ST. THEREZA NAMILYANGO GIRLS' BOARDING PRIMARY SCHOOL

P.3

LIT ONE

SCIENCE

NOTES

FOR TERM 11

WEEK 2

Lesson 1

LIVING THINGS

Living things are divided into two groups i.e

1)Plants

2)Animals

Characteristics of living things

- They grow
- They respire
- They reproduce
- They feed
- They breathe
- They respond to the stimuli
- They move

Animals in our environment

Animals are living creatures that range from big to simple organisms.

Examples of animals in our environment

Cows	Birds	Fox
Lion	Leopards	Crocodiles
Goats	Fish	Snakes
Pigs	Monkeys	Chameleon etc
Sheep	Insects	
Elephants	Whales	

Structures of common animals in our environment

a snake 	**a bee** 
 **a dog**	 **a fish**

ACTIVITY

1) Mention two groups of living things.

2) Why are animals grouped as living things?

3) Identify any four examples of animals in our environment.

Lesson 2

Animal habitats

A habitat is a home of animals

ANIMALS	**HABITAT**
lion	den or jungle
cow	kraal
pig	sty
rabbit	hutch
dog	kennel
horse	stable
goats	shed
hare	burrows
monkey	forest
earth worms	soil
sheep	shed

Animals found in the school compound

Cats
Insects
Goats
Birds
Dogs
Lizards
Snakes etc

Animals found in our gardens

monkeys
birds
earth worms
rats
squirrels
snakes
chameleon
bees
butterflies
lady birds
spiders
termites

ACTIVITY

1) What is a habitat?

2) Give examples of animals found in the school compound.

3) Mention animals found in people's gardens.

4) Where do the following animals live?

a) pigs b) rabbits c) horse

Lessson 3

Animals found in swamps

toads snakes

frogs fish

monitor lizards crested crane

monkeys etc

Animals that live in water

crocodiles perikans

hippopotamus whales

tortoise otters

seal frogs

shark etc

Animals found in a forest

lion hyena

leopard monkey

zebra cheetah

elephant baboons

buffalo fox etc

Diagrams of animals that live in water

Name the animals drawn above.

ACTIVITY

1) Which animals live in water and on land?

2) Identify animals that live in swamps.

3) Mention any four animals that live in the forest.

Lesson 4

Types of animals

Animals are divided into two types:

1) Domestic animals

2) Wild animals

Domestic animals

These are animals that are kept in people's homes.

Examples of domestic animals

cows	rabbits
goats	donkeys
sheep	camels
pigs	etc

Importance of domestic animals

1. They provide us with meat.
2. They provide us with milk.
3. They are a source of income.
4. Dogs protect our homes.
5. Donkeys and camels are used for transport.
6. They are used as pets.

Products from domestic animals

ANIMAL	PRODUCTS
cows	milk, meat, skins
goats	meat,milk, skins, mohair
pigs	pork, lard
rabbits	fur, meat
sheep	wool, mutton

HOW TO CARE FOR DOMESTIC ANIMALS

1. Providing shelter
2. Dipping and spraying them
3. De-worming them

4. Providing them food
5. Cleaning their shelter
6. Vaccinating them

ACTIVITY

1) Identify examples of animals kept at home.
2) How are domestic animals useful to man?
3) Draw four things made from animal skins.
4) How do farmers care for domestic animals?

Lesson 5

WILD ANIMALS

These are animals that live in the bush / forest / jungle.

Examples of wild animals

lion	fox
zebra	buffalo
elephant	baboon
leopard	antelopes
cheetah	hare
hyena	hedge hog
crocodile	giraffe etc

Animals that live in the bush or forest

Dangers of wild animals

1. They destroy people's crops.
2. They eat domestic animals.
3. They spread diseases.
4. They kill people.

Care for wild animals

Protecting them from hunters (poachers)

Discouraging bush burning

Providing them food

Providing them with medical care

Avoid destroying swamps & forests.

ACTIVITY

1) What are wild animals?
2) Identify four examples of animals that live in the bush or forest.
3) How are wild animals dangerous to man?
4) Mention ways of caring for wild animals.

Lesson 6

What is a pond?

A pond is a small pool of water.

Aquarium

An aquarium is a man-made pond for keeping water animals.

Types of aquaria

i. Local aquarium

ii. Modern aquarium

Local aquarium

This one is dug in the ground

Modern aquarium

This is made from a glass tank.

Feeding fish (things fish feed on)

i) green grass.

ii) fish feeds.

iii) kitchen wastes.

iv) pawpaw leaves.

v) Spinach.

vi) sweet potato vines.

Importance of keeping fish

i) people eat fish.

ii) Bones of fish are used for making glue and animal feeds.

iii) Fish is a source of income

vi) Fish are used for study purposes.

vii) Fish in aquarium is for decoration

viii) Fish in ponds feed on mosquito larva.

ACTIVITY

1) How do we call the man-made pond?

2) Mention two things fed on by fish.

3) Give the importance of keeping fish.

4) Which food value do we get from eating fish?

Lesson 7

TOPICAL QUESTIONS

1) Identify two groups of living things.
   i. _____
   ii. _____
2) Why is a goat a living thing?
   i. _____
   ii. _____
   iii. _____
3) Name the habitats of these animals.
   a. dog _____
   b. horse _____
   c. rabbit _____
4) Draw and name two items made out of animal skins.

5) How are domestic animals useful to people?
   i. _____
   ii. _____

iii. _____

6) State two dangers of wild animals.
   i. _____
   ii. _____
7) Which food value do we get from fish?
   _____
8) Mention any two animals that live in a swamp.
   i) _____ ii) _____
9) Write any two animals found in tour school compound.
   i) _____ ii) _____

Reference:

MK Integrated Primary Science Pupils BK 3

Pgs 1 -7

Lesson 8

Birds

Poultry

Poultry are domestic birds.

Poultry are birds kept at home.

Examples of domestic birds

hens
ducks
turkey
geese

Note: Some birds are kept at home as pets i.e.

pigeon
peacock
parrot

Wild birds

These are birds that live in the bush.

Examples of wild birds

penguin
crested crane
ostrich
kite
kiwi
weaver birds
sparrow
eagle
egret

Characteristics of birds

1) Birds lay eggs.

2) Birds have wings.

3) Birds have feathers.

4) Some birds fly.

5) Birds have scales on their legs.

Note

Some birds do not fly.

Examples of birds that do not fly

kiwi emu

ostrich penguin

Reasons why some birds do not fly.

They have short and weak wings.

Their bones have bone marrow.

ACTIVITY

1) What do we call the keeping of domestic birds for eggs and meat?

2) Mention three examples of domestic birds.

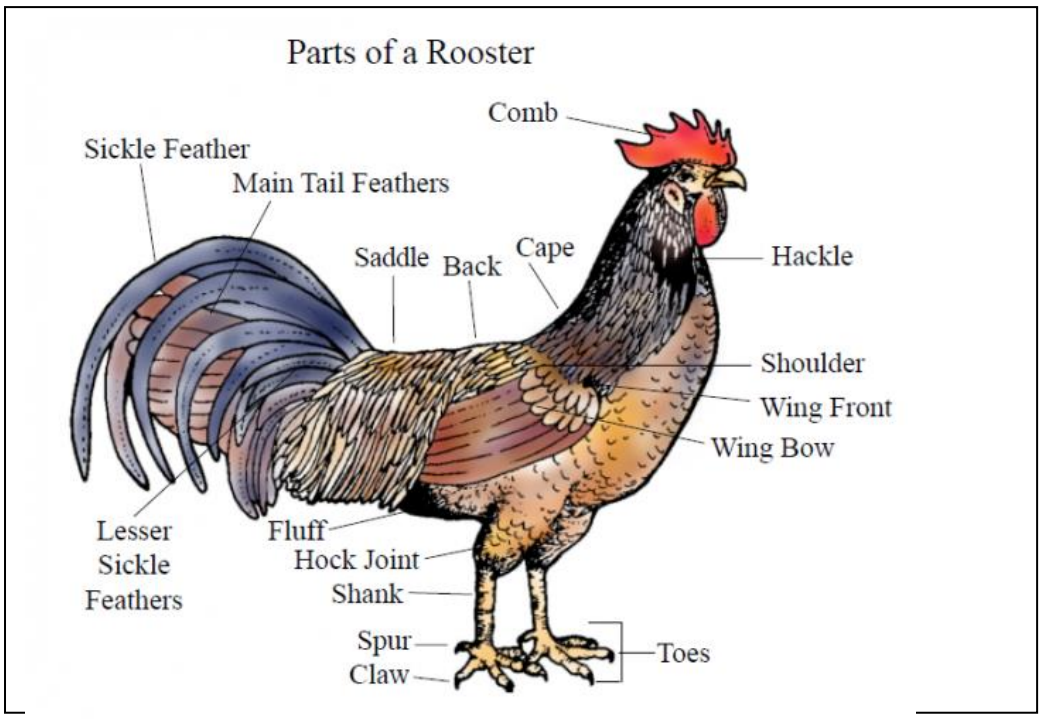
3) Give two reasons why some birds do not fly.

