Theme

Sub-theme

Content

P.3 LITERACY I LESSON NOTES(SCIENCE)

TERM ONE **TERM** ONE NOTES

Our environment in Sub-County/ Division

Soil

Reading descriptions of words.

- Air
- Water
- humus (dead plants and animals)
- particles
- rocks
- clay
- sand
- Loam
- Decay
- Weathering
- Temperature
- Floods
- Aerate
- Afforestation
- Mulching
- Terraces
- Soil
- living organisms
- arrangement
- profile
- fastest
- slowly
- moderate
- drain
- erosion
- earthquake
- wind
- earthworm
- deforestation
- forest
- slope
- grazing
- dissolve
- rot/decay
- vertical
- mineral salt
- layer
- moisture
- steam
- mixture
- vapour

Soil: is the top layer on earth or Soil is a medium on which plants grow and animals live.

Composition / components / constituents of soil.

Soil is made up of Air, water, humus, particles of rocks, mineral salts and living organisms.

Uses of Air in the soil

Oxygen supports the life of living organism in the soil.

Uses of water in the soil.

- Helps plants to grow
- Keeps the soil moist

How can we keep water in the soil?

By mulching

3.Living organisms

Examples of living organisms: Earth worm termites, rates, red ants, snakes etc.

Importance of living organism in the soil

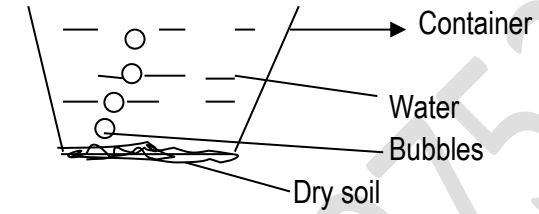
Helps in aeration of the soil.

Ways of keeping soil fertile

- By mulching
- By adding manure
- By bush farrowing

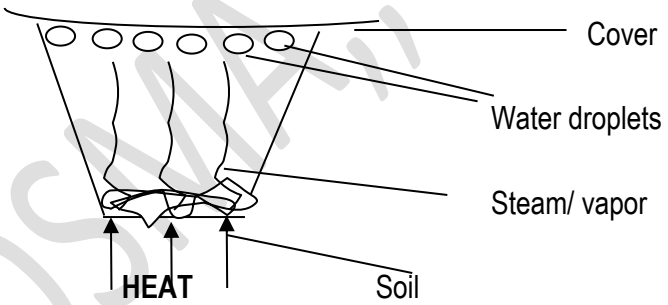
<u>Experiments on what makes up soil</u>

1. **<u>Soil contains air</u>**



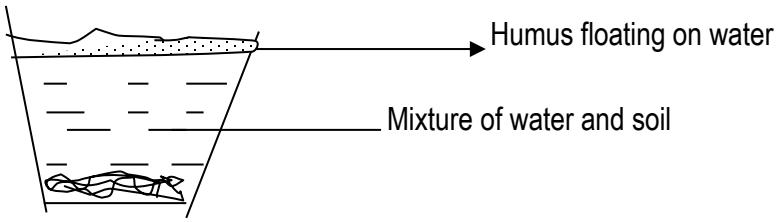
Bubbles show the air coming from the soil

2. <u>Soil contains water</u>



Humus: Humus is formed when dead plants and animals decay

3.<u>Soil contains humus (dead plants and animals)</u>



Humus floats on water

NB: Humus makes the soil fertile.

Uses of soil

To man.

Man uses soil in many ways such as growing crops, building houses, painting, making pots, making bricks, for sale, constructing roads, making glass.

To plants.

Plants get water and mineral salts from soil using roots, soil holds plants upright.

To other animals

Some animals live in soil like; rats, snakes, snails, mole, rats, squirrels, termites etc. Animals also get warmth and protection from the soil. The above animals can live in soil because there is air for breathing.

Soil texture: Is the roughness or smoothness of soil particles or it refers to different sizes of soil particles.

Soil structure.

Is the arrangement of particles in soil.

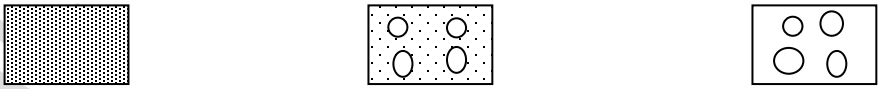
Types of soil and their texture

Soil is made up of sand, clay and loam soil.

Type	Texture
Sand soil	- Its rough - Has the biggest particles
Clay soil	- Its smooth - Has the smallest particles
Loam soil	- It's a mixture of sand, clay and humus - It has moderate texture

Soil particles

Clay soil **loam soil** **sand soil**



Characteristics of clay soil

- It has the smallest particles.
- Its sticky
- Its particles are closely packed
- It has little humus

- It drains water slowly

NB:Clay soil is commonly used for modeling.

Characteristics of sand soil

- It has the biggest particles
- It has rough particles
- Particles are loosely packed (far apart)
- It has big/large air spaces
- It drains water quickly

NB: Sand soil is used to make glasses

Characteristics of loam soil

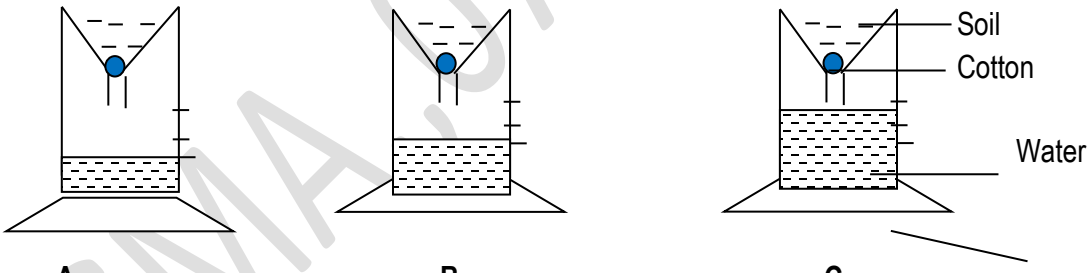
- It's a mixture of sand and clay
- It has a lot of humus
- Its dark in colour

NB: Loam soil is good for crop growing because

i) It is well Aerated

ii) It contains a lot of humus

Movement of water through the soil.



container

A -Clay soil **B** - loam soil **C** - Sand soil

Observations and deductions

1. Clay soil allows little water to go through. Why?
   It has the smallest air spaces or it has the finest soil particles.
2. Sand soil allows water to pass through fastest. Why?
   It has the largest air spaces or it has the biggest soil particles.
3. Loam soil allows water to go through moderately.

Soil formation

Soil formation is the process by which soil is formed.

Soil is formed in two ways.

- Decomposition
- Weathering

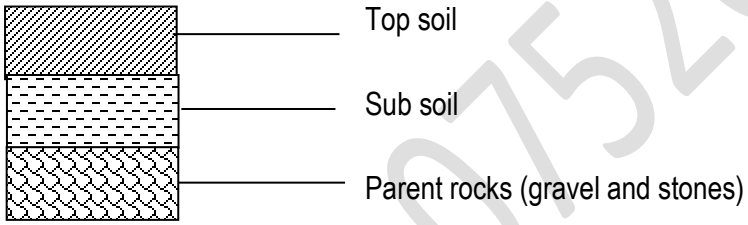
Decomposition: is when organic matter rots or decays. NB Bacteria help in decomposition (decaying)

Weathering: is the process by which rocks break down into small particles to form soil

Agents of weathering

- Running water
- Animals
- Strong wind
- Earth quake
- Plants

Soil profile: Is the vertical arrangement of soil layers or is the arrangement of soil layers from top to bottom.



<u>Uses of soil (practical work)</u>

- Making pots, cups, plates, glasses, bricks (clay soil)
- For building – sand soil
- For growing crops (loam)

NATURAL CHANGES IN OUR SURROUNDING

These are changes made by God (God made changes)

Examples of natural changes in the animals

Growth, death, reproducing, sweating, digestion, excretion

Natural changes in plants

- Growth of plants
- Germination
- Drying plants / wilting
- Ripening of fruits

Germination in seeds

Germination: Is the growing of a seed into a seedling.

Natural changes around us

Floods, drought, earthquakes, landslides, storms, lightning, thunder, hail storms, soil erosion, weather changes, seasonal changes rusting

More about changes around us

Floods – Are heavy rains overflowing in a place.

Drought – Is a long period of too much sunshine.

Hail storm – Are small droplets of ice falling from the sky.

Earth quake – a sudden violent movement of the earth's surface.

Landslides – Sliding down of a heavy part of the earth or rocks from a side of a hill or mountain.

Soil erosion – Is the removal of top soil by running water, strong wind, animals, man (agents)

Changes in the sky

- Formation of rain
- Movement of clouds
- Rising and setting of the sun
- Changes in the moon shapes
- Changes in weather

Effects of changes

- Floods, earthquakes and landslides cause destruction of homes and property, plants and animals.
- Drought – causes hunger, diseases
- Storms cause soil erosion

Managing changes

Floods - control

- Digging trenches
- Avoiding clearing swamps
- Avoid building in drainage systems, swamps

Causes , danger and control of floods

Drought

- Planting trees
- Avoid clearing swamps
- Digging valley dams

Desert plants sisal , cactus

Rusting

Rust is a reddish brown substance that forms on metal when a metal is exposed to oxygen and water.

Note: Oxygen and water are conditions needed for rusting

Examples of metals

- Iron , steel , Aluminum , copper

Ways of controlling rusting

- By painting
- By greasing / oiling
- By enameling
- By galvanizing
- By keeping metals in cool and dry places.

Dangers of rusting

- It weakens metals
- It makes metals blunt
- It makes water in metallic tanks poisonous
- It spoils and changes the colour of metal.

Soil erosion: Soil erosion is the removal of top soil by its agents.

Agents of erosion

- Running water
- Strong wind
- Animals

Types of erosion

- Rill erosion

- Gulley erosion
- Splash erosion

Causes of soil erosion

- Over stocking
- Mono cropping
- Bush burning
- Deforestation

Ways of controlling soil erosion

a) Compound

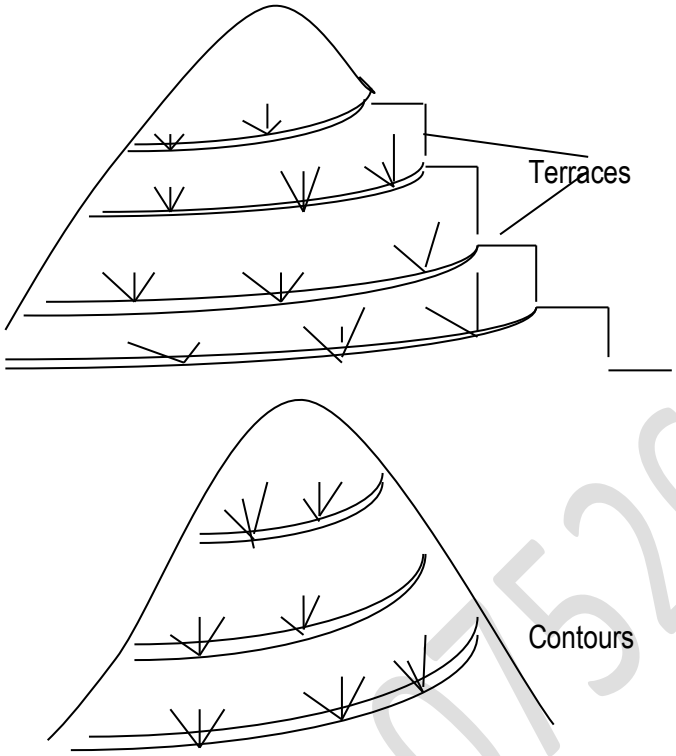
- By planting grass in the compound
- By planting trees (Afforestation)

In the garden.

- By mulching
- By crop rotation
- Afforestation
- Bush farrowing
- Contour ploughing
- Mulching
- Planting trees/ grass
- Crop rotation
- Planting cover crops
- Intercropping
- Agro forestry
- Bush farrowing

c**) In hilly areas**

- By terracing
- By contour ploughing



Mulching: Mulching is the covering of top soil with dry plant materials (mulches)

Mulches: are materials used in mulching.

Examples of mulches.

- Dry banana leaves
- Coffee husks
- Dry grass
- Saw dust
- Dry banana fibre

Advantages of mulching

- It keeps the soil fertile
- It keeps moisture in the soil
- It controls soil erosion
- It controls weeds in the garden

Disadvantages of mulching

- Mulches are fire hazards

- Mulches hides pests
- Some mulches are sources of weeds
- **Note**: Pests are living organisms that spoil farmers crops. E.g. monkeys, birds, rats, weevils, caterpillars.
- **Weeds**: are unwanted plants in the garden.

Examples of weeds

- Black jack
- Star grass
- Nut grass
- Milk grass
- Pig weed

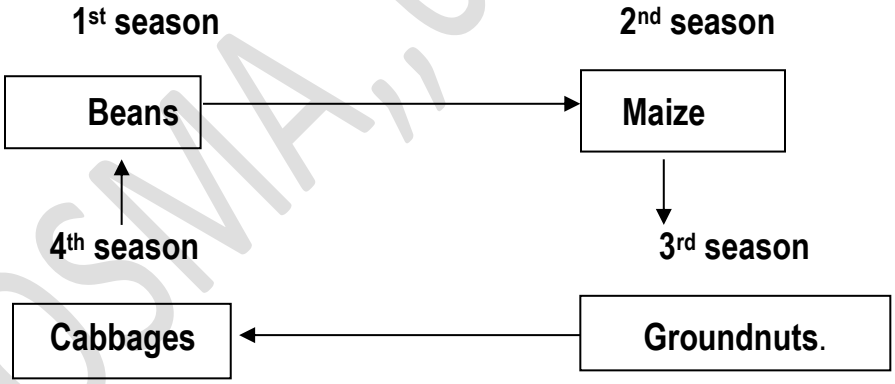
Ways if controlling weeds

- By spraying
- By mulching
- By slashing

Crop rotation

Crop rotation: is the growing of different types of crops on the same piece of land seasonally

Illustration



Importance (advantages) of crop rotation

- It makes the soil fertile
- It controls soil erosion
- It controls crop pests
- It controls crop diseases
- **NOTE:** Crop rotation, mono-cropping and mixed farming are examples of farming practices.
-

Man made changes (ARTIFICIAL CHANGES)

These are changes made by man.,

Examples of man made changes

- Planting trees
- Cutting down tree
- Growing crops
- Killing animals
- Accidents
- Painting buildings
- Building
- Construction of roads

Effects of man made changes

Good effects	Bad effects
- People get shelter - Easy transport - Houses look good	Drought Causes floods Causes soil erosion Causes death

Managing changes brought by man

1. Accidents

An accident is a sudden happening that harms someone's body.

Examples of common accidents

- Burn
- Scalds
- Bites
- Stings
- Cuts

Causes of accidents

a) At school and home

- Carelessness
- Playing bad games
- Running down and up stairs
- Fighting

b) On the road

- Not following road signs
- Over speeding

- Over loading
- Playing on the road

Ways of controlling accidents

a) At home and school

- Avoid fighting
- Avoid playing bad games
- Avoid playing with sharp objects

b) On the road

- Following road signs
- Avoid over speeding
- Avoid over loading

(Afforestation)

Is the planting of trees where they have never existed.

Reasons why people plant trees.

- To get firewood
- To get charcoal
- To get poles
- To get shade
- To get timber
- Trees help in rainfall formation

Things we get from forests

- Fruits
- Poles
- Firewood
- Timber
- Herbal medicine
- Flowers

Note: A group of trees growing together is called a forest.

Forests in Uganda

Forest	Where we find it
Mabira	Mukono/ Buikwe district
Bugoma	Masindi
Budongo	Masindi
Buhweju	Rwampara

Types of wood trees

a) Hardwood trees.

These are trees whose wood lasts for a long time.

Examples of hardwood trees.

- Mvule
- Mahogany
- Eucalyptus
- Mugavu
- Teak
- Misambya
- Oak

Soft wood trees

These are trees whose wood do not last for a long time.

Examples of soft wood trees

- Kirundu
- Enzingu
- Wattle
- Misizi
- Mutuba (ficus)
- Jackfruit tree

NOTE: The bark of Mutuba tree is used to make bark clothes

Ever green trees:

These are trees which bear cones (corniferous) e.g fir . pine, cedar.

Deforestation

Deforestation is the cutting down of trees on a large scale (massively)

Reasons why people carryout deforestation

- To get charcoal
- To get firewood
- To get poles
- To get timber
- To make space for farming

Dangers of deforestation

- It causes soil erosion
- It leads to drought
- It destroys habitats for wild animals

Things we get from wood.

- Tables
- Desks
- Chairs
- Beds
- Doors
- Windows frames

Killing animals

- Pouching is the illegal hunting of wild animals or This is the hunting of wild animals without permission.
- Ways of preventing the killing of animals.
- Putting up strict laws against poaching
- Fencing game reserves.

WEATHER

Weather is the condition of the atmosphere of a place at a given time.

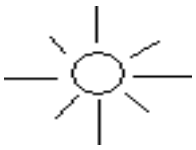
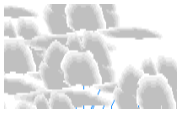
There are four types / conditions / kinds of weather

- Windy weather
- Sunny weather
- Cloudy weather
- rainy weather

<u>Weather makers</u> – these are the aspects, factors or elements of weather.

- Wind blow
- cloud cover
- Sunshine
- Rainfall
- temperature
- humidity
- air pressure

The weather charts

Sunny	Rainy	Windy	Cloudy
			

Importance of weather

Rainfall – it provides rain water to animals and plants.

Sunshine – It dries crops (seeds), provides heat for drying clothes,
- vitamin D

Clouds – nimbus clouds form rainfall,
- makes the weather cool.

Items used in different kinds of weather.

- Rainy weather: Umbrellas, gum boots, rain coats.
- Sunny weather : Umbrellas , light clothes , sun glasses , sandals
- Cloudy weather: Sweater , Jackets overall
- Windy weather : sun glasses

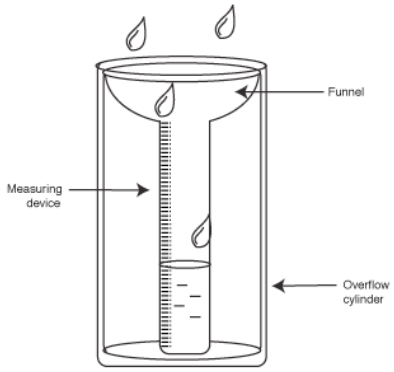
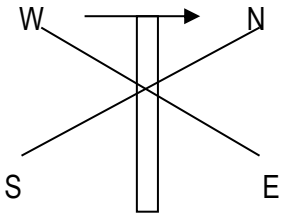
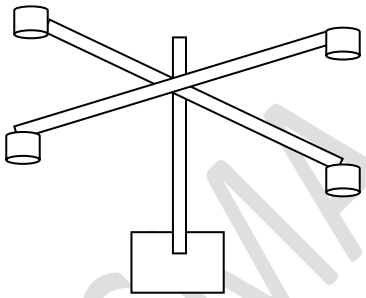
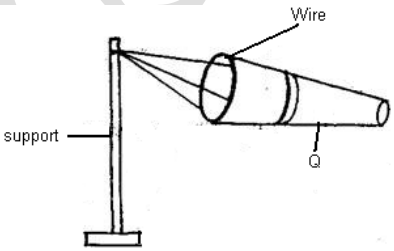
Importance of weather makers

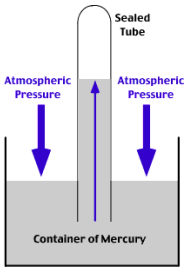
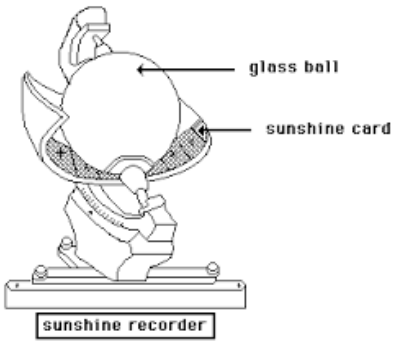
- Rainfall – it provides rain water to animals and plants
- Sunshine – it dries crops (seeds), provides heat for drying clothes
- Vitamin D
- Clouds – nimbus clouds form rainfall.
- Makes the weather cool.

