



Ministry of Education
and Sports

HOME-STUDY LEARNING

PRIMARY
4

SCIENCE

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This material has been developed as a home-study intervention for schools during the lockdown caused by the COVID-19 pandemic to support continuity of learning.

Therefore, this material is restricted from being reproduced for any commercial gains.

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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

THEME: OUR ENVIRONMENT

Topic: Weather Changes Around Us

Lesson 1: Changes in weather

In this lesson, you should be able to describe weather changes over a period of time.

Materials you may need:

A pen, pencil and a book

Introduction

Hello Primary Four pupils, when you look around during the day, some times you see the sun shining strongly or thick clouds. At times it is raining while other times, the wind is blowing strongly. These are the things we are going to learn about. We refer to them as changes in weather.

What is weather?

Weather is the condition of the atmosphere at a given time. The weather of a place is a result of many things. The things which give rise to the weather of a place are called elements of weather. The elements of weather are;

- | | |
|---------------|-----------------|
| i) Sunshine | iv) Temperature |
| ii) Clouds | v) Wind |
| iii) Rainfall | vi) Humidity |

The weather of a place can be described as sunny, rainy, windy or cloudy. These are called the types of weather.

The elements of weather are measured using instruments at a weather station. Look at the table below and identify some of the instruments used to measure weather elements

No.	Weather Element	Instrument Used	Its Use
1.	Rainfall	Rain gauge	Measures the amount of rainfall
2	Wind	Wind vane	Shows the direction of wind
		Wind sock	Indicates the direction and strength of wind
		Anemometer	Measures the speed of wind
3.	Temperature	Thermometer	Measures the hotness or coldness of the atmosphere
4.	Humidity	Hygrometer	Measures the amount of water vapour in the atmosphere (air)
5.	Sunshine	Sunshine recorder	To record the amount of sunshine in a particular place at any time

Project Work

Recording weather changes in your area

In this project, you will record the weather changes in your area in the morning and afternoon and for one month.

Use a table like the one below to record the weather changes. You may tick or shade in the column for the weather type.

Day	Time	Type of weather (put a tick ✓)			
		Sunny	Cloudy	Rainy	Windy
Day 1	Morning				
	Afternoon				
Day 2	Morning				
	Afternoon				
Day 3	Morning				
	Afternoon				

Lesson 2: The Water Cycle

In this lesson, you should be able to describe the water cycle.

Materials you will need

Heat source, water, kettle, bottle filled with cold water

Introduction

Dear pupil, in our last lesson, you learnt about the elements of weather. Can you now name and note them down? Today we are going to look at the water cycle.

What are the main sources of water?

The sources of water are: rainfall, lakes, rivers, springs and wells.

The Processes in the Water Cycle

You have ever cooked. When you close the cooking pot and boil something inside, what do you see at the bottom of the container that you used to close the pot? You will find that some droplets of water will collect at the bottom of the container that you used to close the pot.

Those droplets are particles of water from inside the cooking pot. But how did

they reach there? Water can change from one state to another. These changes in the atmosphere result into formation of rain. Our lesson today is on how rain is formed.

When it rains, some of the water sinks in the ground. Part of the water flows into water bodies like lakes, rivers, wells and springs.

When the sun heats up the soil, lakes, rivers and wells, the liquid water changes into water vapour. This process of liquid changing into vapour is called evaporation. Plants also release water vapour into the atmosphere. This process by which plants release water vapour into the atmosphere is called transpiration.

The warm water vapour from the surface of the earth rises up into the atmosphere where it cools to form small droplets of liquid water. This process is called condensation.

The small droplets of water then become bigger and form clouds. This then falls down as rain. Some of the rain sinks into soil and others flow back into rivers, lake and springs. These changes in water are referred to as the water cycle.

Activity

Write in your notebook sentences using the following words to describe the water cycle:

- i. Evaporation
- ii. Transpiration
- ii. condensation

In your notebook, draw a diagram to show the water cycle.
State the use of the sun in the water cycle.

Lesson 3: Rainfall

By the end of this lesson, you should be able to make accurate measurements of rainfall.

Materials you will need

Pen, tin, funnel, ruler, measuring cylinder
Notebook, pencil

Introduction

You have learnt about the rain cycle. Rain is an important element of weather. Do you remember the instrument used to measure rainfall? Let us learn more about rainfall.

Importance of rainfall

- i. Rainfall provides water for domestic use like cooking food, drinking, bathing, washing clothes, mopping.
- ii. Rainfall makes the day cool
- iii. Rainfall provides water for plants to grow and make food
- iv. Rainfall helps farmers' crops to grow quickly.

Dangers of too much Rainfall

- i. Too much rainfall causes floods which destroy roads, buildings, crops and animals.
- ii. Rainfall which comes with storm and hailstone can destroy property and plants.
- iii. Floods may increase the presence of waterborne diseases e.g. cholera, typhoid fever, diarrhoea, etc.

Activity: How to make your own rain gauge**Materials you will need**

- 1 Litre bottle
- Scissors
- Ruler

INSTRUCTIONS:

With the guidance of your elder brothers or sisters, make a rain gauge. Using a plastic disposable water bottle you can make a simple rain gauge. It costs almost nothing!

- 1-liter plastic water bottle. With a sharp knife, cut it's neck on the cylindrical part.
- Invert the top to make a funnel. This funnel will prevent evaporation of water.
- Using your ruler and pen, place a mark every 1/2 inch on the bottle. These will allow you to measure how much rain you received.
- An empty plastic bottle, being light, will fall down or fly away in the slightest breeze.
- Dig a hole and bury the lower end of the bottle in the ground. This will anchor the bottle in place.
- After it rains, head outside and check your gauge! Record your results.
- Use your rain gauge to measure the rainfall in your area. Record your answer in your notebook.
- Put the rain gauge in an open space on a flat ground (away from buildings and trees). - This helps to get the right amount of water from the rain.
- Place the funnel 30cm above the ground to avoid splashing of rain water into the rain gauge.
- Use the measuring cylinder to measure the water you collected in the tin.

THEME: HUMAN HEALTH

Topic: Personal Hygiene

Lesson1: Keeping Clean

By the end of this lesson, you should be able to:

- i. state why we keep clean.
- ii. identify ways of keeping clean.

Materials you will need

Water, basin, soap, nail cutter, bathing sponge, toothbrush, toothpaste

Introduction

Dear pupil, while in P1 and P2, you learned about keeping some of your body parts clean. Keeping our bodies and clothes clean is personal hygiene.

