

# YOUNG WORLD LEARNING CENTRE-MUKONO

## P.4 SCIENCE HOME LEARNING PACK-ByTr.Joseph

### Message for Children

- As you are all aware, schools are closed for a good cause – to stop the spread of the Corona virus, which is making a lot of people around the world very sick and can spread when people get too close to each other
- However, during this period, children need to keep safe and continue learning at home – so their minds stay active and they can do well in class when schools reopen again - and parents and caregivers have a role to support this.
- This pack is based on what you were supposed to cover for term one. It also includes activities you can practice on your own. Please copy the notes in your exercise book. For new topics, you can read on your own and ask for support from your parents/guardians or sibling for help. When schools open teachers will continue supporting you building on what you have learnt your self
- There also a number of lessons delivered on radio and TVs which relates to the information in this pack
- **Please remember to stay home, wash your hands always and stay safe and continue learning**

### CROP GROWING PRACTICES

- Clearing land: This is the first stage in a food path.
- Clearing land is done with the following tools
  - hoe
  - ox-panga
- ploughing land
  - It is done using a tractor, ox-pough, hoes, and forked hoe.
  - Ploughing the land is done to make the soil loose and soft
  - It makes the soil aerated
- Planting
  - This refers to putting seeds in holes and covering with soil.

### Methods of planting

- Row planting. This is the planting of seed in holes in a line and covered with soil.
- Broadcasting. This is the planting of seeds by throwing them sing the hand in a garden.

### **Crop growing practices.**

a) Weeding is the removal of unwanted plants in the garden

#### **Examples of weeds.**

- nut grass
- couch grass
- spear grass
- timothy grass

#### **Dangers of weeds.**

- They compete with crops for water and mineral salts
- Weeds are hiding places for crop pests.
- Weeds reduce space for crops to grow.
- Weeds lower crop yield.

#### **Uses of weeds.**

- For feeding some farm animals
- For thatching houses
- For mulching

#### **Ways of controlling weeds.**

- By uprooting and burning them
- By spraying with herbicides
- By mulching
- By cutting and burning them

#### **b) Thinning.**

Thinning is the removal of excess seedlings in the garden

#### **Advantages of thinning crops**

- It creates space for crops to grow
- It makes weeding easy
- It prevents overcrowding in seedlings
- It reduces competition for soil nutrients among plants.

#### **Commonly thinned crops**

- cotton
- sunflower
- banana
- millet
- maize

#### **c) Mulching**

- Mulching is the covering of top soil with dry plant materials in the garden.

### **Examples of mulches**

- Dry banana leaves
- Dry grass
- Dry maize stalks

### **Advantages of mulching**

Mulching keeps moisture in the soil

- Mulching controls soil erosion
- Mulching adds humus in the soil making it fertile
- Mulching controls growth of weeds

### **NB;How does mulching conserve soil moisture?**

Mulching prevents direct sun rays from reaching the soil to cause evaporation.

### **How does mulching improve soil fertility?**

Mulches rote and form humus.

### **How does mulching control soil erosion?**

By reducing the speed of running water.

### **Disadvantages of mulching**

- Mulches can easily catch fire and burn crops.
- mulches are hiding places for crop pests e.g. rats.
- Some mulches can turn into weeds

### **d) Pruning**

- Pruning is the removal of unwanted parts of a plant.

### **Garden tools used for pruning**

- secateurs
- pruning saw
- shears

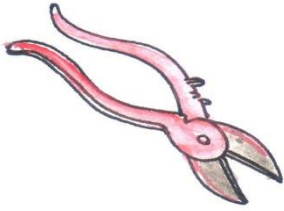
The main garden tool used for pruning is called **secateur**

### **Reasons why crop farmers prune their crops**

- To remove hiding places for crop pest
- To make harvesting easy
- To give space for weeding and spraying
- To reduce the weight of the plant

## Plants which are pruned include

- orange plant
- banana plant
- tomato plant
- coffee plant
- lemon plant



## **Secateurs**

### CROP HARVESTING

- Harvesting is the collection of mature crops from the garden
- Harvesting is usually done in the dry season .

Reason;there is enough sunshine to dry harvested crops.

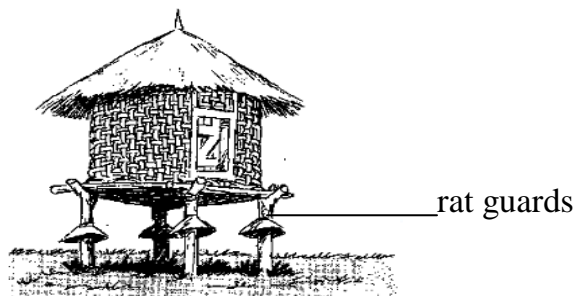
### Methods of crop harvesting

- By uprooting using hands e.g. soya beans, beans, ground nuts
- By cutting using a panga e.g. sugar cane, bananas
- By digging out using a hoe e.g. cassava, sweet potatoes
- By picking using hands e.g. coffee, tomatoes, oranges

### Storage

- This is the keeping of surplus food safely after harvesting
- Seeds and cereals after sun drying them, should be stored properly
- Other foods like cassava are sundried after harvesting to prevent them from rotting.
- The storage facility should be free from storage pests like rats, bean weevils etc

### A storage facility (granary)



### **Reasons for storing food.**

- To prevent wastage of food
- To sell it when there is good market
- To get what to eat in the dry season
- To keep some for planting in the next season

### **Conditions for proper storage of food**

- The seeds or grains should be stored when they are dry
- Stores should be well ventilated
- The roofs of stores should not leak
- Rat guards, should be fixed on the granary to prevent rat from climbing up the store

NB;rat guards prevent rats entering into the granary.

