseptic solution •Trim the hooves •Quarantine
Nagana	Protozoa	•Fever •Watery eyes •Loss of appetite •High temperature •Anaemia and loss of weight	•Kill the tsetse flies using insecticides •Clear bushes around home •Use tsetse fly traps
Lamb dysentery	Bacteria	•Diarrhoea with blood •Dullness •Staggering while moving •Sudden death in lambs	•Treat infected lambswith antibiotics •Vaccinate twice a year •The animal shed should be cleared regularly
Anthrax	Bacteria	•Loss of appetite •High fever •Sudden death •Shivering •Blood stained faces	•Vaccinate the animals regularly •See a veterinary doctor for advice
Mastitis	Bacteria	•Swollen udder •Pus and blood clots in milk •Udder may stop producing milk	•Clean the milking place •Use a strip cup to detect mastitis disease in milk •Treat the infected animals with antibiotics •Get advice from the veterinary doctor

Heart water	Protozoa	•Fever •Loss of appetite •The tongue comes out	•Early treatment •Control ticks by spraying or dipping animals regularly
Coccidiosis	Protozoa	•Diarrhoea •Weakness of the body •Loss of weight in body •Abortion in pregnant animals	•Give animals clean water and food •Keep the animal house clean •Isolate sick animals and treat them
Nairobi disease	Virus	•Blood stained diarrhoea •Difficulty in breathing •High fever	•No treatment •Control ticks

Activity
1.   Write down any four diseases that attack goats and sheep.
2.   How can foot and mouth disease be controlled on a farm?
3.   Name one disease of goats and sheep spread by tsetse flies.
4.   Mention the disease that attacks the udder of goats and sheep.
5.   Name one disease of goats and sheep that is carried by ticks.
6.   Mention one general way of controlling diseases of goats and sheep.

Lesson 3: Exotic Breeds of Pigs

By the end of this lesson, you should be able to;
i)   mention examples of exotic breeds of pigs.
ii)   give the ways of controlling diseases of pigs.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, in this lesson, you will learn about the exotic breeds of pigs and the causes, signs and symptoms and prevention/ control of diseases of pigs.

Examples of exotic breeds of pigs
•   Large white
•   Landrace
•   Large black
•   Poland China
•   Wessex saddle back
•   Hampshire
A house for pigs is called a pigsty. A pigsty should have a slanting floor for easy flow of droppings and urine.

Disease	Cause	Signs and symptoms	Prevention/ control/ treatment
African swine fever	It is caused by a virus	•High fever •Loss of appetite •Staggering •Diarrhoea with blood •Coughing •Difficulty in breathing	•Isolate infected animals •Kill and bury infected animals •Quarantine the infected area
Piglet anaemia	•Worms e.g.roundworm, tapeworm •Poor feeding (malnutrition)	•Weakness of the body •Rogh skin •Loss of body weight	•Regular deworming •Give piglets iron tablets or injections
Pneumonia	It is caused by a bacteria/virus	•Difficulty in breathing •Coughing •Fever	•Treat early with antibiotics •Maintain proper hygiene
Anthrax	It is caused by a bacteria	•High fever •Weakness •Sudden death •Muscular swelling	•Vaccinate regularly •Kill and bury infected animals
Swine flu	It is caused by viruses	•Fever •Bleeding from all body openings	•Isolate infected animals
Nagana	Protozoa	•Fever •Loss of appetite •Dullness •Loss of weight •Death can occur easily	•Treatment with drugs •Control of tsetse flies

Activity
1. Write down any four diseases that attack pigs.
2. Give one sign of anthrax in pigs.
3. Name one disease of pigs caused by bacteria.
4. Give two reasons why people keep pigs at home.
5. Mention one product obtained from pigs.

Lesson 4: Care of Goats, Sheep and Pigs

By the end of this lesson, you should be able to;
i) mention ways you can care for goats, sheep and pigs.
ii) givethe ways of controlling diseases of pigs.
You will need the following materials
Pens, notebook, pencils

Introduction
Hello, in this lesson, you will learn about the different ways you can care for goats, sheep and pigs on a farm.

Ways of caring for goats, sheep and pigs
i) Proper housing
ii) Feeding them regularly
iii) Practicing correct breeding methods
iv) Controlling diseases and parasites
v) Treatment of sick animals

Activity
1. What name is given to the house for;
i) Goats
ii) Sheep
iii) Pigs
2. Why should we keep animal houses clean?
3. Give a reason why we construct houses for animals.
4. Why should a pigsty have a slanting floor?
5. Mention three ways you can care for animals at home.

THEME: HUMAN HEALTH
Topic: Food and Nutrition
Lesson 1: Breastfeeding

By the end of this lesson, you should be able to;
i) describe what breastfeeding is.
ii) give the advantages of breastfeeding.

You will need the following materials
Pens, notebook, pencils
Introduction
Hello, in this lesson,you are looking at the best food for a newly born baby. What is it called? When a baby is born, the mother feeds the baby on milk from her breast.
Breastfeeding
Breastfeeding is the act of feeding a baby directly on milk produced by the mother's breasts.

Advantages of breastfeeding to a baby
i)   Breast milk contains most food values.
ii)   Breast milk has some antibodies that protect the baby against diseases.
iii)   Breast milk is always at the right body temperature.
iv)   Breast milk is easy to digest.

Advantages of breastfeeding to a mother
i)   Breastfeeding delays the next pregnancy.
ii)   Breastfeeding is cheap since you don't buy it.
iii)   Breastfeeding saves time.
iv)   Breast milk is ever ready to feed the baby.
v)   Breastfeeding creates a love bond between the mother and the baby.
Conditions under which breastfeeding may not be allowed
When the mother is HIV positive (when mother has AIDS)
Activity
1.   Define breastfeeding.
2.   Give one advantage of breastfeeding to the baby.
3.   Name the best food for a new born baby.
4.   Mention one advantage of breastfeeding to the mother.

Lesson 2: Bottle Feeding
By the end of this lesson, you should be able to;
i)   describe what bottle feeding is.
ii)   givethe advantages of bottle feeding.
You will need the following materials
Pens, notebook, pencils, bottles used to feed babies

Introduction
Hello, at home you have ever seen babies being fed on milk using a bottle. How do we call this practice?
Bottle feeding

Bottle feeding is the act of feeding a baby on cow's milk put in a bottle.

Conditions that may lead to bottle feeding
i)   Death of the mother
ii)   When the mother has HIV/AIDS
iii)   When the mother has breast cancer
iv)   When a mother cannot breastfeed due to sickness.

Advantages of bottle feeding
i)   It saves lives of babies whose mothers are dead.
ii)   It gives a mother time to do other activities.
iii)   It is used when the mother cannot produce enough breast milk.

Disadvantages of bottle feeding
i)   Bottles can easily be contaminated by germs e.g. houseflies (be made dirty)
ii)   Bottles are difficult to clean.
iii)   A lot of time is spent when preparing the milk.
iv)   Bottle milk can easily get contaminated.
v)   Cow's milk is hard to digest.
vi)   Milk is expensive to buy.
vii)   Bottle milk does not provide immunity to the baby.

Activity
1.   State any one difference between breastfeeding and bottle feeding.
2.   State any one advantage of bottle feeding.
3.   Mention one situation where a mother is forced to use bottle feeding.
4.   Give any one disadvantage of bottle feeding.
5.   Draw a mother feeding a baby using a bottle.
6.   Write down one disease that makes a mother not to breastfeed her baby.

Lesson 3: Vulnerable Groups

By the end of this lesson, you should be able to;
i)   describe what vulnerable people are.
ii)   givethe examples of vulnerable groups of people.

You will need the following materials
Pens, notebook, pencils
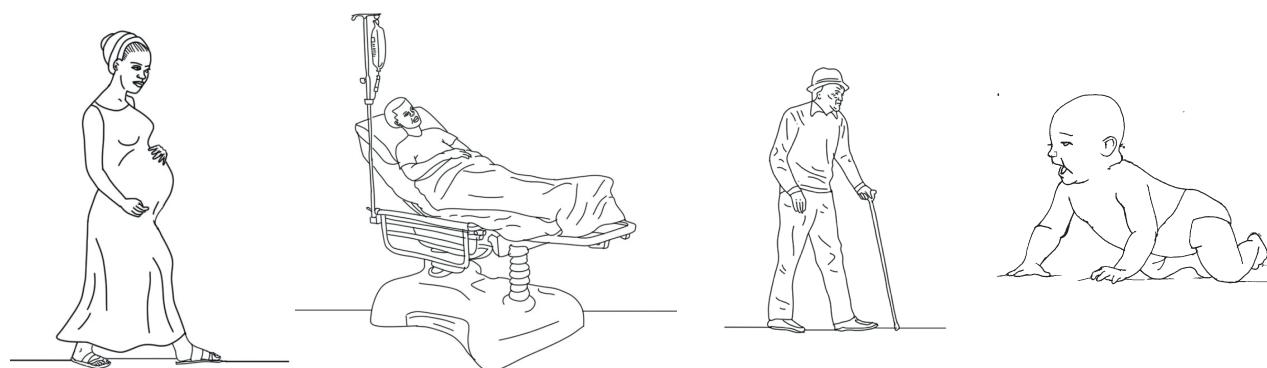
Introduction
Hello, today you will learn about people in our communities who are easily attacked by diseases. These people need special care and special feeding from us the healthy people. How do we call such people in the community?
Vulnerable groups
These are groups of people whose bodies can easily be harmed by diseases due to poor feeding and care.

Examples of vulnerable groups
i)   Pregnant women
ii)   Sick people
iii)   Weaning babies
iv)   The elderly (very old people)
v)   Breastfeeding mothers

How to care for the vulnerable
i)   Feeding them on a balanced diet.
ii)   Encouraging them to take their drugs.
iii)   Taking them to health centres for treatment.
iv)   Bathing them.
v)   Giving them extra fluids.
vi)   Feeding the elderly on food which is easy to chew such as minced meat, fish without bones, mashed fruits.
vii)   Feeding them all the time because they may not eat much food at once.

Activity
1.   Define vulnerable people.
2.   State four examples of vulnerable people in your community.
3.   Mention one way you care for a sick person at home.
4.   Name the practice of introducing solid food to a baby?

THEME: HUMAN HEALTH

Topic: Primary Health Care (PHC)
Lesson 1: Elements of Primary Health Care

By the end of this lesson, you should be able to;
i)   describe the elements of PHC.
ii)   givethe principles of PHC.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello,in Primary Four,you learnt about personal hygiene and sanitation. These are the elements of primary health care. In this topic, you will learn about other elements of PHC.

Primary Health Care (PHC)
Primary health care is the essential care in which individuals, families and communities work together to solve their health problems.

Elements of Primary Health Care
The following elements of PHC help to improve and maintain the health of community members.
i)   Water and sanitation
ii)   Immunisation
iii)   Personal hygiene
iv)   Family planning
v)   Health education
vi)   Food and nutrition
vii)   Maternal and child health care
viii)   Accidents and first aid
ix)   Dental and oral health services
x)   Provision of essential drugs
xi)   Control of communicable diseases and disease vectors

Principles of PHC
Primary health care principles are basic rules which must be followed in carrying out health care programs. They include;
i)   The health care practice should be accessible to all.
ii)   members of the community must be involved in providing the health care service.
iii)   The practice must promote the health of the community
iv)   Equal distribution of health care to everyone.
v)   Activities of the community should be organised according to priorities.
vi)   The care must be accepted by the community
vii)   It must use good technology

Activity
1. Write PHC in full.
2. What is a primary health care?
3. State any three elements of PHC.
4. State any two activities which promote personal hygiene.
5. Write down any two principles of PHC

Lesson 2:Sanitation

By the end of this lesson, you should be able to;
i) mention ways of maintaining sanitation.
ii) give ways of protecting community water sources.

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, in this lesson, you will learn about how to keep the community clean. Community hygiene is the cleanliness of the environment in which a particular community lives.

Management of rubbish and human waste
• Disposing rubbish in rubbish pits and burning rubbish helped to reduce the volume of rubbish in the community.
• Pit latrines and toilets should be constructed in towns and in markets for proper disposal of faeces and urine.Proper disposal of faeces and urine helps people to avoid the spread of diseases.
• Reusing waste plastic containers.Old jerry cans can be used as dustbins, feeding containers for domestic animals and flower vessels.

Protecting water sources
Water sources are places where people collet water for domestic use e.g. wells, dams, taps, boreholes,etc.
Ways of protecting water sources
•By cleaning the water sources regularly, by slashing grass and removing rubbish.
•By fencing the water sources to prevent animals from contaminating the water.
•Latrines should be built at least 30 meters away from the water source to avoid contamination.

Activity
1. Why should every home have a latrine or toilet?
2. Mention one way of maintaining community hygiene.
3. Give oneway water sources can get contaminated.
4. How can community members protect water sources getting dirty?
5. Why should a pit latrine be constructed at least 30 metres away from the water source?

Lesson 3: Roles of Individuals, Families and Communities in Promoting PHC

By the end of this lesson, you should be able to;
i)   mentionthe roles of individuals in promoting PHC.
ii)   give the roles of families in promoting PHC

You will need the following materials
Pens, notebook, pencils

Introduction
Hello, in this lesson, you will learn about the responsibilities of individuals, families and communities in promoting primary health care.

Responsibility of an individual in promoting Primary Health Care
i)   Bathing regularly.
ii)   Brushing teeth every after a meal.
iii)   Ironing clothes and beddings.
iv)   Washing dirty clothes and beddings.
v)   Washing hands before handling food.
vi)   Washing hands after visiting the toilets or latrine.
vii)   Cutting finger nails short.
viii)   Grooming hair.
ix)   Combing the hair.

Responsibility of families in promoting Primary Health Care
i)Feeding family members with a balanced diet.
ii)Proper disposal of rubbish.
iii)Maintaining proper sanitation by keeping the environment clean.
iv)Sharing information on health.
v)Removing breeding places for vectors near home.
vi)Boiling drinking water for family members.
vii)Proper disposal of faeces and urine in toilets or latrines.
viii)Practicing good food hygiene.

Responsibility of a community in promoting PHC
i)Protecting and cleaning water sources to avoid water contamination.
ii)Constructing public latrines in public places e.g. towns, taxi parks and markets.
iii)Distributing garbage containers for proper disposal of rubbish.
iv)Repairing roads to reduce accidents.
v)Participating in immunisation activities.
vi)Construction of rehabilitation centres for the less abled.

Activity
1.   State any two roles of individuals in promoting PHC.
2.   Mention one role of the family in promoting PHC.
3.   Give one duty of the community in promoting PHC.
4.   Mention one way of maintaining sanitation in a home.
5.   Give one disease that can result from staying in a dirty home.

Ministry of Education
and Sports

THE REPUBLIC OF UGANDA

HOME-STUDY LEARNING

P R I M A R Y

5

ENGLISH

August 2020

NCDC
NATIONAL CURRICULUM
DEVELOPMENT CENTRE

Save the Children

TERM 1

TOPIC:: TRAVELLING

1.　Lesson 1: Vocabulary

COVID-19 kills. Wash your hands regularly with clean water and soap.

2.　In this Lesson, you are going to:

- read and spell the given words.
- construct sentences using the given words.

You will need:
- an exercise book/ a notebook, a pen/ pencil and dictionary

What to learn:

You will learn the meanings of new words.

Introduction

Have you ever travelled out of your home? What means did you use? Was it a *bodaboda*, a bus, a taxi, a canoe or other means? Did you like the journey?

Step 1:

Study the picture below and mention what you see.

1. What can you see in the picture?
2. Mention one thing people are doing.

Step 2:

Read and spell these words.

fare   arrive   luggage   passenger   destination
further reach   seat   fast   taxi   coach   by

Construct sentences using some of the words in the table above.

For example:

i) taxi – My father is a taxi driver.

ii) luggage – Tenywa carried luggage on his head.

Step 3:

Now do the exercises below:

A. Fill in the blank space with a suitable word from the list given above.

Example:

The conductor politely asked us to pay the transport **fare**.

1. We put our..............................in the boot of the car before we set off.
2. When we arrived at our......................................., we got off the bus.
3. John went to town................................bicycle.

B. Give the plural forms of the given words.

Example:

passenger   = *passengers*

4. coach
5. seat

C. Use the given words in sentences to show that you know the difference in their meaning.

6. fare
   fair
7. reach
   rich

Lesson 2: Grammar (Adverbs)

COVID – 19 kills. Wear a mask when you are going to public places.

You should be able to:
- learn about adverbs.
- identify adverbs in given sentences.
- write sentences using adverbs.

You will need:

an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

As human **beings,** we can all move from one place to another. One thing you will discover is the difference **in** how we move. Some people move fast while others move slowly. Some people move easily while others move with a lot of effort. Just look at two people doing the same piece of work. One may be enjoying doing the piece of work while the other may not. A word that tells us how something is done is known as an **adverb**. An adverb also tells us when and where something happens.

Step 1:

Let us read these sentences.

1. The bus was moving **fast** as we travelled.
2. Mirembe put her bag **here**.
3. The birds sang **sweetly**.
4. The passengers sat **quietly** in their seats.
5. Mubeezi will arrive **tomorrow**.
6. Anisha cried **softly** when the school closed due to COVID 19.

The underlined words above (**fast, here, sweetly, quietly, tomorrow** and **softly**) are called **adverbs**. These words tell us more about verbs, adjectives or other adverbs.

Step 2:

Underline adverbs in the following sentences.

Example:

The head girl spoke clearly.