How do we keep clean? Why is it important to keep clean?

Things used for keeping parts of our bodies clean

In the table below, you will identify things you can use to keep the parts of your body clean. Draw them and write down the importance of keeping each of the body part clean.

Body part	Things used to keep clean	Draw	Importance
Fingernails			
Hair			
Eyes			
Feet			
Ears			
Nose			
Teeth			
The skin			

Lesson 2: Keeping Beddings and Clothing Clean

By the end of this lesson, you should be able to:

- i. Demonstrate keeping clothes and beddings clean.
- ii discuss-what can go wrong if we do not keep clean.

Materials you will need

Water, basin, soap, detergent, dirty clothes and bed sheets

Introduction

Dear pupil, get a dirty cloth you wore yesterday. Look at the collar, sleeves and around the armpits. How do these clothes smell? How do they look like? In this lesson, you will learn how to wash your clothes and beddings.

Activity

- i. Collect your dirty clothes and beddings.
- ii. Separate the beddings from the clothes.
- iii. Apply soap or detergent on the clothes especially on the collars, sleeves, the armpit regions and on the rest of the clothes.
- iv. Rub the parts and the rest of the clothes until the dirt has been removed.
- v. Rinse the clothes/beddings in clean water at least two times to remove the soap and dirt.
- vi. Ask your parent to check if you have washed your cloths and beddings clean.
- vii. Spread them to dry in the sun.
- viii. Iron the clothes and beddings before you use them.

Write the answers to these questions in your notebook

- i. Why should clothes and beddings be washed with soap?
- ii. Why should clothes and beddings be ironed before use?
- iii. What would happen if clothes and beddings are not cleaned?
- iv. State the importance of rinsing clothes during the process of washing.

THEME: HUMAN HEALTH

Lesson 1: Classes of Food

by the end of this lesson, you should be able to;

- i. identify the classes of food.
- ii describe the uses of food values to the body.

Materials you will need

Pen, notebook, pencils

Introduction

Dear pupil, did you know that most of the food that you eat has different uses in your body? In this lesson, you will identify the groups of foods and state their uses in the body.

There are six groups (classes) of foods. The table below shows these classes.

Class of food	The value of the food in the body	Examples of foods
Proteins	They build the body	Meat, peas, eggs, fish, milk, groundnuts, sim sim, etc.
Carbohydrates	They provide energy to the body	Yams, posho, bread ,rice, cassava, matooke, etc.
Fats and oils	They provide energy to the body	Groundnuts, avocados, sim sim, butter, ghee,etc.
Vitamins	They protect our bodies from diseases	Vegetables, milk, beans, to-matoes liver, egg yolk, etc.
Minerals	They protect the body against diseases. They are for healthy growth of bones.	Milk, salt, vegetables, fish liver, egg yolk,etc.
Roughage	They help in making faeces soft	Fibrous fruits, vegetables, tubers
Water	It makes part of blood, saliva, body fluids and helps in digestion	Drinking water, tea, milk, soup, fruits, etc.

Summary notes

Uses of food in the body

- Food provides energy to the body
- Food keeps the body healthy
- Food builds the body

- Food provides warmth to the body.

Self-testing exercise

Explain the meaning of the term balanced diet.

With guidance from your parent, list the foods in a meal that makes it a balanced diet.

Identify more foods that are rich in proteins, carbohydrates and vitamins in the table above.

Lesson 2: Deficiency Diseases

By the end of this lesson, you should be able to:
identify some deficiency diseases.

give the signs and symptoms of deficiency diseases.

Materials you will need

Pen, pencils, notebook

Introduction

Welcome to this lesson. While at school, you may have seen children who look healthy. There are also others that do not look healthy. Some of these children may be lacking some foods to help their bodies to grow well.

In this lesson, you will learn about some diseases you get when you lack some foods in your body. These are called deficiency diseases

The following table shows a list of some deficiency diseases, their causes, signs and symptoms. Study them.

Deficiency diseases.	cause	Signs and symptoms
Kwashiorkor	Lack of enough protein in the body	-brownish hair -swollen stomach -swollen moon face -swollen feet
Marasmus	Lack of all nutrients in the body	-The child is thin and underweight. The weight is less than what it should be. -The skin is dry -The hair breaks easily - Some pass diarrhea for a long time - The child becomes dull - The child does not grow normally. He/she is short. This is referred to as stunted growth. The child feels hungry all the time
Goiter	Lack of iodine in the body	-swollen neck -difficulty in breathing and swallowing
Rickets	Lack of vitamin D	-legs bend outwards -poor teeth formation
Anaemia	Lack of iron in the body	-pale skin -dizziness -tiredness
Scurvy	Lack of vitamin C in the body	-bleeding of gums -wounds take long to heal -itching skin with rash

Lesson 3: Food Handling

By the end of this lesson, you should be able to:
explain ways in which food gets contaminated.
describe ways of proper handling of food.

Materials you will need

Pen, pencil, notebook

Activity

Observe your parent as she is preparing meals. Answer the following question by ticking in the box given.

i. Washing hands before preparing food.

Yes No

2. Cooking food in a clean place

Yes No

3. Cleaning plates before eating food

Yes No

4. Washing hands before serving food

Yes No

5. Washing vegetables and fruits before eating them.

Yes No

Summary notes

Some of the ways of proper handling of food include the following;

- i. Wash hands before preparing food.
- ii. Wash hands before serving food.
- iii. Wash vegetables and fruits before eating them.
- iv. Prepare food in a clean place.
- v. Serve food in clean containers.

Activity

Food can get contaminated when it has germs in it. The following are some of the ways food can get contaminated. Two of them have been written for you.

Write the other ways.

- i. Preparing food with dirty hands.
- ii. Serving food with dirty hands.
- iii.....
- iv.....
- v.,.....

THEME: THE HUMAN BODY

Lesson1: Major Organs of the Human Body

By the end of this lesson, you should be able to;

- name the major human body organs.
- draw and label the human body organs.

Materials you will need

A pen, notebook

Introduction

Dear learner, in P1 and P2, you learnt about the human body parts. Can you name some of the parts of the human body?

You have the following parts; ear, eye, nose. I know that you know their uses to you. Write down their uses

Eye _____

Ear _____

Nose _____

These parts are called organs. Each organ has a special use to the body. Mention some other organs that you know. The major organs you are going to learn about in Primary Four are: eye, ear, brain, the lungs, the liver, the urinary bladder, the kidneys, the heart, the stomach, nose and the skin. Some of these organs are outside our body. Others are inside our body.