4) Identify two examples of wild birds.

WEEK 3

Lesson 1

External parts of a bird



A PRACTICAL LESSON TO SHOW LEARNERS THE EXTERNAL PARTS OF A BIRD.

Uses of some parts to a bird

1. Nostril: for smelling
2. Beak: for picking food
   For defence
3. Scales: to protect the legs.
4. Spur : for defence
5. Claws: for scratching the soil.
6. Feathers: Protects the inside body parts of a bird.

Uses of feathers to a bird

1. To keep the bird warm.
2. For flight.
3. To protect the bird's skin from injury.
4. For providing warmth during natural incubation.

Uses of feathers to people

1. For cultural purposes
2. Used as costumes in music, dance and drama.
3. For decoration.
4. Some feathers of big birds like ostriches, turkey are sold for money.

ACTIVITY

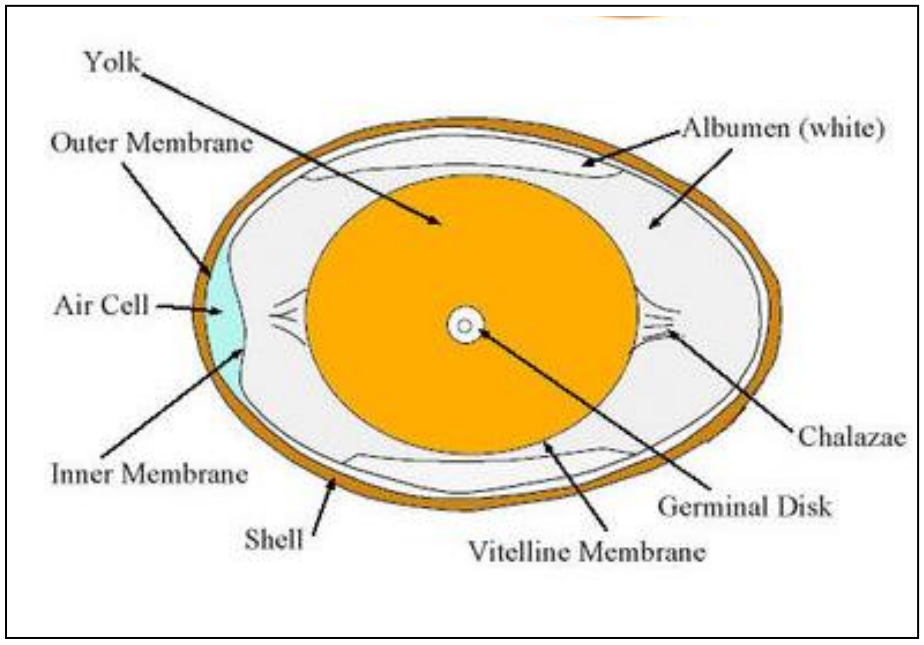
1)How are wings useful to a bird?

2) Give the uses of feathers to a bird.

3) Identify uses of feathers to people.

Lesson 2

Parts of an egg.



PRACTICAL LESSON TO SHOW PARTS OF AN EGG.

Use of each part of an egg.

1. **Air space**: Used to keep air.

2. **Egg shell:**
   a) Protects the inside parts of an egg.
   b) Gives colour and shape to an egg.
   c) For exchange of gases.

Chalaza or twisted albumen

i) holds the yolk in position.
ii) it transports oxygen from the air space to the embryo.
iii) transports carbondioxide from the embryo to the air space to be passed out.

Germinal disc

A fertilized germinal disc develops into an embryo.

Albumen or egg white

It gives the embryo food rich in proteins.

Yolk

Provides the embryo with food rich in proteins and fats.

Shell membrane

It gives support to the egg shell and also protects the inside of an egg.

ACTIVITY

1)Draw and name the following parts of an egg;

a)Chalaza

b)York

c)Shell membrane

d)Air space

Lesson 3

How long some birds take to hatch

i) hen - 21 eggs

ii) turkey - 28 days

iii) duck - 28 days

Why some eggs fail to hatch

i) When the eggs are not fertilized.
ii) When the eggs are too small.
iii) When eggs are double yolked
iv) They may be rotten
v) They could have not got enough warmth.

Uses or importance of birds to people

i) Some birds provide us with meat
ii) Some birds provide us with eggs
iii) Birds provide manure e.g chicken dropping.
vi) Some birds can be kept for pests e.g parrot, pigeon, peacock.
vii) Some birds are sold to get money e.g hens, turkey, ducks.

viii) Some birds eat crop pests.
ix) Birds provide feathers that are used for decoration.
x) Birds in the game parks, forests and zoo are for tourist attraction.
xi) Some birds are used for cultural purposes e.g in marriage, sacrifices.

ACTIVITY

1) How many days does an egg of a hen take to hatch?

2) Give two reasons why some eggs fail to hatch.

3) State the importance of domestic birds to people.

Lesson 4

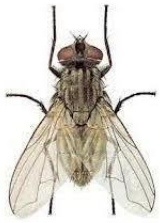
Insects

Characteristics of insects:

i. Insects have six legs (3 pairs).
ii. Insects have 3 main body parts.
iii. They have a pair of feelers.
iv. They have a pair of compound eyes.
v. They breathe through spiracles.
vi. They have exo-skeleton.

Examples of insects

mosquitoes
tsetse fly
butterfly
house flies
cockroaches etc.
grasshopper
ladybirds
dragon flies
bees

	
Housefly	cockroach
	
Butterfly	mosquito

ACTIVITY

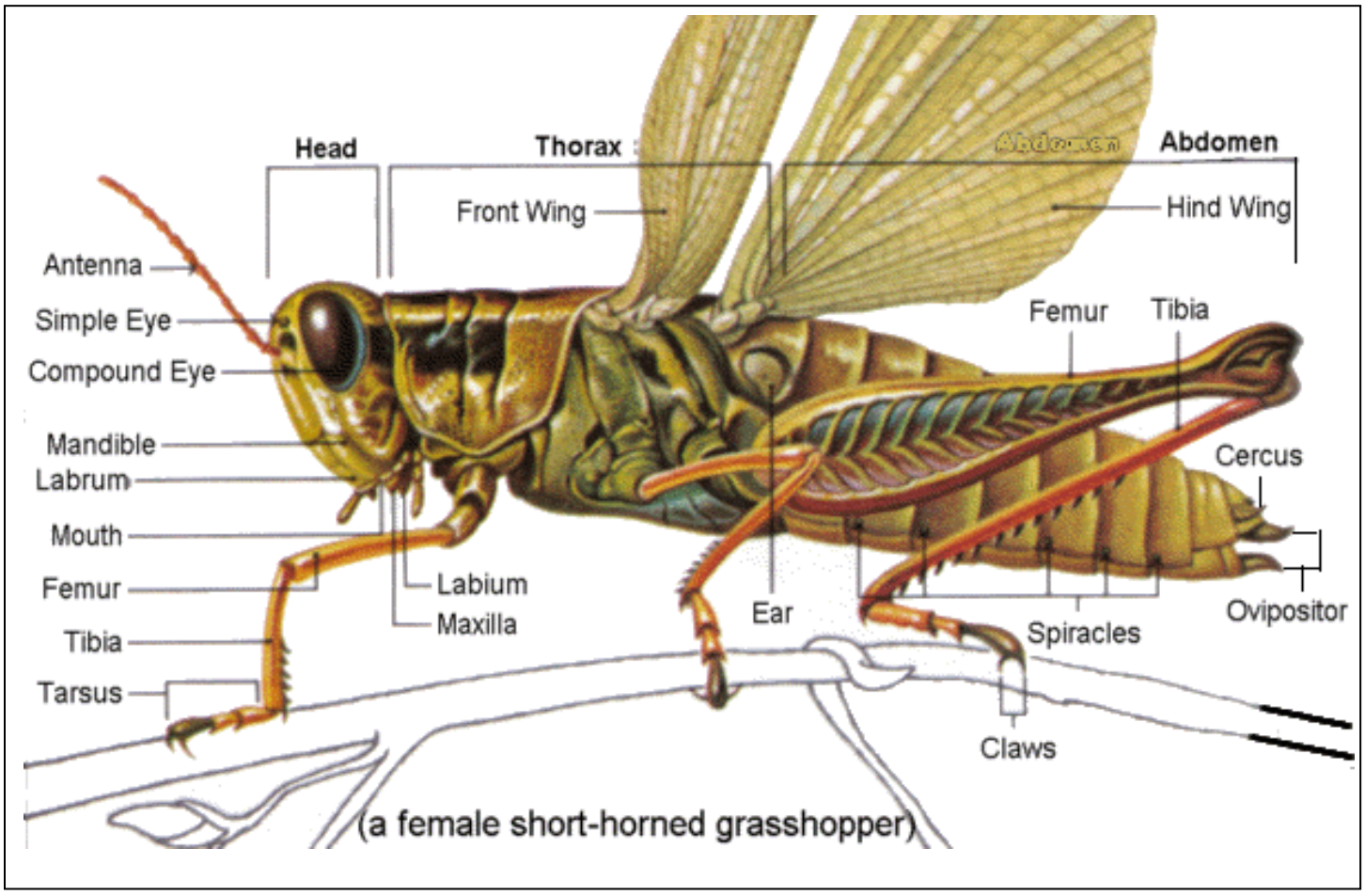
1) Identify any four common insects in our environment.
2) Why is a housefly called an insect?
3) Draw and name any two common insects in our environment.