1. The Policeman shouted angrily at the driver.

2. The bird sings sweetly every morning.

3. The conductor put our luggage carefully in the boot.

4. My grandfather used to live there.

5. The train reached Tororo late.

Note:

We should note that a number of adverbs are formed from adjectives by adding 'ly'. For example:

Adjective	adverb
soft	softly
glad	gladly
greed	greedily
loud	loudly
careful	carefully
angry	angrily
polite	politely

Step 3: Complete the sentences with the correct form of the given word.

Examples:

a. The dog barked ……………….. (loud)

   The dog barked **loudly**.

b. The stubborn boy was beaten ………….. (bad)

   The stubborn boy was beaten **badly**.

1. Abdu waited ----------------------- for the taxi. (patient)

2. --------------------, the train came on time. (lucky)

3. The children ----------------- wait for the bodaboda at the road. (usual)

4. The conductor talked to the old lady --------------------------.

(nice)

5. Joan answered the question ……………… (easy)

6. Otim ………………………..took the tea. (hurry)

7. The passenger ……………fastened his belt. (quick)

3. Lesson 3: Structure (The use of ……while/While…….)

You are going to:

    a. learn the use of '………while………/While……'

    b. use '…..while…./While…..' in sentences.

You will need:

- an exercise book
- a pen

What to learn: The use of '…. while…../While….'

Introduction:

When you are at home, you and other people at home may not do the same thing at the same time. For example, as you wash utensils, another person is playing football. As you revise, another person is washing clothes. We can use the word 'while' to say that two people are doing different things at the same time.

Step 1:

Study the table below and form **six** sentences, **three** of them:

i.   using '…..while…..' within the sentences.

Example:

We sang songs while it was raining.

ii.   beginning with 'While……'

Example:

While it was raining, we sang songs.

Harriet read her storybook The conductor gave us our tickets Victor slept in the bus We sang songs	while	I was reading my Bible. it was raining. the bus was moving. she was travelling.

Step 2:

Now do the exercises below:

A)   Join these sentences using: …. while ….

Examples:

a. The girls were playing netball. The boys were playing football.

> *= The girls were playing netball while the boys were playing football.*

b. Jesse arrived. It was raining.

> *= Jesse arrived while it was raining.*

1. The bodaboda man listened to the news. He was waiting for the children.
2. Olupot put his books in the bag. He was getting out of the classroom.
3. The headmaster addressed us about COVID 19. We were having lunch.
4. It is not good to get off the bus **when** it is moving.
5. The pupils were singing. They were travelling.

B)Rewrite the above sentences beginning: While…….

> *Examples:*

a) The girls were playing netball. The boys were playing football.

= *While the girls were playing netball, the boys were playing football.*

b) Jesse arrived. It was raining.

= *While it was raining, Jesse arrived.*

4. Lesson 4: Comprehension (Story)

COVID – 19 kills. Wash hands with soap.

You should be able to:
  1. read the story.
  2. answer questions about the story.

You will need:

an exercise book/ notebook, a pen/ pencil and **a** dictionary

Introduction

Have you ever travelled anywhere away from your home? Where did you travel to? How did you travel to that place? (Did you travel on foot? Did you ride a bicycle? Did you travel by bus, by taxi, or by family car?) Well, in this Lesson, you are going to read a story entitled "A Journey to Nabikuyi."

Step 1:

First, study the picture and answer the questions that follow:

  1. What can you see in the picture?
  2. What are these people doing?

3. Have you seen a bus going to your town?

Step 2:
Now read the story at least two times.
A Journey to Nabikuyi
It was on Sunday when we left Kampala for Nabikuyi. The schools had closed due to COVID -19. Our father, who owns a shop in Kampala, decided that we go to the village. This was because even the shops had closed.

In the morning, we went to the bus park. We were to travel by bus. We had our pieces of luggage. Our father booked tickets at the Gateway Coach offices. He gave the fare to the conductor. The conductor gave him the tickets. The conductor then put our luggage in the boot. Then we took our seats. While on the bus, people were talking about Coronavirus and its dangers. We listened to the stories attentively though it made us fear that we would all die.

After nearly half an hour, the conductor told the driver that it was departure time. A man led a prayer, after which, we started the journey. The further we went, the faster the bus moved. When the passengers realised that the bus was travelling at a high speed, they told the driver to slow down. Good enough we were about to <u>arrive in</u> Iganga. In Iganga, we got on *bodabodas* to Nabikuyi. We reached our destination at 2 o'clock.

Step 3:
Answer these questions about the story in full sentences.
a. On which day did the family travel?
b. Why had schools closed?
c. What was the father given after paying the fare?
d. Where did the conductor put their luggage on the bus?

e. What is the name of the village the family travelled to?

f. What happened when the bus was travelling at a high speed?

g. At what time did the family reach their destination?

h. Give one word to mean **arrived in**.

Lesson 5: Comprehension (Dialogue)

You should be able to:
- read and act the dialogue.
- answer questions about the dialogue.

You will need:

an exercise book/a notebook, a pen/ pencil and dictionary

Introduction

Travelling is really very interesting but it has some dangers connected to it. One of the commonest dangers is to do with accidents. But today, there is a risk of catching the most feared disease, COVID-19. Below is a conversation between Juma and Jessica. Read and act it.

Step 1: Read the dialogue

Kintu Gets COVID-19

Juma: Do you know that Kintu is infected with COVID-19?

Jessica: I thought he went to Dubai? When did he come back?

Juma: He arrived last week.

Jessica: How did they know he's infected with COVID-19?

Juma: He was tested immediately he arrived at Entebbe Airport.

Jessica: Where is he right now?

Juma: He has been quarantined in one of the isolation centres.

Jessica: Can we go and visit him?

Juma: No, Jessica. According to the Ministry of Health guidelines, we are not supposed to visit him.

Jessica: Why?

Juma: You can also easily catch the disease since you don't have protective clothes.

Jessica: I see. I hope he gets well soon.

Step 2:

Now answer the following questions in full sentences.

a. How many people are talking in the dialogue?

b. Who is infected with COVID–19?

c. Where are people who get COVID–19 kept?

d. According to the dialogue, where did Kintu get infected with COVID–19 from?

e. When did Kintu arrive at Entebbe Airport?

f. Why can't one visit a place where COVID–19 patients are kept?

g. Mention **one** health guideline concerning COVID–19.

TERM 2
TOPIC:: LETTER WRITING
Lesson 1: Vocabulary

COVID – 19 is real! Don't touch your mouth, eyes and nose.

You should be able to:
- read and spell the words correctly.
- construct sentences using the words given.
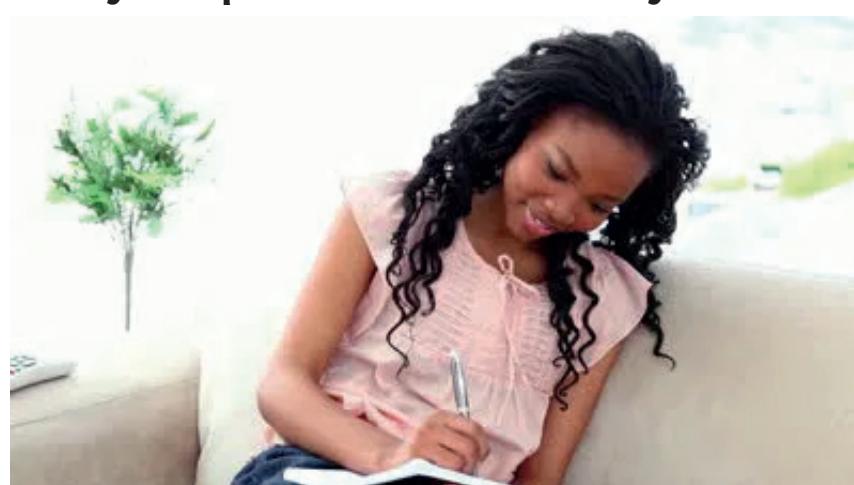
You will need:

an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

You are going to learn about letter writing. Letters are used to communicate to our relatives and friends who stay away from you. There are many types of letters. Some of them are a friendly letter, an invitation letter and official letters. Have you ever written a letter to a friend or a relative? Have you ever received a letter?

Study the picture below and say what is happening.

1. What can you see in the picture?
2. What is he writing?

Step 1:

Read and spell these words.

envelope   invite   occasion   affectionate   reply

friend   address   party   letter   ceremony

Step 2:

Now do the exercises below.

A. Fill in the blank space with a suitable word from the box

Example:

My friend demanded for a **reply** to his letter.

1. After writing the letter, I put it in an.....................................
2. Every letter must have an...to show where the writer stays.

B. Give the plural forms of the following words.

Example:

address – addresses

3. party
4. friend

C. Arrange the words in alphabetical order.

Example:

host, card, writer, invite

= card, host, invite, writer

5. write, invite, reply, seal
6. yours, dear, sender, receiver

Lesson 2: Interjections

Health message: Wear a mask in Public places to avoid Corona Virus infection.

You should be able to:
- use interjections in sentence.
- construct sentences using interjections.

You will need:
an exercise book/ **a notebook**, a pen/ pencil and **a dictionary**

Introduction

Interjections are words that you can use to express a strong feeling. When something is very beautiful, you can say "Wow", that is so beautiful! An exclamation mark "!" is used in interjection.

Step 1:
Read the following examples of interjections:
1. Oh no!
2. Ouch!
3. Excuse me!
4. Gosh!
5. My goodness!

Step 2:
Look at these two sentences:
a) You wrote a very good letter.
b) What a good letter you wrote!
What differences are there between these two sentences? Well,

study the table below.

Sentence (a)	Sentence (b)
Begins with the doer (You)	The doer comes towards the end
Has the word 'very'	Has the word 'What'/'How'
Ends with a full stop	Ends with an exclamation mark
This is a Declarative sentence	This is an Exclamatory sentence

Step 3:

Now do the exercise below.

A.Change the following from Declarative to Exclamatory sentences.

Examples:

a. That is a very expensive envelope.

= What an expensive envelope that is!

b. You look very beautiful in that dress.

= How beautiful you look in that dress!

1. That was a very hard question.
2. The old man is walking very slowly.
3. My cousin has been smartly dressed.
4. Writing letters is a very interesting activity.
5. Ogola drew a very nice picture.

B.Change the following from exclamatory to Declarative sentences.

Example:

How fast he ran!

= He ran very fast.

1. What a long journey that was!

2. What a great person our teacher of English is!

3. How kind a girl Andrina is!

4. Our school looks very beautiful.

5. Kere scored a very wonderful goal.

Lesson 3: Personal Pronouns

Wear Masks in Public places to avoid Corona Virus infection.

You should be able to to:
- learn to use personal pronouns correctly.
- construct sentences using personal pronouns.

You will need:

an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

Pronouns are words used in places of nouns. We use them to avoid repeating nouns. For example:

1. I am going to school.

2. Tom gave **me** the letter.

3. Rose **herself** wrote the letter.

In the above sentences, the underlined words are all pronouns. However, there are different types of pronouns. In this Lesson, you will learn what we call Personal Pronouns.

Step 1:

A Personal Pronoun is a word used in place of the name of a person or thing.

Examples:

Singular	Plural
I	We
you	you
he , she, it	They
Me	Us
him, her, it	Them

Step 2:

Let us study these sentences:

1. Jane invited me to the party.

　　　She invited **me** to the party.

2. The **cat** ran away from the boys.

　　　It ran away from **them**.

3. Musa and **John** have posted the letter.

　　　They have posted **it**.

Step 3:

Rewrite the following sentences and replace the underlined words with pronouns.

Example:

　　　Mary bought an envelope yesterday.

　　　= She *bought an envelope yesterday.*

1. Opio sent us an invitation card.

2. The girls were smartly dressed at Hannah's birthday party.

3. Angela and Brenda are David's sisters.

4. The puppy drank the milk.

5. Martha is one of our guests.

6. Parents are invited to the party.

7. <u>The dog </u>ate the bone.

8. I gave the book to <u>Daniel</u>.

Lesson 4: Composition (Writing an Informal Letter)

COVID -19 can be anywhere. Do not touch objects anyhow in public places.

You should be able to:
- learn the parts that make up an informal letter.
- learn how to write an informal letter.

You will need:

an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

It is important that we communicate with other people from time to time. These people may be living near us or far away from us. How do you communicate with people who are living far away from you? Well, you can either call them by phone, or send them a short message. You could as well send them an email or write them a letter.

In this Lesson, you are going to learn how to write an informal letter. An informal letter is also known as a friendly letter. Have you ever written a letter? If you have, that is great!

Step 1:

The following are the parts that make up an informal letter:
- The Writer's Address – Tells where the writer lives.
- The Date – Tells when the letter was written, for example: 08/05/2020

- The Salutation - The salutation greets the addressee, for example: Dear Mom, Dear Jeremy, Dear Friend, etc.
- The Body -
- The Closing – Yours affectionately, Your friend, Your daughter, etc.
- The Name – this is written in small letters, for example: Dan Ogoso

Step 2:
To understand the above parts of an informal letter better, use the words in the box below to complete the letter.

cards   watch   party   dear
box   friends   beloved

Malir Primary School
P.O...................,
Molo – Totokidwe.
8th July 2020.

...........Mum,

Hope you are all fine at home. I have written to inform you that we shall have an end of year party soon. We are expected to buy gifts for our............................ My best friend is Abdu. He is the school timekeeper. I hope a gift of a....................will be good for him. Mum, will you help me to get a gift for him?

Hope to do some work for you in the garden during the holidays. Parents will be invited and......................... will be sent soon. Hope you will come with Timothy.

See you then!

Your...........................son,
Rashid

Step 3:

Now do the exercise below.
Write a letter to your friend, inviting her to attend your birthday party. In your letter, mention when the birthday is and where the party will be held. Also ask your friend to come with a birthday present. Use your school address.

TOPIC: 5: COMMUNICATION
Sub-topic:: 5B: The Post Office

5.

6. Lesson 1: Vocabulary

You should be able to:
- read and spell the words correctly.
- construct sentences using the words.

You will need:

an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

You have looked at the topic Letter Writing and you now know how to write a friendly letter. After you have written your letter, you yourself may not be able to deliver it to the person to whom you are writing. Someone else may deliver it on your behalf or you may require the services of the Post Office. In this Sub-topic:, you are going to learn about The Post Office.

Step 1:
Read and spell these words.

post	stamp	directory	parcel	money order	box
package	telegram	mail	aerogram	registered mail	

Step 2:

Now do the exercise below.

A. Use the correct form of the word given in brackets to complete

the sentence.

Example:

Did you pick your **parcels** from the Post Office? (parcel)

1. Sarah has already..................................her letter. (post)
2. He sent his letter by a...........................mail. (register)
3. I..Uncle Silva yesterday. (mail)

B. Rewrite the following sentences giving the plural forms of the underlined words.

Example:

It is better for us to use the registered <u>post</u>.

*It is better for us to use the registered **posts**.*

4. Dad bought the <u>stamp</u> from the Post Office.
5. The <u>directory</u> Akisa found at the Post Office helped her so much.

Lesson 2: Structure (The use of '......unless..../Unless....')

You should be able to:
- learn the use of '....unless....../unless.....'
- form sentences using: '....unless....../unless.....'

You will need:
- an exercise book
- a pen

Introduction

Construct some sentences beginning: If.......

Examples:

1. If you come to school early, you will do the test.
2. If Luwiza behaves well, teachers will like her.

Construct some sentences using: ......if.........

Examples:

1. He will post his letter if he goes to the Post Office early.

2. We shall score goals if we play well.

Step 1:

Do you remember negative sentences? What are negative sentences? When you turn the first two examples above negative, you will have:

1. If you do not come to school early, you will not do the test.

2. If Luwiza does not behave well, teachers will not like her.

Now replace 'If' with 'Unless':

1. Unless you come to school early, you will not do the test.

2. Unless Luwiza behaves well, teachers will not like her.

Do not say:

   a) Unless you do **not** come to school early, ...

   b) Unless Luwiza does **not** behave well, ...

This is because 'unless' is used to **mean** 'if.... not.....'. Remember that when a sentence begins with 'Unless', there is need for a comma.

Step 2:

Do the exercise below.

   A)   Rewrite the following sentences beginning: Unless......

Example:

If you do not wash your hands regularly, you will catch COVID-19.

= *Unless you wash your hands regularly, you will catch COVID-19.*

1. You will score high marks if you write well.

2. If you exercise, you will be physically fit.

3. If you go to the Post Office late, you won't post your letter.

4. The postmaster will come here today if my dad's parcel arrives from Kitgum.

5. If you wake up early, you will catch the first bus.

   B)Rewrite the above sentences using: ....unless..........

Example:

If you do not wash your hands regularly, you will catch Covid-19.

= You will catch Covid-19 unless you wash your hands regularly.

TOPIC:: COMMUNICATION
Sub-topic:: 5b: The Telephone

Lesson 1: Vocabulary

WASH HANDS WITH SOAP AND CLEAN WATER TO AVOID GETTING CORONA VIRUS

You should be able to:
- read and pronounce the new words about a telephone.
- spell the new words.
- use the new words in sentences.

You will need:

an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

You are going to learn about: The Telephone. A telephone is a machine used to send messages to others over long distance by electrical means. We use telephones to communicate with one another. Have you ever seen and used it?

Step 1:

Read and spell the following words that are used under *The Telephone*.

telephone   airtime   receiver landline   handset call
mobile telephone   landline   mast   dial   SIM card

Step 2:

Read these sentences.
1. I will <u>telephone</u> my friend tomorrow.
2. I loaded enough <u>airtime</u> in order to call Jane.
3. The <u>receiver</u> of the phone was new.