Lesson 2: Human Body Organs that are Outside Our Bodies

By the end of this lesson, you should be able to:

- i. state the functions of each major body organ.
- ii. explain ways of caring for the organs.
- iii. draw the human body organ.

Introduction

Hello, please look again at the diagram of the human body organs . Identify the organs that can be seen from outside.

Now let us look at the uses of two of these organs one by one.

1. The eyes

The eyes are found in the face. Each person has two eyes. The eyes can easily be damaged if not protected well. They are protected by the eye sockets. The eyes are used for seeing.

How to care for our eyes

- i. Wash your eyes with clean water and soap regularly.
- ii. Avoid looking directly at bright lights.
- iii. Do not read in dim light.

2.Ears

The ears are found on the sides of the face. There are two ears on each person's head. The ear is one of the sense organs in our body. The ears are used for hearing.

The ears are also the organs for balancing the body.

Caring for the ears

- i. Wash your ears with clean water regularly.
- ii. Do not use sharp objects such as sticks and metals for cleaning your ears.
- iii. Do not push objects such as seeds and beads into your ears.
- iv. Do not direct your ears to loud sound.

Activity

- Find from your friends or parent some of the common eye diseases and write them down in your notebook.
- There is a grease-like substance in your ears called earwax.
- What is the use of the earwax?
- Too much earwax in the ear can make you fail to hear well. Some of it needs to be removed. Name two better ways of removing earwax.

Lesson 3: The Human Body Organs that are Inside the Body

By the end of this lesson, you should be able to;

- i. state the functions of each major organ.
- ii. state four ways in which the body works.

Materials you will need

Picture of the human body organs

Introduction

Dear learner, in our previous lesson, you learnt about the ear and the eye. What are the uses of the two organs? I hope you have remembered them. Let us now look at some of the other organs inside the human body and their uses.

Organ	Uses in the Body
The brain	It stores information we hear and see and helps us to remember that information. The brain is used to think.
The lungs	The lungs are used for breathing.
The heart	The heart pumps blood to all parts of the body.
The stomach	The stomach keeps the food we eat for some time.
The kidneys	The kidneys produce urine. They filter blood to remove wastes in form of urine.
The urinary bladder	The urinary bladder stores urine before it is passed out.
The liver	The liver makes harmful materials in body harmless. It stores vitamins and minerals. it produces bile.
The gall bladder	The gall bladder stores bile.

Self-testing exercise

- i. Which two body organs help to remove wastes from our bodies?
- ii. Name two organs protected by the rib cage.
- iii. I am reddish brown in colour, soft and I make the poisonous substances in the body harmless. Who am I?
- v. Match the organs in part A of the table below with their uses in part B.

A: Organs	B:Uses
Lungs	Keeps food for sometime
Ear	Stores bile
Gall bladder	Produces bile
Kidneys	Pumps blood to all body parts
Stomach	For hearing
Brain	For breathing
Heart	Removes waste from blood through urine
Urinary bladder	Stores information
Liver	Stores urine

Lungs

Ear

Gall bladder

Kidneys

Stomach

Brain

Heart

Urinary bladder

Liver

THEME: HUMAN BODY

Topic 3: The Teeth

Lesson1: Types of Teeth

By the end of this lesson, you should be able to:

- i. identify sets and types of teeth.
- ii. describe the types of teeth and their functions.

Material you need

A mirror, notebook, pen and a pencil

Introduction

- a) Dear pupil, before you start this lesson, I would like you to do the following activity.
- b) Get a mirror, open your mouth wide and;
- c) count the number of teeth in the lower and upper jaws.
- d) look at the arrangement of your teeth.
- e) look at the different types of teeth in your mouth.
- f) look at the colour of your teeth.

Sets of Teeth

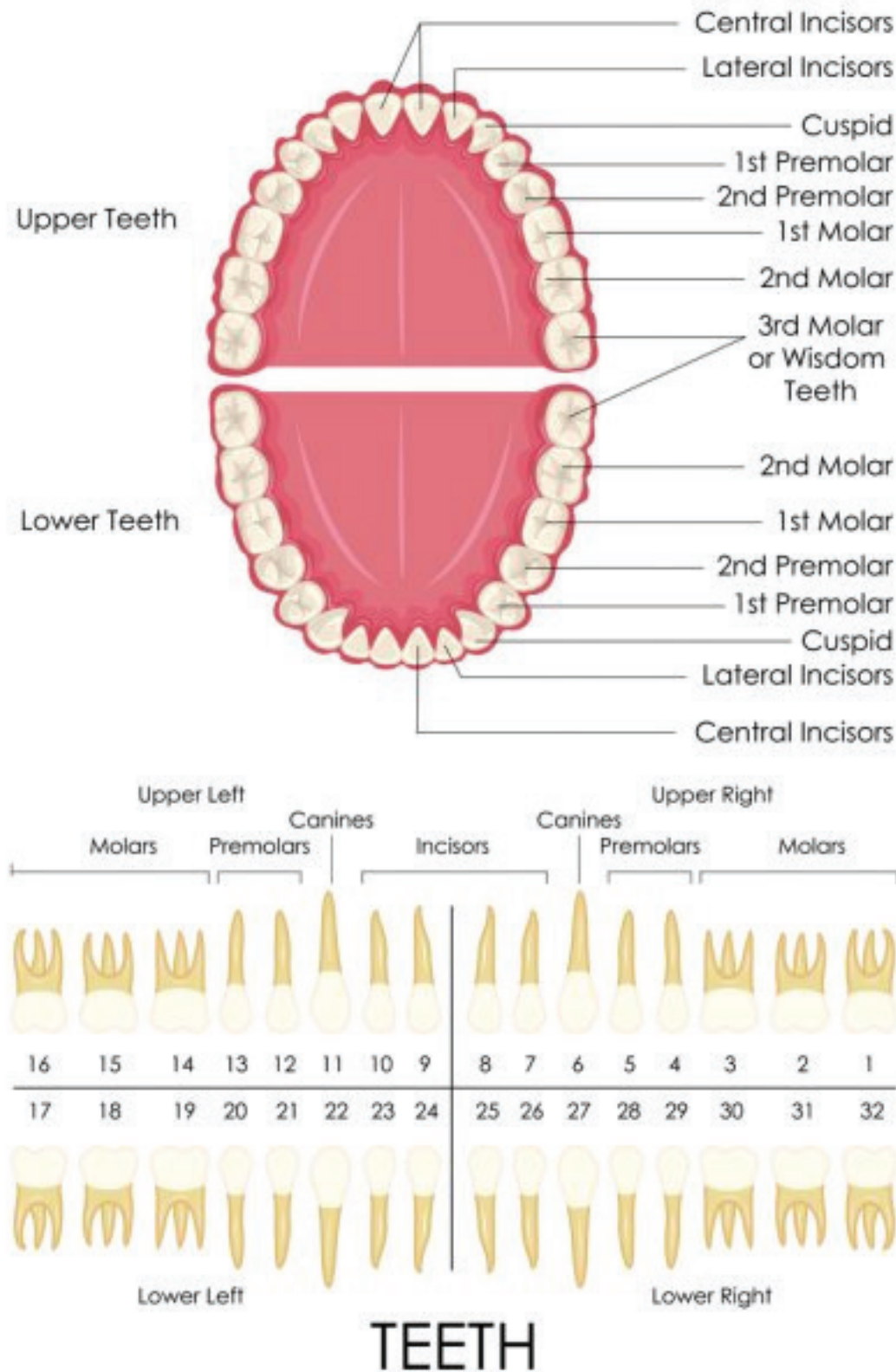
You have already seen that babies are born without teeth. As they grow, they begin to develop teeth. These teeth become loose sometime later and are removed at around the age of six years. Another set of teeth develops. The first set of the teeth is called milk teeth or primary teeth. The milk teeth are 20 in number.