Lesson 5

Why is a spider not an insect?

i. A spider has eight legs (4 pairs) while an insect has 6 legs.
ii. A spider has two main body parts while an insect has three main body parts.
iii. A spider breathes through book-lungs while an insect breathes through the spiracles.

Parts of an insects



Uses of some parts

1. **Feelers**

i) For feeling.
ii) For smelling
iii) For hearing.

2. **Spiracles**

For breathing.

3. **Ovipositor**

i. For laying eggs.
ii. For mating.
iii. For passing out wastes.
iv. For protection in bees and wasps

ACTIVITY

1) Why is a spider not regarded as an insect?

2) How are spiracles useful to an insect?

3) Give the use of an ovipositor to an insect.

LESSON 6

Life cycle of an insect (metamorphosis)

These are the stages of development of an insect.

Types of life cycles of insects.

i) complete life cycle.

ii) Incomplete life cycle.

Examples of insects with complete life cycle

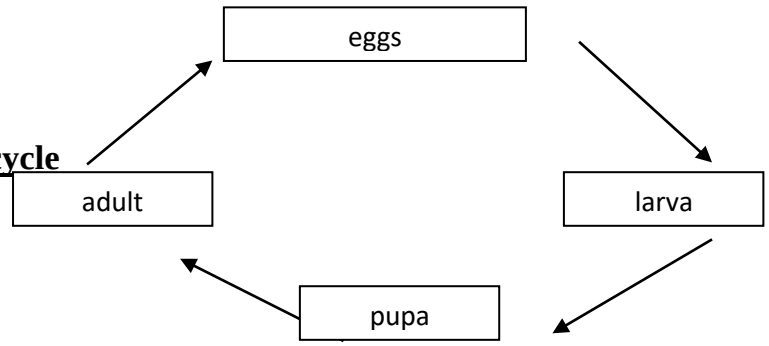
bees mosquitoes

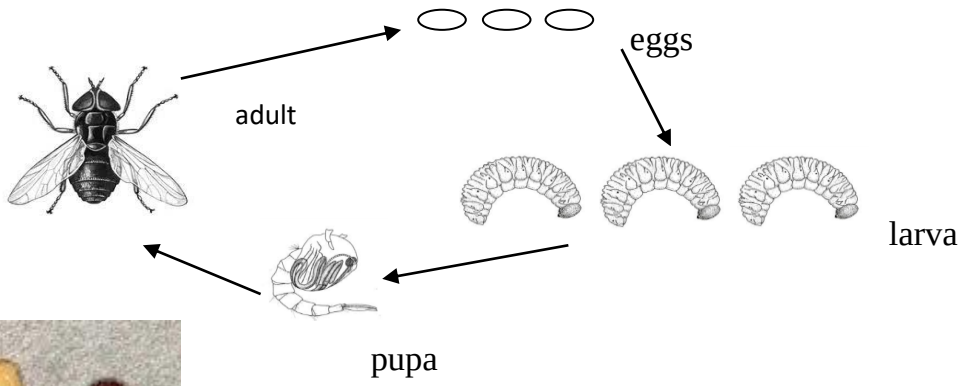
moths butterflies

wasps houseflies

ladybirds etc.

Complete life cycle





NB:

i) The larva stage of a housefly is a **maggot.**

ii) The larva stage of a bee is a grub.

ACTIVITY

1) How many stages of life cycle has a housefly?

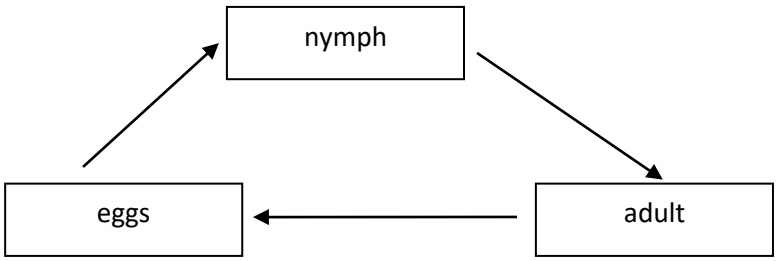
2) Apart from a housefly, mention other insects which undergo complete life cycle.

3) Name the second stage of life cycle of a mosquito.

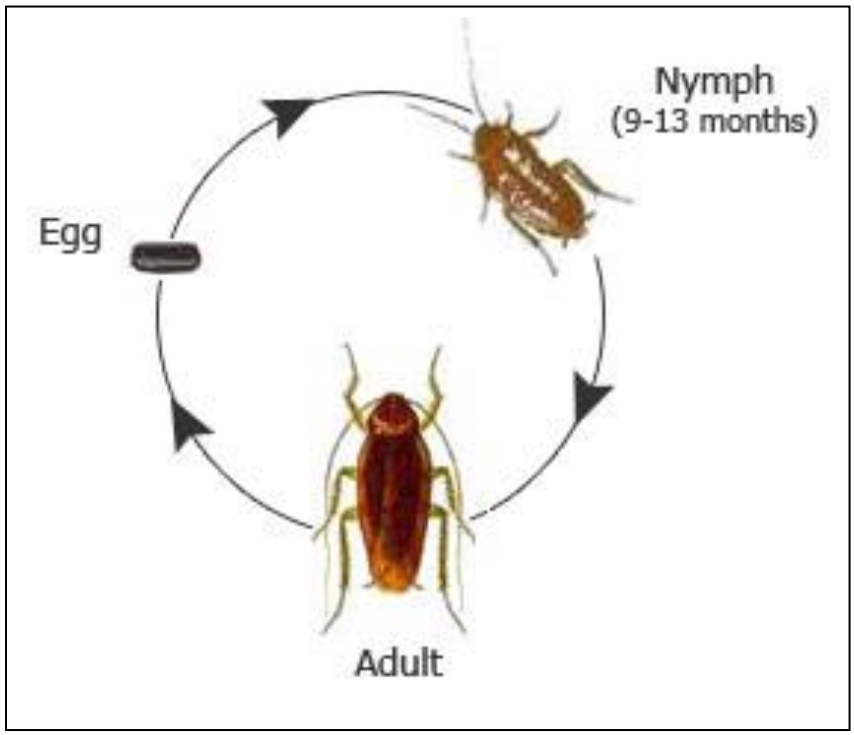
Lesson 7

Incomplete life cycle.

Undergo three stages of development.



The life cycle of a cock roach



NB:

i) The larva stage of a butterfly is a **caterpillar.**

ii) A young locust, cricket, cockroach, grasshopper is a **nymph**.

Examples of insects with incomplete life cycle

locusts	termites
cockroaches	dragon flies
grass hopper	crickets
white ants	tsetse flies

ACTIVITY

1) State three insects which undergo incomplete life cycle.

2) What do we call the second stage of a cockroach?

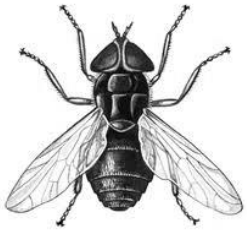
Lesson 8

A house fly

The larva stage of a house fly is a maggot.

A housefly is able to spread more than one disease because it has a hairy body.

An adult housefly



Diseases spread by a housefly

i) trachoma
ii) diarrhoea
iii) cholera
iv) dysentery
v) typhoid
vi) polio

Disease spread by a cockroach

Are the same diseases spread by a housefly;

diarrhoea typhoid

dysentery

Polio

ACTIVITY

1) How is a housefly able to spread diseases?

2) State any three diseases spread by a housefly.

3) Identify two diseases spread by a cockroach.