### **Recording keeping**

- This is a practice where a farmer writes down all the activities done on the farm
- A farmer can record the following
  - a) Date when clearing of land is done
  - b) Date when sowing of crops is done
  - c) Date when first weeding is done
  - d) Date when harvesting is done

### **Reasons why crop farmers keep records**

- They enable a crop farmer to calculate profits and losses
- They enable a crop farmer to plan for his farm
- Records can be used to acquire a loan from the bank
- they are kept for future use
- Records enable the farmers to be taxed fairly

### **Crop pests**

- A crop pest is a living organism which destroys crops
- organisms include animals, birds, insects etc

### **Dangers of crop pests**

- They reduce crop yields
- They lower the quality of crop yields
- They cause damage to crops
- They interfere with the growing of crops

### **Signs of pest damage on crops**

- Some leaves are partly eaten up or have holes
- Fruits develop dark spots
- Cut off buds
- Roots with some parts eaten away
- Seeds with holes

### **Pests of leguminous crops**

Beans	<ul style="list-style-type: none"><li>- Bean fly</li><li>- American ball worm</li><li>- bean aphid</li><li>- bean bruchids</li><li>- Cut worms</li><li>- bean weevil</li></ul>
Ground nuts	<ul style="list-style-type: none"><li>- millipedes</li><li>- thrips</li><li>- ants</li><li>- termites</li><li>- Aphids</li><li>- squirrels</li></ul>
Cow peas	<ul style="list-style-type: none"><li>- pod borer</li><li>- blossom beetles</li><li>- thrips</li><li>- pod sucking insects</li></ul>

### **Pests for root tubers**

Cassava	<ul style="list-style-type: none"><li>- cassava white fly</li><li>- rats</li><li>- mices</li><li>- squirrels</li></ul>
Sweet potatoes	<ul style="list-style-type: none"><li>- sweet potato weevils</li><li>- caterpillars</li><li>- rats</li></ul>

### **Pests for cereal crops**

Maize	- maize stalk bore - maize weevils - monkeys
Rice	- weaver birds - locusts

### **How to control crop pests**

- By spraying crops with pesticide
- By using scare crows
- By using traps
- By practicing crop rotation
- By weeding regularly

### **Crop diseases**

Cassava	Cassava mosaic
Cotton	Leaf spot
Maize	Maize streak
Tomato	Tomato blight
G.nut	Rosette virus
Banana	Bacterial banana wilt

### **WEATHER CHANGES AROUND US**

- Weather is the daily condition of the atmosphere of a place at a given time

### **Conditions of weather**

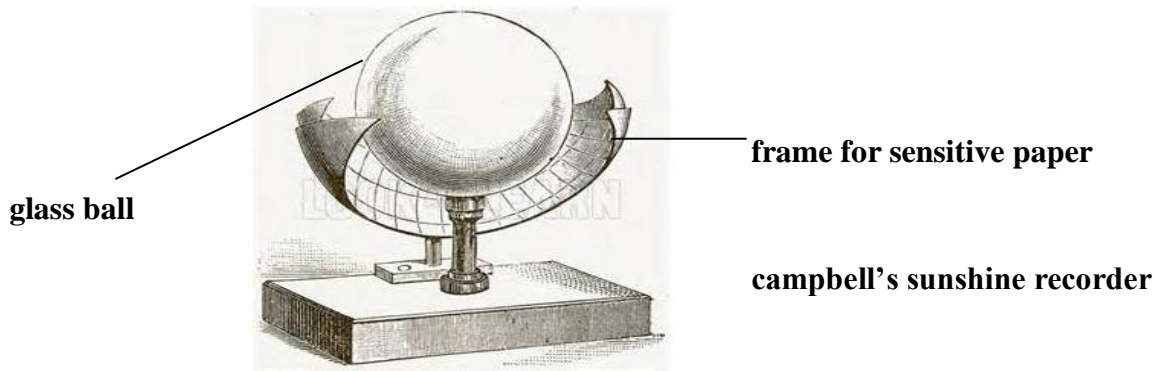
- sunny
- windy
- cloudy
- rainy

### **Elements of weather**

- temperature
- humidity
- cloud cover
- sunshine
- Rainfall

- **sunshine**

The amount of sunshine shine is measured using a sunshine recorder



**Advantages/uses of sunshine**

- Sunshine dries our wet clothes
- It helps in the formation of rainfall
- it dries our harvested crops
- it also makes our crops ready for harvest
- It helps to kill some germs

**Disadvantages of too much sunshine**

Too much sunshine makes the day very hot.  
It can make soil dry.