Weather instruments

Weather instruments are instruments which are used to show or measure the different factors of weather.

Weather instruments

Instrument	Name	Use / function
	Rain gauge	Used to measure the amount of rainfall received
	Wind vane	Used to show the direction of wind
		Measures the speed of wind
	Wind sock	Shows the strength of wind

	Barometer	Measure air pressure
	Sunshine recorder	Show the number of hours it shines

Thermometer

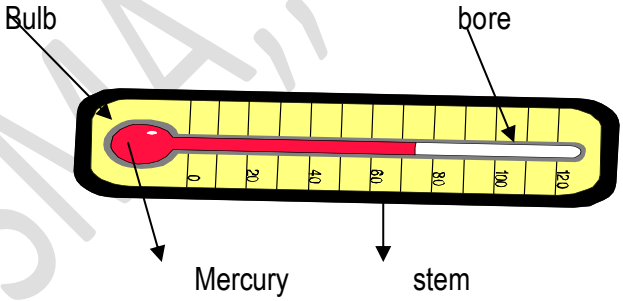
A thermometer is used to measure temperature.

Types of thermometer

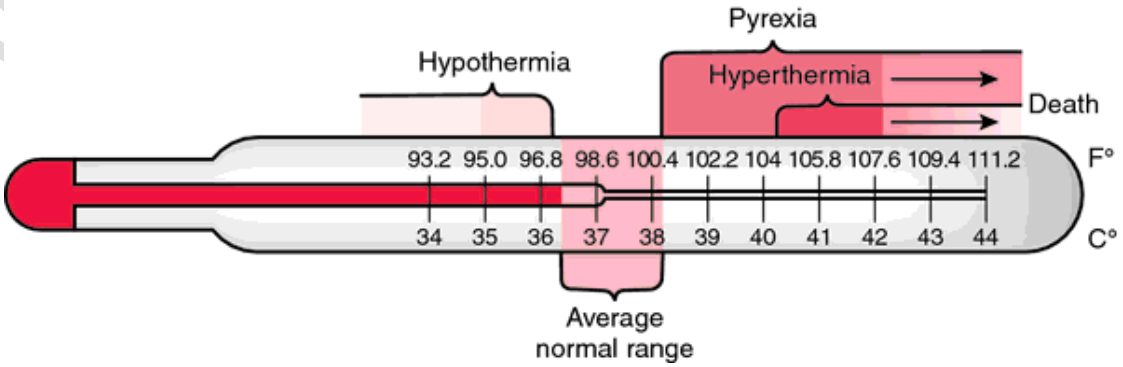
a) Clinical thermometer

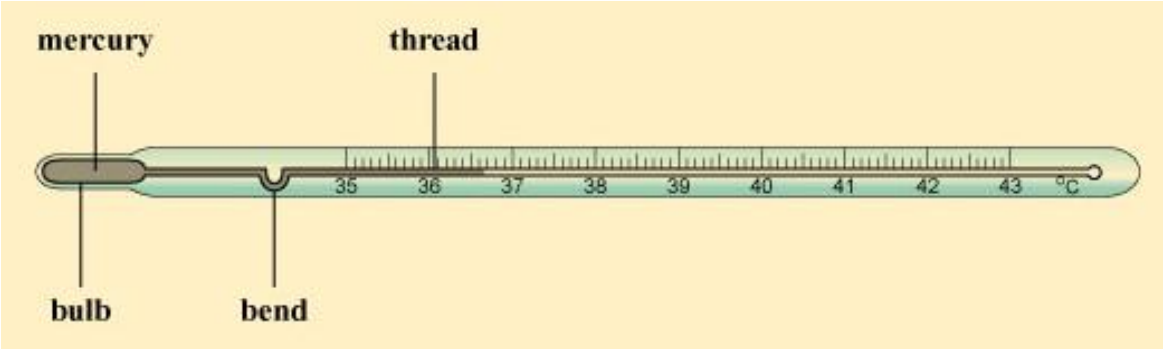
clinical thermometer is used to measure the human body temperature.

Diagram showing a clinical thermometer



Kink / constriction / Namur bend



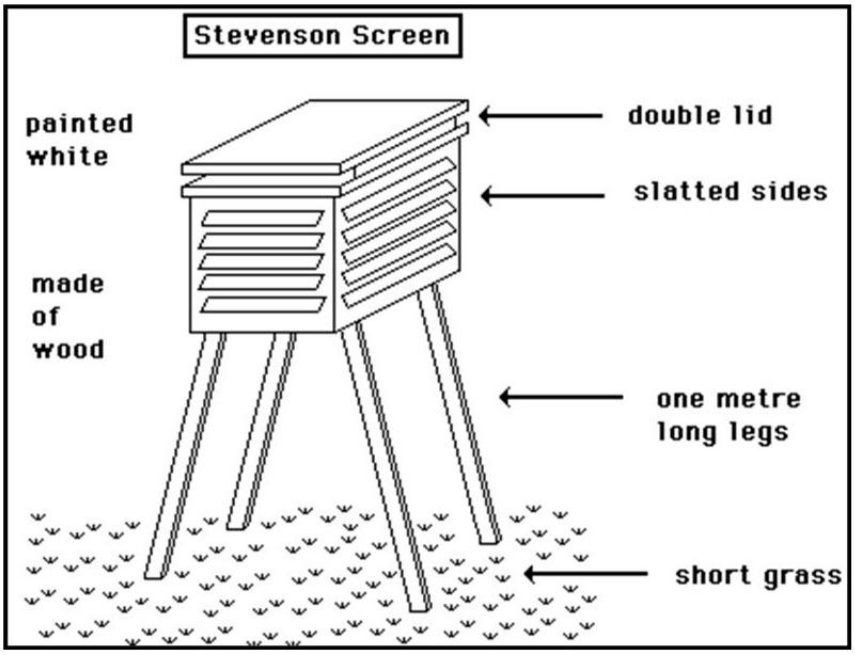


b) Six's thermometer / minimum and maximum thermometer.

Six's thermometer is used to measure the highest and lowest temperature of the day.

Stevenson screen

A Stevenson screen is used to keep delicate weather instruments.



Its painted white to reflect heat.

Examples of delicate weather instruments.

- Barometer
- Thermometer

<u>The seasons</u>

A season is a period when an area receives the same weather condition for a long time.

There are two seasons in Uganda.

i) **Wet season** – an area receives a lot of rainfall.

ii) **Dry season** – an area receives too much sunshine.

Activities done during each season by farmers

Wet season	Dry season
- Planting seeds - Weeding - Pruning - Thinning	- Land clearing - Harvesting crops - Drying seeds - Watering

Theme

Sub-theme

Air and the sun

Reading descriptions of words

Air	atmosphere	objects
Sun	weight	translucent
Gases	properties	glass
Oxygen	pressure	transparent
Nitrogen	occupy	umbra
Carbondioxide	space	penumbra
Rare gases	bubbles	cools
Mixture	compressed	heat
Percentage	Support	winnowing
Breathing/respiration	natural	
Burning	heat	
Fire extinguisher	light	
Preserve	energy	
solar	Artificial	
Fertilizers	Nutrients	
Electrical		

Air concepts and its properties

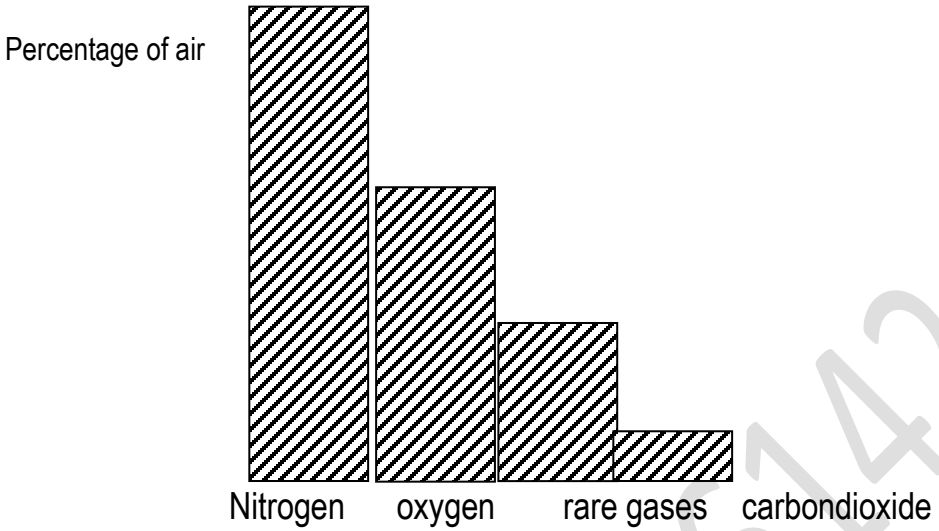
Air is a mixture of gases

Components / parts of air

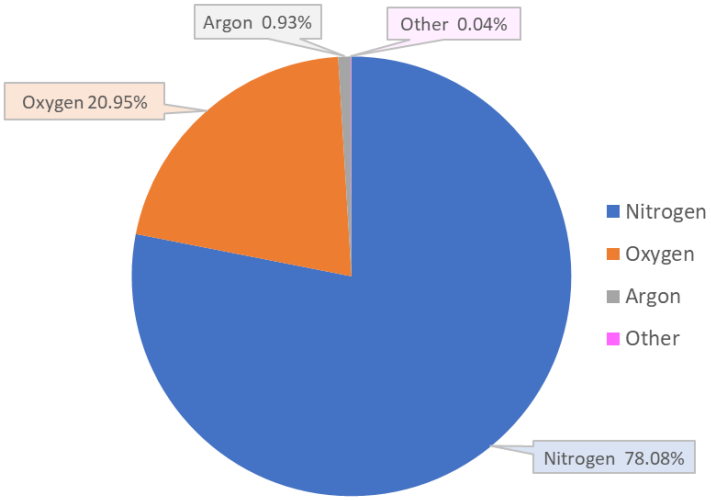
- Nitrogen,
- Oxygen,
- rare gases (argon, helium, xenon, neon, hydrogen, krypton
- carbondioxide

Percentages of gases in the atmosphere

A graph showing the percentage of gases in the atmosphere



Component of Air



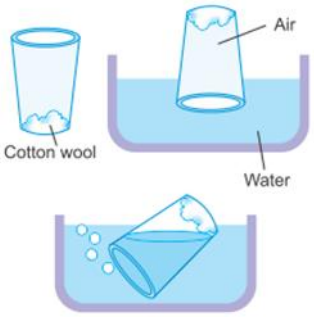
Properties of air

1. Air has weight

balloon with no air

The balloon with air goes down because air has weight.

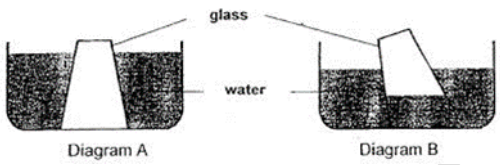
2. Air exerts pressure



When you turn the glass upside down, the hard paper does not fall off because air pressure pushes it up.

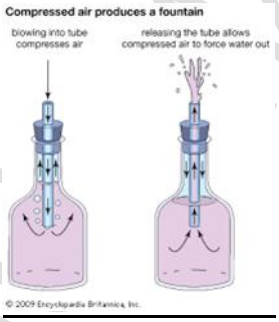
When taking a drink e.g. soda using a straw, the pressure pushes the drink up the straw.

3. Air occupies space



4. <u>Air can be compressed.</u>

Compressed air is used in car tyres to support the weight of the car. It is also used in balls, balloons, floaters and sprays.

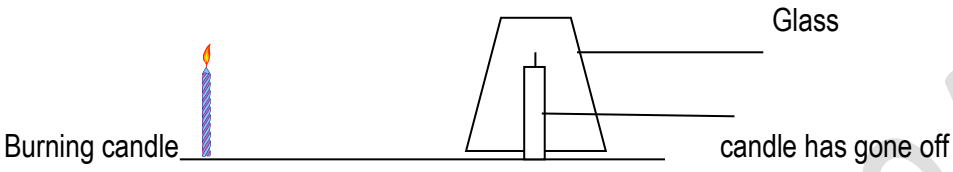


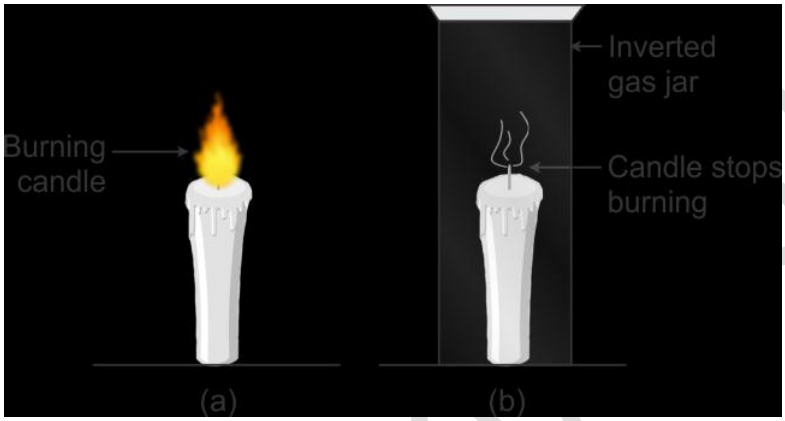
Importance of air

Oxygen

- supports life (breathing, respiration)
- It supports burning

An experiment to show that air supports burning





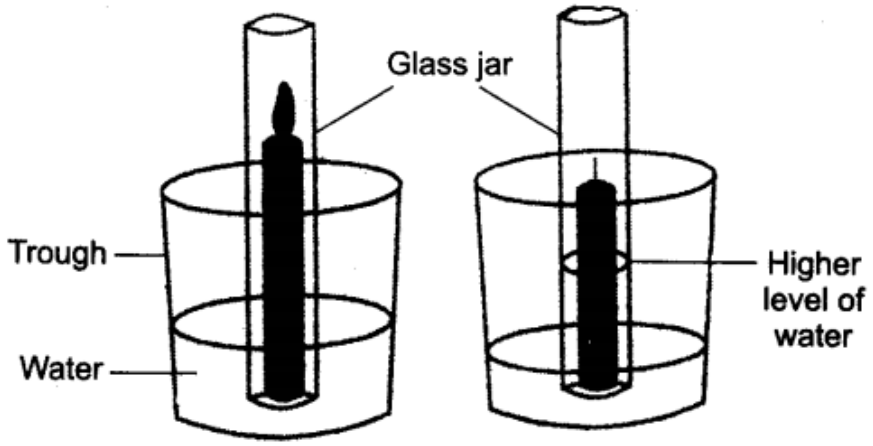


Fig. 15.6 Experiments to show that air supports burning

When the candle is burning, it is supported by oxygen. A glass cuts off the supply of oxygen and then it gets used up in the glass.

The gas the remains in the glass is carbondioxide.

NB: The gas produced by a burning candle is carbondioxide.

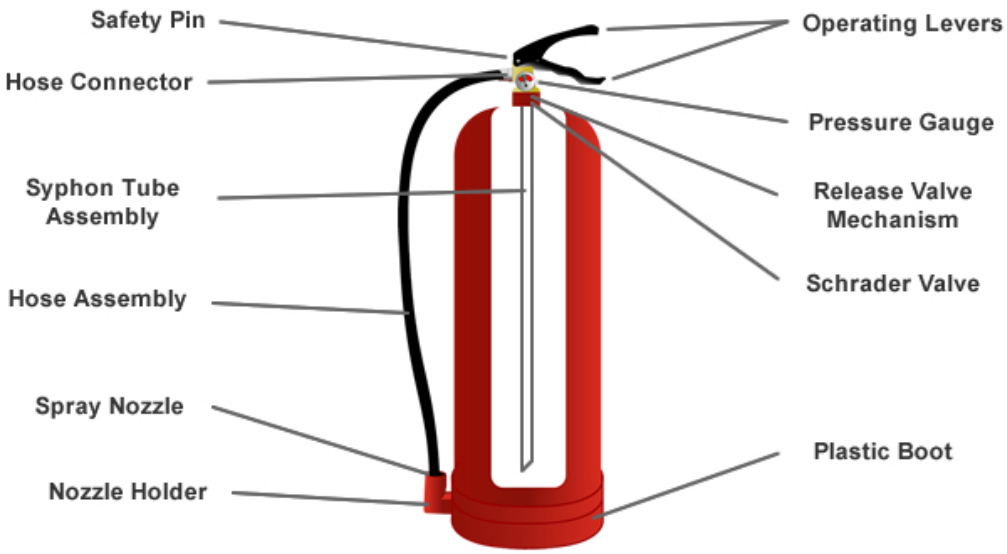
Carbondioxide

- It puts out fire because it does not support burning. A fire extinguisher uses carbondioxide to put out fire. (carbondioxide extinguishes fire)

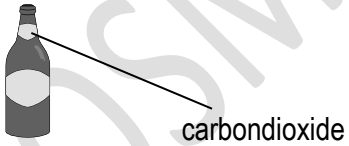
<u>Places where we find fire extinguishers</u>

- schools
- hospitals
- banks
- hotels
- Vehicles
- petro stations

Picture of fire extinguisher



Carbondioxide is used to preserve drinks like soda, beer and tinned food.



Plants use carbondioxide in the process of making their own food. (photosynthesis)

Nitrogen –

- Nitrogen helps in formation of artificial fertilizers
- Nitrogen provides nutrients to plants through minerals.

Rare gases – used in electrical bulbs.

Wind (moving air)

Wind is moving air or wind is air in motion

<u>Uses of wind</u>

- Wind cools our bodies
- Wind moves things e.g. boats, kites
- Wind is used in winnowing
- Wind moves wind mills

Uses of wind mills

- Used to pump water from the ground
- Used to generate electricity

Dangers of wind

- Strong wind destroys crops.
- Strong wind breaks tree branches.
- Wind spreads diseases like flu, cough tuberculosis, measles, mumps etc.
- Wind rises dust
- Wind destroys houses
- Wind causes soil erosion

The sun

The sun is the main source of heat and light energy

It also provides solar energy

Sources of light

- Natural sources of light (God made sources) e.g. the sun, stars, glow worms (caterpillars), fire flies, shooting stars, volcanic mountains
- The moon is not a natural source of light because it reflects light from the sun.