The second set of teeth is called permanent teeth. They remain throughout the life of an adult. They are 32 in number. They take long to grow. Once removed, they cannot grow again.

Types of Teeth

There are four types of teeth in an adult human being. Each jaw has the four types of teeth.

The types of teeth are: Incisors, Canines, Premolars and Molars.



Incisors: These are found in the front of the mouth. There are four incisor teeth in each jaw. Therefore, there are 8 incisors in total. Incisors are chisel shaped. They have flat, sharp edge. The incisor tooth has one root. They are used for biting or cutting food.

Canines: These have sharp and pointed surface. A canine tooth has one root.

Each jaw has two canine teeth. There are 4 canine teeth in total. They are used for tearing food.

Premolars: These have a flat and rough top. A premolar tooth has two roots. Each jaw has 4 premolars. There are 8 premolars in total. The premolars are used for crushing and grinding food.

Molars: These are the last teeth on the jaw. They have large and rough surface. Each jaw has six molars. There are 12 molar teeth in total. The last two molar teeth in each jaw are called the wisdom teeth. The molar tooth has three roots. They are used for crushing, chewing and grinding food.

Activity

1. Using a mirror, look at your teeth again and find the number of the following teeth in each jaw in your mouth;

- i. incisor teeth
- ii. canine teeth
- iii. premolar teeth
- iv. molar teeth

2. Draw the different types of teeth.

Lesson 2: Structure of the Teeth

By the end of this lesson, you should be able to;

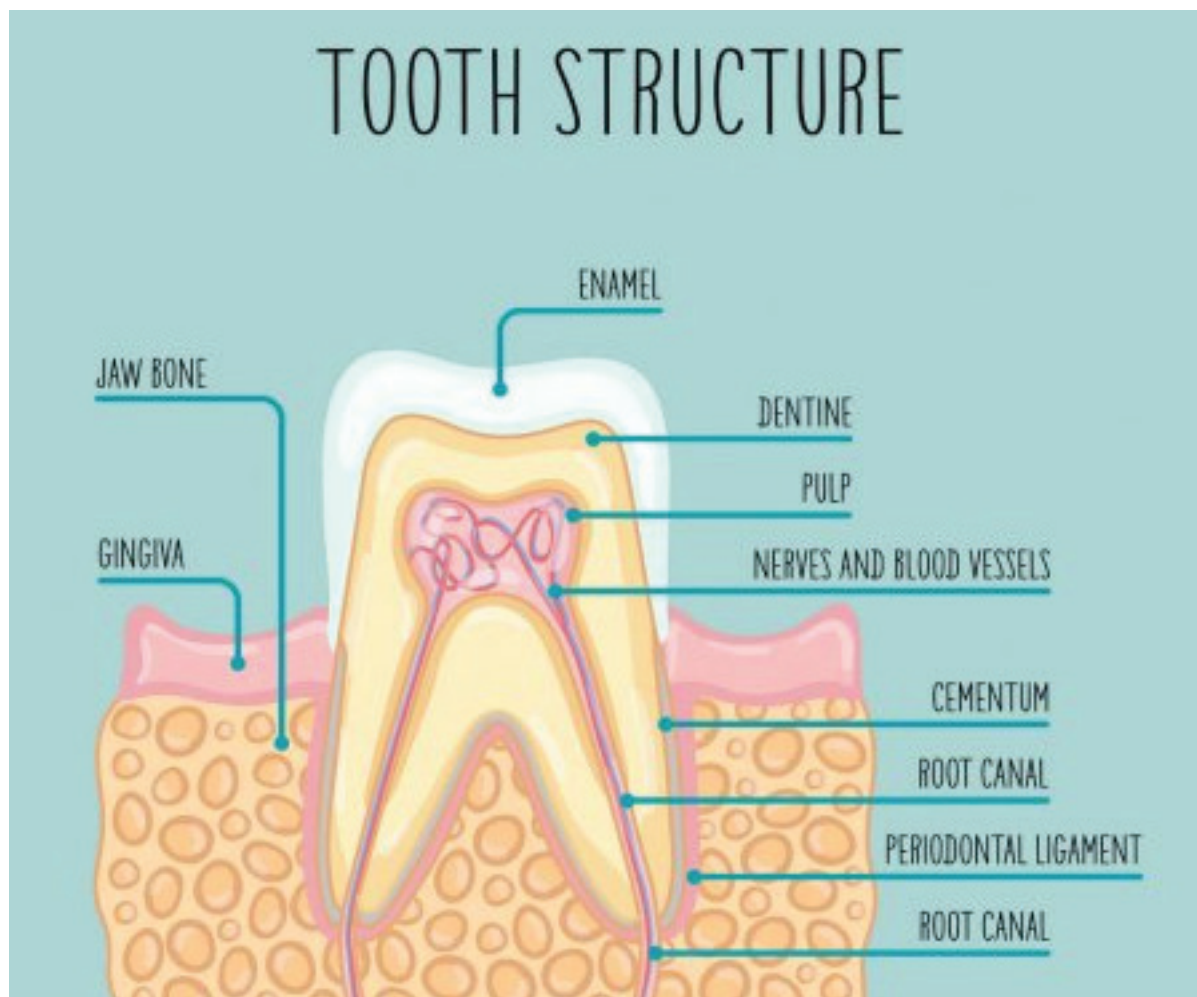
- i. identify the parts of a tooth.
 - ii. mention the ways of caring for the teeth.
- give the diseases and disorders of the tooth.