- It makes water bodies to dry.
- It makes plants to dry in the garden.

**Wind**

Wind is moving air.

The direction of wind is shown using the wind vane.

Anemometer is used to measure the speed of wind.

It has cups which trap wind and rotate as wind blows.

**Advantages of wind**

- Wind helps to bring cold air in a warm place.
- It helps in pollination
- It aids winnowing
- It helps in the formation of rainfall.
- It helps to dry wet clothes.
- Wind helps in seed dispersal.

**Disadvantages of wind**

- Wind spreads germs that cause diseases like.
- It takes away top soil



- Strong wind throws down houses, buildings and trees.
- Strong wind causes storms on land and on water bodies.

## **Rainfall**

Rain is the water falling in separate drops from the clouds.

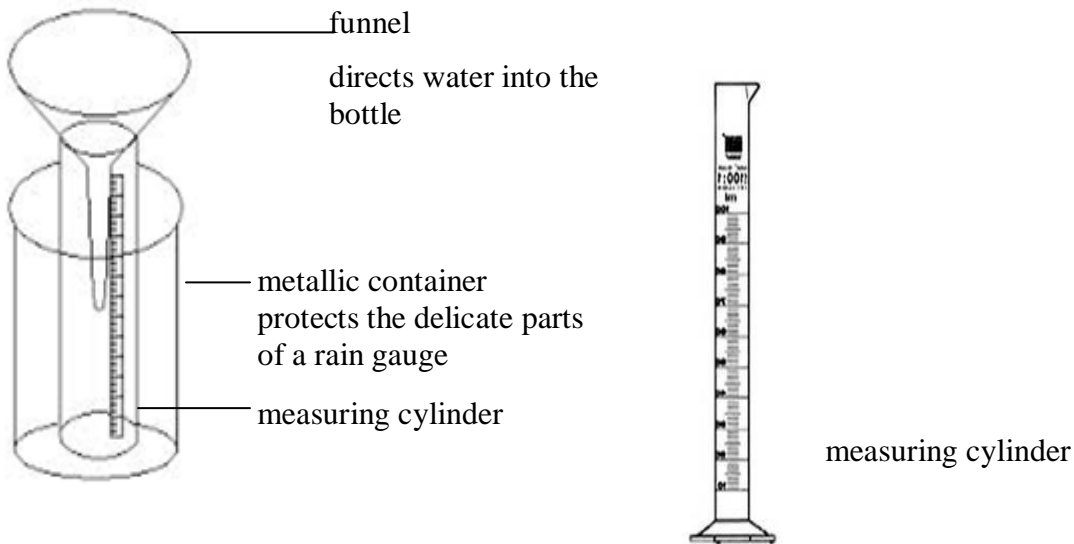
Rainfall is the amount of rain water that falls in a certain area at a certain time.

## **Types of rainfall**

- Convectional rainfall.
- Cyclonic rainfall.
- Relief rainfall

Rainfall is measured by an instrument called a rain gauge.

## **Illustration**



## **IMPORTANCE OF RAINFALL**

- Rainfall is the main source of water.
- It cools the temperature of a place.
- It provides water for plant growth and photosynthesis.
- It helps crops to grow quickly.

## **DISADVANTAGES OF RAINFALL.**

- Too much rainfall destroys crops.
- It leads to flood..,
- Construction of roads, house becomes difficulty .
- It destroys property.

## TEMPERATURE

Temperature is the degree of coldness or hotness of a place or body.

Temperature is measured using a thermometer

A thermometer has the Celsius and Fahrenheit scales.

### Types of thermometers

- Clinical thermometer
- Minimum and maximum thermometer
- Wall thermometer
- Ordinary thermometer

### Clinical thermometer

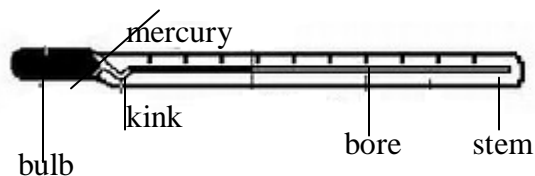
It is used to measure the temperature of a human body. The normal body temperature of a human being is  $37^{\circ}\text{C}$  or  $98.4$

A clinical thermometer is placed in places with a lot of heat and which can surround the bulb.

It can be placed in the following places;

- in the armpits
- in the anus
- in the vagina
- in the mouth under the tongue

### Diagram of a clinical thermometer.



**kink:** It prevents the back flow of mercury

## WATER CYCLE

This is the process by which rainfall is formed.

Processes involved in the water cycle.

Evaporation

Condensation

Transpiration

### Evaporation

It is the process by which water changes to vapour.