Artificial sources of light (man-made)

- torches
- electric bulbs
- candles
- mobile phones
- match boxes

Effects of the sun

Uses of the sun to animals

- Helps to see (light)
- Tells direction
- It helps in formation of rainfall
- It dries clothes
- It is a source of solar energy

- Provides vitamin D

Uses of the sun to plants

- Helps plants to manufacture (make) food.
- Helps plants to grow well.

Dangers of the sun

- Prolonged sunshine causes drought.
- Too much sunshine dries crops.

Changes bought by the sun on the earth

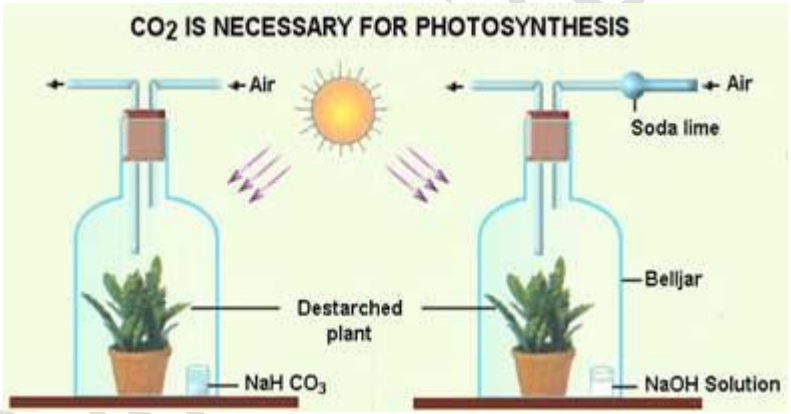
- It causes day and night
- Drought

Day is the time between sun rise and sun set.

Night is the time between sun set and sun rise

Qn. What causes day and night? the rotation of the earth.

Plants need sunlight to grow



A plant bends towards the hole where sunlight is.

Shadows: A shadow is a region of darkness formed when light falls on an opaque object

Formation of shadows

Shadows are formed with light falls on an opaque object.

Shadows are formed when an opaque object stands in the way of light.

Opaque objects:

These are objects which do not allow light to go through them.

Examples of opaque objects

Walls, books, trees, tables, desks etc.

Translucent objects

These are objects which allow light to go through them e.g. clear glass, colourless polythene, sun glasses.

Transparent objects

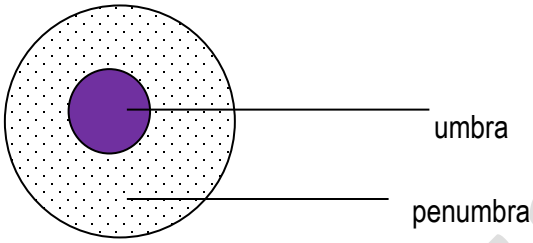
These are objects which allow little light to pass through them e.g. clear glass, water and air.

Parts of a shadow

A shadow has two parts.

a) Umbra – the darker part of a shadow

b) Penumbra – the lighter part of a shadow



Characteristics of shadows

- Have two parts (umbra and penumbra)
- Shadows are always formed on the opposite side of the source of light.
- Appear shortest at noon or mid-day.
- Appear longest in the early morning and late evening.

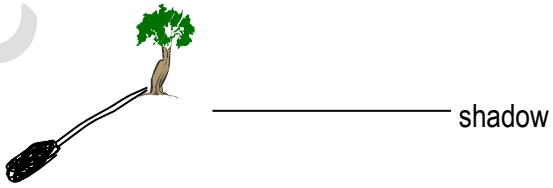
Uses of shadows

- Shadows tell time
- Shadows show direction
- Shadows give us shade

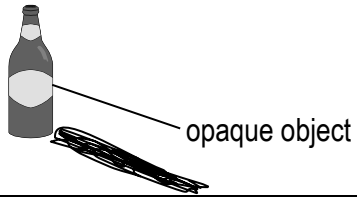
How shadows are formed

source of light

1. Opaque object



2. Source of Light



Sub Theme

Water

Reading descriptions of words

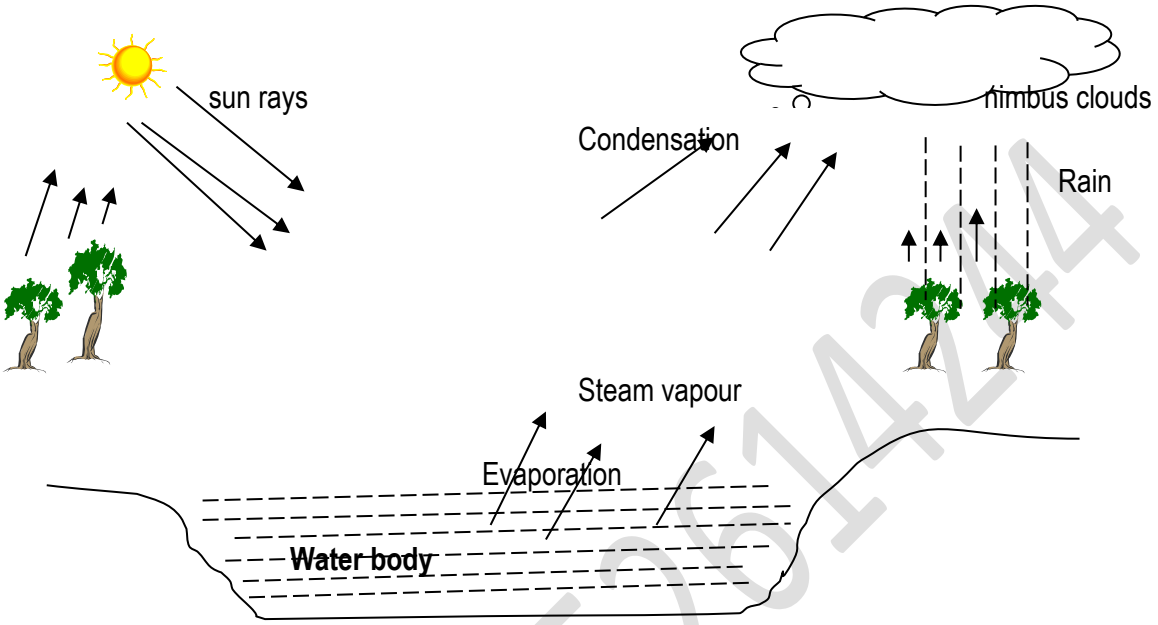
- Rainfall	dark	public	promote
- Formation	feathers	stagnant	condition
- Cycle	piles	Water	resemble
- Vapour	measure	Sunrays	aspects
- Nimbus	source	Clouds	generate
- Evaporation	irrigation	Heat	fencing
- Ice	disposal	Gaseous	waste
- Stratus	proper	Cirrus	products
- Cumulus	collect	Masses	direct
- Nearest	station	Furthest	elements
- Humidity	types	Temperature	
- Layers	transport		

Water cycle: Is the process by which rain is formed

W<u>ater cycle/ rainfall formation</u>

- The sun heats the water body.
- The water gets heated up and starts evaporating (rising up).
- The vapour rises up and then condenses to form nimbus clouds.
- The condensed vapour becomes heavy and then falls down as rain.

Diagram showing the water cycle



Condensation: is the process by which vapour changes to water.

Transpiration: Is the process by which plant lose water to the atmosphere through leaves.

An experiment to show how rainfall is formed

Teacher to draw the experiment

- The charcoal stove represents the sun.
- The water in the kettle represents the water body.
- Evaporation takes place inside the kettle.

NOTE: Evaporation is the changing of water into gas.

- The cold water in the bottle condenses the steam to water.
- The water droplets represent rain.

Types of rainfall.

- Relief rainfall
- Convectional rainfall
- Cyclonic rainfall

NOTE: **<u>Vapour</u>** is water in gaseous form and ice is the water in solid form.

<u>Importance of rain</u>

To man/ animals/ plants

- Plants get water used to grow.
- Animals get water for drinking.

- Rain fills water bodies.
- Rain cools the weather.

Dangers of rain

- Too much rainfall destroys crops.
- Too much rainfall causes floods.
- Too much rainfall kills animals.
- Too much rainfall destroys buildings.
- Too much rainfall causes soil erosion.

Clouds.

Clouds are big masses of water that form in the sky.

There are four types of clouds.

- Nimbus
- Cumulus
- cirrus
- stratus.

Nimbus clouds.

- Dark grey in colour, appear nearest the earth and bring rain.

Stratus clouds.

- They spread in the sky with calm flat layers and are a sign of fair weather.

Cirrus clouds.

- Appear furthest (highest) in the sky. Resemble (look like) feathers.

Cumulus clouds.

- They are white in colour and resemble cotton piles.

Uses of clouds

- Form rainfall (nimbus clouds)
- Protect us from too much sunlight.
- Make the weather cool.

Water sources.

There are two types of sources of water

i) Natural sources or God made sources e.g. rain, lakes, rivers, oceans swamps etc.

ii) Artificial sources or man-made sources e.g. tanks, bore holes, fountains, dams, spring, etc.

Importance of water.

- For domestic use e.g. cooking, bathing
- For transport
- For generating electricity (hydro)
- For cooling machines
- For irrigation/ watering crops

Ways of protecting water sources.

- By fencing sources
- Putting laws
- Planting grass around them
- Proper disposal of waste products
- Adding chlorine to water sources to kill germs.

Water harvesting.

Ways of collecting water

- By using tanks
- Using jerrycans
- Tapping from the roof
- Using dams
- Tapping from trees

Ways of contaminating water sources.

Urinating in water sources.

Putting rubbish in water sources

Sanitation.

Sanitation is the general cleanliness of a place where we live (public cleanliness) or is the cleaning of a place where we live or stay.

Important of sanitation.

- It reduces the spread of germs.
- It promotes public health.
- Little money is spent on treating people.
- People live longer.
- Vectors are controlled.

Ways of promoting proper sanitation.

- Cleaning latrines or toilets.
- Proper disposal of rubbish.
- Slashing around our homes.
- Draining away stagnant water.

- Sweeping our compound.
- Building plate stands.
- Fencing water sources.

Why do we smoke latrines?

- To reduce bad smell
- To prevent house flies.

Things used to keep proper sanitation

- Brooms, soap, water, ash, dustbin, hoes, rays, rakes, brushes, wheel barrows, spades

Qualities of a good house.

- A good house should have windows, doors, strong roof, ventilators and a verandah.

Qualities of a clean home.

A good home should have;

- A kitchen
- Bathroom
- Latrine or toilet
- Rubbish pit
- Plate stand
- Well ventilated house

Germs.

Germs are small living things (organisms) that cause diseases.

There are four types of germs.

- Bacteria
- Viruses
- Fungi
- Protozoa

TERM TWO NOTES

ENVIRONMENT.

Environment are things / around us. Surroundings is another word to mean environment

Component of the environment

Environment is made up of two components namely:

- Living components
- Non – living components

Living components	**Non-living components**
Plants Animals	Air Water Soil

Living things

What are living things?

ENVIRONMENT

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Living things

What are living things?

THEME: LIVING THINGS IN OUR SUBCOUNTY

Reading descriptions of words

Breath

Wastes

Respond

	Reproduce Feed Stimuli Thorax Spiracles Antennae Tasting Laying Feathers Beaks Swimming Gills Cold blooded Hooves Buttons Manure Prestige Dowry Buffalos Tourists Taboos Giraffes Wetland Water logged Crocodiles Tortoises Earthworms Hides Aquatic animals A pond Protection Monitor Shelter Slugs Friendship

	Wriggling Gliding Maggot Nostril Ventral fin Caudal fin Pectoral fin Dorsal fin Corners Senses Nile perch Silver fish Proteins Belts Salting Refrigerator Scratching Warmth Flightless Web feet Penguins Geese Swans Poultry Pigeons Sucking Regarded Scorpions Harmful Spoil Weevils Wax Swarm Proboscis Nectar

Dragonflies

THEME: LIVINGTHINGS IN OUR SUBCOUNTY

What are living things?

Living things are things which have life.

Examples: cows, goats, oranges, mangoes, beans, birds, insects etc.

Groups of living things.

- Plants
- Animals

Characteristics of living things

- They breathe
- They feed
- They move
- They reproduce
- They pass out wastes
- They respond to stimuli
- They grow and change

Non-living things:

These are things which do not have life.

e.g stones, soil, water, timber, etc.

Characteristics of non-living things

- They do not breathe
- They do not feed.
- They do not move
- They do not reproduce
- They do not pass out wastes
- They do not respond stimuli
- They do not grow and change.

Animals

Types of animals in our division

There are two types of animals in our sub county and these are;

(i) Domestic animals

(ii) Wild animals

Domestic animals:

Are animals which are kept in homes.

Examples;

- Cows
- Dogs
- Goats
- Sheep
- Rabbits
- Donkeys

Reasons why people keep domestic animals.

- To get meat
- To get milk
- To sell and get money
- For transport
- For protection

Animals kept for transport

- Donkey
- Camels
- Horse
- Oxen

Animal	Products	Things we make
Goats Cow	Skins and hides	Belt , drum , shoes , watchstraps , handbags
	Milk	Yoghurt, butter , cheese , ghee
	Hooves and horns	Glue , buttons, bungles , necklaces
	Bones	Animal feeds
Sheep	Wool	Woolen blankets , sweaters , stockings , jackets , scurvies
	Mutton	
Pigs	Pork	Bacon and ham, lard
Rabbits	Fur	Blankets
	meat	

Ways of caring for domestic animals

- By giving them food and water
- By cleaning their houses (shelter)
- By treating them when sick
- By building them shelter.

Wild animals

- Are animals which live in the bush.

Examples:

- Antelopes
- Giraffes
- Elephants
- Buffalos
- Zebras
- Leopard

Uses of wild animals

- They attract tourists
- Some wild animals give us skins e.g. snakes, leopards, lions.
- Some wild animals give horns e.g. antelopes, rhinos, buffalos.
- Elephants give us ivory.

Dangers of wild animals.

- Some wild animals can eat people e.g. lions, leopards, etc.
- Some wild animals can also eat domestic animals.

Some wild animals destroy our crops

Habitats

A habit is a home of a living thing.

Types of habitats

- Animal habitats
- Plant habitat

Animal habitats

An animal habitat is a place where an animal lives.

Examples of animal habitats

- Compound e.g. goats, rabbits, geckoes
- Plants e.g. caterpillars, slugs, butterflies, chameleon
- Forest / bush e.g. monkey, buffalo, elephants
- Swamps e.g. mud fish
- Water e.g. whales, dophin
- Garden e.g. rats, squirrels etc.

Animals in swamps and in water:

- A swamp is a water-logged area with some plants in it or
- A swamp is a wetland with vegetation in it.
- A swamp can be called a wetland.

Water animals (Aquatic animals)

Animals that live in water are called aquatic animals.

Examples

- Fish
- Crocodiles
- Hippopotamus
- Frogs
- Slugs

- Crab

A POND

A pond is a small pool of water.

Some ponds are natural and others are manmade.

A pond can be found in homes, schools and hotels.

Examples of animals in a pond

- Fish
- Frogs
- Slugs
- Snai

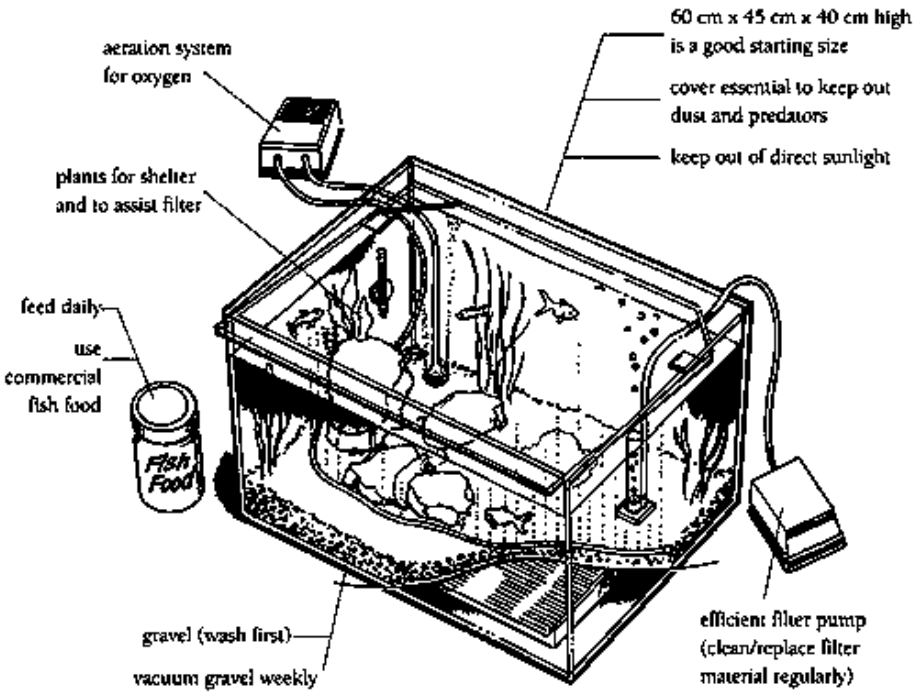
AN AQUARIUM

An aquarium is a glass tank where fish and other water animals are kept in our homes.

Places where an aquarium can be found:

- Hotels
- School compounds,
- homes, etc.

Aquarium diagram



- remove and replace one-third water every two weeks
- allow chlorine to evaporate when refilling tank after cleaning.

Aquarium diagram explanation

The glass tank 60cm x 45cm x 40cm high shown is a good starting size. It must have a cover to keep out predators and be kept out of direct sunlight. A small square aeration system is shown outside the tank with two tubes leading into the tank – ventilation is important. A small filter pump is shown leading into the tank to a tube that needs regular filter changes. Inside the tank there is washed gravel on the tank floor and rocks and plants to provide shelter and assist filtration. Every two weeks one third of the water should be removed and replaced. When refilling the tank after cleaning the chlorine needs time to evaporate. There is a jar of fish food outside the tank to show the fish need daily feeding with commercial fish food.