4. Eleper used a <u>landline</u> to talk to Hawa.

5. Henry moves with his <u>mobile phone</u>.

6. I prefer using a mobile phone to using a <u>fixed line</u>.

7. The MTN network <u>mast</u> is very high.

8. We <u>call</u> our friends every day.

9. I <u>dialled</u> my friend's number and then talked to her.

Step 3:

Some of the words you read in Step 1 are countable nouns. They have plurals.

Give the plural forms of the following words:

Example:

handset – handsets

    a. call ……………………………..

    b. landline ………………………..

    c. receiver ………………………..

    d. fixed line ………………………

    e. SIM card ………………………..

Lesson 2: Use of --- need to ---

You should be able to:

- read the given sentences.
- use --- **need to** --- in sentences.

    You will need:

    an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

We are going to use --- **need to –**

That is something we have to do, or must do or should do.

Step 1:

Read the following words which are similar or related to need to:

i) have to

ii) has to

iii)   ought to

iv)   must

v) should

Step 2:

Read the following sentences.

1. We <u>need to</u> greet our parents every day.

2. You <u>need to</u> pray every day.

Step 3:

Write sentences using: --- need to ---

1. --
----

2. --
----

3. --

Rewrite the sentences using: --- need to ---

Examples:

1. We <u>have</u> to wash our hands with soap and water to avoid COVID
   – 19.

= *We need to wash our hands with soap and water to avoid COVID*
– 19.

2. You <u>must</u> wear masks to avoid corona virus.

= *You need to wear masks to avoid corona virus.*

1. We must stay at home to avoid corona virus.
2. You must wash hand with soap regularly.
3. Ugandans should use sanitizers to fight corona virus.
4. We must wear masks when in public.
5. They have to avoid unnecessary movements.
6. We have to sleep under mosquito nets.
7. Children have to obey elders.
8. The pupils ought to respect teachers.

Lesson 4: Comprehension

You should be able to:

- read the given poem.
- answer the questions about the poem.

You will need:
an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction
We are going to read a simple poem and then answer the questions about it in full sentences.

Step 1:
Read these new words found in the poem.
a) funny   b) terrible
c) affecting   d) millions
e) weapon   f) guidelines

Step 2:
Read these sentences.
1. I saw <u>funny</u> cartoons yesterday.

2. COVID-19 is a <u>terrible</u> disease <u>affecting</u> us.

3. Are <u>millions</u> of people living in Kampala?

4. In order to be good children, we must follow <u>guidelines </u>at school.

5. A <u>gun</u> is a weapon used in war.

Step 3:

Read the poem below at least two times.

When reading this poem,

i) do not open your lips.

ii) do not point your fingers at the words.

> A funny but terrible disease,
> Affecting the whole world,
> Killing millions of people,
> The poor and the rich,
> All in the same boat
>
> A funny but terrible disease,
> A disease which is like a war,
> A war without weapons to fight with,
> But soap, water, sanitizers and masks,
> Let's follow the guidelines to be safe.

Matovu Brian

Step 4:

Answer the following questions in full sentences.

Example:

What is the poem about?

= The poem is about a funny and terrible disease.

a) Who is affected by the disease according to the poem?

b. Who are in the same boat?

c.What is compared to the disease?

e) Write any two things we can use to avoid getting the disease.

i) ……………………………………………………

ii) ……………………………………………………

f) What should we do to be safe?

g. What disease is being talked about in the poem?

h. How many stanzas does the poem have?

i. Who wrote the poem?

TOPIC:: COMMUNICATION
Sub-topic:: 5C: THE INTERNET

Lesson 1: Vocabulary

You should be able to:
- read and pronounce new words.
- spell the words.
- use the words in sentences.

You will need

an exercise book/ notebook, a pen/ pencil and dictionary

Introduction:

You are going to learn about The Internet. The Internet, sometimes called the Net, is a worldwide system of computer networks. It is also a one of the greatest means of communication.

Step 1:

Read and spell these words.

computer	email	folder	café	website	virus
email	search	file	save	delete	sign in

Step 2: Read these sentences.

1. I bought a new <u>computer</u> last month.
2. Tanga received an <u>email</u> yesterday.
3. I stored my messages in the <u>folder</u>.
4. Ayalama visited the Internet <u>café</u> last week.
5. We accessed our exercise on the <u>computer</u>.
6. Our computer has been affected by a <u>virus</u>.
7. I <u>signed in</u> when I wanted to access my email.
8. Otogo saved the work instead of deleting it.

Step 3:

Some of the words you read under **Step 1** about the Internet are countable nouns. They have plurals.

Give the plural forms of the following words.

Examples:

a) email   –   emails

b) computer   –   computers

   1. virus   –   …………………………

   2. website   –   …………………………

   3. file   –   …………………

   4. internet café   –   …………………………

   5. search   –   …………………………

Lesson 3: Use of --- in order to ---/In order to----

You should be able to:

- read the given sentences
- use --- **in order to ---/In order to------** in sentences

You will need:

an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

Whenever you want to do something, you must ask yourself why you want to do it. In other words, there must be a reason as to why you want to do it. In this Lesson, you are going to use --- in order to ---/In order to---- in sentences.

Step 1:

We use --- *in order to ---/In order to----* to talk about the reason for doing something. These structures are similar to --- in order to ---:

--- so as ---

--- so that ---

--- wanted to ---

Examples:

1. I bought a computer in order to communicate with my friends easily.
2. In order to post a letter, Japien went to the Post Office.

Step 3:

A) Rewrite following sentences using: --- in order to ---

Examples:

a. He logged onto Yahoo so as to read his mails.

= *He logged onto Yahoo in order to read his mails.*

b. Henry washed his hands with soap. He wanted to avoid catching COVID-19.

= *Henry washed his hands with soap in order to avoid catching*

COVID-19.

1. We used sanitizer. We wanted to avoid getting corona virus.
2. He bought a smart phone. He wanted to use the internet.
3. We must use masks so as to avoid getting corona virus.
4. We ought to avoid shaking hands so as to avoid getting corona virus.

B)Rewrite the following sentences beginning: In order to................

Examples:

a. He logged onto Yahoo so as to read his mails.

= In order to read his mails, he logged onto Yahoo.

b. Henry washed his hands with soap. He wanted to avoid catching COVID-19.

= In order to avoid catching COVID-19, Henry washed his hands with soap.

5. We should not share masks so as to avoid getting corona virus.
6. We must follow guidelines about corona virus so as to stay safe.
7. We should be literate so as to use the Internet.
8. Father provided basic needs to his children. He wanted them to grow well.

Internet cafe   sanitise   computer mask   wash   leave   soap

TOPIC: 6: CULTURE
Sub-topic::: 6A: NATIONALITIES
Lesson 1: Vocabulary

WEAR A MASK WHEN IN PUBLIC TO STAY SAFE AND HEALTHY

You should be able to:
- read and pronounce new words.
- use new words in sentences.

You will need:
an exercise book/ a notebook, a pen/ pencil and a dictionary
Introduction
You are going to learn about culture and nationalities.
- Culture is the way a particular group of people behave.
- Nationality is the status of belonging to a particular country.
- We form nationalities from countries.

Step 1:
Read and spell these words.

Step 2:
Now do the exercises below.
Use the correct form of the word given in brackets to complete the sentence.
Example:
Asamait is a **Ugandan** athlete. (Uganda)
1. Uganda has received some.....................................doctors.

(China)

2. The............................are good at making cars. (Japan)

3. Some..............................have settled in Uganda. (Sudan)

4. One of my close friends is an................................. (America)

Arrange the following words in alphabetical order.

Example:

Togolese, Jamaican, Nigerian, Cameroonian

= Cameroonian, Jamaican, Nigerian, Togolese

1. Rwandan, Brazilian, French, Indian

2. English, Tanzanian, Scottish, Kenyan,

Lesson 2: Use of --- not *a / an* --- but *a / an* ---

You should be able to:
- read the given sentences.
- use --- not *a / an* --- but *a / an* --- in sentences.

You will need:

an exercise book/ **a notebook**, a pen/ pencil and **a dictionary**

Introduction

In English, we can use the word 'but' to differentiate people. In this Lesson, you are going to construct sentences using: --- not *a / an* --- but *a /an* ---

Step 1:

Read these sentences:

1. I am not a Kenyan but a Ugandan.
2. She is not a Kenyan but an Indian.

Now construct your own meaningful sentences using: --- not *a / an* --- but *a /an* ---

i)   ....

ii)   ....

iii)   ....

iv)   ....

Step 3:

Make **8** meaningful sentences from the table.

Mulongo			American			Indian
She		not a	Japanese		a	Rwandan
Ali	is		French	but		Scottish
He		n o t	Ugandan		an	Congolese
Amos		an	Indian			Sudanese
Anita			Kenyan			Tanzanian

Example:

= Ali is not an American but an Indian.

1. ....

2. ....

3. ....

4. ....

5. ....

6. ....

7. ....

8. ....

Lesson 3: Comprehension (Passage)

You should be able to:

- read the given text (passage).
- answer questions about the passage.

You will need:

an exercise book/ notebook, a pen/ pencil and dictionary

Introduction

You are going to read a passage and answer **the** questions about it in full sentences.

Step 1:

Read the given passage at least two times.

My name is Namudira. I am a Ugandan. I speak Lunyole. I live in Butaleja District in a village called Namulo. I have two friends. My best friend is Betty. She is a Kenyan. My other close friend is Lee. He is a Chinese. His parents work in the rice scheme which is in our district. I respect my friends' cultures very much. For example, I do not laugh at what they eat because I

know they also do not eat what I eat.

While at school, all children from different parts of the world work together. I love listening and learning the different languages spoken by my fellow pupils. They are indeed very interesting languages. The language that interests me most is Chinese. Have you ever heard a Chinese speak?

There are a number of clubs at our school but the one which has more members is the Cultural Club. Every year the club organises a cultural festival. In this event, there is singing and dancing competition. Different cultures compete and entertain people as well. Children usually dress in traditional wear. Parents also attend and they must also dress traditionally. It is really a wonderful day at school!

Step 2:

Now answer these questions about the passage in full sentences.

    Example:

    Who is the writer of the passage?

    = The writer of the passage is Namudira.

a) Which language does Namudira speak?

b) In which district does Namudira live?

c) From which country is Lee?

d) How does Namudira respect her friends' cultures so much?

e) What does the writer love?

f) Which language interests the writer most?

g) Which club in the writer's school has more members?

h) What do different cultures do when cultural festivals are organised?

TOPIC: 6: CULTURE
Sub-topic: 6B: Languages

Lesson 1: Vocabulary

You should be able to:
- read and spell the given words.
- use the given words in sentences.

You will need:

an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

You spend most of daily life speaking. There are a number of reasons as to why you speak. Can you mention some of the reasons why you speak? When you speak, you use a language. Which language do you use? Which other languages are used in your area? Do you understand or can you speak all languages used in your area? In this Lesson, you are going to learn about some of the languages spoken not only in Uganda but in other parts of the world as well.

Step 1:

Read and spell these words.

Luganda   Lumasaba Runyankitura   Luo Ateso   Kiswahili
French   English   German   Latin   Chinese   Ibo Lingala
Kinyarwanda

Step 2:

Do the exercises below.

A. Complete the table below by filling in the missing parts.

Language	People speaking the language
Luganda	Baganda
	Chinese
English	
	French

Lumasaba	
	Basoga
Akarimojong	
	Acholi
Runyakitara	

B. Arrange the given words in alphabetical order.

1. Lunyole, Kiswahili, Lugbar, Kumam
2. German, Spanish, Arabic, Greek

Lesson 2: Comprehension (Poem)

You should be able to:
- read and recite a short poem.
- answer questions about the poem.

You will need:

an exercise book/ **a notebook,** a pen/ pencil and **a dictionary**

Introduction

In the previous Lesson, you learnt about different languages. Now I want you to answer the following questions:

a) Which people mainly speak **Japadhola?**

b) By whom is Lutooro spoken?

c) Which language do the Basamia speak?

d) Which language is spoken by the Sabiny?

e) Which people mainly speak Luganda?

Step 1:
Step 1: Read the Poem below and answer the questions that follow in full sentences.

Languages
Languages, Languages, Languages!
Different people speak different languages.
People from China speak Chinese.
People from France speak French.
People from Spain speak Spanish.
Different people different languages!

Languages, Languages, Languages!
Uganda has many languages.
One country many languages
Lusoga**, Lugbara**, Luo, Luganda, name it.
English brings Ugandans together!
One country, different languages!

Languages, Languages, Languages!
Go to England and learn English.
Go to Italy and learn Latin.
Go to Nigeria and learn Ibo.
We should all speak one language.
Different people one language!

By **Jireh Atugonza**

Step 2: Answer the following questions in full sentences.

1. What is the poem about?

2. What do different people do according to the poem?

3. According to the poem, which country has many languages?

4. What does English do according to the Poem?

5. How many languages have been talked about in the poem?

6. Why is English the language that brings Ugandans together?

7. How many stanzas has the poem?

8. Who wrote the poem?

TERM 3

TOPIC: 7: PEACE AND SECURITY

Lesson 1: Vocabulary

OBSERVE SOCIAL DISTANCING AND STAY SAFE!

You should be able to:
- read and spell the given words correctly.
- use the given words in sentences.

You will need:
an exercise book/ notebook, a pen/ pencil and dictionary

Introduction

All of us need peace and security in our homes, schools, communities and in our country. By doing good things in the places we stay in, we promote peace and security. However, there are some people who do bad things and bring insecurity in our communities. Such people are dealt with by special people in our community. Who are these special people?

Step 1:
Read and spell these words.

cell	army	arrow	case	gun	court
judge	crime	police station	security		report
handcuffs	magistrate	witness	defence		peace

Step 2:
Read these sentences.
1. The murderer had a <u>case </u>to answer in court.
2. The <u>police</u> have arrested the thugs.

3. The man committed *a* <u>crime</u> yesterday.

4. The thief slept in the <u>cell</u> for a night.

5. The <u>army</u> of Uganda is very strong.

Step 3:

Now do the exercises below.

A. Use the correct form of the word given in brackets to complete the sentence.

Example:

1. Our villages are very………………………even at night. (security)

2. The………………………has been sentenced to **life imprisonment**. (crime)

3. Did the……………………visit your school yesterday? (report)

4. Uganda is a………………………country, isn't it? (peace)

B. Use the given words in sentences to show that you know the difference in their meaning.

Example:

peace: *We have peace in Uganda.*

piece: *I ate a piece of meat yesterday.*

5. cell …………………………………………………………………

      sell …………………………………………………………………………

6. court ……………………………………………………………………

7. coat ……………………………………………………………………

C. Give the plural form of the given word.

    Example:

    judge   =   *judges*

8. army

9. police station

Lesson 2: Structure (Use of: --- so --- that ---)

You should be able to:
- read given sentences.
- use --- **so** --- **that** --- in sentences.
  You will need:
  an exercise book/ **a notebook**, a pen/ pencil and a dictionary

Introduction

Normally, when something is in a high degree, we use the word 'very'. 'Very' also means 'extremely'. There are also other words that we can use to mean the same, for example 'too' or 'so'. In this Lesson, we are going to learn about the use of: --- so --- that ---. We use --- so --- that --- to emphasize quality

Step 1:

Read these sentences.

1. The girl is so fat that she cannot run.

2. Our teacher is so good that all pupils love her.

Construct sentences using: --- so --- that ---

1. ………………………………………………………………………………
2. ………………………………………………………………………………
3. ………………………………………………………………………………

Step 2:

Do the exercise below.

Read the given sentences and join them using: --- so --- that ---

Examples:

a. The village has very many thieves. There is no peace.

= The village has so many thieves that there is no peace.

b. Our village is very peaceful. You cannot find any robber in it.

= Our village is so peaceful that you cannot find any robber in it.

1. The cell was very dark. The criminals could not see anything.
2. The thug was very strong. The askari could not arrest him.
3. We were very tired. We could not arrest the thieves.
4. The police officers were very alert. They shot all the terrorists.
5. The army men were very active. They arrested all the criminals.
6. The kidnapper was very tired. He could not run.
7. The army officer is very kind. Many villagers love him.
8. The thieves ran very fast. The police could not arrest them.

7. Lesson 3: Composition (Jumbled Sentences)

You should be able to:
- read the given sentences.
- arrange sentences to form a true story about **A Thief.**
  You will need:
  an exercise book/ **a notebook**, a pen/ pencil and **a dictionary**

Introduction

You are going to read sentences in **a wrong order**. Then arrange them to form a true story.

Step 1:

Read these sentences which are in **a wrong** order at least two times before arranging them.

   a) The man did not answer but continued to move very fast.
   b) On my way, I saw a man carrying a bunch of matoke.
   c) One day, I was going to school.
   d) The villagers chased him and caught him.
   e) He then started running.
   f) Suddenly I saw a mob following him.

g) Lastly, he was taken to the police station.

h) I asked him where he had got the matoke.

i) They were carrying sticks and machetes.

j) When the man saw them, he dropped the matoke.

Step 2:

Draw a table to help you arrange the above sentences and read the sentences according to the order you have given on the table. You can make changes if necessary.

Step 3:

Rewrite the sentences following that order in which you have arranged them on the table.

Step 4:

Read through the sentences to see that the words are spelt well and that the sentences are grammatically correct.