Materials you will need

A diagram of a tooth

Introduction

Dear learner, I know you remember well the sets of teeth we develop as we grow up. You also know that we have four types of teeth in humans. Please, briefly name the types of teeth (incisors, canines, premolars and molars). These teeth have similar structure as you will soon see.



A tooth is made up of the outer white part called the crown and the part below it called the root. The root holds the tooth into the jaw bone. The neck separates the crown from the root.

The outer part of the crown is called the enamel. It is the hardest part of the tooth. It is made from mineral called calcium and phosphorous. The enamel protects the inside parts of the tooth.

Diseases and Disorders of the Teeth

The following are some of the diseases of teeth.

No.	Disease/Disorder	Signs and Symptom	Prevention
1.	Dental cavity	Hole in the tooth	Avoid eating foods with too much sugar. Brush teeth after eating food
2.	Dental plagues	Teeth become yellow/ brown Bad breath from the mouth	Brush teeth after every meal
3.	Gum disease	Swollen gum Gum bleeds when one brushes Bad breath from the mouth	Avoid eating foods with too much sugar in them Brush teeth after eating food
4.	Tooth crack	Tooth has broken part	Do not bite hard things with your teeth Avoid opening bottles with your teeth

Activity

With the help of someone older than you, discuss ways of caring for teeth.

THEME: HUMAN HEALTH

Lesson 1: Sanitation

By the end of this lesson, you should be able to;

- i. state what sanitation means.
- ii discuss the importance of proper sanitation.
- iii. describe the different ways of maintaining proper sanitation.

Materials you will need

Pen, pencils, notebook, colours

Introduction

Dear pupil, have you ever seen a place where people throw rubbish? What do you see happening in such a place? Are the people around such a place happy? Today, you will learn about sanitation. Sanitation means keeping our environment clean. We need to clean our environment because of the following reasons.

to prevent the spread of germs.

to promote good health in our community.

to avoid bad smell in our environment.

Ways of Maintaining Proper Sanitation

Activity

In this table, you will fill in the activities and materials that are needed to maintain proper sanitation. Your parent or elders may help you to do this.

Activities	Materials needed
Sweeping the compound, house
Mopping the house
.....	Slasher
Draining stagnant water in the compound
Cleaning latrines

Lesson 2: Germs and how they are Spread

By the end of this lesson, you should be able to;

- i. explain what germs are.
- ii. describe how germs are spread.

Materials you will need

Pen, notebook, pencils

Introduction

Hello my dear, did you play in the soil or stepped in dirty water while playing? Did you eat food without washing your hands? Did you drink water that was not boiled? Did you wash your hands after visiting the toilet? Look, your hands may have millions of germs that you cannot see with your eyes. Germs are everywhere and can cause diseases to us.

In this lesson, you will learn about germs and how they are spread. A germ is an organism that causes diseases.

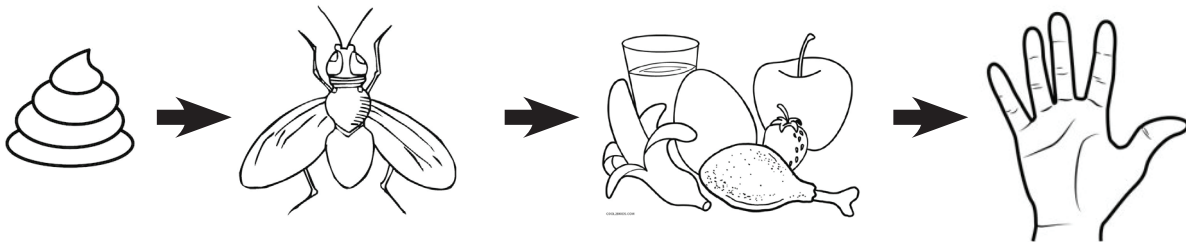
There are five common groups of germs namely: virus, bacteria, protozoa fungi and worms.

Germs are found everywhere; in faeces and urine, water, soil, air, on dirty clothes, on dirty beddings and under our dirty long fingernails, etc.

How do Germs enter Our Bodies?

- i. Through eating contaminated food
- ii. Through the nose when we breathe in
- iii. Through open wounds and cuts
- iv. Through skin contact with infected persons
- v. Through sharing clothes with an infected person
- vi Through insect bites and stings

The following drawing shows the major ways through which germs are spread.



Write the answer to the question below in your notebook
Name the ways you can protect yourself from getting germs.

Lesson 3: Common Diseases Caused by Germs

By the end of this lesson, you should be able to;

- i. identify some diseases caused by germs.
- ii. describe the different ways of protecting against germs and diseases.

Materials you will need

Pen, pencil, notebook, newspaper, glue, scissors

Introduction

Hello, in your notebook, write down some diseases that you know. In this lesson, you will learn about some of the diseases caused by germs and the ways we can protect ourselves against the diseases.

Some of the common diseases caused by germs include the following:

No.	Diseases	The germ that causes it
1.	Trachoma	Bacteria
2.	Cholera	Bacteria
3.	Typhoid	Bacteria
4.	Dysentery	Bacteria
5.	Tetanus	Bacteria
6.	Measles	Virus
7.	Polio	Virus
8.	Rabies	Virus
9.	Hepatitis	Virus
10.	CoVID - 19	Virus
11.	Malaria	Protozoa
12.	Ringworm	Fungus

The following are some ways we can protect ourselves against the diseases caused by germs;

- i. Drinking boiled water.
- ii. Washing hands before handling food.
- ii. Washing hands after visiting a toilet.
- iv. Clearing bushes and draining stagnant waters.
- v. Spraying to kill insects that spread diseases.
- vi. Preparing food in a clean place.
- vii. Covering food.
- viii. Defecating and urinating in a latrine/toilet.
- ix. Removing rubbish and burning it.
- x. Immunizing children.

THEME: HUMAN HEALTH

Topic: Diarrhoea Diseases and Worm Infestations

Lesson 1: Diarrhoea Diseases

By the end of this lesson, you should be able to;
 identify diarrhea diseases.
 describe the causes of diarrhea diseases and how they are spread.