### Transpiration

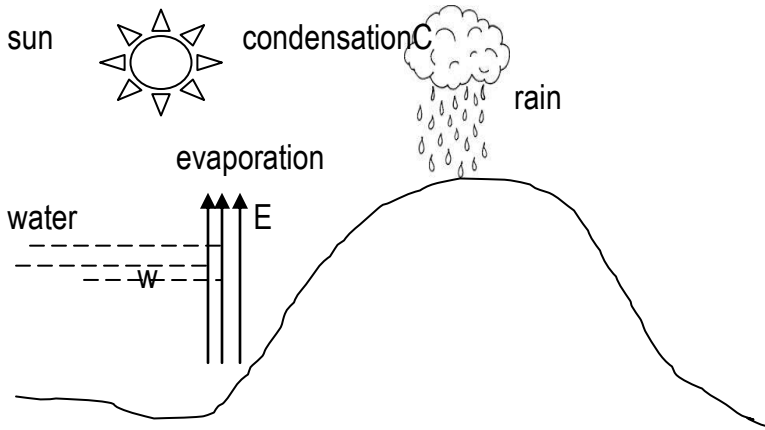
It is the process by which plants lose water to the atmosphere in form of water vapour through the stomata.

Transpiration takes place when plants lose excess water to the atmosphere.

### Condensation

This is the process by which gas changes to liquid.

### Diagram showing a water cycle



C – Condensation

E – Evaporation

T – Transpiration

W – Water body (lake or river)

Nimbus clouds provide us with rain.

### Humidity

Humidity is the amount of water vapour in the atmosphere.

- A hygrometer is used to measure humidity
- The wet and dry bulb thermometer is the most common type of hygrometer
- It consists of two thermometers
- Warm air can hold more moisture than cold air.
- When the warm air fails to hold excess moisture, this moisture comes down as dew.

### Clouds

Clouds are made up of many droplets of water vapour in the atmosphere

### Types of clouds

- Nimbus
- Cumulus
- Cumulo nimbus
- cirrus
- stratus

## **Weather station**

- Is a place where weather conditions are measured and recorded
- Some weather stations have modern instruments which receive satellite pictures.
- The biggest weather station in Uganda is found at Entebbe.

## **PERSONAL HYGIENE**

- General cleanliness of the body and things we use on it

### **Activities done in personal hygiene**

- bathing daily
- cutting long finger nails short
- brushing, drying and ironing clothes
- washing hands
- washing the face

### **Items used for keeping our bodies clean**

- bathing sponge
- water
- tooth paste
- comb
- toothbrush
- nail cutter
- towel
- soap

### **Reasons for keeping our body clean**

- to prevent bad body smell.
- to remove germs from the body
- to remove dirt

### **Ways of keeping our bedding and clothes clean**

- washing them clean
- drying and ironing them
- keeping them in dust free areas

## **Reasons of keeping beddings and clothing clean**

- To prevent bad smell
- To prevent parasites such as lice, bed bugs from breeding in them.
- To reduce the spread of germs

ET1

## **HUMAN HEALTH**

### **OUR FOOD**

#### **A BALANCED DIET**

1. **What is food?** Something we eat or drink and has nutritional value.

2. **Why people eat food?**

Hunger

Habit

Health

Happiness

Hospitality

3. **Importance of food to the human body**

- growth of the body
- health of the body
- provides energy to the body etc

(i) A balanced diet is a diet that contains all food values.

#### **Classes of food**

These include; the 3G's

1. Glow foods
2. Go foods
3. Grow foods

1. **Glow foods mineral salts and vitamins**

- It is a class of foods that gives health and protection to the body.

2. **Go foods carbohydrates**

- It is a class of food that gives energy to the body

3. **Grow foods proteins**

- It is a class of food that gives or makes the body to grow.

## **Foods values that make up a balanced diet**

1. Carbohydrates
2. proteins
3. vitamins
4. mineral salts
5. fats and oils
6. roughages
7. water

## **CARBOHYDRATES**

- These are food values that provide energy to the body
- They are also called energy giving foods

### **Sources of carbohydrates**

- Milk
- Bread
- Jam
- Sweet potatoes
- Cassava
- Maize
- Iris potatoes
- Yams

Lack of enough food or carbohydrates in the body causes marasmus or starvation

### **Signs of marasmus**

- (i) The eyes are very bright
- (ii) The face looks like that of an old man
- (iii) One becomes very thin
- (iv) A swollen pot belly stomach

### **Symptoms**

- the child is underweight

## **PROTEINS**

- These are food values that provide or build the body
- They are also called body building foods.

### **Uses of proteins in the body**

- They are responsible for body growth
- They repair worn-out body cells or parts
- They help to make anti-bodies and enzymes

### **Sources of proteins**

- Lean meat
- Groundnuts
- Cheese
- Eggs
- Fish
- Beans
- Milk Soya beans
- Soya beans

Lack of enough foods containing proteins in a diet causes kwashiorkor

### Signs of Kwashiorkor

- A swollen face
- Little brown hair which falls of the head easily
- A swollen stomach full of air
- Swollen hands and legs
- When you press the skin, it takes long to come back in its position