Lesson 7

Social insects

Social insects are insects that live and work together.

Example of social insect

i) honey bees

ii) termites

iii) ants

iv) wasps

Honey bees

i) worker bee

ii) queen bee

iii) drone bee

Queen bee

i) Queen bee lays eggs.

ii) The queen bee feeds on special food called **royal jelly**.

royal jelly – food for a queen bee

iii) The queen bee has a sting for protection.

Drone bee

i) Are male bee in a hive.

ii) Drones have no stings.

iii) The drone mates with the queen bee.

iv) The flight of bees in which the done mates the queen is called marriage or wedding flight.

Duties of worker bee

i) Collecting nectar from flower.

ii) Making honey.

iii) Feeding the queens, drone and the larva.

iv) Looking after the queen's eggs.

v) Cleaning the beehive.

vi) Protecting the beehive.

vii) Cooling the beehive by fanning using their wings.

NB

- Api-culture is the rearing of bees in their beehives.
- An apiary is a place where there are many beehives.

ACTIVITY

1) State any four examples of social insects.

2) Identify any two duties of a queen bee in a bee hive.

3) What special name is given to a male bee?

4) State at least two duties of a worker bee.

WEEK 4

Lesson 1

Solitary insects

These are insects which do not live and work together.

Examples of solitary insects

i) butterflies

ii) houseflies

iii) mosquitoes

iv) tsetse flies

Importance of insects to people

i) Some insects are eaten.

ii) Bees provide honey and wax.

iii) Some insects pollinate crops.

iv) Some insects are a source of income.

v) Insects are used for study purpose.

vi) Silk worms provide silk threads for making clothes.

Uses of bee wax

i) For making soap.

ii) For making Vaseline.

iii) For making crayons.

iv) For making shoe polish.

v) Making candle wax.

Insects eaten by people

White ants

Crickets

Grasshoppers

Locusts

Termites

Dangers of insects to people

Some insects bite and sting.

Some insects spread germs.

ACTIVITY

1) What are solitary insects?

2) State at least four useful insects.

3) Identify two harmful insects.

4) How does a wasp protect itself?

5) Mention any three importances of insects to people.

Lesson 2

TOPICAL QUESTIONS

1) What is poultry?

_____

2) Mention two products got from domestic birds.

_____ _____

3) What is the reproductive part of an egg?

_____

4) How is the air space important to an egg?

_____

5) State two examples of wild birds.

_____ _____

6) What are social insects?

_____

7) How is a drone bee important in a bee hive?

_____

8) State two useful insects.

_____ _____

9) Mention any two disease spread by a house fly.

_____ _____

10) Name the second stage of life cycle of a cockroach.

_____

Lesson 3

PLANT LIFE

- Plants grow under different environments.
- Un wanted crops in the garden are called weeds.

Examples of weeds

wandering jew couch grass

spear grass elephant grass

goat weed

Plants grown in gardens by man are called crops

Examples of crops

bananas - rice
sugar cane - coco yam
maize - white yam
tomatoes - carrots
avocados - cabbage etc.

ACTIVITY

1) What do we call the unwanted crops in the garden?

2) State any two crops grown by man.

Lesson 4

Some plants that grow in dry places

- Dry places are deserts, rocky places and arid areas.
- **Examples of plants found in dry areas are:-**

  cactus
  sisal
  pine

- Their leaves are reduced to thorns e.g cactus plants.
- Some have thick leaves with tough cell walls e.g sisal.
- Others have small leaves e.g pine.

Sisal

Cactus

2 Plants growing in different types of soils

- Most plants grow well in loam soil.
- Loam soil is very fertile.
- some plants grow well in sand soils while others do well in swamps on top of clay soil, with plenty of humus e.g. yams, sugar cane, rice, etc.

ACTIVITY

1) Identify any three crops that can grow well in dry areas.

2) State two examples of crops grown in swamps.

Lesson 5

How do plants get their food?

Most plants get food by the process of **photosynthesis.**

PHOTOSYNTHESIS

- Photosynthesis is the process by which green plants make their own food.
- It is the way plants make their own food.
- The type of food green plants make is called starch.

Things plants need to make food

- sunlight - water

- carbon dioxide - chlorophyll

Importance of each of the conditions during photosynthesis

Chlorophyll: - Is a green matter found in leaves.

- - It traps sun light energy.

Sunlight:

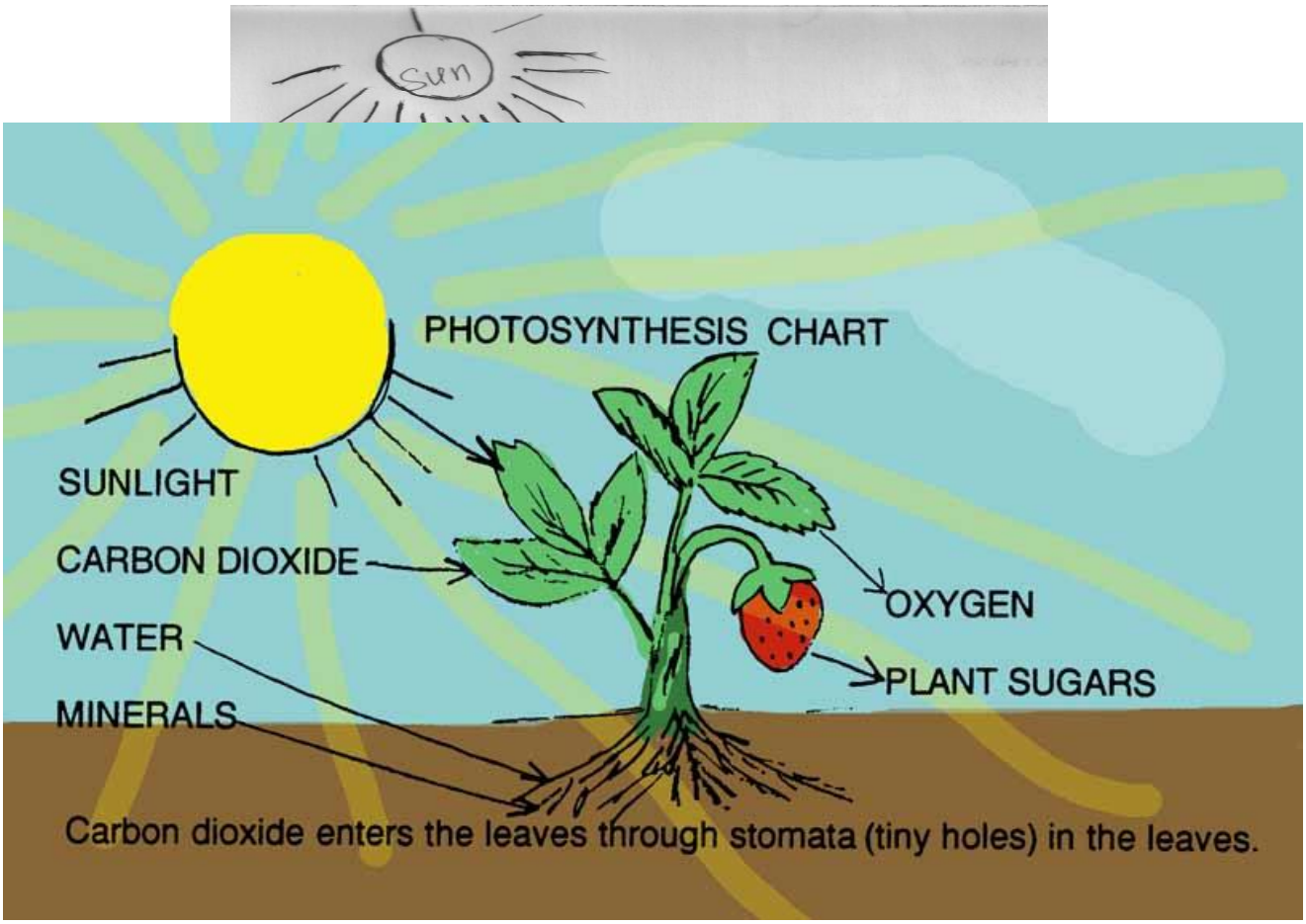
- Splits water into hydrogen and oxygen.

Carbon dioxide and water

- Are both raw materials.
- Carbon dioxide mixes with water to form starch.
- Water mixes with carbon dioxide to form starch.

N.B

- Oxygen is given off during photosynthesis.
- Plants make their own food only during day time in the presence of sunlight.



At night photosynthesis cannot occur due to absence of sunlight energy.

ACTIVITY

1) Name the process by which green plants make their own food.

2) Identify two raw materials needed for photosynthesis to take place.
3) Which gas is given off during photosynthesis?
4) Why are plants unable to make food at night?