TOPIC: 8: BANKING
Lesson 1: Vocabulary

COVID – 19 KILLS; WEAR A MASK WHEN GOING TO PUBLIC PLACES

You should be able to:
- read and spell the given words.
- construct sentences using the given words.
  Y**ou will need:**
- an exercise book/ **a notebook**, a pen/ pencil and **a dictionary**

What to learn

You will learn the meaning of new words about Banking.

Introduction

Where do you keep money when you get any? Do you keep it in the box or suitcase or piggy bank? Have you ever gone to the bank?

Step 1:

Study the picture below.

Answer these questions in full sentences.

1. What do you see in the picture?

2. Name any two banks you have heard of.

3. Why do people go to the bank?

Step 2:

Read and spell these words.

account   ATM   bank   cheque   deposit   save teller

withdraw balance   credit   cashier   manager

Step 3:

Now do the exercises below.

A. Use the correct form of the word given in brackets to complete the sentence.

Example:

Have you **saved** any money in your piggybank? (save)

1. My father is a...............................in that bank. (manage)

2. **Mother** has just................................some money from her account. (withdraw)

3. That is the shop in which my uncle works as a........................ .... (cash)

B. Write these abbreviations in full.

4. a/c

5. ATM

C. Rewrite the sentences giving the plurals of the underlined words.

6. The teller in that bank will be rewarded at the end of the year.

7. The cheque he gave us bounced.

Lesson 2: Structure (The use of '... as soon as.../As soon as....')

COVID-19 IS REA! AVOID GOING TO CROWDED PLACES.

You should be able to:
1. Learn the use of '.....as soon as..../As soon as.......'
2. Form sentences using: '.....as soon as..../As soon as.......'
   Y**ou will need:**
   an exercise book/ **a notebook,** a pen/ pencil and **a dictionary**

What to learn

You will learn about the conjunction: '.....as soon as..../As soon as.......'

Introduction

8.   Usually, when we want to say that one thing happens right after another, we can use 'immediately'. We can also use 'as soon as'. In this Lesson, you are going to learn the use of 'as soon as' both at the beginning and within the sentence.

Step 1:

Study the following sentences:
1. Mirembe went to the bank as soon as it stopped raining. /As soon as it stopped raining, Mirembe went to the bank.
2. I joined the queue as soon as I reached the banking hall. /As soon as I reached the banking hall, I joined the queue.

Construct some three sentences using: ......as soon as.........

   a. ....
      ....
   b. ....
      ....

c. ....
....

Step 2:

Do the **exercise** below.

A. Rewrite the following sentences using: ....*as soon as*...........

Example:

The cashier gave me a receipt immediately I paid in the money.

= The cashier gave me a receipt as soon as I paid in the money.

1. The bank manager greeted us immediately she saw us.
2. Immediately I got into the banking hall, power went off.
3. The teller gave Dad the money he wanted immediately he presented the **withdrawal** form to her.
4. Immediately it clocked five, the bank was closed.

B. Rewrite the following sentences beginning: As soon as...........

Example:

The cashier gave me a receipt immediately I paid in the money.

= As soon as I paid the money, the cashier gave me a receipt.

1. It started raining immediately we reached school.
2. Immediately the match ended, we went back to the dormitory.
3. The children sanitised their hands immediately they reached the bus station.
4. Immediately the anthems ended, the head teacher addressed us.

9. Lesson 3: Composition (Guided Composition)

You should be able to:

- read the composition.
- fill in the blank spaces.

  You will need:

  an exercise book/ a notebook, a pen/ pencil and a dictionary

Introduction

Have you ever been to a bank? If yes, which bank was it and what had you gone to do there? Say something about the banking hall. Were there many people? What were those people doing?

Step 1:

Read the words below two times.

deposited	cashier	account	bank
signature		credit	balance	filled
forms	kept		

Step 2:

Fill the blank spaces with suitable words from the box.

Read the composition below at least two times.

Last Monday, Mzee Kalori went to the ……………… He wanted to deposit some money on his ……….. He had sold a lorry full of matoke. His money would be ………………… in the bank. He went to the counter and picked some ……………..so that he could fill them.

However, since he last …………..…………some money on his account two months ago, he first filled a balance inquiry form. He took it to the …………..……………because he wanted to know how much was there. The cashier checked and wrote for him the …………..………

He was happy that he had some …………….……… on his account. He then………………………………… the deposit form and, with the money he wanted to deposit, he handed it to the cashier. The

cashier studied the deposit form. He told Mzei Kalori that he had forgotten to put his....................................so he had to do so.

Step 3:

Read the composition and see whether the blank spaces have been filled with suitable words.

Ministry of Education
and Sports

THE REPUBLIC OF UGANDA

HOME-STUDY LEARNING

P R I M A R Y

5

SOCIAL STUDIES

August 2020

Term 1

Topic 1:The Location Of Uganda

Lesson: Districts that Form Uganda

You shouldbe able to:

i)   locate the district where you live.

ii) identify the neighbouring districts to the district where you live.

You will need:

– notebook

-   pen
-   atlas
-   textbook— Pupil's Book 5

Introduction

In Primary Four you learnt about your district.

In this lesson, you willlearn about other districts of Uganda.

Procedure

Step I

In which districtisyour school located?

In which region of Uganda is your school located?

Uganda has four regions namely:
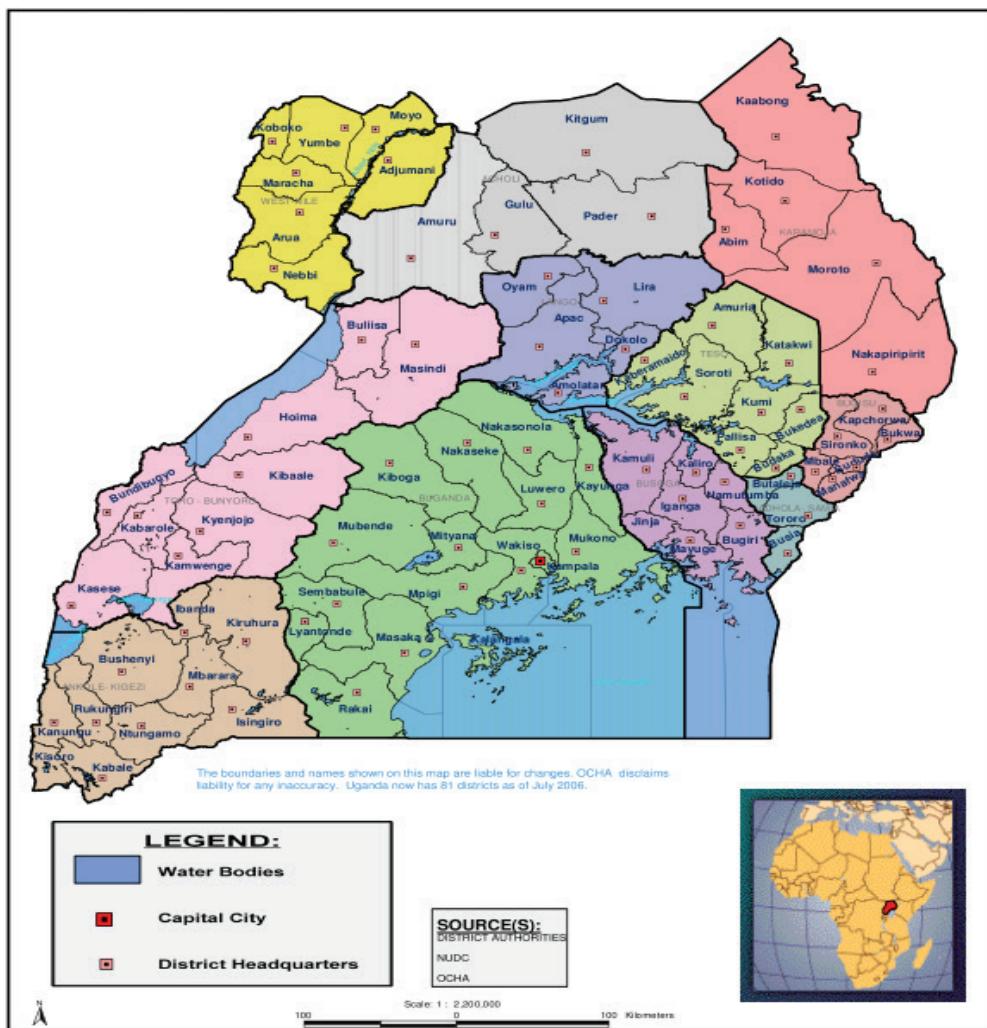
• Northern
• Eastern
• Western
• Central

It is important to note that Uganda had many districts totaling to 135 in number (by 2019).

Each region has a specific district.

Step II

A map of Uganda showing district

Lemukol is a resident of Moroto district in North Eastern Uganda.

Locate Moroto on the map given above and the region where it is found.

You can now study the map of Uganda above:

1. Find out from the map the district where your home is located.
2. Find out from the map the region where your home district is found.
3. Identify the neighbouring districts to your home district in the fol-
   lowing directions:
   a) North
   b) West
   c) East
   d) North East

Lesson: Locating Uganda on the map of East Africa

You shouldbe able to:

i)   give themeaning of the following terms:
        Latitudes and longitudes
ii)   locate Uganda on the map ofEast Africa.

You will need:

-       notebook
-       atlas
-       pen
-       coloured pencil

Introduction

In this lesson you are going to look at the location of Uganda on the map of East Africa.

Procedure

i)   Draw a circle on a sheet of paper. In the circle you have drawn add lines crossing. Try describing those lines using a compass direction which you learnt about in primary four. For example, the linesthat run from the East to the West.
ii)   Draw another circle in your exercise book. This time draw lines moving from the top to the bottom. Try describing those lines you have drawn using a compass direction.
iii)   Now we can name those lines as
        a) Lines of latitude
        b) Lines of longitude

Summary

Lines of latitude run from East or West while Lines of longitude run from North or South of the Equator.

More practice

i)   Draw another circle in your exercise book. This time draw lines moving from the top to the bottom. Try describing those lines you have drawn using a compass direction.
ii)   Now we can name those lines as
        a) Lines of latitude
        b) Lines of longitude

Lesson: LocatingUganda's Neighbours

You should be able to:

i)   Try to locate countries that share boundaries with Uganda.
ii)   Identify the compass directions of Uganda's neighbours.

You will need:

- pencils
- notebook
- atlas
- pen

Introduction

In this lesson you will be learning about the countries that are neighbours of Uganda and the compass directions in which they are found.

Procedure

i) Uganda shares boundaries with the following countries:
   a)   South Sudan– in the North
   b)   Democratic Republic of the Congo(DRC)– in the West
   c)   Tanzania– in the South
   d)   Rwanda– in the South west
   e)   Kenya– in the EastYou will find out that these countries are found in different directions from Uganda.

You will need:

- water
- sheets of paper
- cutting blade
- hardboard

Activity

1. Identify the neighbouring countries of Uganda to the following directions.
   a) North
   b) East
   c) South
   d) West

2. With the help of an adult prepare clay and model the map of Uganda. Using the clay show its neighbours using seeds.

Lesson: Elements of a Map

You should be able to:

i)   write the elements of a map.

ii)   identify some of thefunctions of each element of a map.

You will need:

- pencils
- textbooks
- ruler
- atlas
- notebook
- colour

Introduction

In Primary Three and Four you learnt about the meaning of a map. In this lesson, you are going to describe the elements of a map.

Procedure

Step I

i)   There are five elements of a good map. List them.

ii)   Give the functions of each element of a good map.

Step II
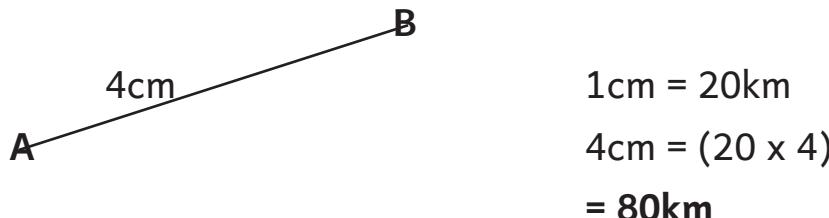
i)   **A scale** is used to find distance on a map in relation to the distance on ground.

You need the following materials to measure distances between places on a map.

- pencil
- ruler
- compass
- thread

When finding distance between two places using a ruler, that is,**A** and **B**.

For example;

The distance from **A** to **B** is 4cm. What is the distance if the scale is 1cm representing 20km.

4cm

1cm = 20km

4cm = (20 x 4)

= 80km
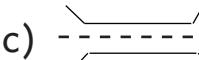
Types of scale

a)   Statement scale: This is written in a sentence.

b)   Linear scale –   0   4km

c)   Fractional scale/Representative/Ratio Scale: For example, as fraction (1/50,000) or as ratios (1:50,000).

ii)   The key interprets symbols used on a map.

Symbols are features used to represent real objects on a map.

To prevent congestion on a map,many symbols are used which need inter-pretation for example;

a)   water fall

b)   swamp

c)   bridge

d)   dam
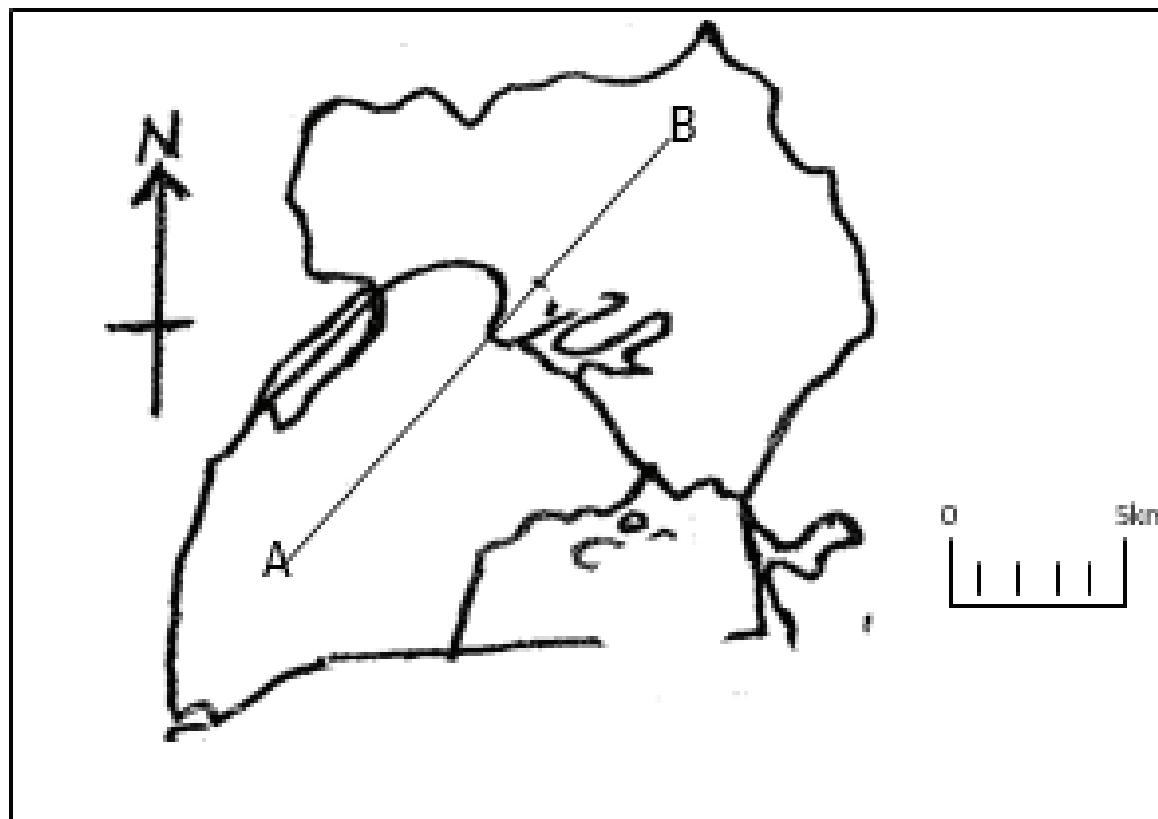
iii)   A title is used to show what the map is all about.

iv) A compassdirection is used to show direction of places on a map.

iv)   A frame is used to enclose a map.

Activity

1.   What is a map?

2.   Write the importance of the following elements of a good map:

   a) Frame
   b) Map Key
   c) Map Title

3.   Use the map below to answer questions that follow.

a)   What is the distance between town **A** and **B**?

TOPIC 2:PHYSICAL FEATURES OF UGANDA

Lesson: Typesof physical features in Uganda

You should be able to:

i)   give the importance of mountains and highlands.
ii)   write the activities that are carried out on a plateau.
iii)   name different types of fish found in lakes and rivers of Uganda.
iv)   locate the rift valley on the map of Uganda.
v)   draw the map of Uganda showing major physical features.

You will need:

- pencil
- notebook
- rubber
- atlas
- coloured pencil
- sharpener
- textbooks

Note:

i) Read the instructions carefully before doing each activity.
ii) Ask an adult to help where you find difficulties when doing the activity.
iii) Mind your drawings,grammar and spelling,and handwriting.

Introduction

In Primary Four, you learnt about physical features. In this lesson, you are going to learn about importance of different types of physical features.

Procedure

Step I

i) Types of physical features

Physical featuresare landforms of an area.

These include:– Mountains,Plateau, Plains and Hills

  – lakes, rivers, rift valleys and others

ii)   Importance of physical features

   a) Mountains
      They provide fertile soils for growing crops.
      They help in rain formation.
      They attract tourists.

b) Plateau
They have fertile soils for farming.
They are mining grounds.
c) Lakes and Rivers
They help in rain formation.
Rivers help in making hydro– electricity.
They are sources of fish.
They are used for transport.
d) Rift valleys
They provide fertile soils for growing crops.
They help in rain formation.
They attract tourists

iii) Types of fish caught in Uganda

- Tilapia   –   Lung fish
- Nile perch   –   Cat fish
- Mud fish   –   Lake Victoria Sardine (Mukene)

By use of an Atlas and with guidance from an adult, locate and draw theWestern rift valley.