Materials you will need

Pen, pencil, notebook

Introduction

Read this story

Once upon a time, there was a boy called Mark. One day, his mother sent him to buy tomatoes. On his way, he saw a chapatti that was dropped on the ground. He picked and ate it. That evening, he started feeling a stomach-ache. Later he started vomiting and passing out watery stool (faeces).

What do you think was the cause of his sickness? How could Mark have avoided getting the disease?

In this lesson, you will learn about diarrhoea diseases. These are common intestinal diseases. The table below shows their cause, the signs and symptoms.

Diarrhoea Dis- ease	Germ	The Signs and Symptoms
Diarrhoea	bacteria	Passing out watery faeces. Body weakness
Dysentery	protozoa or bacteria	Watery faeces with blood in it. Stomach-ache
Cholera	bacteria	Vomiting Body weakness
Typhoid	bacteria	Body weakness Headache

Ways by which Germs Spread

- i. When houseflies and cockroaches feed on our food, they leave germs on the food.

- ii. When we drink contaminated water.
- iii. When we eat contaminated food and fruits.

Self-testing Exercise

Briefly explain the following words:

- Diarrhoea
- Dysentery
- Explain why a person suffering from diarrhoea is given a lot of fluids to take.

Lesson 2: Making Oral Rehydration Solution (ORS) or Salt-Sugar Solution

(SSS)

By the end of this lesson, you should be able to demonstrate how to mix and administer ORS and SSS.

Materials you will need

Pen, pencil, notebook, salt, sugar, boiled water, tablespoon, clean container like jug, bowl, etc.

Introduction

Hello my dear, you have learnt that diarrhoeal diseases make us vomit a lot and pass out watery faeces too much. This makes our bodies to lose water. This condition is called dehydration.

Today we are going to learn about how to mix and administer ORS. You will also make SSS to treat diarrhoea.

Instruction

Ask your parent or guardian to get for you a sachet of ORS. Mix the ORS by following the steps below:

Wash your hands with clean water and soap.

Measure 1 litre of drinking water into a clean container.

Tear the sachet well and pour the powder into the drinking water.

Stir it to make a solution.

How to prepare ORS/SSS at home

You will follow the following steps:

- i. Wash your hands with clean water and soap.
- ii. Measure 1 litre of drinking water into a clean container.
- iii. Measure one tablespoonful of salt and eight tablespoonsful of sugar into a clean container.
- iv. Stir until the salt and sugar dissolve.

Using the ORS or SSS at home

Give babies a quarter of a cup after every passing out watery faeces.
For grown up children and adults, give half a cup after passing out watery faeces.

Note: The ORS should be kept covered to avoid contamination.

Importance of ORS or SSS

- i To replace the lost water and mineral salts in the body.
- ii. To provide energy to the body.
- ii. It prevents a person from being dehydrated.

Self-testing exercise

State the reasons why ORS or SSS is given to dehydrated patients?

Lesson 3: Intestinal Worms

By the end of this lesson, you should be able to:

- i. identify the types of worms.
- ii. explain ways worms enter the body.
- iii. describe the signs and symptoms of worm infestation.

Materials you will need

Pen, pencil, notebook

Introduction**Read the riddle below.**

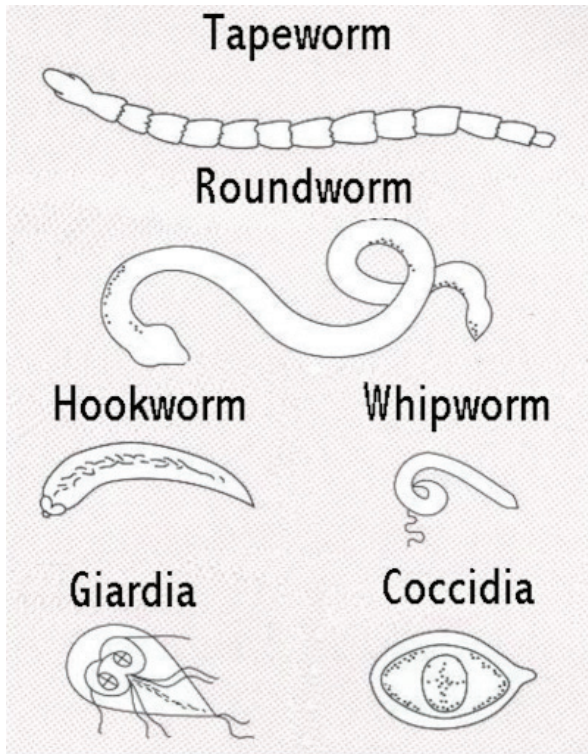
I am small, long and I live in your intestines. You will find it hard to kill me. I make you sick when we are many inside you. What am I? (Worm)

Today, we are going to learn about worms. Worms are living things that live inside our bodies. They feed on our blood and the food that we eat. That is why they are called parasites.

Examples of worms include the following.

Worm	How it Enters the Body	Signs and Symptoms
Tapeworm	By eating meat which is not properly cooked	Swollen stomach Diarrhoea, vomiting, loss of appetite
Roundworm (<u>Askaris</u>)	Through eating unwashed fruits and raw vegetables Eating food with dirty hands	Feeling weak, diarrhoea, loss of weight

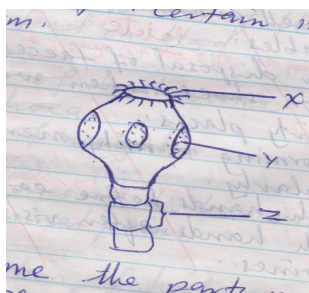
Threadworm	Through eating food with unwashed hands	Itching around the anus, stomach ache, loss of appetite
Hookworm	Through the skin when we walk outside without shoes or sandals Eating contaminated fruits and vegetables	Diarrhoea, itching on lower leg, weakness of body



Self-testing Exercise

Identify any food for worms in the intestine.

The diagram below shows the head of a certain intestinal worm. Study it and answer the questions that follow.



Name the parts marked:

X _____

Y _____

Z _____

Which type of worm has the head above?

Lesson 4: Worm Infestation

In this lesson, you should be able to describe the treatment and ways of preventing worm infestations.

You need the following materials;

Notebook, pen, and pencil

Introduction

Hello my dear, we looked at the types of worms and how they enter the body. I hope you remember them well.

In this lesson, you are going to learn about the treatment and ways of preventing worm infestations.