Animals without legs

- fish
- Snakes
- Slugs
- Earth worm
-

Animals which lay eggs

- Lizards
- Tortoise
- Chameleon

Animals and their young ones

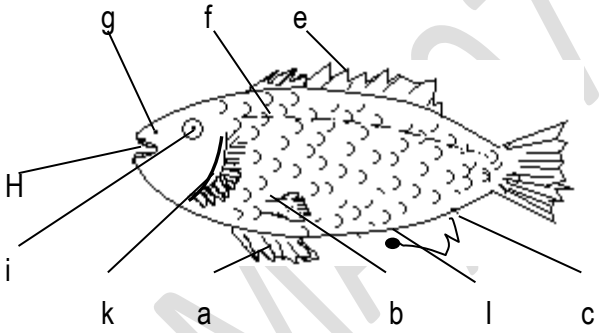
Animal	Young	Home
Cow	Calf	Byre
Goat	Kid	Shed
Rabbit	Kitten	Hutch
Sheep	Lamb	Pen
Pig	Piglet	Sty
Horse	Foal	Stable
Chicken	Chicks	Coop
Lion	Cab	Den
Fish	Fry	Water / aquarium

Animal movements

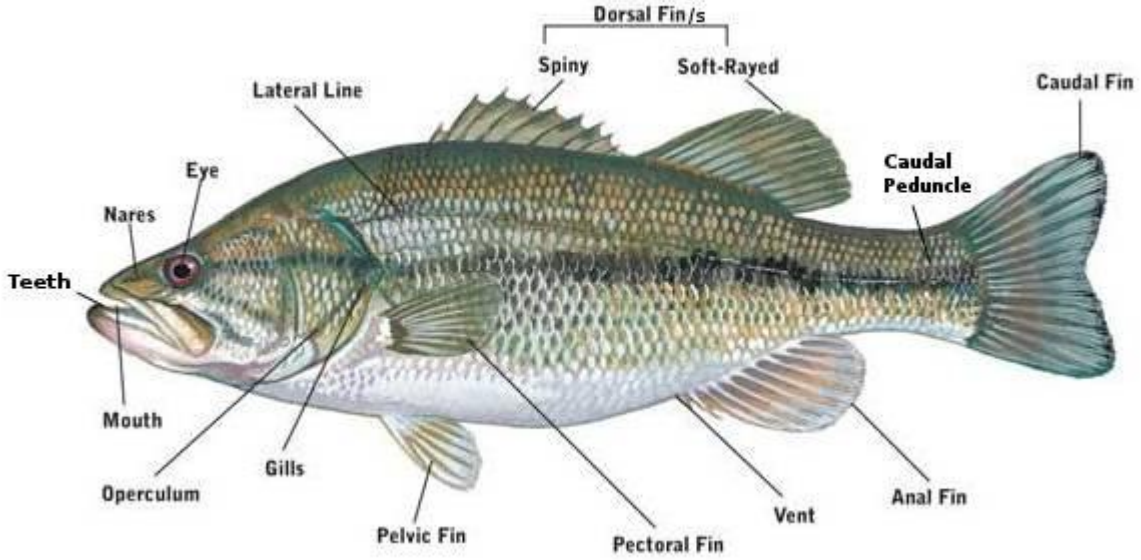
Way f movement	Animals
Crawling	Lizards Chameleon Tortoise
Hopping	Frogs Grasshoppers

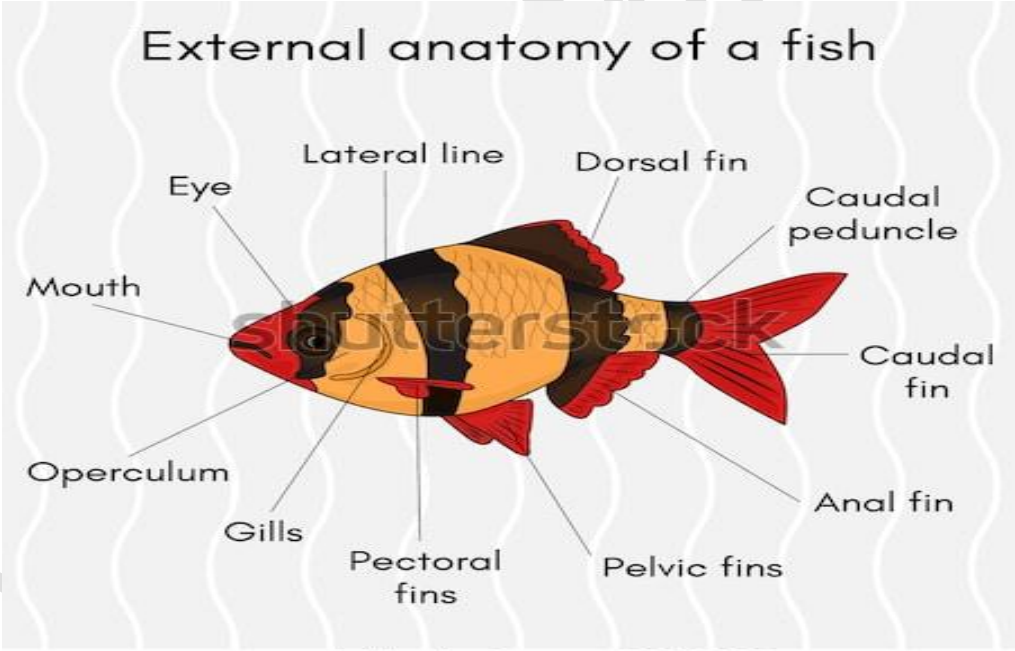
	Locusts Toads
Flying	Butterflies Houseflies Bees
Walking	Cows Dogs Hens Man
Gliding	Snail Slug Snake
Wriggling	Caterpillar Earthworms Maggot
Swimming	Fish Ducks Swans Geese

External parts of a fish



a. Pelvic fin
b. Pectoral fin
c. Ventral/anal fin
d. Tail/caudal fin
e. Dorsal fin
f. Lateral line
g. Nostril
h. Mouth
i. Eye
j. Scale
k. Gill cover/operculum
l. Anus


Dorsal Fin/s
Spiny
Soft-Rayed
Lateral Line
Caudal Fin
Caudal Peduncle
Eye
Nares
Teeth
Mouth
Gills
Operculum
Pelvic Fin
Pectoral Fin
Vent
Anal Fin


External anatomy of a fish
Lateral line
Dorsal fin
Eye
Caudal peduncle
Mouth
Caudal fin
Operculum
Anal fin
Gills
Pectoral fins
Pelvic fins
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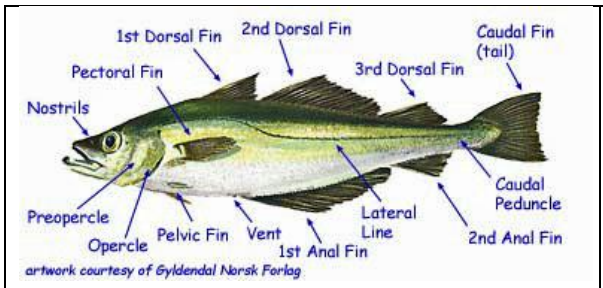
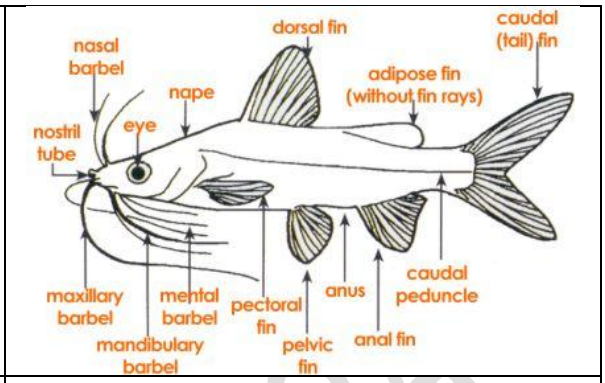
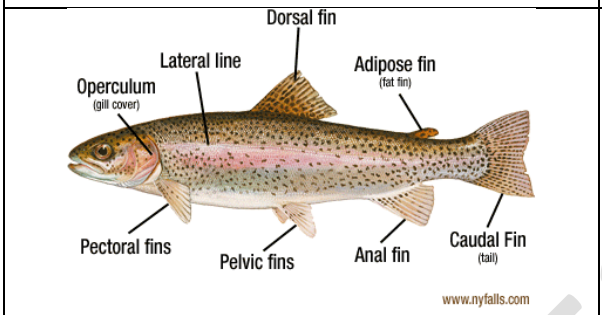
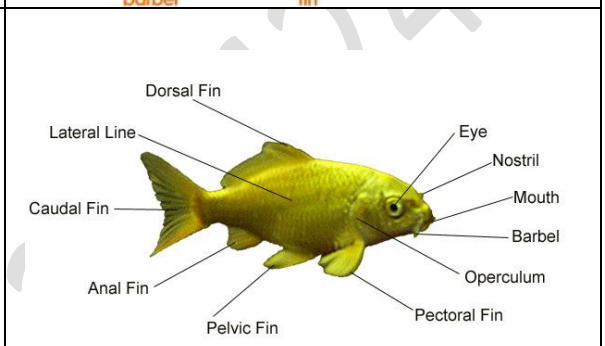








USES OF PARTS OF A FISH

1. The dorsal fin protects the fish from enemies.
2. The eyes are used for seeing.
3. The gill cover protects the gills.
4. He tail fin helps the fish to turn to different directions.
5. The scales protect the body of a fish.
6. The nostrils are for smelling.
7. The mouth is for feeding /getting food.
8. The lateral line detects sound waves.
9. Pectoral and pelvic fins are used for breaking speed and going up or down wards in water.
10. Gills are used for breathing.

NB : Fins help a fish to swim in water.

Examples of fish common in Uganda.

- Tilapia (engage)
- Nile perch (empuuta)
- Cat fish
- Silver fish (mukene)

- Lung fish
- Mud fish

Use of fish

- Source of proteins
- Scales are used to make bags and belts.
- Fish helps to control mosquito larvae
- Helps in manufacture of animal feeds
- Some people get jobs e.g. fish mongers
- For selling

Methods of catching fish

- fish hawks
- Fishing nets
- Fishing baskets

FISH PRESERVATIONS

Preservation

Preservation is the way of keeping food for a long time without going bad.

Morden methods of preserving fish

- Canning / tinning
- Refrigeration

Local methods

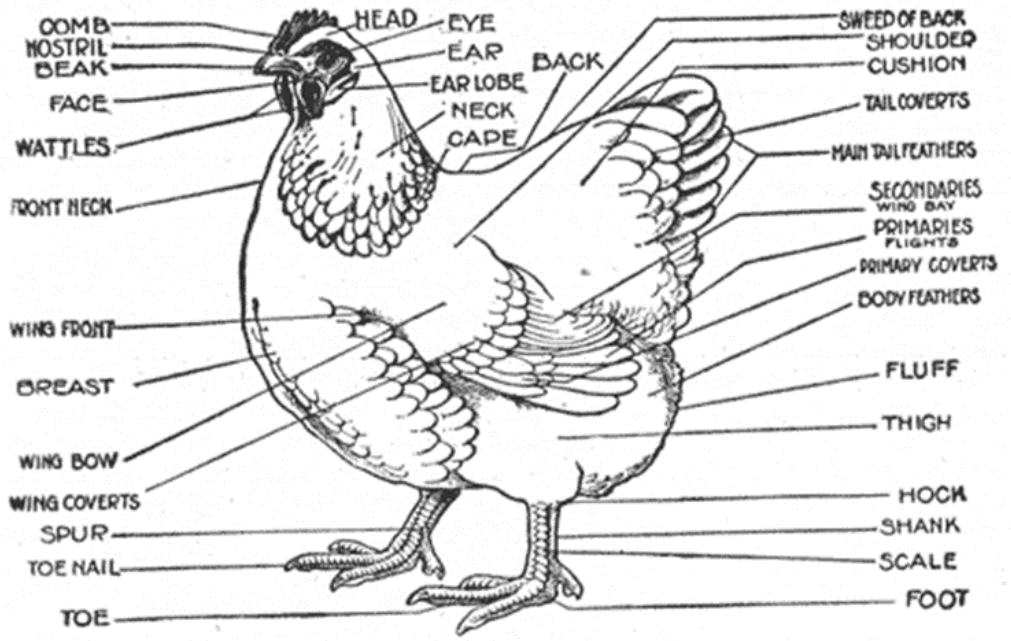
- By smoking
- By salting
- By sun drying

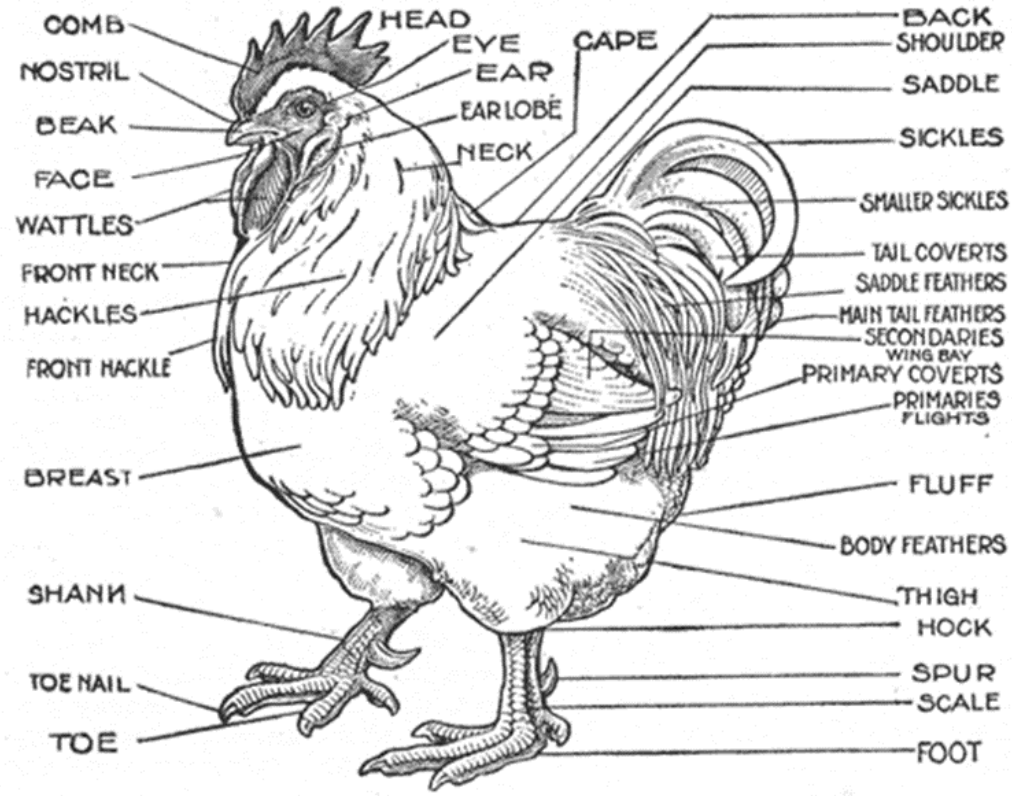
Qn: Why do we preserve fish?

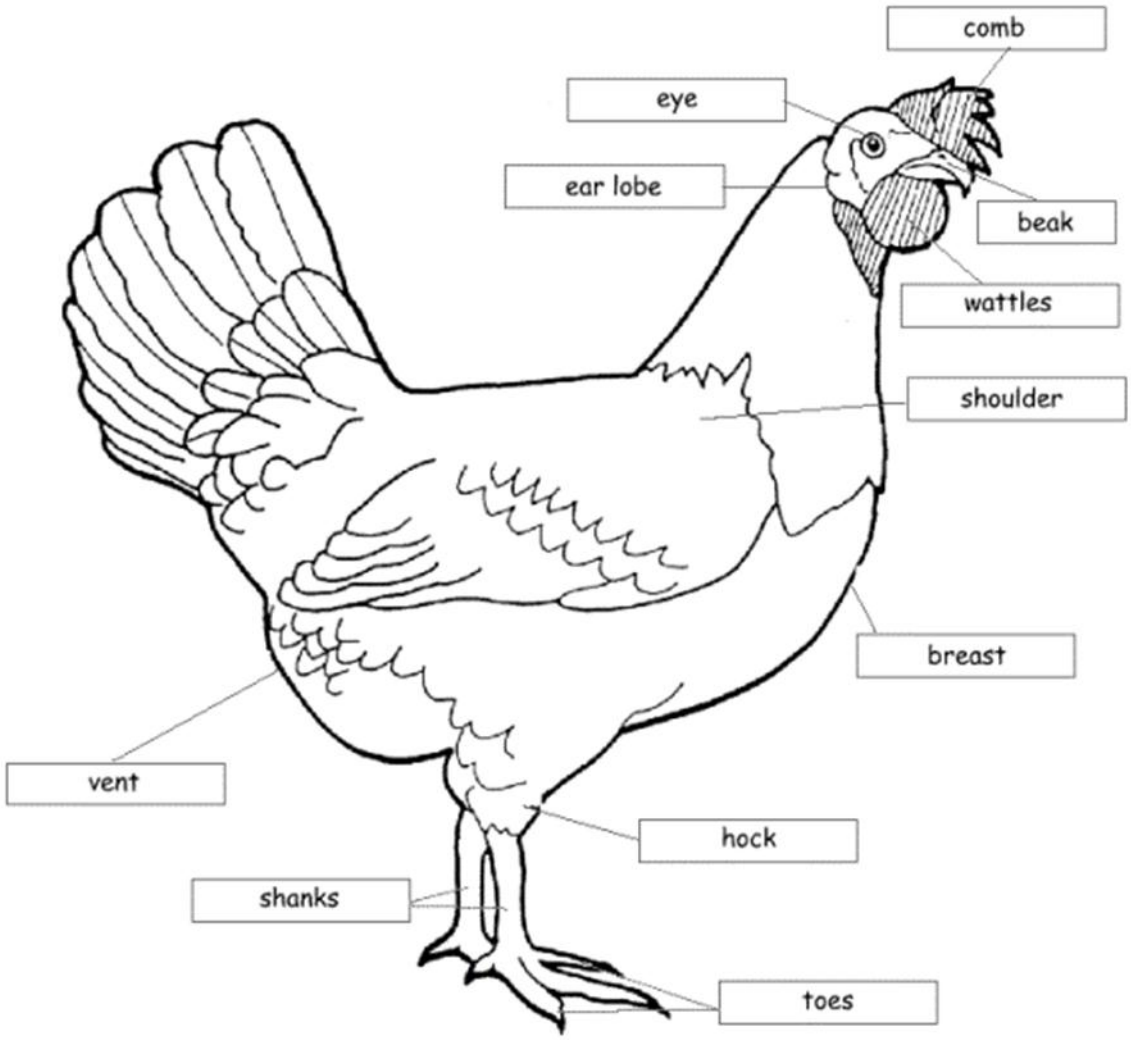
- For future use
- To prevent wastage

SUB THEME BIRDS

The external parts of a bird.







Functions of parts of a bird.