Activity

1. Outline the different activities done on different physical features in Uganda.
   a) Mountains   c)   Plateau
   b) Lakes and rivers   d)   Rift valley

2. By use of an Atlas, textbooks and help from your elders, identify examples of the following physical features in Uganda.
   a) Mountains
   b) Lakes
   c) Rivers
3. By use of an Atlas and text book, draw the map of Uganda and show the major physical features.

You will need the following to attempt the questions on drawing:

- Pencil   –   Notebook   – Rubber
- Sharpener   –   Colours   – Atlas   – Textbook

Lesson: Problems Associated With Different Types of Physical Features

You shouldbe able to:

    i)   identify problems some physical features cause.

    ii)   identify water borne diseases.

    iii)   mention problems brought about by lakes and rivers.

You will need:

-    notebooks
-    pencils
-    pens
-    sharpener

Tips

i)   Read the instructions carefully before completing each activity.

ii)   Ask an adult to help you where you find difficulties when doing the activity.

iii) Mind your spelling, handwriting, drawing skills and observation.

Introduction

In Primary Four you learnt about dangers of different physical features.

In this lesson, you are going to learn identifying problems associated with difference types of physical features.

Procedure

Step I

    i)   **Problems caused by the presence of physicalfeatures in an area**
           Mountains make road and railway transport difficult.
           There is a lot of soil erosion in mountainous areas.
           People face a problem of landslides in mountainous areas.
           Rivers and lakes keep dangerous water animals.

    ii)   **Water borne diseases**
           These are diseases that are spread by drinking dirty water.

Examples of water borne diseases include;

- cholera
- typhoid
- dysentery
- diarrhoea
- bilharziasis

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Step II

Problems brought about by lakes and rivers

i) Floods.
ii) Disease vectors like mosquitoes.
iii) Attacks from dangerous water animals.
iv) Difficulty in road construction.

Activity

1. Write problems caused by different physical features.
2. With the help of an atlas and your elder, identify the:

   a) The highest mountain in Uganda.

   b) The longest river in Uganda.

   c) The largest lake in Uganda.

3. Mention any one problem caused by the presence of rivers and lakes in the area.
4. Visit any physical feature in your area with an adult:
   - Discuss the problems the physical feature has caused to the people in that area.
   - Record four findings in the notebook under the guidance of an adult.

Lesson: Activities Done Around Different Physical Features in Uganda

You shouldbe able to:

i) identify activities done by people on different physical features.
ii) identify possible solutions to the problems caused by physical features.

You will need:

- notebook
- pens
- pencil
- sharpener
- ruler

Tips

i) Read the instructions carefully before completing each activity.
ii) Ask an adult to help you where you find difficulty while doing this work.
iii) Mind your handwriting, spelling, and observation.

Introduction

In Primary Four you learnt about ways of caring for physical features.

In this lesson you are going to learn how to care for physical features in your area.

Procedure

Step I

Activities done by people around physical features

- Pottery   – Fish smoking
- Fishing   –Crop cultivation
- Craft making–Trade
- Quarrying
- Tourism
- Mining

Step II

Caring for physical features

- Avoiding pouring dirty things into lakes and rivers.
- Using physical features carefully.
- Covering pits with soil after sand mining.
- Maintaining vegetation around physical features.

Activity

You are going to carry out a **project** on how people care for the physical features in your area.

With the guidance of an adult person find out and record the following:

    a) Activities people do to protect the environment.
    b) The role of the government towards the protection of physical features.

TOPIC: THE CLIMATE OF UGANDA

Lesson: Climatic Regions of Uganda

You should be able to:

    i)   locate climatic regions of Uganda.

ii)   differentiate between climate and weather.

iii)   explain factors that influence climate of Uganda.

You will need:

- notebooks
- pens
- pencils
- ruler
- rubber
- textbooks
- atlas
- coloured pencils
- sharpener

Tips

i)   Read the instructions carefully before attempting each activity.

ii)   Ask an adult to help where you find difficulties when doing this activity.

iii)   Mind the following: handwriting, spellings, drawing skills and observation.

Introduction

In the previous lesson you learnt the meaning of climate and its aspects.

In this lesson,you are going to locate the climatic regions of Uganda.

Procedure:

Step I

What is climate?

Climate is the average weather condition of a place recorded for a long period of time.

Rainfall and temperature are the major **aspects** of climate.

Weather is the state of the atmosphere at a given time.

Factors that Influence the Climate of an Area

Note that the climate of Uganda changes from one place to another. Things that cause these changes include:

- Altitude
- Vegetation distribution
- Distance from the equator
- Distance from big water bodies
- And human activities

Activity 1

1. With the help of an atlas and textbooks, identify the climatic regions of Uganda.
2. Find more factors that influence the climate of different areas in Uganda.

Activity 2

1. With the help of an atlas or textbooks, draw a sketch map of Uganda showing climatic regions of Uganda.
2. Write the factors that influence the climate of Uganda.
3. Give the difference between weather and climate.
4. Which climatic condition is experienced in your local area?

Lesson:Influence of Physical Features on the Climate of Uganda

You should be able to:

i) explain how different physical features influence climate of Uganda.

ii) show the different physical features with their climatic conditions.

You will need:

- notebooks
- pens
- pencils
- ruler
- rubber
- textbooks
- atlas
- coloured pencils
- sharpener

Different physical features affect the climate of an area.

Procedure

Step I

These physical features include;

    i) Highlands
    ii) Waterbodies
    iii) Plains.

Step II

These physical features affect climate in different ways.

    i) Highlands lead to the formation of **relief rainfall**.
    ii) Waterbodies lead to the formation of **convectional rainfall.**
    iii) Plains lead to the formation of **frontal rainfall.**

Another name for relief rainfall is **orographic** rain**fal**l.

Frontal rainfall is also called**cyclonic rainfall**.

Activity 1

1. Write examples of physical features that influence the climate of an area.
2. With the help of an elder and a textbook, draw a diagram showing the formation of convectional rainfall.

Lesson: ExplainingHow Climate Influences Human Activities

You shouldbe able to:

    i)   locate the wet and dry areas of Uganda.
    ii)   name different crops grown in dry and wet climatic condition.
    iii)   draw a map of Uganda showing major agricultural and cattle keeping areas.

You will need:

- notebooks
- pencil
- pens
- ruler

Tips

    i)   Read the instructions carefully before completing each activity.

    ii)   Ask an adult to help you where you find difficulties when doing the activity.

    iii)   Mind your spelling, handwriting, drawing skills and observation.

Introduction

In the previous lesson you learnt about how physical features influence the climatic conditions of an area.

In this lesson, you are going to look at how climate influences human activities.

Procedure

Step I

Note that the wet areas of Uganda are those areas that receive heavy rainfall throughout the year.For example:

        Shores of lakes
        River banks
        Swampy areas
        Slopes of mountains
        And areas near forests.

Mention the activitiesthat are carried out in the above wet areas.

Dry areas of Uganda are those areas that experience high temperatures all the year round.Like;

        Karamoja sub -region
        Ankole – Masaka cattle corridor
        Gomba district
        Kiboga and Kyankwanzi districts

Mention the human activities are carried out in the areas mentioned above.

Step II

Write down the crops grown in the wet and dry areas from the list below.

Wet areas	Dry areas
-	-
-	-
-	-

List of crops

- Bananas
- Sugarcane
- Coffee
- Oil palm
- Cocoa
- Millet
- Sorghum
- Maize
- Cassava
- Beans

Activity

Outline the major activities carried out in:

a) Wet areas
b) Dry areas

Lesson: The Problems Associated With Wet and Warm Areas to Living Things

You should be able to:

i)   identify different pests and vectors that affect   plants and animals.
ii) state the methods which are used to destroy animals and plant pests.
iii) suggest possible solutions to the problems caused by pests and vectors to crops and animals.

You will need:

-   pencils
-   notebook
-   a ruler
-   pens

Tips

i)   Read the instructions carefully before completing the activity.
ii) Ask an adult to help where you find difficulty when doing this activity.
iii) Mind your handwriting, spelling and drawing skills.

Introduction

In the previous lesson you learnt about how climate influences human activities. In this lesson, youare going to identify the problems associated with wet and warm areas and the possible solutions.

Procedure

Step I

Problems associated with wet areas to living things

- Disease vectors
- Floods
- Poor transport network
- Crop pests.

Problems associated with warm areas to living things

- Disease vectors
- Drought
- Lack of pasture and water
- Wild bush fires
- Poor veterinary services.

Step II

Methods used to destroy animal and plant pests

- Spraying
- Dipping
- Croprotation
- Using traps.

Find other solution to the above problems.

Activity

1. Write examples of crop pests and animal parasites.

Crop pests	Animal parasites
_	-
_	-

2. Give possible solutions to the problems faced by people living in warmareas.
3. With the help of a textbook, draw examples of vectors. Mind your drawing skills.

TOPIC; VEGETATION OF UGANDA

Lesson: Factors that Influence Vegetation

You should be able to:

i)   list down the factors that influence vegetation distribution.
ii)   explain how each factor influences vegetation distribution.
iii)   draw map of Uganda showing areas with different rainfall pat-
        terns and vegetation.

You will need:

-   pens
-   pencils
-   notebook
-   atlas
-   rubber
-   sharpener
-   coloured pencil
-   ruler

Tips

i)   Remember some activities may take you more than one hour to
        complete.
ii)   Read the instructions carefully before completing each activity.
iii)   Ask an adult to help you where you find difficulties as you do the
        activity.
iv)   Mind your spelling abilities, drawing skills, observation, and hand
        writing.

Introduction

In Primary Four, you learnt about vegetation and different examples of
vegetation.

Note that Uganda's vegetation is not the same. Different areas have dif-
ferent vegetation. Inthis lesson you are going to look at the factors that
cause that.

Procedure

Step I

Factors that influence vegetation distribution

- rainfall
- soil fertility
- altitude
- distance from large water bodies
- relief
- human activities

Step II

How the above factors influence vegetation distribution

Note: Influence can be negative or positive.

Rainfall

- Areas that receive reliable rainfall have thick vegetation.
- Areas that receive little rainfall have scattered vegetation.

Activity

1. Talk to your elder about how the following factors influence vegetation distribution.
   a) soil fertility
   b) human activities
   c) altitude
   d) landform
2. With the help of an adult draw a sketch map of Uganda showing areas with different rainfall patterns and vegetation.

Lesson: Ways how Vegetation Influences Human Activities

You should be able to:

   i)   write the human activities carried out in each of the vegetation zones.
   ii)   suggest activities that can be carried out in different areas.

You will need:

-    notebook
-    ruler
-    pen
-    rubber
-    sharpener
-    pencil
-    atlas

- textbooks

Tips

i) Read the instruction carefully before completing each activity.
ii) Ask an adult to help you where you find difficulties when doing the activity.
iii) Try to complete all the activities.
iv) Mind your spelling, observations and handwriting.

Introduction

In the previous lesson you learnt about the factors that influence vegetation. In this lesson youare going to learn ways how vegetation influences human activities.

Procedure

Step I

Human activities carried out in the following vegetation zones

Savanna grassland

- Cattle keeping
- Tourism
- Hunting

Rain Forest

- Lumbering
- Tourism
- Hunting

Mountain vegetation

- Cattle keeping
- Lumbering
- Tourism

Swamp Vegetation

- Pottery, bricking making
- Craft making
- Farming

Step II

Activity

1.Suggest other activities that can be carried out in the above vegetation zones.

2.With the help of an adult visit any vegetation zone near your

home.

3.Observe and record human activities which are carried out in that vegetation zone.

Lesson: Conserving Vegetation

Youshould beable to:

i) list the uses of vegetation.
ii) mention human activities that conserve the environment.

You will need:

- notebook
- pencil
- pen
- rubber
- ruler
- sharpener

Tips

i) Read the instructions carefully before starting each activity.
ii) Ask an adult to help you where you find difficulties when doing the activity.
iii) Mind your handwriting, spelling and observation.

Introduction

In Primary Four you learnt about how to care for vegetation. You also learnt about its importance.

In this lesson you are going to learn about human activities that conserve the vegetation. You will again learn about its importance .

Procedure

Step I

Activity

1.List the uses of vegetation.
2.Mention the human activities that conserve the vegetation.

Step II

Activity

1. With the help of an adult visit a nearby farm:
    a) Observe the activities carried out on the farm.

b) Record the farm activities that conserve vegetation

2.   If you want to improve the home compound you will be required to plant flowers and 1 – 2 trees in the compound.

Using the guidance of an adult show the steps you will take to carry out the project

Human activities that affect vegetation

You shouldbe able to:

i)   Identify the human activities that negatively affect vegetation in Uganda.
ii)   Plant trees and flowers in your home compound.

You will need:

- Notebook
- Pencil
- Pen
- Rubber

Tips

i) Try to complete all the activities.Remember that some activities may take you long to complete.
ii) Read the instructions carefully before starting each activity.
iii) Ask an adult to help you where you find difficulty when doing this activity.

Introduction

You have to note that the work done in any given area affects the environment in which you live. You will take a look at the human activities that negatively affect vegetation

Procedure

Step I

i) Remember what you learnt in Primary Four.
ii) What are some of the ways how people in you district affect vegetation?

Step II

You will need:

- a notebook
- pen
- pencil
- an adult to guide you

Activity

With the help of an adult, visit a site where vegetation has been de-stroyed.

a)   Find out the reasons why that vegetation was destroyed.

b)   Record the human activities that are carried out there.

Relationship between vegetation and population distribution

You shouldbe able to:

i)   Identify the areas near your home that have few people and those with many people.

ii)   Find out the kind of vegetation that grows in areas with:
a.Few people.
b. Many people.

You will need:

- notebook
- pen
- pencil
- rubber
- ruler
- sharpener

Tips

i) Read the instructions before starting each activity

ii) Ask an adult to help you where you find difficulties when completing this activity.

iii) Mind your handwriting and language as you talk to people during the visit.

Introduction

In the previous lesson, you found out the activities that negatively affect vegetation. You are going to identity the relationship between vegetation and population distribution.

Procedure

Step I

a) **Population** means the number of people living in an area.

b) **Population distribution** means how people are spread in an area.
c) People choose to settle in an area basing on factors that favour their interests.
d) With the guidance of your parent find out the factors that influence patterns of settlement.
e) How do those factors affect vegetation?

Activity

1. Locate two areas near your home area, one with many people and the other with few people (your parent may help you to do this activity).
2. Find out the kind of vegetation that is growing in each area.

TOPIC:NATURAL RESOURCES OF UGANDA

Lesson: Types of Natural Resources in Uganda

You should be able to:

i) give the meaning of natural resources.
ii) mention different types of natural resources in Uganda.
iii) tracethe map of Uganda and show the major natural resources.

You will need:

Pens, pencils, rubber, SST Atlas for Uganda, textbook for P.5 SST, the nearby environment and a cut out of the map of Uganda

Tips

i) Read the instructions carefully before doing the activity.
ii) Mind your spellings and handwriting while attempting the work.
iii) Feel free to find help from the adults near you in case of any difficulty.
iv) Make use of the nearby environment to get more knowledge about this lesson.

Introduction

In this lesson, you will learn the meaning of; resources, natural resources and environment.

You are expected to identify examples of natural resources in the environment.

Procedure

Step I

Materials that people use in order to meet their needs are called **resources.**

Remember in the previous lessons, you studied basic needs of human beings. The things people need to live a better life are got from other materials.

Step II

Natural resources are the materials that exist on their own in the environment which people use to meet their needs.

Environment means people and their surroundings.

Types of Natural Resources

　　a) Renewable resources
　　b) Non-renewable resources

Renewable Resources

These are components of the environment that can be replaced naturally once they are used.

Non-renewable Resources

These are components of the environment that can never be replaced once they are used.

The following are examples of natural resources in the environment. Find out those that can be replaced and those that cannot be replaced once used up;

Water, people, animals, vegetation, land, minerals, climate

Activity

1. With the help of adults near you, move around in the community and make notes about things people use to get their needs.
2. Which of those things in(1) above are found;
   - on land
   - in water
   - in air
3. Discuss with the adults how people use the resources you saw in the community. Please make notes in your notebook.
4. Trace the map of Uganda and show the following; major lakes, rivers, mountains and forests.

Location of Natural Resources on the Map of Uganda

You shouldbe able to locate different natural resources on the map of Uganda

You will need:

- a well sharpened pencil
- pens
- ruler
- exercise book or notebook
- Primary School SST Atlas
- Cut out of the map of Uganda
- SST textbooks for P.5

Tips

i) Read the instructions carefully before doing the activity.
ii) Mind your spellings and handwriting as you do the activity.

Introduction

Trace the map of Uganda, make a cut of that map and use it in your note-book or exercise book.

Procedure

Step I

Trace the map of Uganda and locate different resources.

Step II

i) On the map of Uganda, use your Atlas or textbook to locate major lakes, rivers, natural forests, swamps and game parks.
ii) Use a pencil to draw using map symbols of the major:
   c) Mountains in Uganda like Mt. Elgon, Mt. Rwenzori, Mt. Moroto and Mt. Mufumbiro
   d) Lakes like; Victoria, George, Edward, Albert and Kyoga.
   e) Rivers like; Nile, Achwa, Kafu, Katonga and Kagera.
   f) Game parks like Queen Elizabeth, Murchison falls, Kidepo valley

Activity

1. Using the map of Uganda, which lake occupies the central part of Uganda?
2. Name the natural forests located in Uganda.