The following are the ways of preventing worm infestations. Please find out from your parent or guardians or older siblings the other ways and write them down.

By eating well cooked meat.

By washing fruits and vegetables well before eating them.

Washing hands before handling food and after using a toilet /latrine.

Deworming yourself regularly.

.....

THEME: HUMAN HEALTH

Lesson 1: Disease Vectors

By the end of this lesson, you should be able to;
name some disease vectors.

- i. state characteristics of the disease vectors.
- ii. identify the diseases spread by the vectors.

Materials you will need

Notebook, pen, pencil, a housefly, a cockroach

Introduction

Hello my dear, in Primary Three, you learnt about insects. Get your notebook and write the insects down. Some insects are useful while others are harmful. Can you mention some of the harmful insects?

Today, you will learn about vectors. A vector is an insect or animal which spreads diseases. In your home, can you name some of the insects and animals that spread diseases?

Here are some examples of vectors and the diseases they spread.

1.	Vectors	Diseases they Spread
2.	Anopheles mosquito	Malaria
3.	Culex mosquito	Elephantiasis
4.	Aedes / Tiger mosquito	Yellow fever
5.	Rat	Plague
6.	Housefly	Diarrhoea, dysentery, typhoid, cholera, trachoma
7.	Cockroach	Diarrhoea, cholera, dysentery
8.	Tsetse fly	Sleeping sickness
9.	Louse	Relapsing fever
10.	Flea	Bubonic plague
11.	Dog	Rabies

12.	Ticks	Typhus fever
13.	Itch mite	Scabies

Activity

- Discuss with your parent/guardian or elders the characteristics of the following;
 - A housefly
 - A cockroach
 - A mosquito
- Describe the life cycle of each of the three vectors above.
- Draw the life cycle of a housefly.

Lesson 2: Prevention and Control of Diseases Spread by Vectors

By the end of this lesson, you should be able to practice correct prevention and control of the diseases spread by vectors.

Materials you will need

Pen, pencil, notebook, mosquito net

Introduction

Dear pupil, I hope you still remember the diseases spread by vectors. Today, you will learn about the different ways of controlling the diseases spread by vectors.

1. In our last lesson, you discussed with your parent/guardian or elders the characteristics of some vectors. Find out what you learnt by ticking the right answer in the box for each question below.

Activity:

(a) A housefly lives in dirty places. Yes No

(b) Houseflies carry germs to our food through their vomits and hairy body.
Yes No

(c) Mosquitoes hide in tall grass in our compound Yes No

(d) Mosquitoes do not lay eggs in stagnant waters.
Yes No

e) Cockroaches feed on our foods and spread germs.
Yes No

3. List down in your notebook the activities you can do to prevent diseases in your home.

4. Draw in your notebook the tools and materials you can use to clean your

home.

Summary notes

Prevention and Control of Diseases Transmitted by Vectors

i, Drain stagnant water around the home to control malaria.

ii. Spray with insecticides to kill insect vectors.

iii. Sleep under mosquito nets to prevent mosquito bites.

Keep food covered to prevent houseflies and cockroaches from sitting on it.

iv. Defecate in latrines/toilets.

v. Clear bushes near homes.

vii Use rat traps and rat poison to kill rats in order to control rat plague.

viii. Cut hair short and keep it clean, wash clothes and iron them to control lice.

ix. Treat/vaccinate dogs and avoid disturbing dogs to control dog bites.



THEME: HUMAN HEALTH

Topic: Accidents, Poisoning and First Aid

Lesson 1: Common Accidents

By the end of this lesson, you should be able to;
 namethe common accidents at home, on the way to school and from school.
 statethe causes of common accidents.
 demonstratethe correct practices to avoid accidents

Materials that you will need

Pen, pencil, notebook

Introduction

Dear pupil, you realise that you can easily harm yourself anytime and anywhere. Can you identify things that can cause harm to you when you handle them badly? Have you ever seen somebody who had an accident on your way to school?

In this lesson, you will learn about the common accidents at home, on the way to and from school.

An accident is a sudden happening that causes harm to the body.

Activity 1

With guidance from your parent of guardian or elders, identify the causes of the following common accidents:

a) at home b) on the way to school c) from school d) at school

No.	Type of Accident	Cause	Effects
1.	Fractures		
2.	Burns		
3.	Cuts		
4.	Sprains and strains		
5.	Choking		
6.	Animal and insect bites		
7.	Bruises		
8.	Road accidents		

Activity 2

In the table below, you will identify the ways you can prevent these accidents.

No	Type of Accident	Ways of Preventing the Accident
	Fractures	
	Burns	
	Cuts	
	Sprains and strains	
	Choking	
	Animal and insect bites	
	Bruises	
	Road accidents	

Identify the causes of road traffic accidents.

Mention the ways of preventing road traffic accidents.

Lesson 2: Poisoning

By the end of this lesson, you should be able to:

- i. state the causes of poisoning.
- ii. describe the habits which help to avoid poisoning at home, on the way and at the school.

Materials you will need

Pen, pencil, notebook

Introduction

Hello pupil, you have learnt about the common accidents at home and their causes. You should be careful so as to avoid these accidents

Today, you will learn about poisoning as one of the common accidents.

Poisoning is the taking in of substances that can be harmful to the body.

Common Causes of Poisoning

In your notebook, write down the common causes of poisoning.

Ways of Preventing Poisoning

Keep chemicals and drugs away from children.

Handle foods properly to avoid contamination.

Destroy all expired drugs that are not in use.

Keep chemicals away from foodstuffs.

Label all bottles containing liquids.

Self-testing Exercise

What is poisoning?

Name any two examples of poisons.

Why is it dangerous to keep poison in bottles of soda?

Lesson 3: First Aid for Accidents

By the end of this lesson, you should be able to demonstrate ways of giving first aid to victims of accidents and poisoning.

Materials you will need

Pen, pencil, notebook

Introduction

Welcome to this lesson. We come across accidents all the time. It is important to know how we can take care of ourselves and other people who are involved in an accident.

In this lesson, you will learn about the different ways of giving first aid to people who have got accidents.

The table below shows the type of accident and the first aid you can give to an injured person.

Type of Accident	First Aid
Fractures	Tie splints around the injured part to keep the broken bone in position. Take the victim to the nearest health center.
Burns	Put the burnt area in cold water or pour clean cold water on the injured part.
Poisoning	Give the person a lot of milk, water or juice to dilute the poison.
Cuts	Press the affected part to stop bleeding. Wash the wound with clean water and soap and dress the wound with a clean piece of cloth.
Sprains and strains	Rest the injured part. Put ice on the injured part. Bandage the injured part. Raise the injured part on a pillow to reduce pain and swelling.