Lesson 6

Uses of plants to people

- Most plants are used for food.
- They can be sold to get money.
- We get medicine from some plants.
- Flowers and leaves are sold to get money.
- Flowers and leaves are also used for decoration.
- Plants with thorns are used as hedges.
- Trees provide us with timber /building materials etc.
- Timber is also used for making furniture.
- Plants give us oxygen which we need for breathing.
- Trees work as wind breaks reducing the strength of wind.

ACTIVITY

1) How are plants useful to people?
2) Identify the reproductive part of a plant.

LESSON 7

Parts of a flowering plant and their uses:

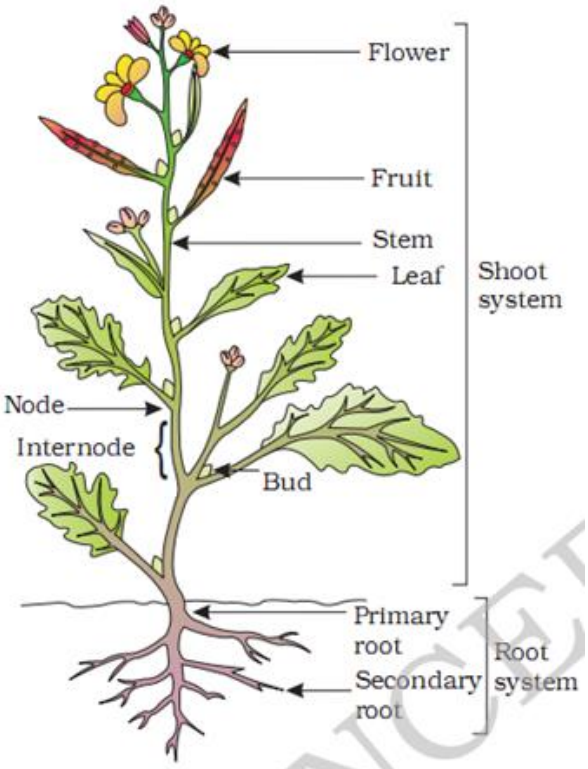


Figure 5.1 Parts of a flowering plant

Uses of some parts of a flowering plant

ACTIVITY

Draw a flowering plant and name these parts.

Stem, flower, bud, fruit and leaves.

LESSON 8

Roots:

Examples of different types of roots

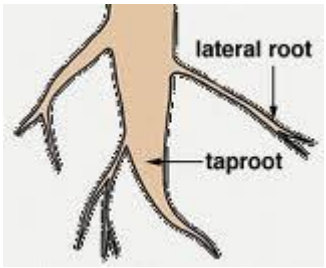
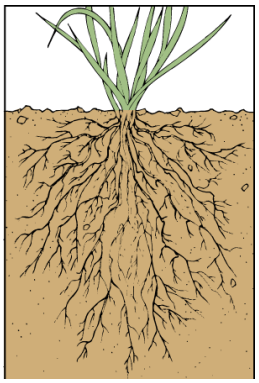
i. tap roots

ii. fibrous roots

iii. prop roots

iv. adventitious roots e.t.c

(Adventitious roots (from the Latin term adventicius, meaning "not belonging to") are roots that form on organs other than roots, such as a leaf or stem.)

A PRACTICAL LESSON ABOUT ROOTS.

USES OF ROOTS

To plants

i. They store food for the plant. e.g cassava, sweet potatoes

ii. They hold plants firmly in the ground.

iii. They absorb water and mineral salts from the soil.

iv. They transport food to rest of the plants.

v. Some plants have roots that fix nitrogen in the soil.

USES OF ROOTS

To people

1) source of food
2) used for herbal medicine
3) used as charcoal for cooking
4) used to make crafts
5) some are sold to get money eg cassava, sweet potatoes etc

ACTIVITY

1. How are roots useful to
   a) a plant
   b) people?

2. Identify three examples of root crops.

WEEK 5

Lesson 1

Uses of stems:

i. To a plant

1) Some stems store food for the plant e.g sugarcanes.
2) They hold the branches, leaves and flowers upright to get sunlight
3) They transport water from the roots to the leaves
4) They also transport food made in the leaves to the roots

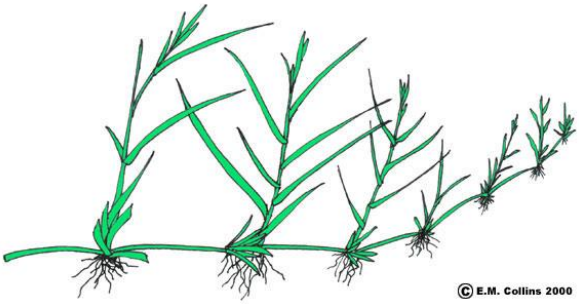
ii. Uses of stems to people

1) Most stems are used in building
2) Some stems are used as herbs
3) Some stems are eaten by people
4) They are used for study purpose
5) Some stems sold to get money.
6) Some stems are used to make crafts.

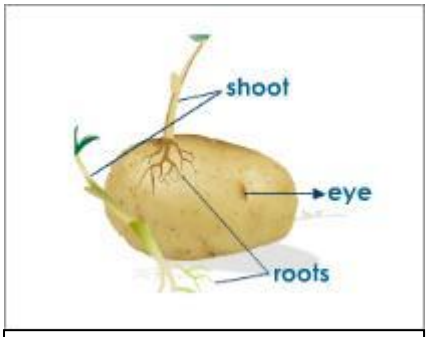
Types of stems

1. Creeping stems or climbing stems
2. Upright stems
3. Underground stems
4. Storage stems(stem tubers)
5. Rhizomes

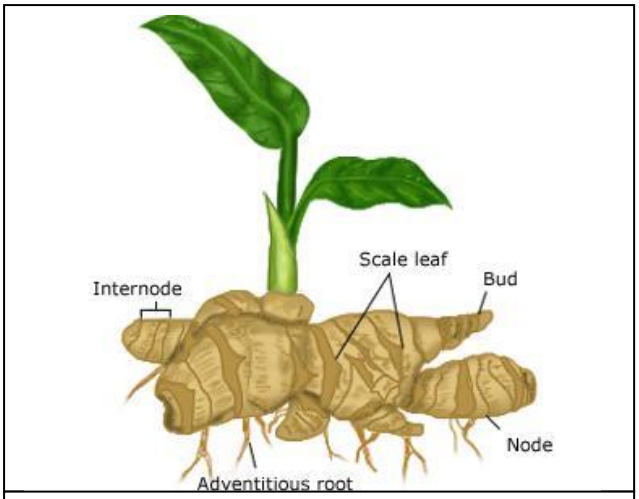
Upright stem **creeping or climbing stem**



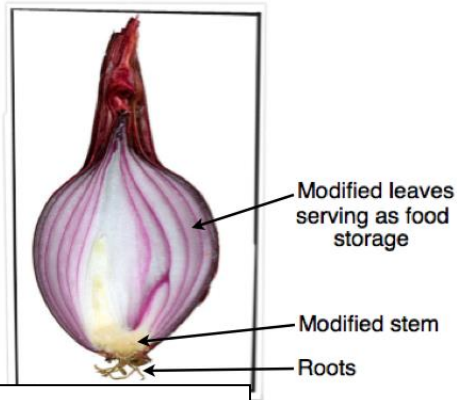
creeping stems



storage stems



rhizomes



underground stems

1. **Creeping stems/ climbing stems:**

Climbing stems are weak stems and can not support themselves upright

Plants with weak stems climb others for support and to get sunlight

Plants with weak stems climb others in three main ways

Using tendrils

Using thorns or hooks

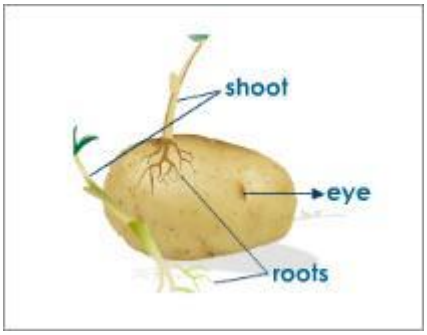
By twinning

2. **Underground stems**

Underground stems store food in their stems and are called stem tubers

Examples of stem tubers

i. irish potatoes



ii. coco yams



Practical lesson about different stem tubers and root tubers.

ACTIVITY

1) How are stems useful to
   i. plants
   ii. people
2. Which part of these plants do we eat?
   i. Sugarcane
   ii. irish potato
3. Identify any two plants with climbing stems.

Lesson 2

Leaves:

There are two types of leaves.

1) Simple leaves
2) Compound leaves.