The Importance of Natural Resources

You should be able to:

i) discuss the importance of natural resources, that is, land, minerals, water, climate, people, animals and plants.

ii) make your own notes about the importance of natural resources.

You will need:

- pens
- exercise books
- SST textbooks
- previous work about resources
- resource person

Tips

Read the instructions carefully before doing the activity and mind your spellings and handwriting

Introduction In Primary Four you studied about the importance of different examples of natural resources.In this lesson, you are going to give different ways natural resources are important to people.

Procedure

Step I

i) With the help of an adult, visit the nearest resource and find out how it is used (forest, swamp, lake or river, mine, land).
ii) Ask your parents or an adult the ways resources are used and the problems facing each natural resource.
iii) Find out the activities people do on land, water bodies, forests, rivers and mountains (use a resource near to you).

Activity

i) With the help of an adult, visit a nearby forest or garden, observe and record different plants, grass, trees or crops you see.
ii) Stateways each of the following resources are important:
   a) Land
   b) Water
   c) Animals
   d) People
   e) Climate
   f) Vegetation
iii) Why is land regarded as the most important resource?
iv) Give any challenges facing :
   a) Land
   b) Water bodies
   c) Vegetation

Problems Associated with the Development of Various Natural Resources

You will be able to:

i)   List problems associated with developing of various natural resources.
ii)   Give solutions to the problems associated with development of various natural resources.
iii)   Write d ways how people misuse natural resources.

You will need:

-       notebook
-       pens
-       pencil
-       ruler
-       sharpener
-       rubber
-       nearby environment

Tips

i)   Read the instructions carefully before starting each activity.
ii)   Ask an adult to help you where you find difficulties when doing the activity.

Introduction

In the previous lesson you learnt about importance of natural resources.

In this lesson you are going to learn about problems associated with development of various natural resources.

Procedure

Step I

i)   State the problems faced by each natural resources listed below:
        a) Land
        b) Animals
        c) Minerals
        d) Plants
        e) Water
        f) Climate
        g) People

Step II

How has man misused the natural resources in our country?

a) By over cultivation
b) By over grazing
c) Over mining
d) Deforestation
e) Swamp drainage
f) Bush burning
g) Over stocking

Activity

1. With the help of an adult give the problems associated with the devel-
    opment of various natural resources:

    a) Lakes and river/water bodies

    b) Plants

    c) Mineral

    d) People

    e) Land

Ways of Caring for Natural Resources

You are expected to show ways of caring for natural resources.

You will need:

   -   notebook
   -   pen

Tips

i)   Read the instructions carefully before completing each activity.
ii)   Ask an adult to guide you where you find hardships in completing
        this activity.
iii)   Mind your spelling, observations and handwriting as you do this ac-
        tivity.

Introduction

In your previous lesson, you learnt about problems that are associated
with natural resources.

You are going to find out ways people should care for natural resources

Procedure

Step I

In your home, ask an adult to guide you on how best you can care for the
resources in your area.

You will be required to discuss one after the other, so you should first list

those resources in your area such as:

   a) forests

   b) wetlands

   c) mine

Step II

Try to think how you can involve all the people in the area to conserve land (resources) in your area.

Activity

1. Identify ways of caring for natural resources.
2. With the guidance of an adult,visit a nearby natural resource like a forest and:
   - observe and record- examples of trees.
   - type of wood in that forest.
3. How can you care for the above resource in your area?

Term 2

TOPIC : THE PEOPLE OF THE PRE-COLONIAL PERIOD IN UGANDA

Lesson 1: Ethnic groups in Uganda

You will be able to:

i)   Find out the meaning of an Ethnic group.
ii)   Name the major Ethnic groups in Uganda
iii)   Study the map of Uganda showing the major ethnic groups.

Materials you will need

- Pen
- Pencil
- Note book
- P.5 book for SST
- An atlas for Uganda (If possible)

Introduction

In primary four, you learnt about tribes found in your district. Do you remember them?

In this activity, you are going to study about people of pre-colonial period in Uganda. You will learn about the main Ethnic groups in Uganda. You will find out the different tribes found in each Ethnic group and the languages they speak.

Procedure:

Step 1:

- With the help of your parents/Guardians find out the different tribes that are found in Uganda. Find out the languages that each tribe speaks. Identify the tribes that speak a similar language.
- All the tribes that speak a similar language are grouped to form an **Ethnic group**. It means they share the **same origin**.

Step 2:

Now that you know the tribes that form different Ethnic groups, tell your parents/guardians the Ethnic group of your tribe. Tell them the region in which your Ethnic group is located.

Step 3

Look at the map of Uganda below and observe the different ethnic groups. The arrows show where each ethnic group came from to enter Uganda.

A SKETCH MAP OF UGANDA SHOWING ETHNIC GROUPS

- You will discover that the main Ethnic groups in Uganda are:
  - **Bantu** (Largest ethnic group)
  - **Nilotes** (River-lake Nilotes (Nilotics), Nilo-Hamites or plain Nilotes and Highland Nilotes)
  - **Sudanic people**(They live in West Nile)
  - **Hamites** (e.g Bahima)

Activity

Answer the questions below correctly :

1. To which Ethnic group do you belong?
2. Name the largest Ethnic group in Uganda.
3. Complete the table below correctly.

TRIBE	LANGUAGE SPOKEN
Baganda	....

....	Lusoga
Iteso	....
....	Runyankole

Lesson 2: The origin of different Ethnic groups in Uganda

You will be able to:

(i)   Tell the origin of the Ethnic groups in Uganda
(ii)   Explain the reasons which led to the migration of the ethnic groups.

Materials you will need:

- A pen
- A pencil and a rubber
- A ruler
- Exercise book
- P.5 text book for P.5
- S.S.T atlas for Uganda

Introduction

In the previous lesson, you learnt about the Ethnic groups in Uganda.

In this lesson, you are now going to study about the origin of the Ethnic groups. You will also find out the reasons which led to their migration

Procedure

Step 1

- Look at the table below. It shows the Ethnic group and their places of origin.

Ethnic group	Place of Origin
• Bantu group	Cameroon Highlands
• Nilotes group i) River-lake Nilotes (Luo speaker) ii) Plain Nilotes (Nilo-Hamites)	Bahr-el-Ghazel in South Sudan Southern Ethiopia North – Eastern Ethiopia
• Sudanic group	South Sudan
• Hamites	Ethiopia

NOTE:

- The Bantu were farmers and settled in the Interlacustrine region.
- The Luo speakers (River–lake Nilotes) were cattle keepers and fishermen
- The Plain Nilotes were cattle keepers and they settled in the semi–arid areas of Uganda.
- The Highland Nilotes settled around the slopes of Mt. Elgon.
- The Sudanic groups were crop cultivators, cattle keepers and Iron smelters.
- The Hamites were mainly cattle keepers.

Step 2:

- You have now known the origin of the Ethnic groups in Uganda.
- You can now learn about the reasons why Ethnic groups migrated from their original homelands.
- Some of the reasons for their migration include;
  - i.   They were looking for fertile land to grow crops
  - ii.   They were looking for pasture for their animals
  - iii. They were searching for water for their animals
  - iv.   They had internal misunderstandings
  - v.   They were attacked by other unfriendly tribes

Lesson 3: Political organisation of Ethnic groups in Uganda

You will be able to:

- State the political organisation of different Kingdoms, chiefdoms and clan system.
- Study the map of Uganda showing Kingdoms.
- State the role of leaders of different ethnic groups.

Materials you will need:

- Pen
- Pencil
- Rubber
- Note book
- Primary SST Atlas for Uganda (if possible)
- SST text book for P.5

Introduction

In this lesson, you will study about the Political organisation of the ethnic groups of Uganda.

You will also study the map of Uganda showing Kingdoms. You will find out the roles of leaders of different Ethnic groups.

Roles of leaders of different ethnic groups.

Leaders settled disputes among the people. Societies had different conflicts which were solved by cultural leaders. They protected people in their communities. Leaders played a big role of ensuring that their people are safe.

They united people. They ensured that cultural ceremonies performed brought people together.
They preserved their cultures.

Procedure

Step I:

Ask your parents or guardians to help you find out how different ethnic groups were politically organised.
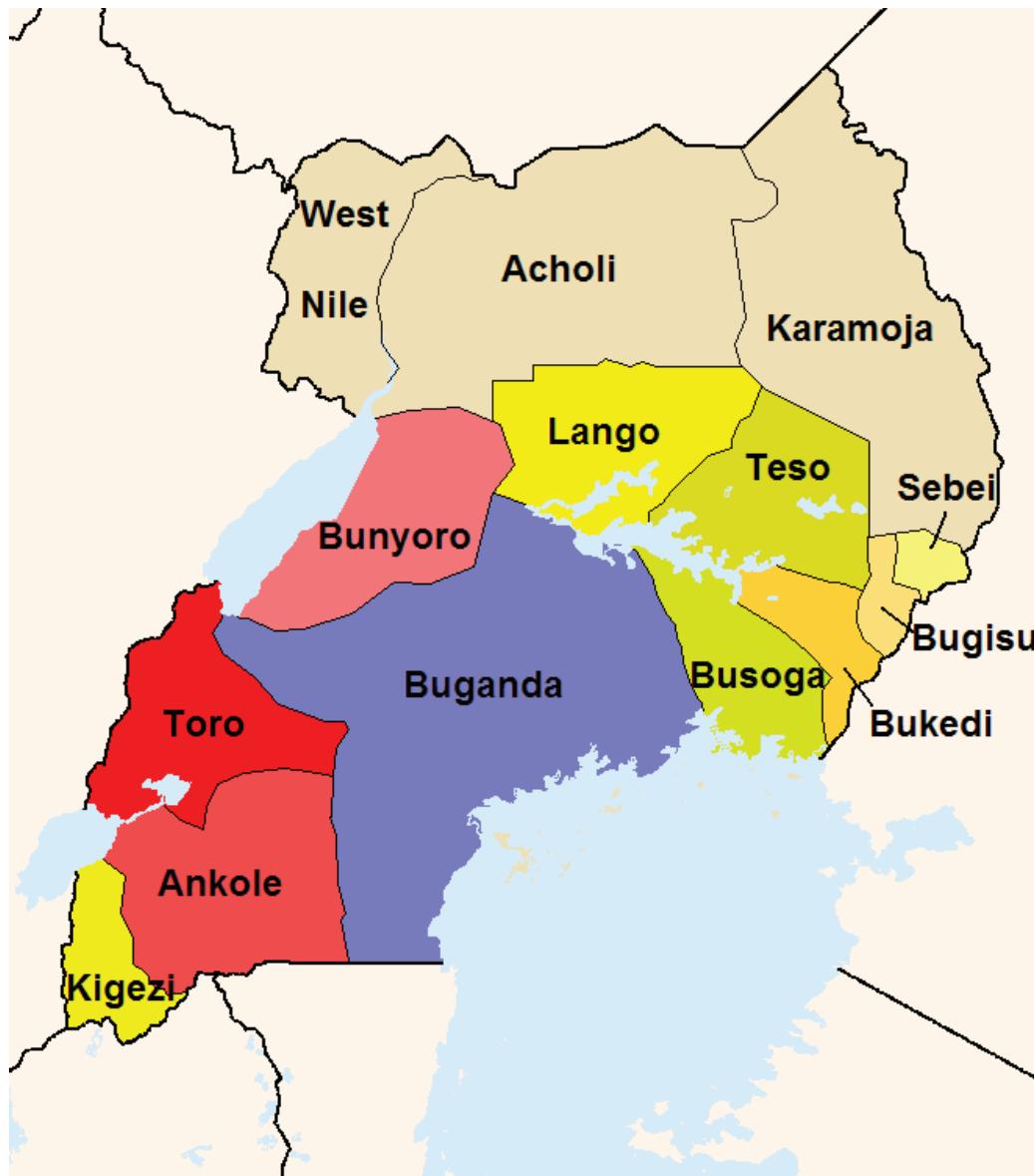
Note:

Ethnic groups in Uganda were ruled through two political systems . These were:

i) **Centralised system** where the king was the supreme ruler.
ii) For example Buganda, Bunyoro, Toro, Ankole.
iii) **Decentralised system** where the chiefs and clan heads formed leadership in their communities.
iv) For example among the Nilotics, Nilo Hamites and the Basoga from the Bantu speakers.
• Ask your parents/guardians to help you know some facts about Bunyoro–Kitara Kingdom.

Step 2:
• Look at a map of Uganda below and observe areas with Kingdoms, Chiefdoms and Council of Elders

- Ask your parents/guardians to find out the titles of leaders in each area on the map above.

Activity

1. Write roles of the following leaders in our communities
   (i)   LC1 Chairperson
   (ii)   Traditional leaders
2. Ask your parents to help you find out the roles of your clan leader.

Lesson 4: Social organisation of Ethnic groups in Uganda

You will be able to:

- state the importance of social norms like; clans, customs and totems
- Identify ways of practising social norms of Ethnic groups e.g naming

children, marriage, circumcision.

Materials you will need

- Pen
- Pencil
- Exercise books
- Primary 5 SST textbook

Introduction

In this lesson, you will learn about ways of practising social norms in your Ethnic group and the importance of the social norms.

Procedure:

Step 1:

- Ask your parents/guardians to tell you the meaning of your name. Find out how names are given to newly born children in your tribe.

Note

Naming children is one example of a custom.

Customs are accepted ways of living, behaviour and traditional practices by a community. They include; initiation and marriage customs.

Social Norms are unwritten rules about how to behave. They provide us with an idea of how to behave in a particular social group or culture. For example, we expect pupils to arrive to a lesson on time and complete their work.

Step 2:

With the help of your parents, find out the importance of social norms and values in your community. For examole; they enable us to have "proper" way to behave.

Activity

1. Which tribes in Uganda practice circumcision?
2. Give examples of initiation activities carried out by different ethnic groups in Uganda.

Summary
Norms provide order in society. It is difficult to see how people in society could operate without social norms. Human beings need norms to guide and direct their behavior, to provide order as we relate with one another.

TOPIC: FOREIGN INFLUENCE IN UGANDA

Lesson 1: Foreigners who came to Uganda

You will be able to:

i)   Identify the foreign groups that came to Uganda.
ii)   Draw the map of Uganda showing the explorers' routes in Uganda.

Materials you will need;

- Pen
- Pencil
- Rubber
- Note book
- P5 SST text book
- Social studies Atlas for Uganda (if possible)

Introduction

In this lesson, you are now going to learn about the foreign groups that came to Uganda. You will also learn about the different parts of the world where the foreign groups came from and the activities they did.

Procedure

Step I:

Study the table below showing the foreign groups that came to Uganda and their places of origin.

Group of foreigners	Place of Origin
i) Arab Traders	Saudi Arabia– Asia
ii) Indians	India in Asia
iii) Explorers	Europe
iv) Missionaries	Europe
v) European Traders	Europe
vi) Colonialists/Administrators	Europe

Step II:

- You will read about explorers like John Speke, Richard Burton, James Grant and Samuel Baker. Read also about Captain F.D Lugard and Sir Gerald Portal.
  An Explorer is a person who discovers unknown land. European explorers came to Uganda and explored different parts of the country. There were sponsored by organisations such as the Royal Geographical Society.
  Explorers came mainly to find the source of River Nile.
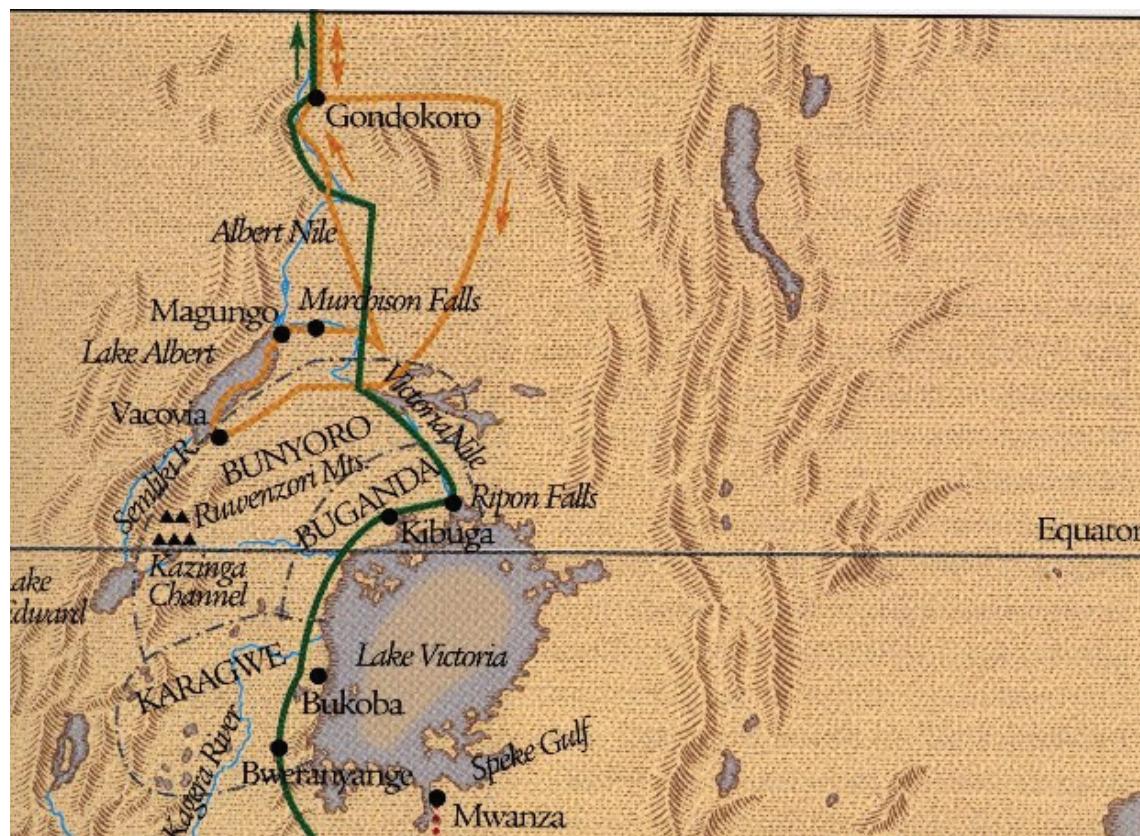
Step 3

Now study the explorers' routes in this map.