Reasons for giving First Aid

- i. To save life.
- ii To reduce pain.

- ii. To promote quick recovery.
- iv. To prevent further injuries.

Activity

With guidance from your parent, guardians or elders, get a box and collect some the materials that are needed to give First Aid. Label the box “FIRST AID KIT”. Keep the box in a safe place to help you in giving First Aid at home.

**THEME: SCIENCE IN HUMAN ACTIVITIES AND
OCCUPATIONS**

Topic: Rabbit Keeping

Lesson 1: Breeds and Uses of rabbits

By the end of this lesson, you should be able to;

- i. name the different breeds of rabbits and their uses.
- ii. compare the different breeds of rabbits.

Materials you will need

Pen, pencil, notebook

Introduction

Dear pupil, in P1 and P2, you learnt about domestic animals. Please name them. Some of these animals are eaten while others are not. From your list, we have rabbits as one of the domestic animals that are eaten.

Today, you will learn about the types of rabbits and their uses.

Breeds of Rabbits

There are two breeds of rabbits, namely local and exotic rabbits.

Local rabbits: They mostly live in the bush. They are small in size and run faster.

1.Exotic rabbits: These have been brought into the country from other countries. They produce good meat and have different colours.

Examples of exotic breeds are:

Chinchilla, New Zealand white, Angora and California

2.Uses of Rabbits

Rabbits have many uses in homes.

- i. They are a source of food. Rabbit meat is white meat that is good for eating.
- ii. Fur of rabbits is soft and it is used to make different things like clothing.
- iii. Rabbit skins can be dried and treated to give good pelts (skins with fur) to be used in clothing and other uses.
- iv. Rabbit droppings make good fertilisers.
- v. Rabbits are also used as pets by people.

Self-testing Exercise

Identify any two things got from a rabbit.

- i. State the use of the things we get from rabbits to people.
- ii. Give three differences between a local and an exotic breed of rabbit.

Lesson 2: Housing of Rabbits

By the end of this lesson, you should be able to construct a hutch.

Materials you will need

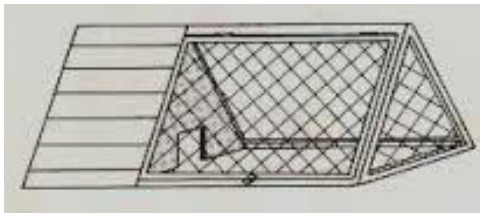
Pen, pencil, notebook, nails, small sticks, poles, dry grass, pieces of timber, panga, poles, stone, hammer or stone, iron sheets

Introduction

Just like people, rabbits need houses to stay in. A house for rabbits is called a hutch.

In this lesson, you will construct a hutch.

Examples of hutches



i) Morat



ii) Caged hutch

Activity: Constructing a hutch for your rabbits

- Step 1: Get four straight poles of about 2 metres each.
- Step 2: Measure half a metre of each pole to mark the floor level of your hutch. Use a hammer or stone to fix pieces of timber as you make the floor.
- Step 3: Identify the front, back and sides of your hutch. Fix pieces of timber using nails to make the walls of the hutch. Leave some space for ventilation.
- Step 4: Fix some small poles on top of the 4 poles to create the base of the roof. Use dry grass or iron sheets to roof. Remember the roof should slant and be strong enough not to leak.
- Step 5: Make a door and fix it on the hutch.

Lesson 3: Management Practices in Rabbit Keeping

By the end of this lesson, you should be able to;

- i. describe the breeding of rabbits.
- ii. demonstrates skills of keeping rabbits.

Materials that you will need

- Pen, pencil, notebook

Introduction

Welcome dear pupil, I want you to identify ways your parent care for you. Just like you, rabbits also need care.

In this lesson, you will learn about ways of caring for rabbits. Some of these ways are feeding them well, maintaining proper hygiene, breeding and record keeping.

Ways of caring for rabbits	What you need to know
Feeding	They feed on sweet potato leaves, banana peelings, weeds, carrots, <i>dodo</i> , etc.
Hygiene	Keep them in a clean hutch, provide clean drinking water, wash feeding containers, all rabbit droppings should be removed every day to prevent a bad smell.
Breeding	Breeding is the process through which animals multiply by giving birth to young ones. They give birth after 28-31 days. They should be fed well when they are pregnant.
Record keeping	It means writing down some information of what has happened during the time of rearing the rabbits. Examples of records in rabbit keeping are: Records of the number of rabbits on the farm or in a hutch Records of young ones produced by each doe Records of meat produced in kilograms Vaccinating records Feeding records

Activity

Ask your parent or guardian to buy for you one male and a female rabbit and start your rabbit project. Make sure you care for them well.

Lesson 4: Diseases of Rabbits

By the end of this lesson, you should be able to;
name common parasites and diseases for rabbits.

i.practice the control, prevention and treatment of rabbit diseases and parasites.

Materials you will need

Pens, pencil, notebook

Introduction

Welcome dear pupil. You realise that rabbits also fall sick just like we fall sick. In this lesson, you will learn about the control, prevention and treatment of rabbit diseases and parasites.

Parasites are living organisms which live and feed on another living organism.

The common parasites that affect rabbits are; lice, mites, fleas, ticks and worms.

The table below shows diseases that attack rabbits, signs and symptoms and ways of preventing and controlling the diseases.

Disease	Signs and Symptoms	Prevention and Control
Coccidiosis	Swollen abdomen Rough fur Diarrhoea Loss of weight Sudden death	Separate the infected rabbit Clean the hutch daily
Pneumonia	Shivering Breathing difficulties High temperature Loss of appetite Rabbits die suddenly	Protect the rabbits from rain. Keep the hutch dry.
Snuffles	Sneezing all the time Mucus from the nose	Keep the hutch dry and clean.
Ear Canker	Itching ears Ears bend downwards Wounds in the ears	Keep the hutch clean. Spray to kill the mite.
Colds	Sneezing all the time Runny nose Watery mucus in their nose	Keep the rabbits in a warm place.

Self-testing exercise

- i. Name the types of rabbits.
- ii. Give uses of rabbits.
- iii. State parasites that affect rabbits.
- iv. Why should a hutch be kept clean all the time?
- v. Identify ways of caring for rabbits.
- vi Name the diseases that attack rabbits.



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