Beak - It picks food from the ground (feeding)
- It is used for protection

Wings - used f or flying

Legs - for walking

Claws - for protection

Spur - for fighting/ protection
- seeing
- for flying
- giving birds shape
- cover body of a bird.
- Give birds colour
- Feathers give birds warmth

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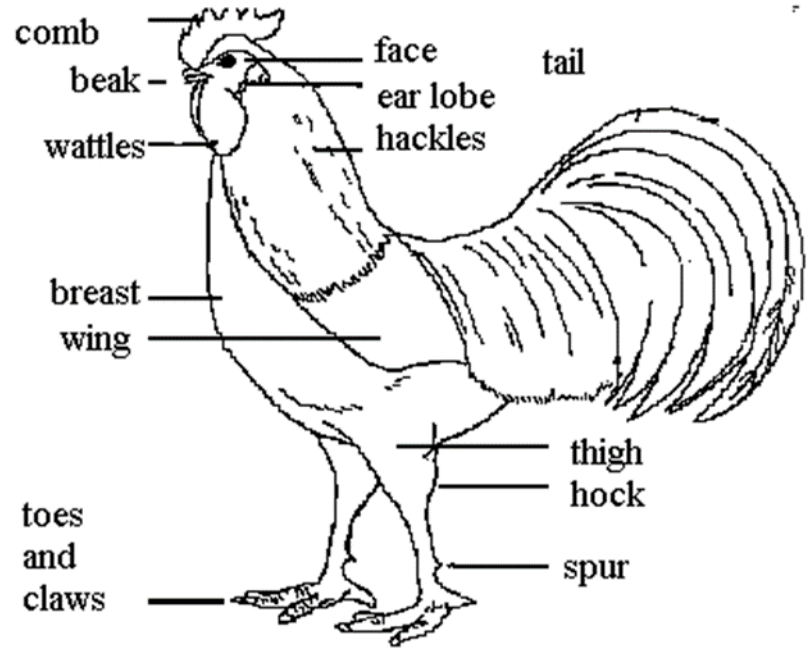

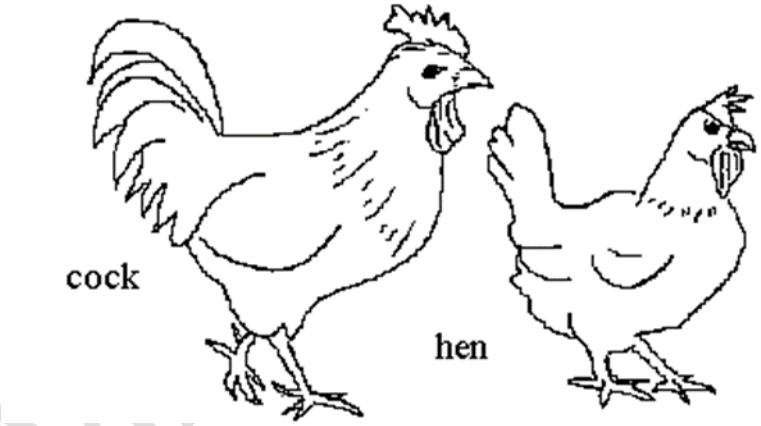

Characteristics of birds.

- Birds breathe by means of lungs
- Birds are covered with feathers.
- Have beaks
- Have claws
- Reproduce by laying eggs

Note: Swimming birds have webbed feet which help them to swim on water.

Examples of swimming birds.

- Ducks
- Geese
- Swans

Types of birds

- Domestic birds
- Wild birds

Domestic birds

- Are birds kept in our homes.
- They are also called poultry.

Examples

- Ducks
- Pigeons
- Peacocks
- Guinea fowls
- Chicken
- Parrots
- Turkeys

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- Pigeons

- Peacocks
- Guinea fowls
- Chicken
- Parrots
- Turkeys

Wild birds.

- Are birds found in the bush.

Examples

- Weaverbirds
- Kites
- Crested cranes
- Eagles/crows

Habitats of birds

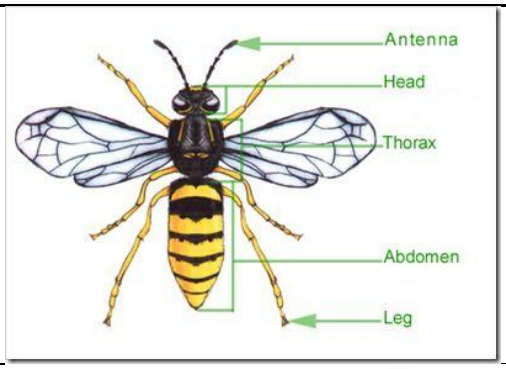
- A habitat is a home of a living thing.
- Birds live on trees, nests, burrows.

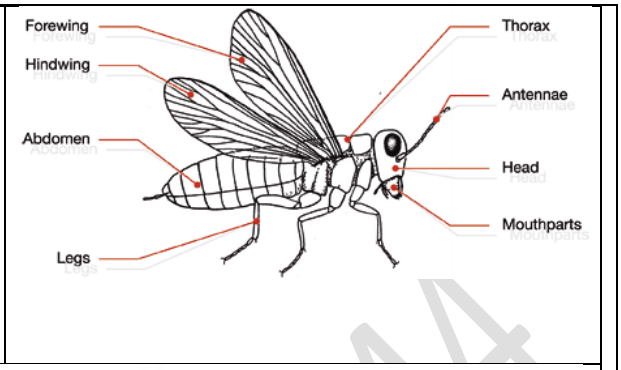
Uses of birds to people;

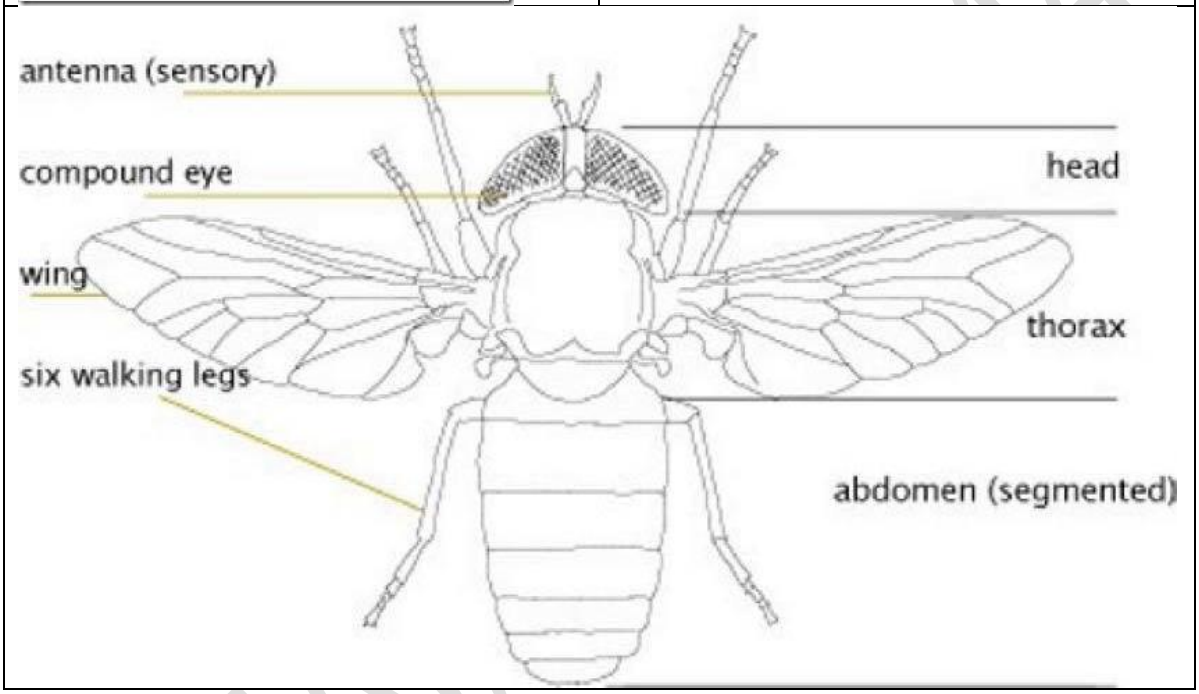
- Birds provide meat e.g. chicken, turkey
- Provide manure
- Provide feathers
- Provide bones used to make animal feeds
- Used f or cultural purposes e.g. paying dowry
- Used for tourist attraction

Caring for birds

Providing food, water, shelter to birds







The three main body parts of an insect.

1. **Head** - It is where the eyes, feelers and proboscis are found.
2. **Thorax**- It's where the legs and wings are attached.
3. **Abdomen**-It is where we find the spiracles.

Functions of parts of an insect.

1. Feelers - for feeling
2. Proboscis - used for sucking food and water
3. Wing - for flying
4. Spiracles - for breathing

Characteristics of insects.

- Insects have three main body parts
- Have three pairs of legs
- Have jointed legs
- Have feelers for feeling and smelling

- Have segmented bodies

Note: spiders, ticks and mites have two main body parts and eight legs. They are not insects.

Harmful and useful insects

- Some insects are harmful or dangerous to man

Examples:

- Of harmful insects
- Wasps
- Crickets
- Locust
- Mosquitoes
- Termites
- Bees
- Houseflies
- Red ants
- Cockroaches

Useful insects to man

- Bees
- Grasshoppers
- White ants
- Locusts
-

INSECT HABITATS (HOMES)

Insects that live in the soil

- Termites
- White ants
- Red ants

Insects that live on plants

- Butterflies
- Caterpillars

Social and solitary insects

Social insects are the insects that live, move and work together.

Examples.

- Bees
- Red ants
- Termites
- Wasps
- Black ants
- White ants

Anti – social insects (solitary insects)

- Are insects which do not live, move and work together.

Examples.

- Houseflies
- Locusts
- Mosquitoes
- Cockroaches
- Dragon flies
- Butterflies
- Moth
- Grass hoppers

NOTE: Moth pollinates flowers at night

Other insects habitats.

- Bees - bee hive
- Spider -web

CARE FOR INSECTS, BIRDS AND ANIMALS

Care for bees.

- By providing a hive
- By planting flowers for nectar
- By providing water.

Types of bees.

- Worker bees
- Drone bees
- The queen bees

Note: A group of bees is called a swarm.

Uses of bees to man.

- Bees provide honey
- Bees provide bee wax
- Young bees are eaten

Importance of honey.

- Honey is used as medicine e.g. syrup
- Honey is used to make some foods sweet
- People sell honey and get money
- It is a source of carbohydrates

Products from the wax

- Candles
- Shoe polish
- Some cosmetics
- After shave
- Crayons

Ways of caring f or birds.

- Treating birds
- Keeping bird's records
- Providing food to birds
- Building birds' houses
- Vaccinating birds
- Protecting eggs

Signs of a sick bird

- It is sleepy
- Has dull feathers

- It does not want to eat food.

Note: Poaching is the hunting of wild animals without permission

- Treating sick animals in the wild life Centre
- Providing food to animals.

SUB THEME: PLANTS

Reading description of words.

- Seed
- Develop
- Germination
- Seedling
- Condition
- Necessary
- Moisture
- Temperature
- Warmth
- Epigeal
- Hypogeal
- Cotyledon
- Dicots
- Monocots
- Thatching
- Chlorophyll
- Upright/erect
- Clasping
- Underground
- Flower
- Habitat
- Nursery bed
- Harsh
- Weeding
- Spraying
- Chemicals
- Thinning
- Transplanting
- Mulching

- Fencing
- Rotation
- Photosynthesis
- Legumes
- Cereals
- Firmly
- Reproductive
- Suffocate
- Harbor
- Excess
- Pests
- Pesticides
- Premature
- Pruning
- Transplant
- Manure

Plant

Plants are anything on earth's surface

Examples of plants

- Maize plants
- Bean plant
- Cow pea plant

Reasons why they are called plants.

- They make their own food
- They have chlorophyll

GROUPS OF PLANTS.

a. **Flowering plants.**

Are plants which bear flowers e.g. maize, beans, grass, tomatoes, peas, etc.

b. **Non-flowering plants.**

Are plants which do not bear flowers e.g. ferns, conifers, mosses, liver worts

Characteristics of plants.

They grow, reproduce, feed, breathe, excrete.

Plants habitats.

Plant habitat is a place here plants grow or are found

N.B a habitat is a home of a living thing.

Plants in school compounds.

- Pawpaw
- Avocadoes
- Mangoes
- Palms
- Trees, flowers, etc.

Plants in swamps

- Papyrus
- Yams
- Rice
- Sugarcanes, etc.

Plants in desert/dry areas

- Cactus
- Sisal

Plants which grow water

- Waterhyancith
- Water lily
- Water cabbage

Plants that grow on rocks

- Liverworts
- Ferns
- Mosses

SCHOOL GARDEN

Factors to consider when setting up a school garden

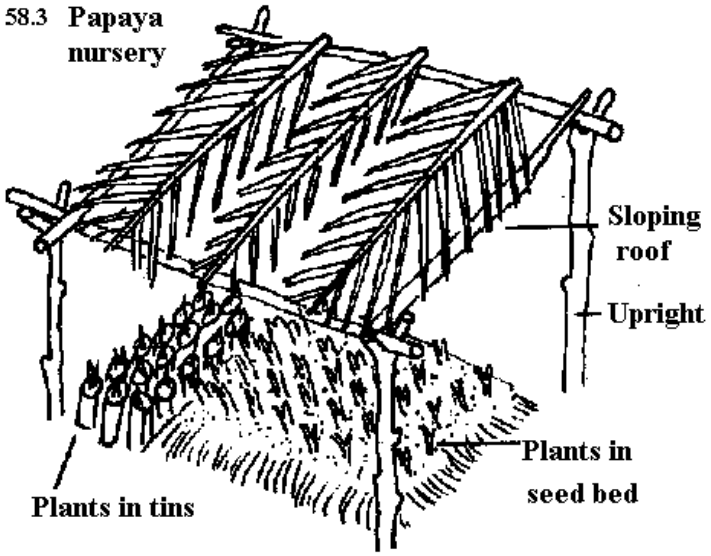
- It should be near a water source
- Should be near the school
- It should be in an open space

Importance of a school garden.

- Children learn about crop i.e. for study purposes
- Children get food from the grown crops
- The surplus is sold and generates income to the school.
- Children learn how to dig.

NURSERY BED.

Nursery bed is a small piece of land where seedlings are raised before taking them to the main garden.



58.3 Papaya nursery

Importance of a nursery bed.

- Protects the seedlings from harsh conditions e.g. too much sunshine, strong wind and heavy rains.
- It is easy to care for the seedlings.
- The shelter prevents water from evaporating
- It is easy to select good seedlings.

Examples of crops grown in a nursery bed. -

- Tomatoes
- Cabbage
- Loofah plants
- Passion fruits

- Onion
- Orange
- Egg plants
- Green pepper
- Spinach
- Trees

Caring for crops in a nursery bed.

- Watering/irrigation
- It provides water to plants mainly in dry seasons

Spraying

This is the application of chemicals on seedlings to control pests, diseases and weeds.

WEEDING.

This is the removal of unwanted plants from the garden.

A weed is un –wanted plant in the garden.

Examples of common weeds.

- Black jack
- Star grass
- Spear grass
- Sodom apple
- Finger millet
- Goat grass
- Wondering jew
- Elephant grass
- Nut grass

Importance of weeds to man.

- Some weeds are eaten as food
- Some weeds are used as herbal medicine
- Some weeds are feeds to domestic animals.

Ways of controlling weeds

- By up rooting
- By mulching
- By slashing
- By spraying

- By digging

Dangers of weeds in the gardens

- Weeds hide dangerous pests.
- Weed lead to low crops yields
- Weeds compete with plants for sunlight, water and nutrients.

Thinning

- Is the removal of excess crops from the garden to create space.

Hardening off:

This is the making of seedlings get used to harsh conditions.

Transplanting

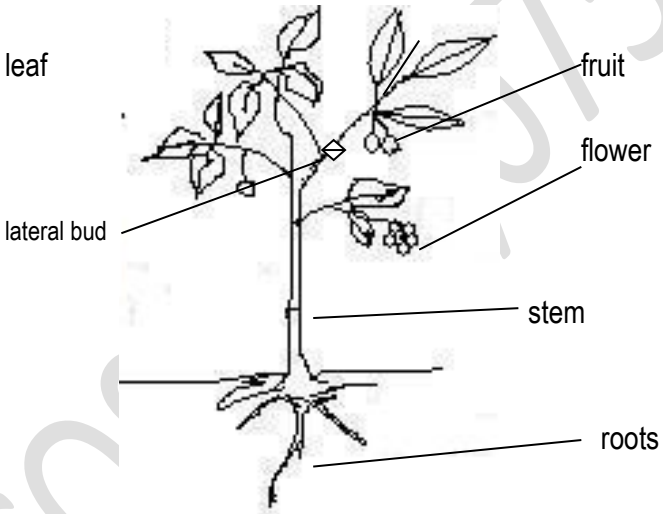
- Is the transfer of seedlings from the nursery bed to the main garden.

Mulching

- Is the covering of top soil with dry plant materials.

Fencing:

Diagram of a flowering plant



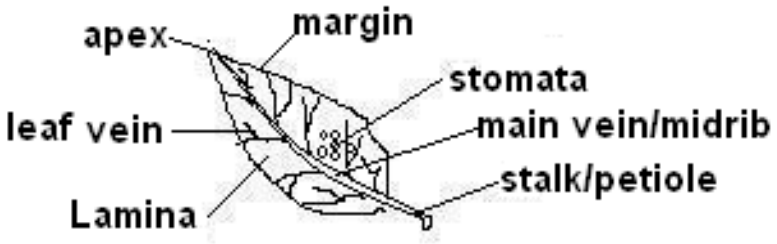
Systems of Plants

- Shoot system
- Root system

Parts of a flowering plant.

- It has 3 majors namely leaves, stem, roots

LEAF



(leaf blade)

Uses of leaves to plants

- They make food for the plant.
- Some leaves store food
- They help plants during transpiration

Note: Plants use stomata for breathing

Types of leaves.

a)Simple leaves

Illustration

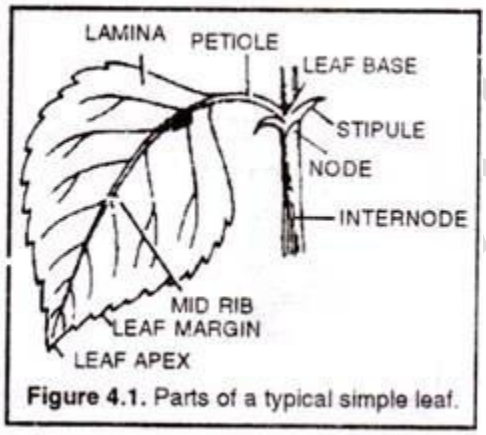
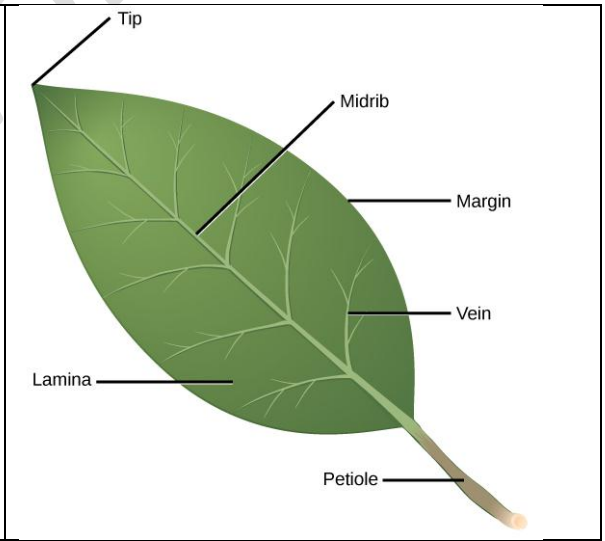
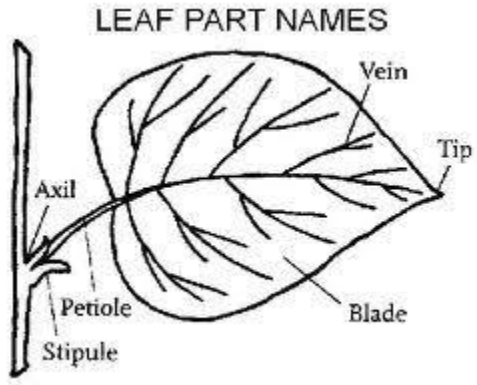


Figure 4.1. Parts of a typical simple leaf.