### VITAMINS

- These are food values that give health and protection to the body

Vitamins	Sources	Deficiency and symptom
A	Liver, egg yolk, carrots butter cold liver oil, green leafy vegetables	<ul style="list-style-type: none"><li>- Poor eye sight</li><li>- Reduced night vision.</li><li>- Night blindness</li></ul>
B <sub>1</sub>	Palm wine, beans, lean meat, egg yolk, milk, kidney bread, unpolished cereals, groundnuts	<ul style="list-style-type: none"><li>- Retorted growth</li><li>- Lack of appetite</li><li>- paralysis</li></ul>
B <sub>2</sub>	As for B <sub>1</sub> plus yeast extracts	<ul style="list-style-type: none"><li>- Pellagra</li></ul>
C	Fresh fruits and vegetables, prepared concentrated frits	<ul style="list-style-type: none"><li>- Bleeding of gums</li><li>- Anaemia</li><li>- Scurvy</li></ul>
D It is formed in the skin with the help of sunlight	Liver, milk, egg yolk, fish, margarine	<ul style="list-style-type: none"><li>- Weak bones</li><li>- Poor teeth</li></ul>

#### Note

A nutritional deficiency is a disease caused by failure to have enough of the food values in the body.

## **MINERAL SALTS**

(i) These are food values that give health and protection to the body

### **Examples of mineral salts**

Mineral salt	Sources	Function
Calcium	Milk, fish, whole grain cereal, cheese, beans bread, hard water, finger millet	- Strengthens bones and teeth - Prevents rickets
phosphorous	Dairy foods, meat, fish, milk, eggs, cheese, cereals and green leafy vegetables	- Helps in absorption of carbohydrates
Iron	Meat, liver, kidney, egg yolk, green leafy vegetables, cocoa	- Helps in formation of haemoglobin - Lack of iron causes anaemia
Iodine	Sea water, sea food, sea weeds like algae and iodized salts	- It is essential to proper working of the thyroid glands - Lack of iodine causes goitre

## **FATS AND OILS**

(i) These provide the body with energy and heat

(ii) In mammals, fats are stored under the skin

### **Sources of fats and oils**

- milk
- butter
- egg yolk
- ghee
- groundnut
- palm oil
- simsim
- cheese

### **Functions of fats and oils**

- Fats and oils provide warmth and energy
- They protect the heart and kidney
- They assist in making body cells

### **Note**

- Too much fats and oils in a diet will lead to obesity and other health problems.

### **Effects of too much fats and oils to body**

- lack of energy
- thinness
- feeling cold
- vitamin A and D deficiency

## **ROUGHAGES**

This is the un digestible fibres from the cell walls of plants

### **Sources of roughages**

- Green leafy vegetables
- Sweet potatoes
- Bread and flours



- Cassava
- Peas
- Nuts and seeds
- Fresh fruits
- Rice
- Dried fruits

### **Functions of roughages**

- It allows easy movement of food through the intestines
- It adds bulk to food
- It aids digestion
- It helps to prevent constipation
- Reduces the risk of bowel cancer
- Encourages chewing of food

Lack of enough foods containing roughages in the diet leads to **constipation**

### **WATER**

- Water helps in easy digestion and absorption of food
- It helps in reducing body temperature by sweating
- It forms the basis of the blood as plasma

### **How food gets contaminated**

- By serving food using dirty hands
- Preparing food from dirty places
- By serving food using dirty containers
- Keeping food in dirty places or containers
- By leaving it uncovered

### **Prevention of food contamination**

- By covering food properly
- Preparing food with clean hands
- Serving food in clean containers
- Serving food from clean places

### **Food preparation**

- Boiling food
- Frying food
- Steaming
- Roasting food

### **Food preservation**

This is the keeping of food for a long time without going bad

- Smoking
- Refrigerating
- Sun drying
- Salting

**Food hygiene**; is the keeping of food clean or free from germs.

**Food security**; refers to ensuring that there is enough food to be eaten and for the future.

## **THE HUMAN BODY ORGANS**

Major organs of the human body include;

Eyes	Stomach	Lungs
Brain	Bladder	Liver
Ears	Heart	Kidney

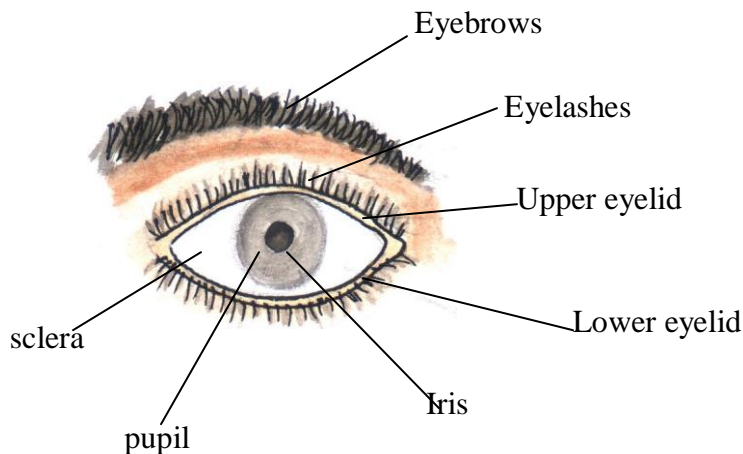
## **THE EYES**

The eyes or eyeball is placed in a strong socket in a skull for protection.