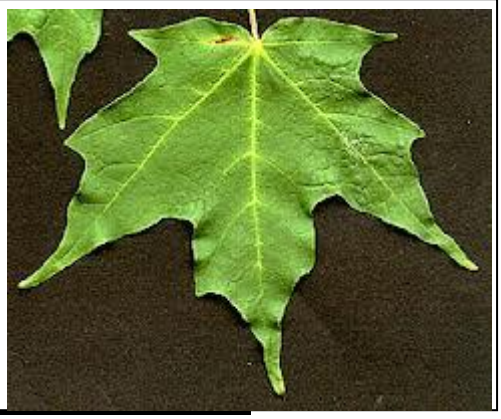
Simple leaves

A simple leaf has one leaflet on one leaf stalk.

simple entire

simple serrated

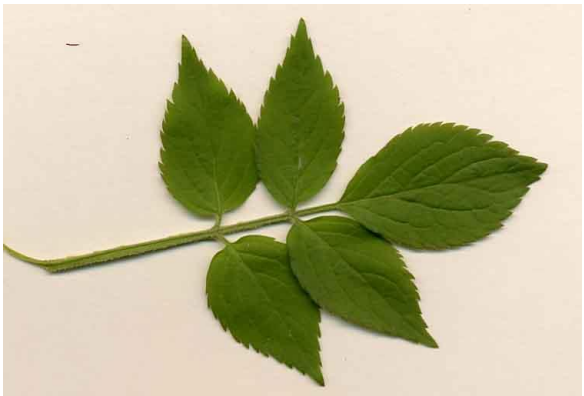
simple lobbed



simple palmate

A compound leaf has many leaflets on one leaf stalk.

compound pinnate



compound bi-pinnate

Compound trifoliate

Practical lesson about leaves.

ACTIVITY

1) Why is a trifoliate leaf grouped under compound leaves?
2) Give one example of crop that has a simple leaves.

LESSON 3

Parts of a leaf

Uses of different parts of a leaf

Veins

They transport food and water in a leaf

Stomata:

For breathing

For transpiration

Leaf blade

The point at which the leaf stalk is attached to the plant

Leaf margin works as a boundary for a leaf.

Uses of a leaf to a plant

Used for breathing by plants.

Gives water into the air (transpiration)

Makes food for the plant

Some leaves are used for reproduction

Some leaves are used for storing food

Uses of leaves to people

Leaves of some plants are used as vegetables

Leaves are used as herbal medicine
Some leaves are sold for money
Some leaves are used to wrap things like food
Broad leaves are used to cover ourselves during rainfall or strong sunshine
Leaves are used for study purposes.

ACTIVITY

1) Which part of a leaf has the same function as the spiracles of an insect?
2) State the uses of leaves to
a) People
b) plants

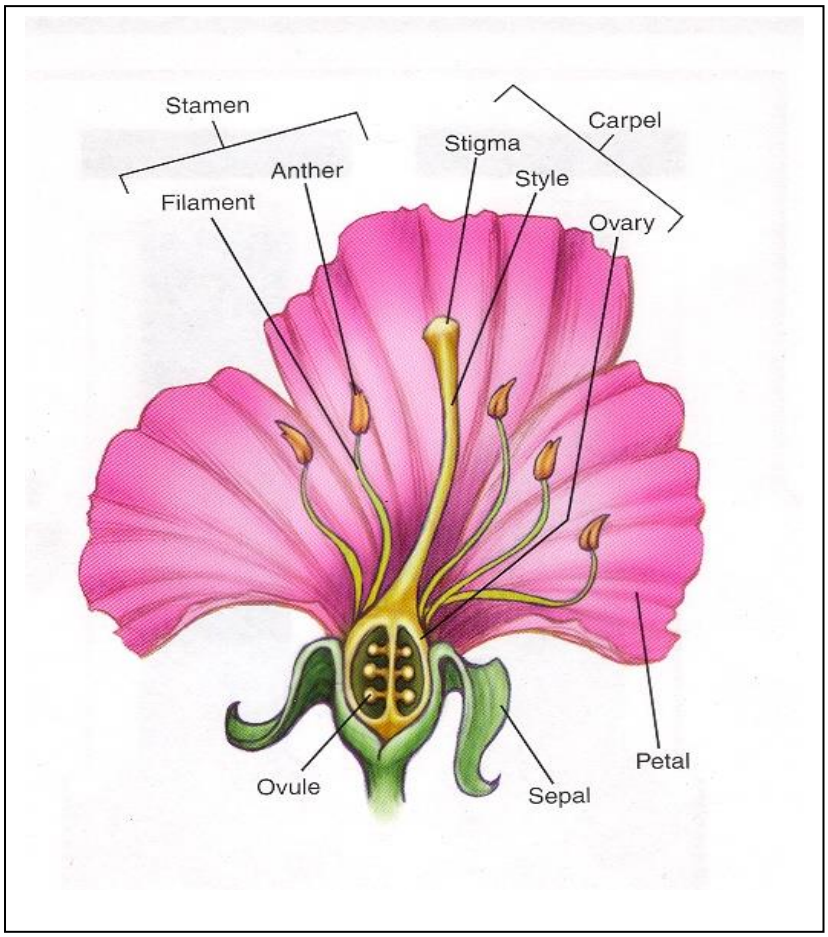
3)Mention two examples of crops whose leaves are eaten by people.

LESSON 4

Flower

It is the reproductive part of the plant.

Parts of a flower:



Uses of each part of a flower

Petals:

Attracts pollinators like insects and birds
The collective name for petals is corolla

Stigma

Receives pollen grains from the anthers

Anthers

Produce pollen grains

Filament

Holds the anthers upright

Ovary

Protects the ovules and it grows into a fruit after fertilization

Ovules

Develop into seeds after fertilization

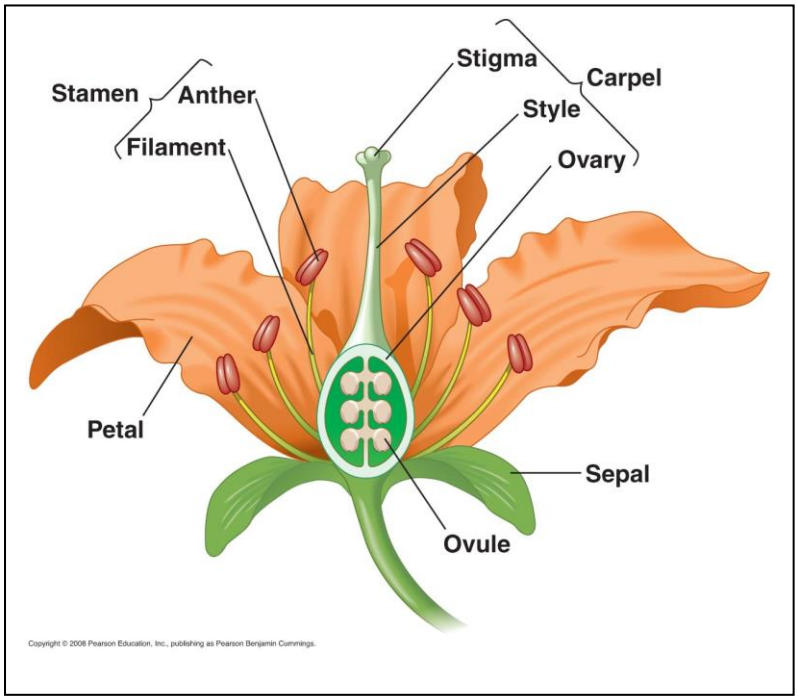
Sepals: they protect young flower

Flower stalk: holds the flower upright

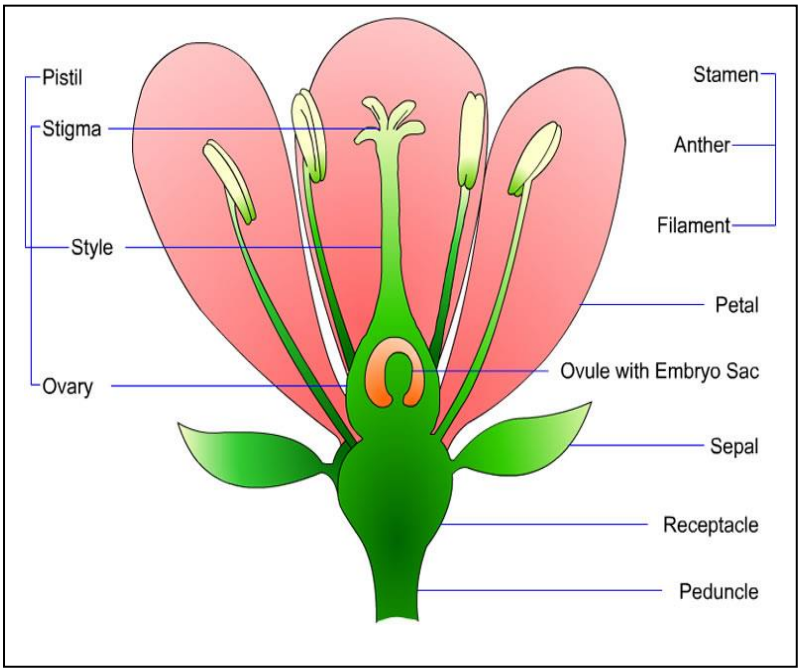
Flower base: is the point at which the flower stalk is attached to the plant.