A SKETCH MAP SHOWING JOURNEYS OF EXPLORERS IN UGANDA

KEY

—— Burton and Speke 1856–59		••••••• Speke 1858	
—— Speke and Grant 1860–63		———— Baker 1863–65	

Activity
1. Write the foreign groups that came to Uganda.
2. Draw a sketch map of Uganda and show the journeys of explorers.

Lesson 2: Reasons why foreigners came to Uganda

You will be able to:

• State the reason why foreigners came to Uganda

Materials you will need:

• Pen
• Note book
• P5 SST text book

Introduction

Dear learner, welcome to our new activity. In this activity, you are going

to learn about the reasons why foreigners came to Uganda.

Procedure

Step I:

You have learnt about the foreign groups that came to Africa.

Can you find out some of the reasons why they came ?

Reasons for the coming of foreign groups to Uganda.

• Arab Traders	- To carry out trade and spread Islam.
• Explorers	- To find out about the unknown land.
• Indians	- To build the Uganda railway.
• Missionaries	- To spread Christianity.
• European traders	- To carry out trade and prepare for coloni-sation.
• Colonialists/Ad-ministrators	- To acquire colonies and to administer.

Activity

1. Give one reason why foreign groups came to Uganda.
2. How did people of long ago benefit from trading with the Arabs?

Lesson 3: Influence of foreigners and their contributions to Uganda.

You will be able to:

- State the influence of foreign groups to the people of Uganda.
- Tell the contributions of the foreign groups to Uganda.
- Suggest the positive and negative contributions of foreign groups to Uganda

Materials you will need:

- Pen
- Pencil
- Note book
- P5 SST text book

Introduction

In this activity, you are now going to find out the influence of foreign groups to the people of Uganda and their contributions.

You should also be able state the positive and negative contributions of the foreign groups to the people of Uganda.

Procedure

Step I:

the influence and contributions of foreign groups to the people of Uganda.

Positive contributions of the Arabs
They introduced:

i) Art of building using stones. New styles of building using stones and bricks.
ii) Wearing of tunics. The local people started dressing in Arabic form. Men started wearing kanzus, turbans, caps and sandals and women wore long silk dresses and veils.
iii) New crops. These were foods of Atlantic origin such as rice, wheat and sugarcanes.
iv) Cowrie shells as a form of currency (money).

You can also use your text book for more information.

Step II:

Now that you have known the influence and contributions of foreign groups to Uganda, let us look at the positive and the negative contributions.

Negative effects of missionary work in Uganda.
They preached against traditional culture. this affected the morals of society.

Negative effects of colonialists in Uganda.
Many people died due to rebellions against colonialism. Many families were separated due to the boundaries which were drawn by colonialists.

Activity:

1. Write the names of the foreign groups which came to Uganda.
2. How did the coming of foreigners benefit the people of Uganda?

TOPIC: HOW UGANDA BECAME A NATION

Lesson 1: How Uganda signed agreements with Britain

You willbe able to:-

i) Define the term **nation**.

ii) Identify ways how Uganda became a nation.

iii) State the agreements which were signed between Britain and different communities in Uganda.

Materials you will need:
- Pen
- Pencil
- Exercise books
- P5 SST text book

Introduction

In this lesson, you are now going to learn about how Uganda became a nation. This was done through signing agreements, using force, using colonial agents and changing boundaries.

You will also identify the agreements signed between Britain and Uganda and explain how the agreements helped to create Uganda as a nation.

Procedure

Step 1:

- You have already learnt that before the coming of foreigners, some societies in Uganda had kings.
- A nation is a group of people living together in a particular country having the same political leaders and common policies and goals.
  A nation can also be defined as a group of people who share culture, ethnic origin and language.
  Uganda as a nation has national symbols such as, National Anthem, Coat of Arms, National flag, and National emblem that unite all its people.

You can also read more from your P5 S.ST text book.

Step II:

The agreements signed between the British and the kingdoms of Uganda were;

- The Buganda agreement (1900).
- The Tooro agreement (1900).
- The Ankole agreement (1901).
- The Bunyoro agreement (1896).

Step III:

Agreements signed to bring Uganda under British rule.
There were several agreements that were signed in Uganda
with different Kings of Buganda, Ankole, Bunyoro, and Toro.
Before signing treaties with different kings/chiefs in different parts
of the country, the British formed the Imperial British East Africa
company which was authorised to carryout trade with the local
people with an aim of making profits and also to govern Uganda
on behalf of the British Government as a British colony.
The Imperial British East African Company sent an administrator
called Sir Harry Johnstone to Uganda who later signed an
agreement with Kabaka Daud Chwa.

Activity

1. Which country colonised Uganda?
2. What evidence is there today to show that Uganda was colonised by
    Britain?

**Lesson 2: Administrative systems that existed during the British rule
in Uganda**

You will be able to;

i)   Identify the administrative systems used in Uganda during the
        colonial rule.
ii)   State the reason why each type of rule was applied.
iii)   Suggest areas where each type of rule was applied.

Materials you will need

- Pen
- Exercise book
- P5 SST text book

Introduction
In this lesson you are going to learn about the administrative systems in
Uganda during British rule. You will find out why the British used those
systems and the areas where they were applied.

Procedure
Step 1:

        There were two main administrative systems that were applied in
        Uganda by the British.

Note:

The British used two systems to rule Uganda. These were:

i)   **Indirect rule** (used local rulers to rule their respective areas).
ii)   **Direct rule** (this is the British took direct control over the local
        areas   where there was resistance).

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Step II:

- Indirect rule was mainly applied by the British in the Kingdoms of Buganda, Tooro and Ankole.
- Direct rule was applied in Kigezi, Bugisu, West Nile and Bunyoro through Baganda agents.
- Indirect rule did not interfere with the local leaders.
  The kings and chiefs still had some powers over their people and kingdoms.

Activity

1. Name the types of administrative systems used by the British in Uganda.
2. Why did the British use indirect in most parts of Uganda

Lesson: Positive and Negative effects of colonial rule in Uganda.

You will be able to:

State the positive and negative effects of colonial rule in Uganda.

Materials you will need:

- Pen
- Exercise book
- P5 SST text book

Introduction:

You have learnt that Uganda was colonised by the British. In this lesson, you are now going to find out the positive and negative effects of colonial rule to Uganda.

Procedure

Step I:

You can also read more about the effects of colonial rule to Uganda from the P.5 Social studies text book.

Effects of colonial rule in Uganda.

i) **Positive effects**
   - Introduced formal education by building schools. They taught reading and writing.
   - Improved on health services by building hospitals and introducing new types of medicine.
   - Improved on transport network by building the Uganda railway and many roads. This promoted trade.
   - Introduced new crops like cotton.
   - Modern Industries were built.

- New methods of farming and better farming tools were introduced.

ii) **Negative effects**
- Overused Uganda's resources.
- Undermined the culture of Uganda e.g. language culture, religion and indigenous education.
- Created divisions among the people of Uganda.
- Traditional education was replaced by formal education.

Activity

1. How did the people of Uganda benefit from the introduction of;
  (a) cash crops by the British?
  (b) formal education?

TOPIC: THE ROAD TO INDEPENDENCE

Lesson 1. Characteristics of the Colonial administration system and its effects.

You will be able to:

i)   Identify the characteristics of the colonial administration (foreign laws, taxation, segregation).

ii)   Suggest the effects of the characteristics of the colonial administration (rebellions, riots and formation of associations).

Material you will need:

- Pen
- Pencil
- Exercise book
- P.5 SST text book

Introduction

In this lesson, you are now going to learn about the characteristics of the colonial administrative systems in Uganda (Indirect and Direct rule)

You will also find out the effects of the characteristics of the colonial administrative systems in Uganda.

Procedure:

Step I:

- You can now learn about some of the events which took place in Uganda from the time Uganda was under colonial rule till it got her independence.
  Events which took place in Uganda during colonial rule
  - Setting up of the Imperial British East Africa Company (IBEACO)
  - Introducing foreign laws.

- Introduction of taxation system.

Step II:

- Let us now find out the effects of the characteristics of the colonial administrative system.
- **Effects of the characteristics of colonial administrative system in Uganda**
  - Foreign laws were written down and gave punishment to whoever broke them such as imprisonment.
  - Taxation system (hut and gun taxes) helped the British to raise money to run the government.

Note:

The people of Uganda reacted to colonial rule differently. Some leaders were working (**collaborated)** with the British like Sir Apollo Kaggwa, Semei Kakungulu and Nuwa Mbaguta. They obeyed the British rulers.

Other leaders like chief Awich ,Kabalega and Mwanga did not welcome British rule. They formed rebellions, riots, and strikes like Lamogi rebellion in Acholi and Nyangire rebellion in Bunyoro.

Activity

1. a) Name the rebellions that were formed in Uganda during colonial rule.
   b) Give reasons why each of the rebellions named in (1a) was formed.
2. a) Why did the colonial government encourage the growing of cash crops in Uganda?
   b) Complete the tale below

Crop	Product(s)
Cotton	…………………………….
Sugar cane	……………………………
Tea	……………………………..
Tobacco	……………………………..

Lesson **2 Factors that led to the formation of the Legislative Council (LEGCO)**

You will be able to:

i) Identify the factors that led to the formation of the Legislative Council.
ii) State how the Legislative Council helped in the struggle for independence.

Materials you will need:

- Pen
- Exercise book

- P.5 text book for SST

Introduction

In this lesson, you are now going to study about the formation of the Legislative Council, the factors that led to its formation and how it helped in the struggle for Independence.

Procedure

Step I:

The Parliament of Uganda during colonial rule was called **Legislative Council.** It was responsible for making laws. It advised the British government on how to administer.

Formation of the Legislative Council (LEGCO)

- It was formed in 1921 during the time of Governor **Sir Robert Thone Coryndon.**
- It was formed to make laws that would be used to govern Uganda during Colonial rule.

Membership of LEGCO
- Before **1926**, it was made up of seven British officials including the Governor.
- In **1933**, three Asians joined the LEGCO.
- In **1945**, the first three Ugandans were also appointed to the LEGCO. These were:-

(i) **Kawalya Kaggwa** to represent Central region.

(ii) **Yekonia Zirabamuzale** to represent the Eastern Region.

(iii) **Petero Nyangabyaki Akiiki** to represent the Western region.

- Later, **Yekosofati Innyon** was appointed to represent Northern region.

Step II:

Factors that led to the formation of LEGCO

- To help make laws for governing the Protectorate. A protectorate is a state contolled by strong foreign country.

- To discuss the proposed laws before applying them.

- To approve the budgets and plans for the protectorate.

Activity

1. Write LEGCO in full.
2. How was the work of LEGCO similar to the work of Uganda's parliament

today?
3. Name the first Africans to join LEGCO in 1945.

lesson 3 Groups and Individuals that led the struggle for national Independence

You will be able to:

i)   Identify groups and Individuals that led the struggle for Independence.
ii) Name the political parties formed to fight for national Independence.
iii) Mention political leaders who led the struggle for national
     Independence.

Materials you will need:

* Pen
* Pencil
* Exercise book
* P.5 SST text book

Introduction

You have already learnt about how Uganda was colonised by Britain and as such it became a protectorate.

In this lesson, you are now going to learn about groups and individuals that led the struggle for national Independence.

Procedure

Step I:

You can now learn about the meaning of Independence. Independence means freedomfrom by controlled by an outside country.

Let us noe find out how the following helped in the struggle for national Independence.

* World War I and World War II.
* Formation of political parties.

Step II:

The political parties that fought for Uganda's independence were;

* Uganda National Congress (UNC).
* Democratic Party (D.P).
* Uganda Peoples' Congress (UPC).
* Kabaka Yekka (KY).

Step III:

The following people helped in the struggle for independence.

(i)   Ignatius Kangave Musaazi.

(ii)   Benedicto Kiwanuka.

(iii)   Dr. Apollo Milton Obote.

(iv)   Sir Edward Muteesa II.

Activity.

2. Why were political parties formed during the colonial period?

3. Why is 9th October celebrated as a public holiday every year in Uganda?

TOPIC : UGANDA AS AN INDEPENDENT NATION

Lesson: 1 Symbols of Uganda as a nation

You will be able to;

(i) Mention the symbols of Uganda as a nation.
(ii) Name the colours of the Uganda national flag.
(iii) State the meaning of the colours of the national flag.

Materials you will need:

A pen, pencil, note book, colours, primary school atlas for Uganda, the national flag

Instructions:

In this topic, you are going to learn about the symbols of Uganda as a nation.

Introduction:

In primary two, you learnt about the symbols of a school. Can you now list them in your note book?

Procedure:

Step I:

Remember that some school symbols are similar to those of Uganda as a nation. These symbols are useful to our country Uganda.

Step II:

a) You should identify the symbols of Uganda as a nation. For example; Uganda national flag, Uganda national coat of Arms, national motto, national Emblem.
   The Uganda national flag
i) Uganda used the British flag called the **Union Jack**. The Uganda flag was designed by **Grace Ibingira**. When Uganda got her independence in 1962, the Union Jack was lowered and the Uganda flag was raised by Major **Kanuti Akorimo.**
ii) The colours of the Uganda flag are: **Black, Yellow, Red.**
iii) You should learn the meaning of the different colours of the Uganda National flag.
   Black – stands for black Africans.
   Yellow – stands for abundant sunshine.
   Red – stands for brotherhood.
iv) You need to find out the areas where the national flag is flown such as

schools and police stations. Can you mention some more places?

Step III:

You should also learn the importance of the national flag.

- It is for identity.
- It is a symbol for independence.The Uganda flag is flown at half-mast during national mourning days.

Activity:

1. Using crayons or colours, draw and shade the Uganda national flag.
2. Name the colours of the Uganda national flag.
3. Who designed the Uganda national flag?
4. Mention places where the Uganda flag can be flown.

Lesson 2: The national Coat of Arms.

You will be able to;

- Mention the features of the national Coat of   Arms.
- Give the importance of the features on the national Coat of Arms.
- Tell who designed the national Coat of Arms.

Materials you will need:

 A pen, pencil, and crayons, note book, P.5 text book for S.ST, primary school atlas.

Introduction:

You have learnt about the Uganda flag. Now in this lesson, you will look at the national Coat of Arms.

Procedure:

Step I:

You will mention the features on the Uganda Coat of Arms. These include; the sun, drum, kob, motto ,coffee and cotton. Can you mention other features?

Step II:

The importance of the features of the national Coat of Arms.

(i)   **The sun** – stands for abundant sunshine.

(ii)   The kob – stands for wildlife.

(iii)   Drum – Culture

(iv)   The spear and the shiled – traditional defence/protection

(v)   Coffee and cotton – cash crops of Uganda

    Note: The national coat of arms was designed by **Cecil Todd**.

Activity:

Get a paper, crayons and draw the national coat of arms.

Lesson 3: The national emblem and motto

You will be able to;

- Name Uganda's national emblem.
- Outline the characteristics of the national emblem.
- Write the Uganda national motto.

Materials you will need:

A pen, pencil, colours, note book, P.5 text book for S.ST, primary school atlas.

Introduction:

In the previous lesson, you learnt about the national Coat of Arms. In this lesson, you will learn about the national Emblem and Motto.

Procedure:

Step I:

a) **Uganda's National Emblem**
b) It is the **Crested Crane**. It was chosen because it is **has all the colours of the Uganda flag**.
c) **Characteristics of the national Emblem**
- It is gentle.
- It is humble.
- It is peaceful.
d) **Official documents where the crested crane is found**.
- National flag, security flags, hats of police and army.

Step II:

With the help of your parent or guardian;

- Write the national motto of Uganda.

- Give Importance of the national motto.

Activity:

Use a piece of paper, crayon or colours and draw the crested crane.

Exercise:

1. Why was the crested cran chosen as the Uganda's Emblem?
2. Write the motto of your school.

Lesson 4: The Uganda National Anthem

You will be able to;

- Sing the stanzas of the National Anthem.

- State the way people show respect to the National Anthem.

- Identify the occasions when the National Anthem is sung.

You will need:

A Pen, notebook, P.5 S.ST text book (if possible)

Introduction:

In this lesson you are now going to study about the Uganda National Anthem, when it was first sung, the person who composed it and occasions when it is sung.

Step I

Sing the Anthem of your school. How many parts does it have? when do you sung it?

Step II

With the help of an adult or guardian, sing the National Anthem. How many parts does it have?

Step III

The National Anthem you sung is the **Official Song** for our country.