### **Uses of the eyes**

- It is a sense organ for seeing
- It helps in estimating distance

### **Diagram of the front view of the eye**



E – Eyelashes

L – Eyelids

I – Iris

P – Pupil

### **Functions of the parts**

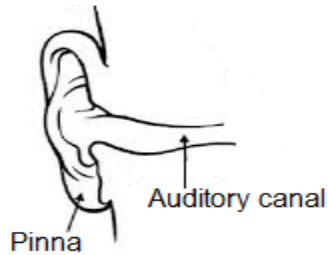
- **Eyelids** help to cover the eye
- **Eye lashes** and **eyelids** help to prevent foreign bodies from entering the eye.
- **The iris** is a coloured dark brown, black blue broad ring found in the middle of the eye
- The iris helps to control the amount of light that reaches the retina
- The iris helps to control the size of the pupil

### **Diseases that affect the eye**

1. Trachoma
2. conjunctivitis
3. impetigo

### **Ways of caring for the eyes**

- Washing eyes with clean water and soap regularly
- do not touch the eyes with dirty hands
- Do not share materials or shake hands with persons with eye diseases or infection
- Visiting **the oculist** in case of any eye problems



### **THE EAR**

- The ear is the sense organ for hearing
- The ear helps in body balancing
- **Structure of the outer ear**

(leave space)

### **Pinna**

- It helps to collect, trap and direct sound to the ear drum

### **Auditory canal**

- It is the passage for sound waves to the ear drum
- The auditory canal contains special sebaceous glands which secrete wax
- Wax and hair help to trap dust and germs from entering into the ear

Diseases of the ear

- earache
- ear discharge

### **Disorder of the ear**

- Deafness
- Ringing of the ears (tinnitus)

### **Care for the ears**

- Do not use sharp objects to clean ears
- Wash ears daily with soap and clean water
- Do not stay in a very noisy place
- Always visit ear nose throat doctor (ENT) for check up

## THE BRAIN

The brain is found in head

- The brain is protected by a **skull** or cranium

### Uses of brain

- for memory
- for thinking
- for controlling body movement
- for storing information
- for interpreting information

### Diagram showing the brain

### Disease of the brain

- Epilepsy
- Stroke
- Almyery disease
- Poliomyelitis
- Meningitis
- Cerebral malaria



### THE LIVER

- The liver is a reddish – brown organ which lies just below the diaphragm and partly covering the stomach.

### Functions of the liver

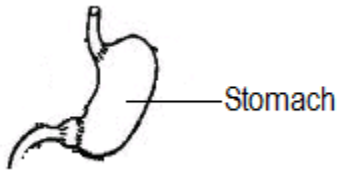
- It regulates blood sugar
- It produces bile
- It helps to produce heat
- It helps to store vitamin **A** and **D**
- It regulates the amount of proteins
- It removes harmful substances like alcohol

### Diseases of the liver

- Cirrhosis of the liver:
- Hepatitis
- Liver abscess (**it is a disorder**)

### **THE STOMACH**

- The stomach is a large muscular sac.
- The stomach walls help to produce **gastric juice** and **hydrochloric acid**.



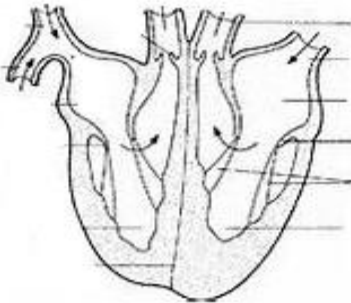
#### **Use of stomach**

- Stores food for some time

#### **Structure of the stomach**

### **Disorders of the stomach**

- Peptic ulcers
- Constipation
- Indigestion
- Gastritis



### **THE HEART**

- It helps to pump blood to all body parts
- The heart is protected by the rib cage
- 

### **Diseases of the heart**

- Heart attack/coronary disease

### **Ways of maintaining proper working of the heart**

- Eat a balanced diet
- Always have regular meals
- Eat meals containing low animal fat
- Doing regular exercises

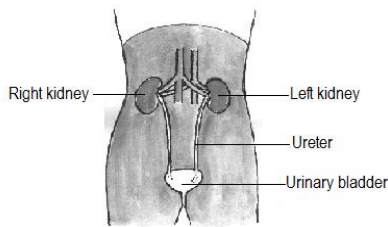
### The kidney and urinary bladder

- The kidneys are two bean shaped organs situated at either side of the lower abdomen

#### Urinary bladder

- Stores urine for some time

#### Diagram of the kidney and urinary bladder



**(leave space)**

#### Functions of the kidney

- It helps to filter blood
- It controls the amount of water and salts in the blood and body tissues