The female part of a flower is called the pistil and it has the following parts: stigma, style and the ovary while the male part is made up of the anthers and filament and is called the stamen

Female part



Male part of a flower



Practical lesson about flowers.

ACTIVITY

1) How do we call the female part of a flower?

2) Which part of the flower grows into a fruit after fertilization?

3) Why are petals of flowers brightly coloured?

LESSON 5

Uses of flowers to people:

- Some flowers are used for food.
- They can be sold to get money.
- Flowers and leaves are sold to get money.
- Some flowers are used for making perfumes
- Some flowers are used to make insecticides

Dangers of some plants to people:

Some plants are poisonous when eaten.

Some plants have thorns.

Non flowering plants

These are plants that do not produce flowers

Most non flowering plants reproduce by means of spores

Examples of non flowering plants

ferns

mosses

toad stools

Liverworts

ACTIVITY

1) Identify any three uses of flowers to people.

2) Why are toad stools grouped under non flowering plants?

Lesson 6

<u>Crop growing practices:</u>

Garden tools and their uses:

Watering can watering plants 	**Hoe** digging planting weeding harvesting 
axe Splitting timber Chopping wood Felling big trees 	**forked hoe** Digging hard soils Removing roots in the garden 
trowel  Transplanting seedlings	**sickle**  Harvesting cereals Cutting grass for thatching and mulching
rake  For collecting rubbish Leveling soil Spreading manure	**wheelbarrow**  Transporting harvested crops, seeds, manure, etc.

panga	**slasher**
 Cutting small trees and shrubs Harvesting some crops	 cutting tall grass/ slashing

Practical lesson about garden tools.

ACTIVITY

Give the use of the following garden tools;

i. rake
ii. hoe
iii. wheel barrow
iv. trowel
v. watering can

Lesson 7

1) **How to care for garden tools**
2) Keep them in a cool dry place.
3) Clean the tools after using them
4) Each garden tool should be used for the correct work it was made for.
5) Tools for cutting things must be sharpened
6) Replace handles of tools that get used up whenever necessary
7) Paint metallic tools that need painting to avoid rusting

Terms used in crop growing

Digging

Is the turning of soil all over

It softens the soil which allows water into the soil

Weeding

Is the removal of unwanted plants from the garden

It controls crop pests and diseases

It also reduces competition for plant food and space

Seedling

Is a young plant

Transplanting

Is the removal of seedlings from the nursery bed to the main garden.

- Seedlings should be transplanted in the evening and in a rainy season.
- This is because their roots are still weak to resist the hot sunshine and dry soils.

Weeds

Are unwanted plants growing in an area.
A weed is a plant that grows where it is not wanted

Sowing

Is a method of planting seeds in the garden? Row planting and broadcasting are examples of planting seeds

Crop

A crop is a plant that grows where it is wanted.

A PRACTICAL LESSON.

ACTIVITY

1) Where should farmers keep the garden tools after use?

2) Draw and name the garden tool used in transplanting seedlings.

3) What is weeding?

LESSON 8

A good site for a garden

1) Should be near the home, buildings or school
2) Should be near the water source
3) Should have fertile soils
4) Should be near the road for easy transport
5) Should be on a gentle slope to control soil erosion
6) Should be in an open space i.e. receive enough sunlight for proper growth and photosynthesis

Steps taken to prepare a garden

1) Clearing the land
2) Collecting manure (rubbish) into heaps and compost pits
3) Digging the soil or harrowing it
4) Leveling the garden (seed bed)
5) Planting crops
6) Fencing the land

ACTIVITY

1) State three things to consider while choosing a good site for a garden.

WEEK 6

Lesson 1

Crops grown in the garden

Cabbage	cucumber
Tomatoes	sweet potatoes
Egg plant	lettuce
Cassava	onions
Peas	bitter tomatoes
Ground nuts	turnips
Simsim	garlic
Soya beans	beans

Qualities of seeds and crops to be grown

2) Seeds should be big, smooth and healthy
3) Seeds should be free from pests and diseases
4) The seedlings should be big and healthy
5) The stems should be got from healthy crops
6) The vines to be planted should be from healthy and good quality plants

Uses of a garden

For growing crops and producing food

For study purpose

For research

For practical demonstrations

ACTIVITY

1) Identify at least six crops grown in the garden.

2) State any two qualities of seeds and crops to be grown.

3) Mention two uses of a garden.

LESSON 2

Types of crops

Cereals, fruit crops, leguminous crops, root crops vegetables, trees

Cereals crops

These are grain bearing crops

Popularly known as grain crops

Their seeds have one cotyledon.

They are commonly known as monocotyledonous seeds

Examples of cereal crops

Millet maize oats

Wheat barley rice

Sorghum

Leguminous crops

These are crops which have nodules (swelling on their roots)

Examples of leguminous crops

Beans peas simsim

Soya beans ground nuts French beans

The root of a legume

In root nodules there are bacteria called nitrogen fixing bacteria

The use of these bacteria is to add nitrogen into the soil

The root nodules store nitrogen fixing bacteria

They make the soil fertile for growing crops

ACTIVITY

c) What are cereal crops?
d) Identify any three examples of cereal crops.
e) Mention any two leguminous crops
f) State at least two uses of root nodules in the soil

Lesson 3

Vegetables

- These are crops which are eaten as vegetable source
- There are three types
- Leafy vegetables e.g cabbage, spinach e.t.c
- Fruit vegetables e.g tomatoes egg plants, red pepper e.t.c
- Root vegetables e.g carrots, beet roots

Examples of fruit crops

Oranges mangoes pears lemons

Pawpaws bananas grapes e.t.c

Fruit keep our bodies healthy when eaten

They should be washed first before eating to avoid eating germs/ worms

Note

We get vitamin D from eating vegetables and fruits.

Learners group vegetables and fruits differently.

Root crops

These are crops whose roots are eaten as food

Examples of root crops

Cassava, white yams, sweet potatoes carrots

cassava

sweet potatoes

white yams

carrots

t tubers

nder the gro

ACTIVITY

1) Identify any three vegetables crops.

2) State three examples of

i. fruit crops

ii. root crops

Lesson 4

Germination

Seed germination

Seed germination is the growing of a seed into a seedling.

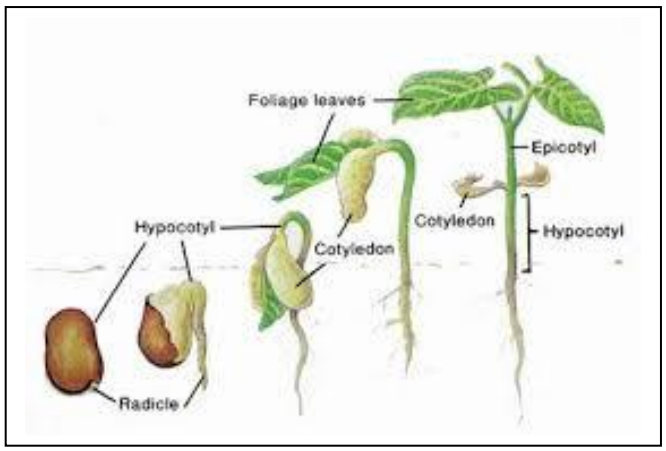
Types of germination

Apogeal germination

Hypogeal germination

Epigeal germination

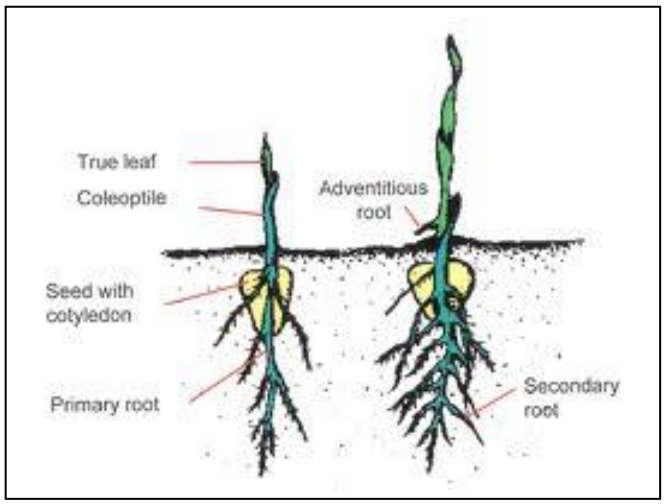
This is where the cotyledons come out above the ground level.
This type of germination is seen in most dicotyledonous seeds e.g beans.