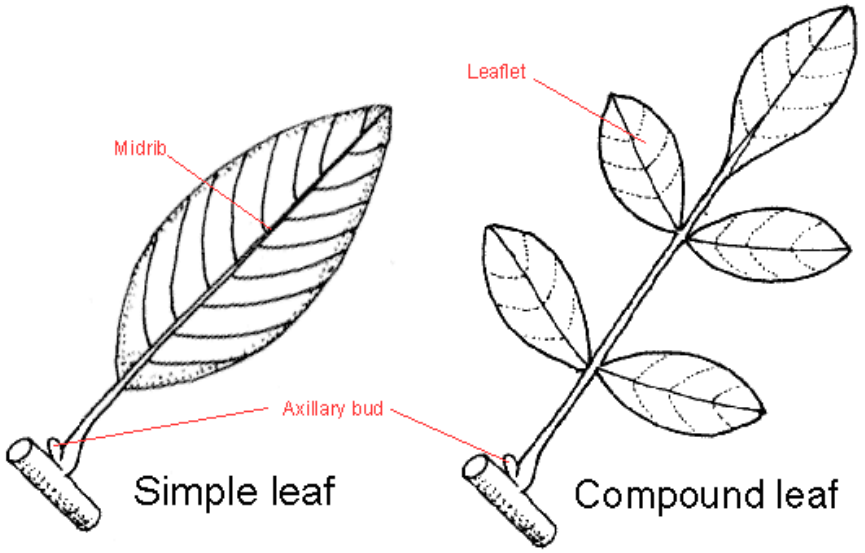


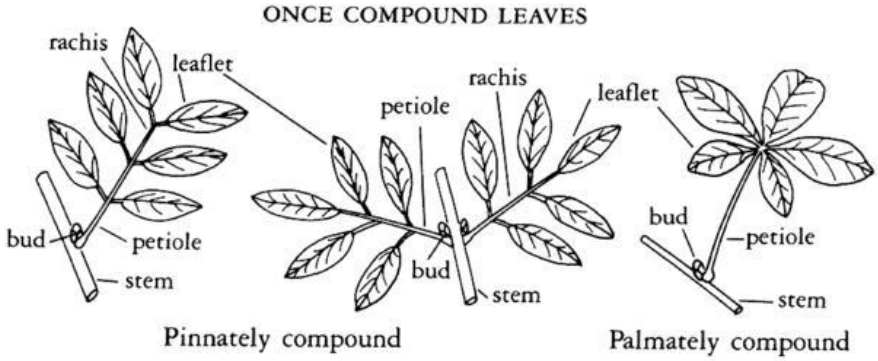


Examples of plants with simple leaves

- Mango plant
- Orange
- Jack fruit

b) Compound leaves





Examples of Plants with Compound Leaves

- Bean plant
- Cassava plant
- Soya bean
- Acacia plants
- Molinga plant

PHOTOSYNTHESIS

It is the process by which green plants make food I the presence of sunlight and carbondioxide.

NB: Food made by plants is called starch.

Conditions necessary for photosynthesis

- Chlorophyll (Green colouring matter that trap sunlight)
- Carbondioxide } These are raw materials of photosynthesis
- Water }
- Sunlight } (provide energy to plants)
- N.B Transpiration is the process by which green plants lose water to the atmosphere through the leaves.

By – products of photosynthesis

a) Oxygen

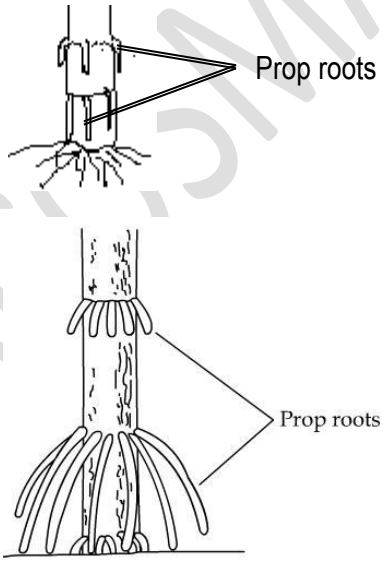
b) Starch

Uses of leaves to animals.

- Leaves are eaten as food
- Leaves are used as herbal medicine
- Some plants have leaves sused f or thatching houses
- They are used for d ecoration
- People sell leaves and get money.

(b) Prop roots

They develop from the stem of the plant



Maize

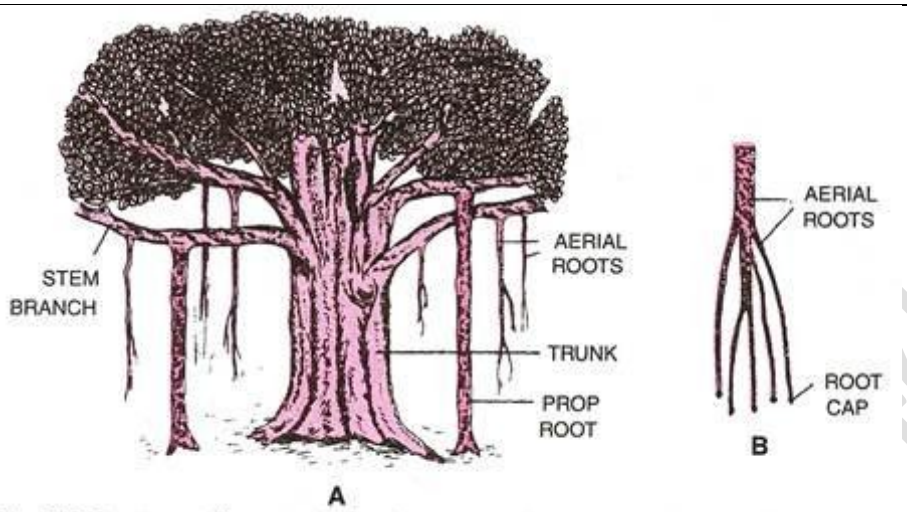
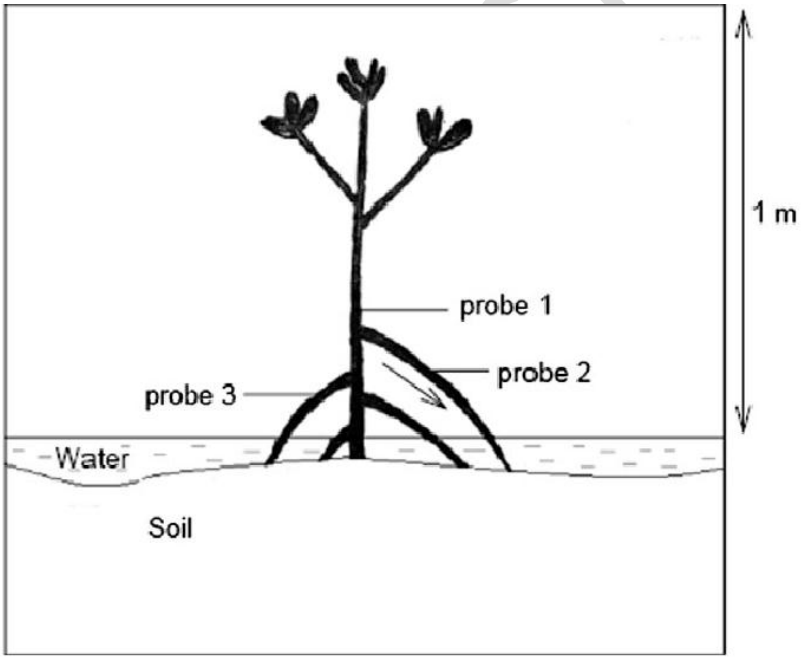


Fig. 5.13. A, prop or pillar roots of *Ficus bengalensis* (banyan tree); B, hanging aerial roots.



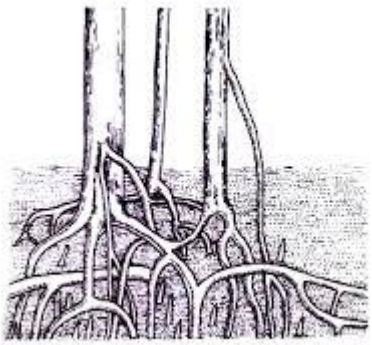


Fig. 10.3. Supporting or stilt roots of mangrove plants developing from the trunk.

NOTE: The function of prop root is to give extra support to the plant.

Examples of plants with prop roots

- Sorghum
- Maize
- Millet and some grasses

(c) Adventitious roots

(d) These also develop from the stem of the plant. They are common in plants like onions, some yams

Adventitious roots

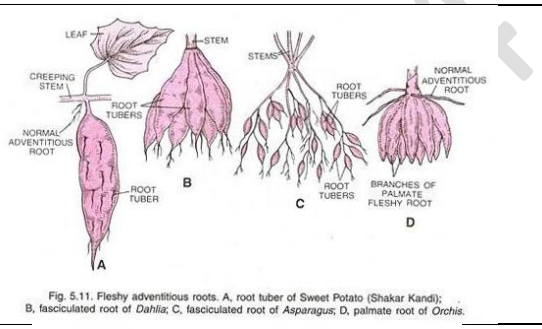
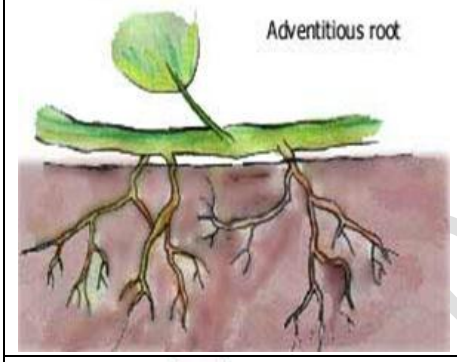


Fig. 5.11. Fleshy adventitious roots. A, root tuber of Sweet Potato (Shakar Kandi); B, fasciculated root of *Dahlia*; C, fasciculated root of *Asparagus*; D, palmate root of *Orchis*.



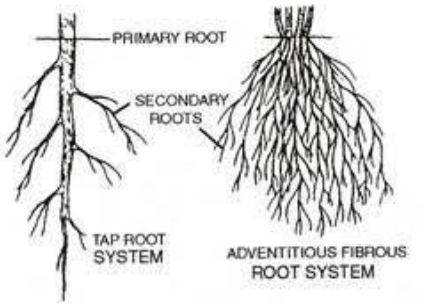


Fig. 5.24. Tap and adventitious root systems.

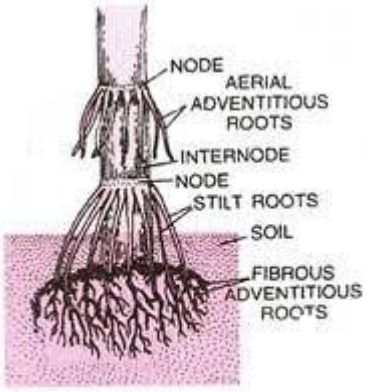


Fig. 5.14. Stilt roots of Maize.

Uses of roots to plants

- Hold the plant firmly in the soil
- Absorb water and mineral salts from the soil
- Stores food for the plant
-

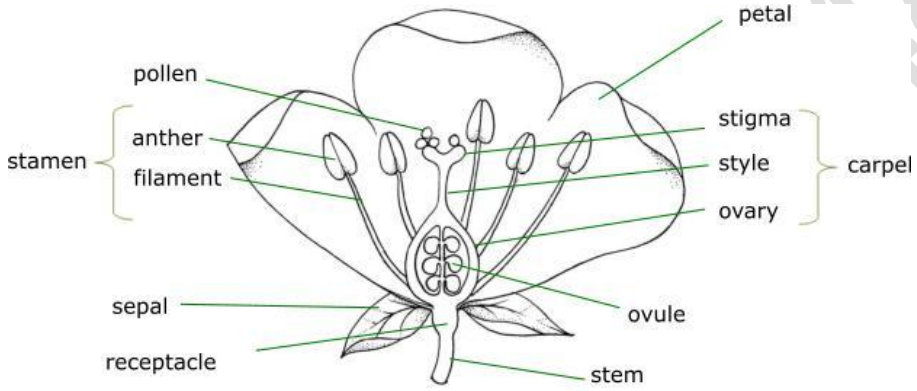
Uses of roots to animals.

- It is a source of food
- It is used as herbal; medicine
- Controls erosion like he buttresses roots
- Some people sell roots and get money

The flower

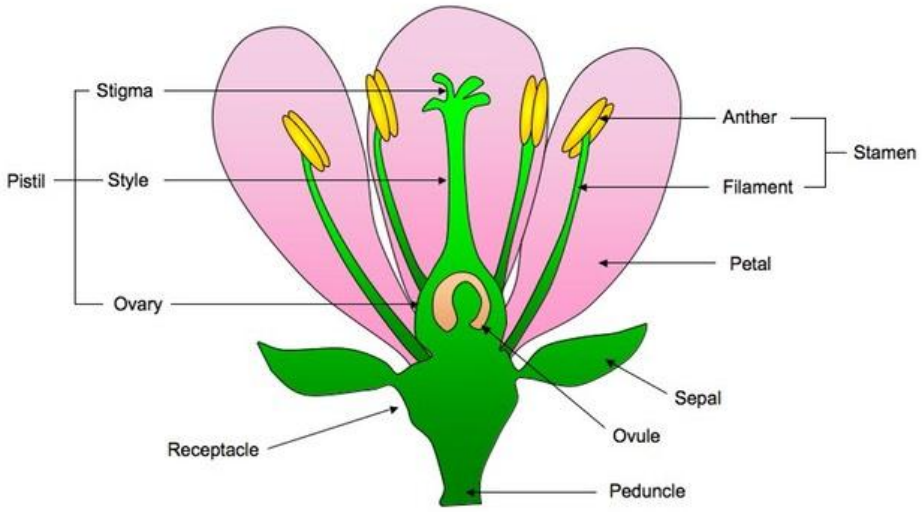
A flower is the reproductive part of a plant.

Parts of a flower.



NOTE: Pistil is the female part of a flower

Stamen is the male part of a flower.



Uses of flowers to people.

- They are used for decoration
- Bees and birds get nectar from flowers
- They are eaten as food
- They are used for making perfumes
- They are used for making colours
- They are used as herbal medicines

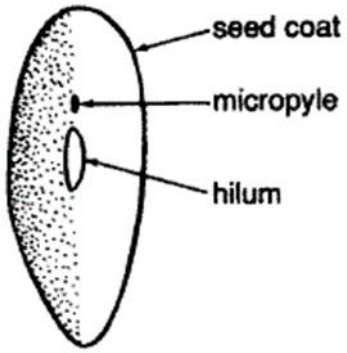
Uses of flowers to plants

- They help a plant to reproduce.

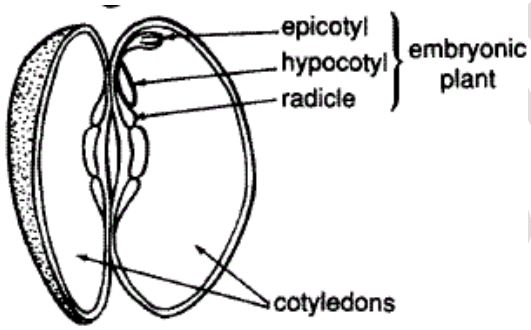
SEEDS

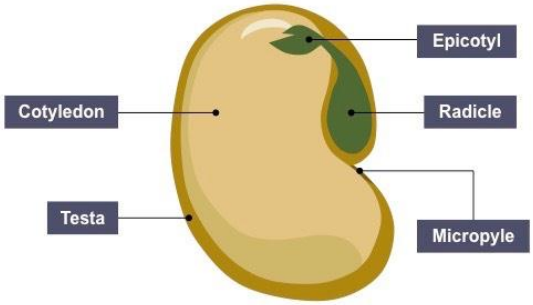
A SEED IS A DEVELOPED OVULE

External parts of a bean seed



Internal parts of a bean seed





Groups of seeds

Monocotyledous seed

Dicotyledonous seeds

Uses of seeds

- Seeds are eaten as food.
- Seeds are used for planting
- They are sold
- They are used as medicine
- They are used I making crafts
- They are used for making vegetable oil.

Dangers of plants

Some plants are poisonous e.g. Sodom apple to cattle

Some pare thorny and therefore damage the skins of animals.
Some plants harbor/hide dangerous animals and pests
Plants can be weeds hence compete for nutrients with crops.
Some water weeds cause suffocation of fish in the water.

Crop growing

Steps of clearing land

-slashing: shortening of grasses or some bushes using a slasher
- digging /ploughing- breaking up of soil in preparation for planting

Planting: It is putting a planting material in the soil

- Seeds are selected for planting
- Afterwards seedlings are cared for.

Methods of planting

1. Broadcasting method: Is the planting of seeds by scattering them at random on land.
2. **Row planting:** Is the growing of plant material in lines.

Caring for crops

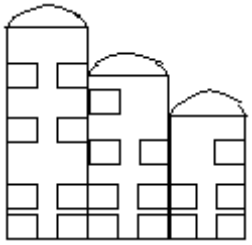
Weeding:The removal of unwanted plants from the garden.
Staking:giving extra support to plants with weak stems.
Pruning: Removal of excess branches from the plant.
Thinning:Removal of excess plants from the garden to create space.
Mulching:is the covering of different crops on the same piece of land seasonally.
Spraying: Application of chemicals on plants to control pests and diseases.

- Harvesting removal of ready crops from the garden during dry season.
- Drying harvested crops.

Storing harvested crops

Granaries

Silos



Material used to make a granary

a) grass, pole reeds, banana fibres

crops stored in a granary

sorghum, Rice, maize, millet

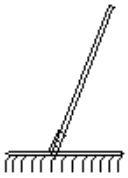
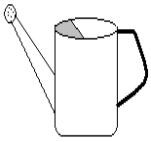
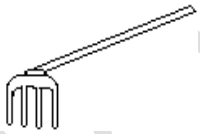
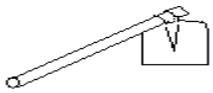
storage: pests, rats and weevils

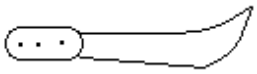
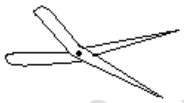
Marketing

It is the selling of crops

Places of marketing

- Markets
- Shop
- Vending

GARDEN TOOLS	IMPORTANCE	WAYS OF CARING FOR GARDEN TOOL
Rake 	- For collecting or gathering rubbish	- Keeping tools in a dry place. - By painting the tools. - By oiling garden tools - By greasing the tools. - By cleaning tools - before storing them.
Watering can 	- Watering crops	
Forked hoe 	- For digging hard soil and stony areas	
Trowel 	- For transplanting	
hoe 	- For digging - For weeding	

panga 	- For cutting down small trees. - For harvesting ready crops	
Spade 	- For carrying soil	
Slasher 	- For slashing	
sickle 	- For cutting grass	
Prunner 	- For prunning	
Garden fork 	- For turning manure	
Wheel barrow 	- For carrying soil - For carrying and transporting tools and harvested crops.	