#### Note:

- The **ureter** helps to carry urine from the kidneys to the urinary bladder

#### Disease of the kidneys

- Kidney failure
- Kidney cancer
- Kidney stones

#### Care for the kidneys

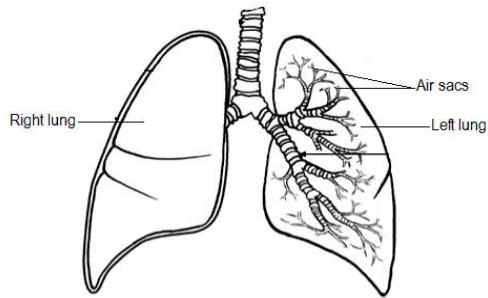
- Eat a balanced diet
- Do not hold back urine
- Drink enough water
- Avoid swimming in dirty water
- Do not eat or take too much salt

### THE LUNGS

- Lungs are organs for gaseous exchange

Gaseous exchange takes place in **air sacs**

**Lungs** are protected by the **rib cage**



**Diagram showing lungs**

- Oxygen is breathed in and carbon dioxide is breathed out.

**Diseases of the lungs**

- Pneumonia
- Tuberculosis
- Asthma
- Bronchitis
- Diphtheria
- Whooping cough

**Ways of maintaining proper working of lungs**

- Do not smoke
- Avoid being in places with a lot of smoke
- Avoid being in dusty places
- Carry out regular physical exercise
- Eat a balanced diet

**HUMAN BODY**

**THE TEETH**

- The teeth are hard bone like- structures found in the mouth

**Sets of teeth**

- Milk set
- Permanent set

**Milk set**

- It is a set of teeth which appears first in babies after the age of 6 months
- They last up to 6 years
- They start falling out one by one and later replaced by the permanent set of teeth

- The milk set consists of 20 teeth

### Arrangement of teeth in the milk set

	incisors	canines	premolars	Total
Lower jaw	4	2	4	10
Upper jaw	4	2	4	10
Total	8	4	8	20

### The permanent set of teeth

- This is the second and final set of the teeth in man
- The permanent set of teeth consists of 32 teeth
- It has the following types of teeth
  - incisors
  - canines
  - premolars
  - molars

### Regions of a tooth

#### **CROWN**

- (i) This is the part above the gum mainly the enamel.

#### **NECK**

- (ii) This is the region on the same level with the gum where the crown joins the root

#### **THE ROOT**

- (i) This is the part which is sunk or fixed in the socket of the jaw.

### TYPES OF TEETH

They include;

- |             |              |
|-------------|--------------|
| 1. Incisors | 3. Premolars |
| 2. Canines  | 4. Molars    |

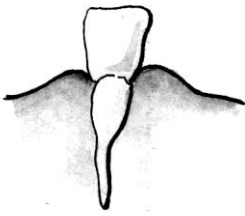
#### **1. Incisors.**

- (i) These are sharp chisel – shaped teeth at front of the mouth
- (ii) They are flat on top
- (iii) Incisors are used for cutting food.
- (iv) They are four in each jaw of man.
- (v) **Incisors** are well developed in;



- rats
- rabbits

- squirrels



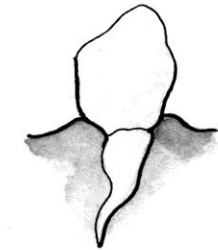
### **Structure of an incisor tooth**

(leave space)

## **2. Canines**

- These are sharp cone - shaped teeth
- They are pointed and stronger in the jaw.
- They are two in each jaw on either side of the incisors
- They are used for tearing food.
- They are most developed in;
  - Dogs
  - Cat
  - Leopards
  - Lions
  - Tigers

### **Structures of a canine tooth**



## **3. Pre - Molars**

- (i) These are blunt rigged teeth in front of the molars.
- (ii) They have flat tops with cusps
- (iii) They have two roots
- (iv) Premolars are used for chewing, crushing and grinding food
- (v) They are four of them placed in pairs after each canine tooth in each jaw.
- (vi) **Structure of a premolar tooth**

#### 4. Molars

- (i) These are blunt broad ridged teeth.
- (ii) They have a larger surface area
- (iii) They have flat tops with cusps like the premolars
- (iv) They are six in each jaw
- (v) The molars in the lower jaw have two roots but in the upper jaw have three roots



Diagram showing structures of molar teeth

#### Internal parts of the teeth

##### A. Canine tooth

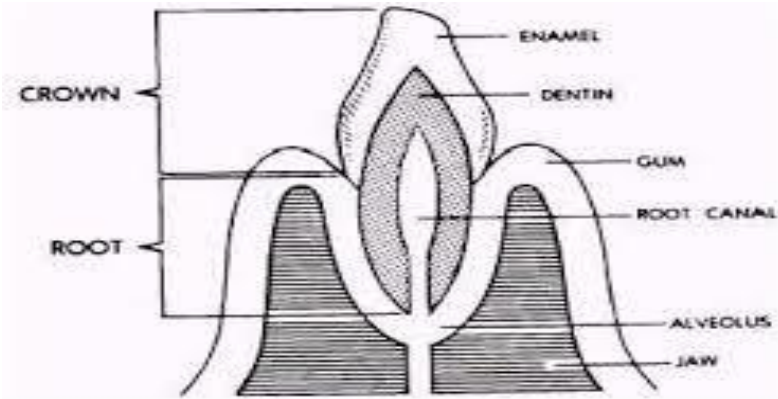


Figure 6-3. Section of a tooth and jaw.