Hypogeal germination

This is the type of germination in which the cotyledons remain under the ground

This type of germination is seen in monocotyledonous seeds e.g maize



Conditions for germination

water / moisture

oxygen

warmth

Uses of each condition during germination

Water / moisture

It dissolves the food in the **cotyledons** or **endosperm** for the growing embryo

It softens the testa to ease germination

Warmth

It provides good temperature for germination to take place

Oxygen

Used by the growing embryo to burn food and produce energy

Practical lesson about germination.

ACTIVITY

1) Define germination.
2) Identify the conditions necessary for germination.
3) Of what importance is moisture to a seed during germination?

Lesson 5

Project work on seed germination

Get four containers, seeds and carry out the following

Put:

a) a seed put in a container with water, no warmth and oxygen

What is your observation?
(No germination)

b) a seed put in a container with warmth and oxygen but no water

What is your observation?
(No germination)

c) a seed put in a container with water and oxygen but no warmth

What is your observation?
(No germination)

d) a seed put in a container with warmth, water and oxygen

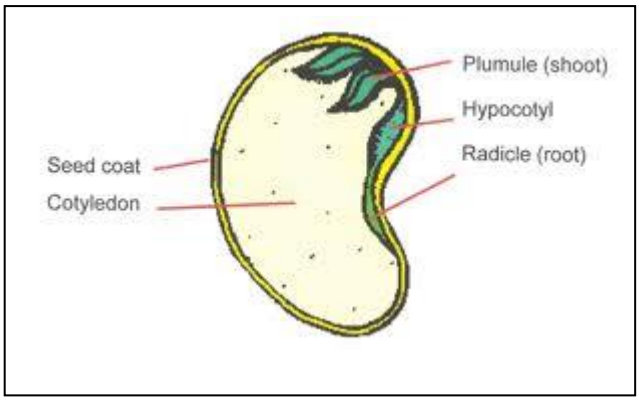
What is your observation?
(There is germination.)

Lesson 6

Parts of a bean seed

Outer parts of a bean seed

Inside parts of a bean seed



Uses of each part of a seed:

Testa / seed coat:

This protects the inner parts of a seed.

Micropyle:

This is a small hole on the seed which allows air and water into the seed.

Scar/hilum: attaches the seed to the pod. It shows that the seed was attached to the pod.

Cotyledon: it sores food for the growing embryo (radicle and plumule)

Plumule:

It grows into the shoot system of the plant. The shoot system is the stem and leaves.

Radicle: this grows into root system of the plant.

ACTIVITY

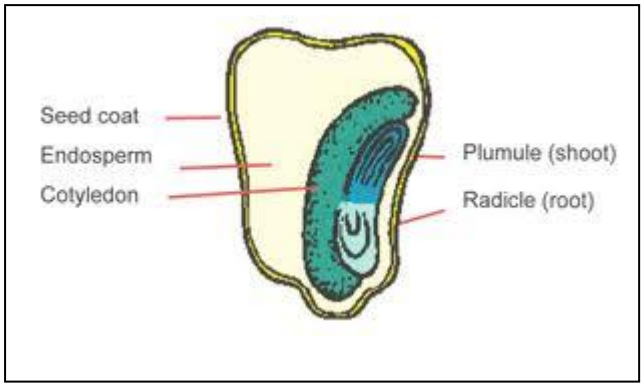
1. Draw and name the following parts of a bean seed. (testa, cotyledon, hilum, radical)
2. Of what importance is a cotyledon to a bean seed during germination.
3. Which part of a bean seed develops into roots?

Lesson 7

A maize seed

Outer parts

Inner parts



Uses of each part to the maize seed

Endosperm: Stores food for the embryo

Cotyledon: sucks food from the endosperm and supplies to the growing embryo

Plumule and radicle: these form the embryo. They grow into new plants

Style scar: This attaches the seed to the pollen tubes. It shows that the seed was once attached to the pollen tube.

ACTIVITY

4. Draw and name the following parts of a maize seed. (testa, cotyledon, radical)
5. Of what importance is a testa to a maize seed during germination.
6. Which part of a maize seed develops into leaves?

Lesson 8

Uses of seeds to people

Seeds are eaten as food

Seeds are sown to grow into new plants

Some seeds are used for making drugs

Seeds can be used for making crafts.

Some seeds are used to make cooking oil e.g. ground nuts, simsim and sunflower.

Husks from seeds are used as mulches.

A nursery bed

A nursery bed is a small piece of land where seeds are first sown to grow into seedlings.

Importance of a nursery bed

i. Some seeds are too small to be planted direct to the main garden.
ii. A nursery bed gives shelter to the seedlings.
(protection against strong sunshine and rainfall)
iii. For easy selection of healthy seedlings to be transplanted.
iv. It is easy to look after seedlings in the nursery bed.

Note

- Seedlings should be transplanted in the evening and in a rainy season.
  This is because their roots are still weak to resist the hot sunshine and dry soils.

ACTVITY

1) State three uses of seeds to people.
2) What is transplanting?
3) Why are seeds transplanted in the evening or during the rainy season?
4) Identify two uses of a nursery bed.

WEEK 7

Lesson 1

Common crop pests and diseases

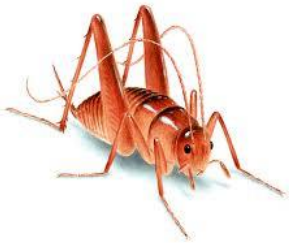
What is a pest?

A pest is a living organism which destroys crops.

Examples of insect pests

Grasshoppers and locust – Bite vegetables and feed on them.

Crickets – Bite seedling of vegetables.



Caterpillars – Cut the stems and feed on leaves.

Cabbage sawfly – lay eggs on cabbage leaves. The eggs hatch into caterpillar. Caterpillars do a lot of damage on the cabbage.

Aphids – Feed on juice found in crop leaves and green parts of the stem. They damage leaves and stems of cabbages, tomatoes, pumpkins and peas.

Army worms – Bite the leaves of the onions and other young plants.

Beetles – Feed on seeds and flowers of crops.

Scale insects - Damage pineapples and oranges.

Termites – damages stems and roots of crops.

Locust – bite vegetables and feed on leaves of crops.

Eel worms (nematodes)

Eel worms live in the soil.

They damage the roots of carrots which then start rotting.

They also damage beans and egg plants.

ACTIVITY

1) What is a pest?
2) Identify any four insect pest.

Lesson 2

Examples of bird pests

Birds

i. damage shoots and leaves of crops.

ii. They also damage grains like maize, rice, sorghum, millet and wheat.

<u>Examples of bird pests</u>

weaver birds

pigeons

guinea fowl


crows


ravens


francolins

Rodent pests (animals)

Rodents damage leaves, shoots and fruits of the plant.

Examples of rodent pests

squirrels

rats

moles

Mice

How to control crop pests;

- Staking vegetables e.g tomatoes
- Practicing crop rotation
- Use correct spacing when planting vegetables.
- Practicing regular weeding.
- Plough and dig up soil to destroy the eggs and larvae in the soil.
- Remove all crops that have been attached by pests.
- Spray crops with insecticide to kill them.
- Use traps.
- Using scare crows.

ACTIVITY

1. Identify three examples of

   a) bird pests

   b) rodent pests

2. State three ways of controlling pests.

Lesson 3

Diseases of crops

- **Cassava mosaic** – affects cassava plant.
- **Leaf spot** – affect crops like cotton.
- **Maize steak** – attacks maize crops.
- **Tomato blight** – attacks tomatoes.
- **Ground nut rosette** – affects groundnuts

Signs of crop diseases

- Wilting
- Leaf rust
- Black spots on the leaf
- Leaves turn yellowish and crop off the crops

Control diseases

- Stake vegetables e.g tomatoes
  Removing fruits with diseases from the garden.
- Pick the affected leaves and throw them away.
- Mulch vegetables.
- Spray the vegetables with pesticides.
- Plant disease resistant varieties.
- Weed the crops regularly

ACTIVITY

1) Which disease attacks

a) tomatoes

b) cassava

2) Identify any two signs of crop diseases.

3) State three ways of controlling crop diseases.

TOPICAL QUESTIONS

1) How do we call the un wanted plants in the garden?
2) Identify any that grow well in dry areas.
3) How are crows harmful to a farmer?