Seed germination

Is the process by which a seed develops into a young plant. A young plant is known as a seedling

Conditions necessary for germination.

- Water, air, warmth

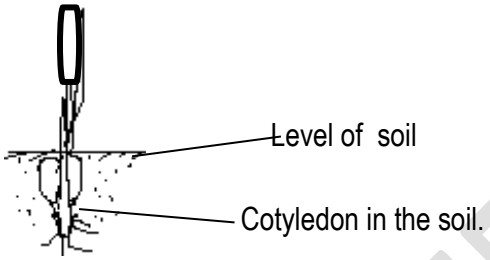
Types of germination

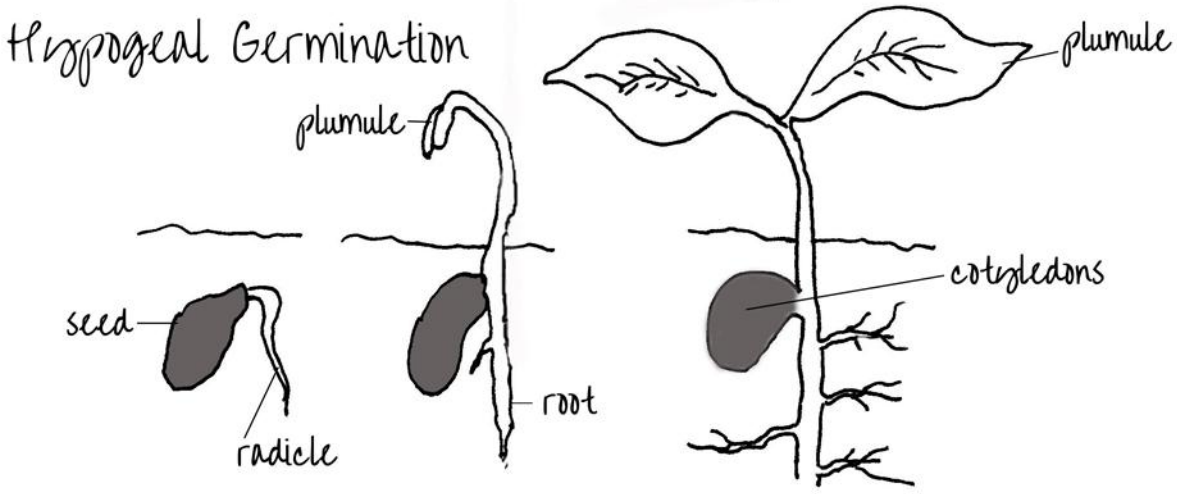
- Epigeal
- Hypogeal

Hypogeal germination is where the cotyledons remains under the ground in the soil.

It is common in cereals or monocots e.g. maize, millet, sorghum, rice, wheat , barley

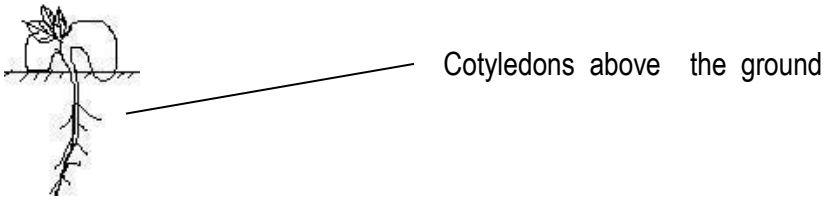
Diagram to show hypogeal germination.

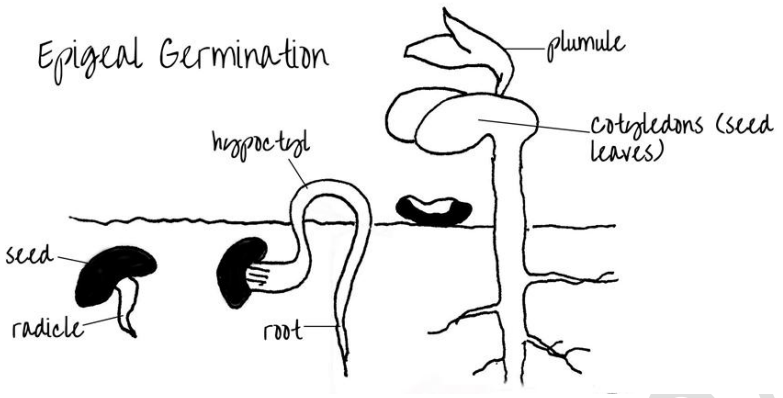




Epigeal germination is the type of germination where cotyledons come out of the ground (beans , g.nuts, etc)

Diagram to show epigeal

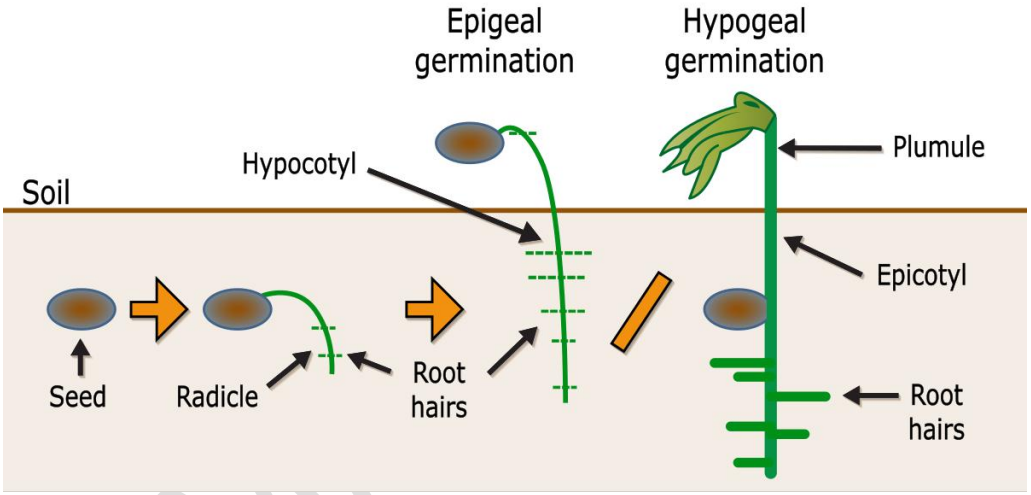




Note: Plant a bean and maize to show the types of germination.

- Germination, burning, rusting and breathing (life) all use a common gas called oxygen.

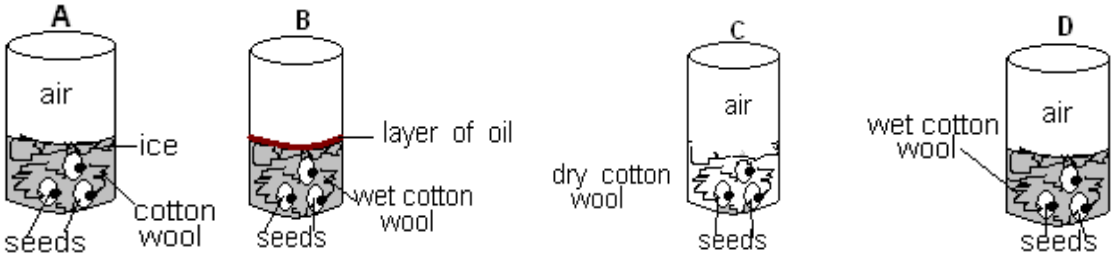
Comparison with diagram/illustration



An experiment to show the condition needed for germination.

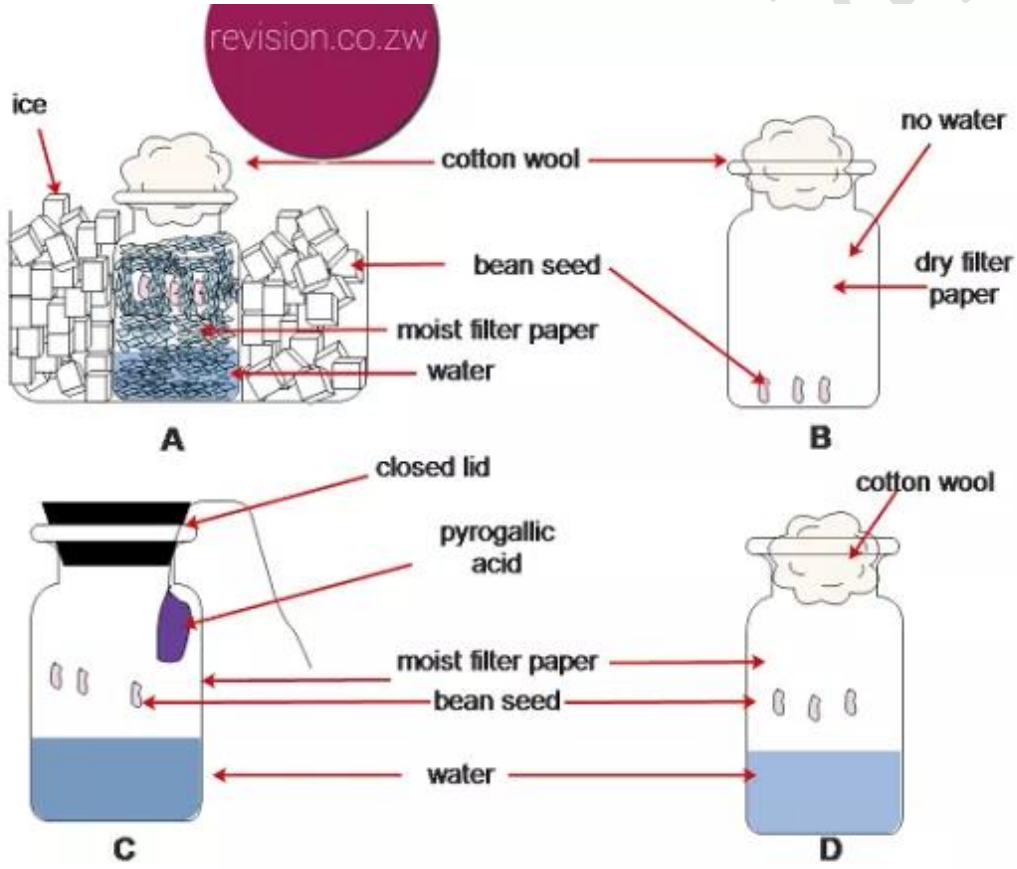
<u>Things needed</u>

- 3 tins
- Cotton wool
- Seeds (beans , maize)
- Ice
- Oil



- In tin A the seeds will not germinate because there is no warmth.
- In tin B, the seeds will not germinate because there is no air. The oil prevents air from entering to reach the seeds.
- In tin C, the seeds will not germinate because there is no water (moisture)
- In tin D, the seeds will germinate because there is air, water and warmth. The cotton provides warmth.

Additional description of the experiment



TERM THREE NOTES

VECTORS

What are vectors?

Vector are animals that spread disease causing germs.

Vectors are germ carriers.

Common vectors in our environment.

Mosquitoes

House flies

Black flies

Lice

Fleas

mad dog

tsetse flies

ticks

bed bugs

Characteristics of vectors.

Vectors carry germs.

Vectors live in dirty places.

Some vectors suck blood

Most vectors are insects.

Mosquitoes

There are three different types of mosquitoes.

These are;

Mosquito	Disease it spreads
Female anopheles mosquito	Malaria
Culex mosquito	Elephantiasis
Aedes mosquito/ tiger	Dengue fever/ yellow fever

Characteristics of mosquitoes

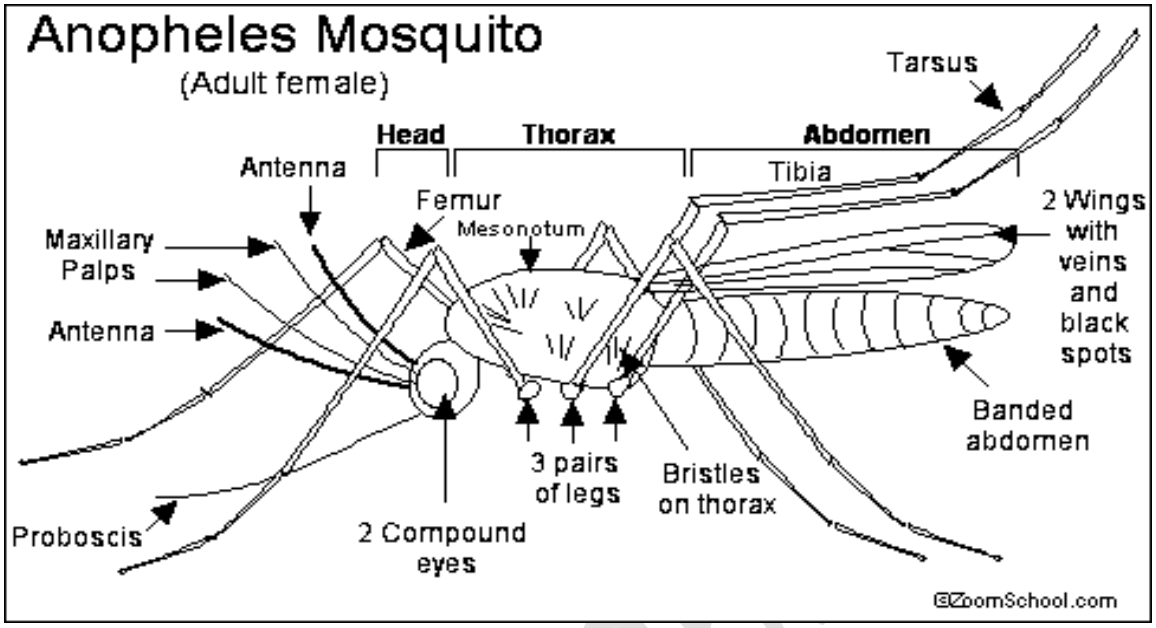
Mosquitoes lay their eggs in stagnant water / still water.

Mosquitoes live in bushes.

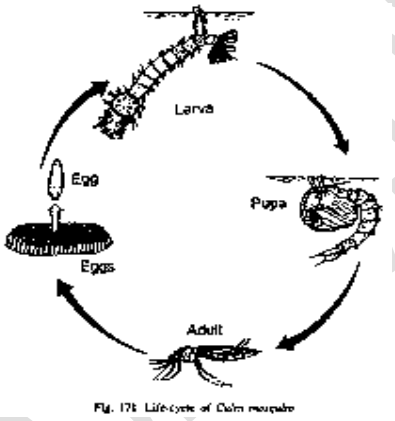
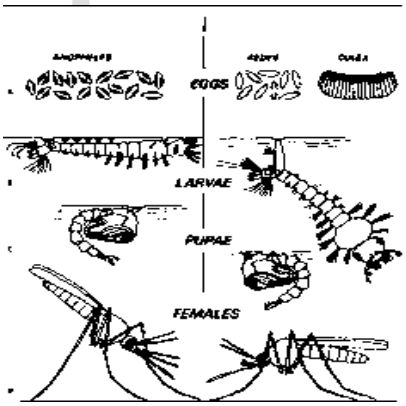
Mosquitoes have a proboscis used for sucking blood.

Mosquitoes are insects and move by flying.

EXTERNAL PARTS OF A MOSQUITO



Life cycle of a mosquito

Culex mosquito	Anopheles mosquito
	

A female mosquito lays eggs in stagnant water. Eggs hatch into larva, to pupa and pupa grow into adult.

MALARIA

Malaria is spread by a female anopheles mosquito.

Mosquitoes carry germs called plasmodia which cause malaria.

Signs and symptoms of malaria

High body temperature

Vomiting

Stomachache

Diarrhoea

Loss of appetite

General body weakness
Headache
Joint pain
Anaemia (Lack of enough blood in the body)
Chattering of the teeth

Control and treatment of malaria.

Sleep under a treated mosquito net.
Drain away stagnant water
Put oil on stagnant water.
Spray with insecticides.
Slash the bushes around the home
Introduce fish in pond to eat mosquito larvae.
Treat malaria early to prevent spreading.
Medicine used to treat malaria

Factory drugs	**Local drugs**
Chloroquine	Mululuza
Quinine	bombo
Co – Artem	Kigaji
Fansider	

Places where we can get factory made drugs

- Clinics
- Pharmacies
- Dispensaries
- Hospitals

HOUSE FLIES

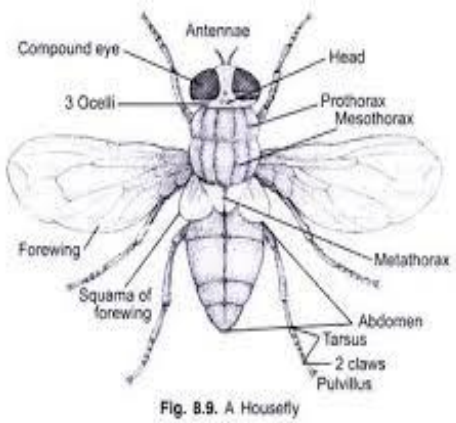


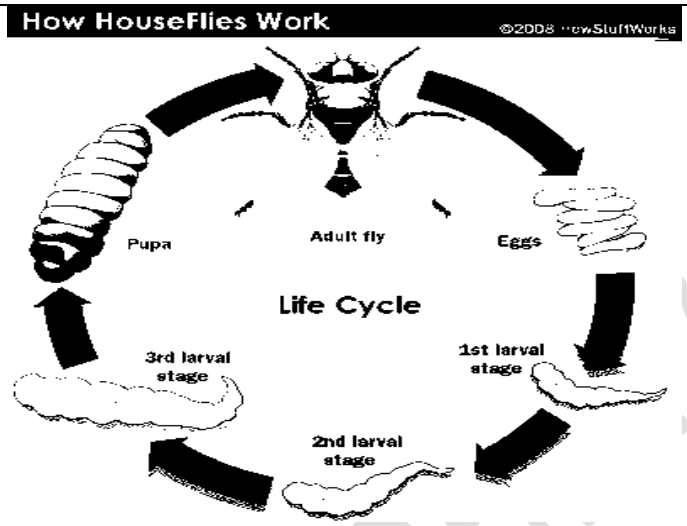
Fig. 8.9. A Housefly

Features of a house fly

- It has three main body parts i.e. head, thorax. Abdomen
- Houseflies lay their eggs **<u>in dirty rotting places</u>**.

- It has a hairy that enables it to carry germs.
- It has a proboscis for sucking food.

Life cycle of a house fly



A house fly has four stages of growth **called complete metamorphosis** i.e
Eggs - larva - pupa - Adult

List down other insects that have four stages of growth.

House flies butter flies wasps
Mosquitoes tsetse flies
Bees Fleas

The <u>larva stage</u> of a housefly (maggot) is useful to man because it helps to decompose faeces in latrines.

<u>The adult stage</u> is dangerous to man because it spreads disease germs.

Adult stage and larva stage are called <u>active stages</u> because they move and feed.

Pupa stage is <u>dormant</u> because there is no feeding or movement.