E – Enamel

G – Gum

D – Dentine

P – Pulp

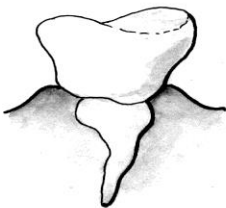
C – Cement

cavity

J – Jaw bone

B – Blood capillaries

N – Nerve fibres



## B. Molar tooth

E – Enamel

D - Dentine

S – Sensory nerve ending

G – Gum

C – Cement

P – Pulp cavity

B – Blood capillaries

J – Jawbone

### Enamel

- (i) This is the hardest part of the tooth
- (ii) It is the hardest tissue in the body of an animal.
- (iii) The **enamel** prevents wear and tear of the teeth
- (iv) The enamel is made from calcium and phosphorus

### Dentine

- (i) It forms the biggest part of the teeth
- (ii) It contains living cells and channels through which the dentine receives

### Pulp cavity

- (i) It contains blood vessels teeth forming cells and sensory nerves
- (ii) The sensory nerves are sensitive to heat, cold and pain
- (iii) The blood vessels bring digested food to the teeth.

### Cement

- (i) This helps to fix the tooth in its socket by the tough fibres in it and the jaw.

### Gum

- (i) This gives extra support to the tooth into the jaw bone.

### Jaw bone

- (i) This holds the tooth in position

### Dentition

This is the arrangement of teeth in the mouth.

**Dental formula** is the formula showing the number and kinds of teeth in the mouth.

### Dental formula of an adult person

	Incisors	Canines	premolars	Molars	Total
--	----------	---------	-----------	--------	-------

Lower jaw	4	2	4	6	16
Upper jaw	4	2	4	6	16
Total	8	4	8	12	32

### Disorders of the teeth

- Improper growth
- Broken teeth
- Teeth cracks
- Dental cavities

### Teeth diseases

#### These include

1. Dental caries
2. Periodontal disease
3. Plaque
4. pyorrhoea

#### Dental caries

- (i) It is the scientific name for tooth decay.
- (ii) It is caused when bacteria act on the sugars and starch which remain on the teeth after eating
- (iii) Action of bacteria on sugars and starch lead to the production of lactic acid.
- (iv) The lactic acid slowly wears and tears the enamel and dentine leading to the formation of cavities
- (v) The pulp cavity is destroyed by bacteria if the cavities are not treated

#### Plaque

- (i) This is a coating on the teeth caused by saliva containing mucus bacteria and other organic substances.
- (ii) Plaque destroys mostly the crown and the gum
- (iii) Plaque causes gum swelling called **gingivitis**

#### Note:

Calculus is a black hard substance that forms on the teeth.

#### Periodontal disease

- (i) This is an inflation of the gums and tooth sockets
- (ii) This disease is caused when plaque is neglected which results in gingivitis

#### Care of the teeth

- (i) Brush teeth with fluoride tooth paste

- (ii) Avoid eating sweets and sweetened foods like sweets, biscuits
- (iii) Brush the teeth daily
- (iv) Do not drink hot or very cold foods
- (v) Rinse your mouth with water and salt every after a meal
- (vi) Eat plenty of fresh fruits and vegetables
- (vii) Do not open bottles using the teeth.

## **Human health**

### Sanitation

- (i) **sanitation** is the general cleanliness of the places where we stay and live

Or: **Sanitation** are the steps taken to promote public cleanliness involving community efforts to disease prevention.

### **Concerns of sanitation**

- Having a latrine or toilet for proper disposal of faeces and urine
- Having rubbish pits and dust bins for proper disposal of house hold refuse like peelings
- Slashing around our homes
- Draining a way all stagnant water
- Sweeping away all the rubbish in our compound
- Having a plate stand or rack in our homes

### **Importance of good sanitation.**

-t reduces the spread of germs and vectors in the environment.

-it reduces bad smell in the environment

--It prevents contamination of food and water sources.

It promotes good health.

### **Germs and diseases**

Germs are microscopic organisms which cause diseases.

Germs are commonly found in rubbish pits, pit latrines, air, soil, water, dirty food. Rotting fruits etc

### **Ways of protecting ourselves against germs**

- Proper disposal of faeces and urine.
- Proper disposal of rubbish.
- Water for drinking.

## **GERMS AND DISEASE**

- (i) Germs are tiny living organisms that cause diseases

(ii) Germs are found in;

- water
- soil
- decaying matter
- bodies of animals (man)
- air
- on plants
- blood
- faeces
- urine

**Ways how germs are spread**

- Through air
- Through insects bites
- Through close body contact with an infected person
- Through cuts and wounds on the body
- Through animals bites

**Note:**

- A disease an illness or disorder caused by an infection or unnatural growth
- The types of germs include;
  - Bacteria
  - Fungi
  - Protozoa
  - virus
- The 4 F's
  - faeces
  - flies
  - food
  - finger
- Germs cause rotting by feeding on the dead organism.