That National Anthem replaced the British anthem which was known as **"God Save the Queen".**

Summary

The Uganda National Anthem is the official song of Uganda. It was first sung on **9th/Oct/1962**. This is when Uganda got her **independence**. It was composed by The Late **George William Kakoma**. It is sung during school assemblies, on Independence Day celebrations, when opening meetings, opening parliamentary meetings and other state functions. Ugandans respect the national anthem by standing up right nd standing at attention.

Activity:

1. Who composed the Uganda National Anthem?

2. How many parts has the National Anthem?

3. When did Uganda get her independence?

4. How do Ugandans show respect to the National Anthem when it is being sung?

5. Write the messages you learn from the National Anthem

Lesson 5:

Democracy and its importance

You will be able to;

– give the meaning of democracy.

– State ways democracy is practiced in Uganda.

– Mention the importance of democracy

– identify the problems facing democracy

Materials you will need:

A Pen, note book, P. 5 SST text book (if possible)

Introduction:

 In this lesson, you are now going to study about the meaning of democracy, ways in which democracy is practised, importance of democracy and problems facing democracy.

Step I

With the help of an adult, find out how your local council I chairperson was elected or chosen by the people in your village.

Step II

Your adults might have told you that the local council I chairperson was elected or chosen by people. What is the role of the LC I chairperson?

Step III

i) **Democracy is where people elect their leaders freely.**

It is a system of governance that promotes human rights. It can also mean going by the decision of the majority. It is also the government of the people by the people and for the people.

) Democracy in Uganda is practiced through;

- Observing Freedom of speech, freedom of association, freedom of movement, and freedom of worship.

iii) **Importance of democracy**

- It promotes peace and order in a country.

- It promotes peaceful change of leadership.

- It promotes respect for human rights.

- It allows people to choose leaders of their choice.

iv) **Problems facing democracy in Uganda**

- It does not favour the interests of the minority(few).

 It encourages bribery of voters

-Some people do not know their rights.

Activity

1. State the meaning of democracy.

2. Mention ways democracy is being practiced in Uganda.

3. Give the importance of democracy to Uganda.

Lesson 6: Systems of Elections

You will be able to;

- State the meaning of election.

- Mention the kinds of elections.

- Identify the systems of election.

- Outline the duties of the Electoral Commission.

Materials you will need:

A pen, note book, P. 5 text book (if possible)

Introduction:

In the previous lesson you learnt about democracy. Now in this lesson you are going to study about elections in Uganda.

Step I

i) **Election** is the action of choosing leaders. To elect means to select.

ii) In Uganda, there are different kinds of elections exercised for example; elections for the president, elections for Members of Parliament, local

council elections, By – elections and referendum.

Step II

Let us find out the materials used during elections. Write them in your note book.

Step III

In Uganda, elections are organised by a body **called The Independent**

Electoral Commission (I.E.C). It carries out different duties. below are some of its duties;

- To register voters.

-To print ballot papers

- Displat voter's registers

-To organize and supervise elections.

Activity

In my village, _____ where carried out at a _____.
People cast their votes in the _____. After voting, the
_____ were counted for each candidate. The _____
announced the election results.

Polling station, presiding officer, elections, votes, ballot box

TOPIC: THE GOVERNMENT OF UGANDA

Lesson 1: Organs of government

You will be able to;

- Give the meaning of government.

- State the importance of government.

- Mention the three organs of government.

Materials you will need:

Pens, Pencils, note book, P. 5 SST text book (If possible)

Instructions:

 Get ready with your books. Today you are going to study about the or–gans of government.

Introduction:

At home, the mother prepares food on three cooking stones or a charcoal stove with also three stands. Find out what happens when one stone or stand is removed. In the same way the government is is made up of three organs or arms.

Procedure:

Step I: Give the meaning of government

A government is a ruling body of a country.

In Uganda, there are two levels under which people are governed. These include; **Central government** which manages the national affairs and the **Local government** which runs the district affairs.

Step II:

The government plays many roles to its citizens as listed below;

- keeping law and order.

–Building schools.

–Building hospitals.

–Defending the country from external attacks.

– Constructing roads

Step III

Now write the three organs of government relating to the cooking stones or stands of a charcoal stove at home.

They are **Executive, Legislature and Judiciary**.

Activity

1. Name the three organs of government.

2. What name is given to a group of people who govern a country?

3. Mention the two levels of the government.

4. State the importance of government to its people.

Lesson 2: The Executive

You will be able to;

– Mention the groups of people who form the Executive.

– State the functions of the Executive.

– Identify the duties of the President.

Materials you will need:

 Pens, Pencils, note book, P. 5 SST text book (If possible).

Introduction:

In this lesson, you are going to learn about the Executive, groups of people who form the Executive, functions of the Executive and duties of the President.

Step I:

The Executive.

i. This is the ruling organ of the government.

It is headed by the **President.** It is made up of; the president, the cabinet and civil servants.

ii. The head of civil servants at the district level is the **Chief Administrative Officer**. (CAO)

iii) The highest civil servant in any ministry is known as **Permanent Secretary.(PS)**

Step II:

The functions of the Executive.

i) To implement laws.

ii)To provide social services to the people.

iii) To collect and spend revenue.

Step III:

The duties of the president

i) He heads the Executive.

ii) He is the Commander- in – Chief of   the Armed Forces.

iii) He signs bills passed by Parliament.

Activity

1. Write CAO in full.

2. Who is the head of the Executive?

3. What title is given to the head of civil servants in a district?

4. State functions of the Executive.

5. To which organ of the government do teachers and nurses belong?

Lesson 3:

The Legislature

You will be able to;

- Mention the title given to the head of the Legislature.

- Identify the groups of people who form the Legislature.

- State the function of the Legislature

Materials You will need: A pen, Pencil, note book, P. 5 S.ST text book (if possible)

Introduction:

In this lesson, you are now going to learn about the groups of people who form the Legislature, functions of Legislature, duties of the Speaker and main officials in Parliament.

Step I:

The Legislature

i) This is the law making body of the country.

It is also called **Parliament** or National Assembly

ii) It is headed by the **Speaker of Parliament**.

iii) It is made up of; Members of Parliament, who represent different constituencies in the country.

Step II:

The functions of the Legislature.

i) To make national laws.

ii) To amend laws.

iii) To approve the national budget.

The duties of the Speaker

i) He/she chairs parliamentary meetings.

ii) He/she represents the country at international functions.

Step III:

The main officials in the Parliament.

i) **The Speaker.**
He/ she chairs parliamentary meetings.

ii) **The Deputy Speaker.**

He/she chairs Parliamentary meetings in the absence of the Speaker.

iii) **The Sergeant – at – Arms.**

He/she ensures order in the Parliament.

iv) **The Clerk to Parliament.**

He/she records parliamentary proceedings.

Note: The recorded proceedings in the Parliament are known as **Hansard**.

A proposed law in the parliament is a **Bill.**

Activity

1. Name the Speaker of Uganda's Parliament.

2. Write M.P in full.

3. Which organ of government is known as the law making body?

4. find out the name of the MP og your local area/constituency.

5. State the functions of the Legislature.

In this lesson you have learnt about the groups of people that form the Legislature, functions of the Legislature and the main official in the Parliament.

Lesson 4: The Judiciary

You will be able to;

– Mention the groups of people who form the Judiciary.

– Give the duties of the Judiciary.

– Identify the Courts of law of under the Judiciary.

Materials you will need: A pen, Pencil, note book, P. 5 S.ST text book (if possible)

Introduction:

In this lesson you are going to study about the groups of people who form the Judiciary, functions of the Judiciary and Courts of law under the Judiciary.

Step I:

The Judiciary.

i) This is the organ which interprets laws of the country.

ii) It is headed by the **Chief Justice** (CJ).

iii) It is made up of; **Justices, Judges, Magistrates, Lawyers** and **Attorneys**

The duties of the Judiciary.

i) To interpret laws to the people.

ii) To settle disputes among people.

iii) To punish law breakers.

Step III:

The Courts of law under the Judiciary.

Level	Head
Supreme Court	Chief Justice
Court of Appeal	Deputy Chief Justice
High Court	Principal judge
Chief Magistrate's Court	Chief magistrate
Resident Magistrate's Court	Magistrate

Activity

1. Name the Chief Justice Of Uganda.

2. Name the highest court of the judiciary.

3. What title is given to head of Judiciary?

4. State the duties of the Judiciary.

Lesson 5:

The Constitution

You will be able to;

- Give the meaning of a Constitution.

- List the examples of Constitutions.

- Identify the importance of a Constitution.

Materials you will need:

A Pen, pencil, note book, P. 5 S.ST text book (if possible)

Introduction:

Do you have some rules at home that were set by your parents? List some of them. Also as a country, there are laws which the citizens must follow. These laws make up what we call a **Constitution.**

Step I:

The Constitution.

i**) A Constitution** is a set of laws that govern a country.

ii) The Constitution of the Republic of Uganda was written in 1995.

iii) It is called the **1995 Constitution**.

Step II:

Examples of constitutions in Uganda since independence.

i) 1962 Constitution/Independence Constitution.

ii) 1966 Constitution/Pigeon hole Constitution.

iii) 1967 Constitution/Republican Constitution.

v) 1995 Constitution/The people's Constitution.

Note: The 1995 constitution was made public on **8th October, 1995** at the **Constitutional Square**, formerly known as City Square

Step III:

a) **The functions of the Constitution.**

i) It creates order in a country.

ii) It protects people from unfair laws.

iii) It protects people's rights.

b) Importance of the constitution.

i) It promotes human rights.

ii) It promotes democracy.

iii) It promotes good governance.

iv) It helps to change leadership peacefully.

Activity

1. _____ is a set of laws governing a country.

2. Why should every school have rules and regulations?

3. Give the importance of a constitution.

Lesson 6:

Sources of Revenue and Expenditure by the government.

You will be able to;

- Mention the sources of government revenue.

- State the ways the government spends its money.

- Identify the services on which government spends its revenue.

Materials you will need:

A pen, pencil, note book, P. 5 S.ST text book (if possible)

Introduction:

In this lesson you are now going to learn about the government revenue, ways the government spends its money and services on which government spends money.

Step I:

Find out the type of work that your parent or guardians do to get money. List them. Write down the things on which your parents spend money on.

Step II:

The sources of government revenue.

i) **Revenue** is the money government gets or earns.

ii) **Expenditure** is the money government spends or uses.

iii) List the sources of government revenue. Check your list with these below; taxes, loans, donations, court fines, tourism, grants, licenses.

Step III:

a) **Ways government spends its money.**

–Building of schools.   –Buying security equipments.

-Paying civil servants.   -Building of hospitals.

-Constructing and maintaining roads,

-Paying loans .   -Providing safe and clean water.

b) Services on which the government spends its money.

-Education services.   -Security services.

-Transport services.   -Health services.

 Communication services.

Activity

1. Give the meaning of revenue.

2. Mention the sources of government revenue.

3. State the services on which government spends its money.

4. List the source school revenue

5. Write down the items on which schools spend money on

lesson 7

The rights and responsibilities of Citizens of Uganda.

You will be able to;

i) Give the meaning of a Citizen.

ii) Identify the ways of becoming a Citizen of Uganda.

iii) Mention the rights of a Citizen of Uganda.

iv) State the duties of Citizens of Uganda.

Material you will need:

A pens, pencil, note book, P. 5 S.ST text book (if possible)

Introduction:

In this lesson, you are now going learn about the meaning of a Citizen, ways in which one can become a Citizen, rights of Citizens and duties of Citizens of Uganda

Step I: Give the meaning of a Citizen.

Step II: Ways of becoming a Citizen of Uganda. There are different ways a person can become a Uganda. The constitution of the Republic of Uganda identifies the following;

Registration; This is when a person is born in Uganda but neither of his or her parents are Ugandans. He/she can apply to be registered as a Ugandan.

A person can become a citizen of Uganda by **descent;**This is a citizen of Uganda whose parents or grand parents belonged to one of the indigenous communities by the year 1926.

Step III: Rights of Citizens of Uganda.

All people in Uganda have rights because they are human beings. The rights include:-
i) The right to life. Nobody should take away the life of another.
ii) The right to own property.
iii) The right to food.

i) The right to shelter and clean environment.
     v) The right to education.
ii) The right to worship. People are free to follow any religion of
      their choice.
iii) The right to freedom of association.

Step iv: duties of Citizens of Uganda.

This is what a citizen should do to contribute to the development of
our country.
Maintaining law and order, paying taxes, protecting
public property, respecting national symbols such as National flags,
National Anthem and Coat of Arms, participating in community work,
participating in national elections.

Summary notes;

A Citizen is a person who belongs to a given country according to the constitution. You can become a Citizen of Uganda through **birt**h, **registration, adoption**, **descent** and **naturalization**. Citizens of Uganda have the right to life, right to vote and the right to own property. As Citizens you have duties to perform such as; keep law and order and pay taxes.

Activity

1. Who is a Citizen?

2. Give ways of becoming a citizen of Uganda.

3. Mention the rights of Citizens of Uganda.

4. State the duties of citizens of Uganda.

TOPIC: POPULATION, SIZE AND DISTRIBUTION

Lesson 1: The importance of a Census.

You will be able to;

i) Give the meaning of population and Census.
ii) List the information collected during a Census.
iii) State the importance of a population Census.
iv) Identify the problems faced during a population Census.

Materials you will need:

A pen, pencil, note book, P.5 S.ST text book (if possible)

Instructions:

Count the number of people at your home. Write the number of females and males. The number you have got is known as **population**.

Introduction:

In this lesson, you will learn about the meaning of population and Census, the information collected during census, the importance of population census and problems faced during population Census.

Procedure:

Step I: Give the meaning of population and census. Explain the meaning of Enumerator.

Population is the number of people in a given area. home, village, district ,region ,country, . **Census** is the official counting of people living in a country. The national population census is carried out after every ten **(10) years.** This is done by people known as **Enumerators**. **Step II:** List the information collected during census.

Step III: State the importance of population census.

Enumerators are trained people who move from home to home counting people. During census, they collect the following information; Names of family members, sex, education level of people in a family, age, occupation and relationship with the head of the family**, religion, and number of children.**

Step IV: Identify the problems faced during population census.

Importance of population census.

- To plan for the country.
- To know the number of people.
- To know the death rate.
- To know the birth rate.

Problems faced during population census

- Insecurity in some areas.   -
- Poor transport especially in highland areas.
- Bad weather conditions especially if it is a rainy season.
- People give wrong information.

Activity:

1. ……………………….. is the number of people in a given area.
2. Give the meaning of population census.
3. After how long is population census carried out in Uganda?
4. State any three reasons why the government counts people.
5. Identify problems faced during population census.

Lesson 2: Influence of population growth on communities.

You will be able to;

i) Give the meaning of population growth.
ii) Mention the factors that influence population growth.
iii) Outline the effects of population growth.
iv) Identify the ways of controlling population growth.

Materials you will need: a pen, pencil, note book, P.5 S.ST text book (if possible)

Introduction:

 In this lesson, you are now going to study about the meaning of population growth, factors that influence population growth, effects of population growth and ways of controlling population growth.

Procedure:

Step I:

Find out from an adult how the number of people at your community increased. This is **population growth**.

Step II:

Now you can learn about the factors that influence population growth.

Availability of food. Once a lot of food is available, the number of people will grow because they do not starve neither die of hunger.

Presence of better social services like health and clean piped water often allow
many people to survive because diseases are minimised.
Ignorance about family planning services also leads to population increase. High fertility rate among women also leads to population growth.

Step III:

Outline the effects of population growth in a country.

Negative effects of population growth.

- It leads to unemployment.
- It leads to high crime rate.
- It leads to shortage of land.
- It leads to environment destruction.

Positive effects of population growth.

- Leads to high tax collection.
- Provides enough labour force.

Ways of controlling population

- Encouraging use of family planning methods.
- Discouraging early marriages.
- Discouraging polygamy.

Activity:

1. Write down;
   a) The causes of large families.
   b) The dangers of large families.
2. What is population growth?
3. State any three ways in which government of Uganda can control population growth.

Summary
Population growth is the increase in the number of people in a country or area. There are many factors that make the number of people

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increase such as **improved diet, immigration, polygamy, low death rates, improve**d **medical care, early marriages.**

Lesson 3:

Factors that influence population distribution.

You will be able to;

i) State the meaning of population distribution.
ii) Identify the factors that influence population distribution.
iii) Locate areas on a map of Uganda with large and small population.

Materilas you will need:

 A pen, pencil, note book, P.5 S.ST text book (if possible)

Instructions:

You will need to get help from an adult to find out why some areas have many people while others few. Use the neighbouring villages or homes; take note of the ways houses are near or far from each other.

Introduction:

In this lesson, you are going to look at why some districts have more people than others. Urban areas have more people than rural areas. You will also be able to find out the areas in Uganda with large and small population.

Procedure:

Step I:

Write the meaning of population distribution. Let an elder brother or sister to help you to find out the places in your local area with many and few people. Ask him/her why the number of people in those areas is different.

Step II:

Identify the factors that influence population distribution.

Population distribution is the way people are settled in an area or country.

This differs from place to place. Some areas have many people while others few . This means that some areas are **densely populated** while others are **sparsely populated**. The factors that influence population distribution include; **climate of an area, presence of soil fertility, the nature of relief, presence pests and diseases.**

Activity:

1. Give the meaning of population distribution.
2. Mention places in Uganda that have a very high population.
3. Give factors that make the shores of Lake Victoria to have many people.
4. Identify the type of work people in villages do.
5. State factors that influence population distribution.

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National Curriculum
Development Centre,
P.O. Box 7002,
Kampala.

www.ncdc.go.ug