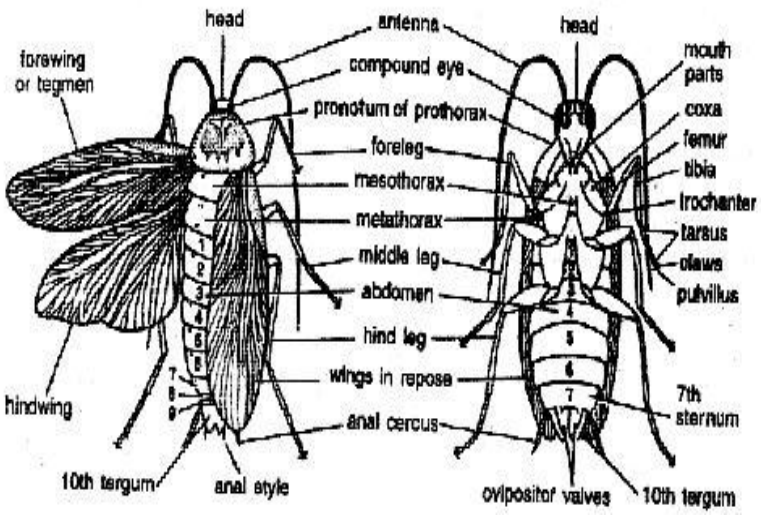
Ways of controlling houseflies in our environment

- By spraying them
- By smoking latrines
- By burning rubbish
- By mopping toilets / latrines
- By covering our food
- Ensuring proper disposal of faeces.

Diseases spread by houseflies

- Trachoma
- Typhoid
- Diarrhoea
- Dysentery
- Conjuctivitis
- Cholera
-

Diagram of a cockroach



COCKROACH

Features of a cockroach

- It is a brown winged insect.
- It has a flat abdomen.
- It lays its eggs in dark corners.
- It is mostly found in dirty places.

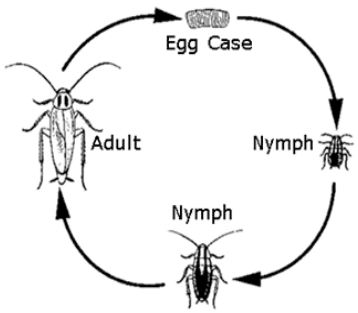
Name the places where cockroaches live.

- Pit latrine
- Cracks of walls
- Drawers
- Book shelves
- Cupboards
- Pit latrines.

Name the things that are eaten by cockroaches.

- Books
- Papers
- Faeces
- Clothes
- Dark dirty stores

Life cycle of a cockroach



Name the three stages that a cockroach undergoes to grow.

i. Eggs
ii. Nymph
iii. Adult

List down the insects that undergo 3 stages of growth.

- Cockroaches locusts Dragon flies white ants
- Grasshoppers termites Crickets
- Dragon fly

Give the difference between a nymph and an adult cockroach.

Nymph	**Adult**
- Has no wings	- Has wings
- White in colour	- brown in colour
- Less active	- more active
- Smaller	- bigger

Identify the diseases spread by a cockroach.

- Diarrhoea
- Dysentery
- Cholera
- Leprosy
- Polio
- Typhoid

Mention ways of controlling the diseases spread by cockroaches.

- Spray the cockroaches suing insecticides.
- Practice proper hygiene
- Provides enough light in rooms
- Cover the food that has remained
- Warm left over food.

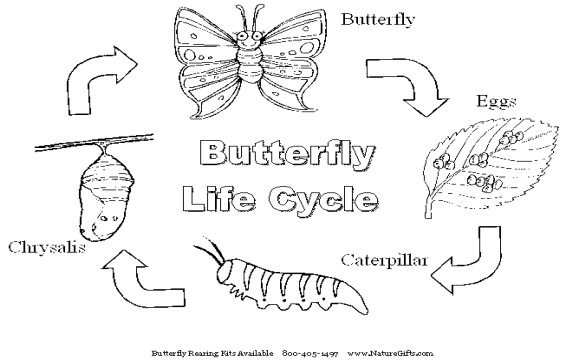
Tsetse fly

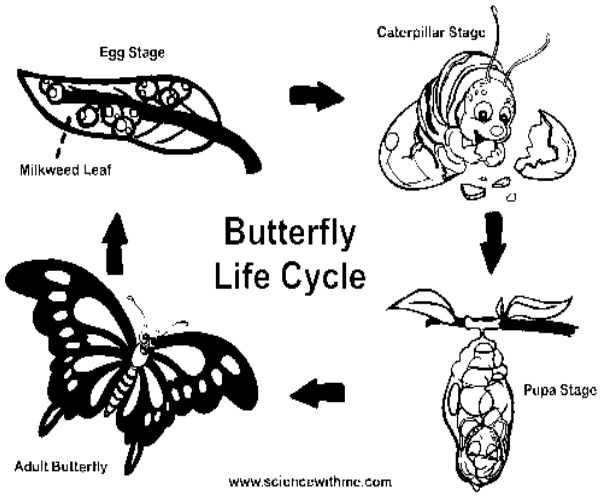
- It is a black hairy insect with a broad abdomen.
- It is found in bushes and produces its larva near water sources.
- Mature tsetse flies spreads nagana to cattle and sleeping sickness to man.
- A tsetse fly feeds on blood by sucking with its sharp proboscis.
- Both nagana and sleeping sickness are caused by germs called trypanosomes.

Life cycle of a tsetse fly

A tsetse fly undergoes four stages if growth. i.e complete metamorphosis (eggs, larva, pupa, adult)

NB Eggs of a tsetse fly hatch into larva from inside the abdomen.





Signs and symptoms of sleeping sickness.

- Persistent fever
- Sleepy all the time
- Lack of appetite
- Loss of weight

General body weakness

How can tsetse fly be controlled from our environment.

- By using tsetse fly traps
- By spraying with insecticides
- By clearing bushes near our homes.
- Avoid very early and late grazing of animals.

Diarrhoea, Dysentery, cholera and typhoid.

All the above diseases are water borne diseases because they are spread through drinking contaminated water.

	Signs and symptoms. • Abdominal pain • Watery stool • Headache • Dehydration • Loss if body weight • Severe vomiting. **Note** **Diarrhoeas** is the frequent passing out of watery stool many times a day. **Dysentery** is the frequent passing out of watery stool with blood in it. **Typhoid** is mostly spread through drinking unboiled water. **Ways of controlling diarrhea, dysentery, typhoid and cholera.** Dispose wastes in latrines. • Keep toilets and latrines clean. • Keep cooked food covered. • Boil water for drinking • Proper disposal of faeces • Burn rubbish • Spray insecticides to kill house flies. • Treat sick people early with antibiotics. **Trachoma** • It is spread by a house fly. • It is caused by germs called Chlamydia virus • It affects eyes.
	Signs and symptoms of trachoma. • Itching eyes • Eyes turn red. • Tears come out of the eyes. • Difficult to look in light. • Painful eyes. **Control and treatment of trachoma.** • Observe personal hygiene. • Spray the house flies • Do not share face towels and basins. • Avoid shaking hands with infected people. • Keep eyes clean. Yellow fever Yellow fever is spread by aedes/tiger mosquito. **Signs and symptoms.** Eyes turn yellow. Passing out yellow urine. Itching skin.

General body weakness.
Feeling sleepy.

How can yellow fever be controlled?

Spray the aedes mosquitoes with insecticides.
Drain stagnant water.
Sleep under treated mosquito nets.
Carry out fumigation

Table showing diseases with their germs.

Disease	Causing germs
Malaria	Plasmodia
Cholera	Vibrio cholera
Typhoid	Salmonella typhi
Trachoma	Chlamydia
Elephantiasis	Filaria worm
Sleeping sickness	Trypanosomes
Nagana	Trypanasoma
BIlhazia	Schistosoma / bilharzias flukes
Dysentery	Shigella

Other diseases, vectors and their control.

Vector	**Disease**	**Control**
Rat fleas	Bubonic plague	Trap and kill rats
Lice	Relapsing fever	Spray with insecticides
Ticks	Relapsing fever	Spray with insecticides
Itch mites	Scabies	Spraying
Mad dog (rabied dog	Rabies	Vaccinate dogs
Water snails	Bilhazia	Boil water for drinking / avoid swimming in dirty water
Black flies/ simulium flies / Jinja flies	River blindness	By spraying

The 4Fs

Diseases spread through the 4Fs

- Diarrhoea
- Dysentery
- Cholera
- Typhoid

Write 4 Fs in full.

- Faeces
- Flies
- Food
- Fingers

Diseases spread through the 4Fs are also called **diarrhoeal diseases** and they dehydrate the body.

Dehydration

What is dehydration?

Dehydration is the condition when the body does not have enough water in the body.

What causes dehydration?

- Severe vomiting
- Too much diarrhoea

List down the signs and symptoms of dehydration.

- Pale skin
- Loss of weight
- A pinch on the skin goes back slowly
- General body weakness
- Sunken eyes
- Joint pain
- Little or no urine at all
- Little or no tears.
- Sunken fontanel (soft spot on the head)
- Dry lips

Treatment of a dehydrates person.

Provide a lot if juice.

Give ORS

Mineral salts lost during dehydration

- Sodium
- Potassium

Write ORS in full.

ORS - Oral Rehydration solution.

Oral Rehydration salts.

Why are patients given ORS?

To replace the lost water and mineral salts to the body.

NOTE : Rehydration is the putting back lost water and mineral salts in the body.

Steps taken to prepare ORS

Steps 1 Wash your hands with clean water and soap.

Step 2 Put 1 litre of clean boiled water into a clean container.

Step 3 Add 8 tea spoons of sugar and 1 tea spoon of slat.

Step 4 stir the mixture to dissolve completely.

Term used in preparation of ORS

a) Solutes

a solute is a substance which is dissolved by a solvent.

Examples of solutes

- Sugar
- Salt

b) solvent
A solvent is a substance which sisolves a solute eg water.
c) A solution
A solution is the mixture if a solute and a solvent.
Examples of solution

- Sugar solution
- Salt solution
- Sugar salt solution (SSS)

Things (items) used in preparation of ORS (SSS)

- Sugar
- Salt
- Clean boiled water

NOTE: Sugar and salt are items that dissolve in water
Questions

a. What is the first step taken to prepare ORS.
b. Name the items used to prepare ORS.
c. How many tea spoons of salt are needed to prepare ORS.
d. During preparation of ORS, state the;
   i. Solvent
   ii. Solutes

ORS prepared locally is called SSS. Write SSS in full.

HIV / AIDS

AIDS is an STD (Sexually Transmitted Disease)
AIDS is called a deadly disease because it has no cure.
AIDS is caused by a virus called HIV.
AIDS - Acquired Immune Deficiency Syndrome.
HIV - Human Immunodeficiency virus

State the signs and symptoms of AIDS.

- Loss of weight
- Chronic cough
- Loss of appetite
- Chronic appetite
- Skin rash
- Skin cancer
- Herpes Zoster (Kissipi)
- Mouth ulcers

How is AIDS / HIV spread from one person to another?

- Through unprotected sex with an infected person.
- Through blood transfusion.
- Through breast feeding
- At birth from the mother to the unborn baby.
- Through sharing sharp instruments.

- Through cultural practices like circumcision.

Ways though which AIDS (HIV) cannot b spread

NOTE: PMTCT stands for prevention of mother to child transmission

How can AIDS / HIV be prevented from spreading.

Be faithful to your partner.

Abstain from sex.

Use condoms,

Screen blood before transfusion.

PMTC in pregnant women.

Sterlize sharp instrument before use.

Effects of AIDS/ HIV

To an individual

- Death of a person
- A person is isolated
- A person can commit suicide
- Psychological torture.
- Loss of job

To a family

- Loss of a family member
- Loss of income during treatment
- Children become orphans.
- It leads to poverty.
- Grief to family members

How can we care for HIV/ AIDS patients.

- Give guidance and counseling.
- Show them love
- Do not isolate them
- Give them a balanced diet.
- Maintain proper hygiene and sanitation.

Organizations which care AIDS victims

a) TASO – The AIDS support organization

b) Mild May Uganda

c) Uganda Cares

d) ACP – AIDS control programme

other examples of STDS

- Gonorrhea
- Syphilis
- Candida

PIASCY

Write PIASCY in full.

PIASCY - Presidential initiative on AIDS strategy for communication to youth.

PIASCY messages.

PIASCY messages help to protect the Youth from AIDS.

State the PIASCY messages.

- Say no to bad touches.
- Do not take gifts from strangers.
- Do not move in lonely places.
- Say no to early marriages.
- Follow your religion and stay safe.
- Know and observe your responsibility.
- Boys and girls respect a virgin.
- HIV and AIDS kill, protect yourself.

SOURCES OF ENERGY

What is energy?

Energy is the ability to do work.

There are two main sources of energy.

i. Natural sources
ii. Artificial sources

Natural sources of energy.

Natural sources are sources made by God.

Examples

i. Wind
ii. Water
iii. Sun
iv. Food

How is wind a source of energy?

- Wind moves kites, parachutes and balloons.
- Wind moves wind mills.
- Wind sails boats and ships.
- Wind is used for winnowing.
- Wind generates electricity.
- Wind dries clothes.
- Wind drives machines.
- Discuss making a kite and parachute.

How is water a source of energy?

- Water generates hydro – electricity.
- Water is used for cooking.
- Water is used for transport.
- Water is used for washing clothes.
- Water is used for mopping.

- Water is used to mix chemical in factories.
- Water is used to cool machines.

Forms of energies got from the sun

- Heat energy
- Light energy
- Solar energy

How is the sun a source of energy?

The sun enables us to see.
The sun helps in rainfall formation.
The sun helps plants to make their own food.
The sun helps us to dry seeds, clothes and fish.
The sun provides solar electricity.
The sun give us light.
The sun makes us warm.

How is food a source of energy?

Helps us to grow.
Makes us healthy.
Helps us to be strong.
Helps us to build our body.

Artificial sources of energy.

Artificial; sources of energy are made by man.

Examples of artificial sources.

i. Fuel
ii. Electricity

What is a fuel?
Fuel is anything that burns to produce heat energy.

Examples of fuels.

- Diesel - fire wood
- Petrol - paraffin
- Wood - coal
- Charcoal - natural gas.

Uses of fuels

Petrol and diesel are used to run vehicles.
Paraffin helps in cooking ad lighting.
Fire wood and charcoal are used in cooking.
Fuel are used to rum machines.

Electricity

Uses of electricity

- For running machines.
- For cooking
- For washing clothes
- For producing light.
- For producing heat.

- For hair dressing.

Types of electricity

- **Hydroelectricity:**generated from running water
- **Solar electricity**:generated from the sun
- **Thermal electricity** : generated from burning fuels

Items that use electricity in our homes

- Televisions
- Flat irons
- Computers
- Radios
- Cookers
- Fridges
- Electric bulbs
- Oven

Dangers of electricity

- It shocks us
- It burns houses
- It spoils machines

Energy conservation.

Energy conservation means saving energy.

Ways of saving energy.

- Using energy saving bulbs.
- Switching off electrical appliances after use.
- Put out fire when not in use.
- Planting trees.

Switching off bulbs during the day.

Importance of saving energy.

- To avoid wastage.
- For future use
- To save money.

Dangers of energy and ways of avoiding them.

	Danger	**Ways of avoiding them**
1	Electric shocks	Proper installation / insulating electric wires
2	Fire out break	Using fire extinguisher By proper use of fire.
3	Strong wind (storms)	Plant trees for wind breaks. Constructing strong buildings.
4	Drought	Planting trees. Irrigating the land.
5	Floods	Constructing wide channels
6	Famine	Planting more food crops. Storing food for future use.

Accidents and First Aid

What is an accident?

An accident is a sudden injury on the body.

Accidents on the road.

Types of accidents

Road traffic accidents

- Fractures
- Burns
- Scalds
- Cuts
- Near drowning
- Stings
- Poisoning
- Bites
- Fainting

Road traffic accidents:

These are accidents which happen (occur) on the road.

Traffic : is the movement vehicles and people in an area.

Write down the causes of road accidents.

- Carelessness
- Poor roads
- Over speeding
- Overtaking in corners
- Driving while drunk
- Driving vehicles in poor mechanical conditions.
- Over loading
- Playing on the road.
- Bad weather
- Road users who can be knocked on the road.
- Pedestrians
- Drivers.
- Cyclists
- Animals

Ways of controlling road traffic accidents.

- Avoid over speeding
- Avoid playing on the road.
- Do not drive while drunk.
- Repairing the road.
- Avoid over loading.
- Following road signs.
- Avoid over taking in corners.
- Observing the high way code

- Using fly overs

Mention any road traffic signs and draw them.

- Humps ahead
- School ahead
- Traffic lights
- Parking
- No parking
- Corner a head
- Zebra crossing

Accidents at home and school.

Mention the common accidents at home.

- Cuts - poisoning
- Burns - choking
- Scalds - electric shocks
- Bruises - near drowning
- Near drowning - fractures
- Bites

Identify the things that cause accidents at home.

Sharp objects like knives, razor blades.

- Broken bottles
- Nails
- Pins
- Water bodies
- Poison
- Electricity

Give the cause of accidents at home and school.

- Climbing trees.
- Playing with sharp objects
- Over running
- Playing with fire.
- Poor storage of medicines.
- Playing with electricity.
- Fighting
- Carelessness
- Playing near water bodies.

Ways of controlling accidents at home and school.

- Keep medicines out of rich of children.
- Avoid climbing trees.
- Void playing with broken bottles.
- Avoid playing with sharp objects.
- Avoid over running.
- Keep young children away from the kitchen.
- Avoid playing near water bodies.
- Avoid playing with electrical appliances.
- Avoid fighting

First Aid

What is first aid?

First aid is the first help given to an injured person before taken to the nearest health centre.

NOTE: An ambulance is the special vehicle used to carry a casualty to the nearest health centre.

Why is it important to give first aid?

To save life

To reduce pain

To stop bleeding in case it occurs.

To promote quick recovery.

To prevent further injuries.

Who is first aider?

A first aider is a person who gives firs aid to a casualty.

Who is a casualty?

A casualty is an injured person.

State the qualities of a good firs aider.

- Should be clean.
- Should be kind.
- Should be helpful.
- Should be quick / fast .
- Should be empathetic.
- Should be knowledgeable

First aid box

What is a first aid box?

This is a box where first aid tools/ items are kept.

Items found in the first aid box are called first aid Kit.

Mention the things found in a first aid box.

- Bandages - safety pins
- Plaster - iodine
- Spirit - gauze
- Cotton wool - gloves
- Razor blade - - pain killers
- Pair of scissors

Draw some items found in the first aid box.

Give the importance of items found in the first aid box.

a. Bandage - To tie broken bones, sprains and strains
b. Iodine - To heal the wound by drying.
c. Spirit - To kill germs on the wound.
d. Cotton wool - To clean the wounds and cuts.

	e. Plaster - To cover the wound or cut. f. Razor blade / pair of scissors. – To cut the plasters and bandages. g. Pain killers _ To reduce pain. h. Gloves - To prevent contaminating the health worker. **A first aid kit** A first aid kit is a collection if items used to give first aid. Qn: What is the importance of each of these items? a) A first aid kit? b) A first aid box? **END**