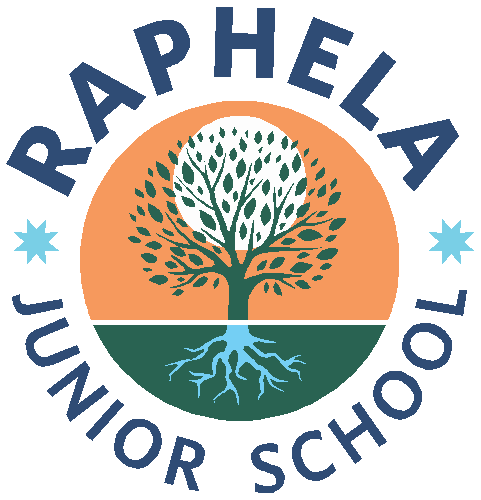
**RAPHELA JUNIOR SCHOOL**



**LITERACY 1A LESSON NOTES TERM TWO**

** PRIMARY THREE**

**THEME: LIVING THINGS IN OUR SUBCOUNTY.**

**TOPIC: 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 |

**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.

|  |  |  |  |
| --- | --- | --- | --- |
| **D:\images\stones.jfif** | **D:\images\soil.jfif** | **D:\images\water.jfif** | **D:\images\timber.jfif** |
| Stones | Soil | Water | Timber |

**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.

**Activity**

1. What is environment?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give two major components of the environment.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define living things.

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1. Give three characteristics of living things.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are non-living things?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write down two characteristics of non-living things.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Animals**

**Types of animals in our division**

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

1. Domestic animals
2. Wild animals

**Domestic animals:**

Are animals which are kept in homes?

Examples;

* Cows
* Dogs
* Goats
* Sheep
* Rabbits
* Donkey

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| --- | --- | --- |
| **D:\images\cow.jpg** | **D:\images\dog.jfif** | **D:\images\goat.jfif** |
| **Cow** | **Dog** | **Goats** |
| **D:\images\sheep.jfif** | **D:\images\rabbit.jpg** | **D:\images\dokey.jpg** |
| **Sheep** | **Rabbit** | **Donkey** |

**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

|  |  |  |  |
| --- | --- | --- | --- |
| **D:\images\dokey.jpg** | D:\images\camel.jfif | D:\images\horse.jfif | D:\images\oxen.jpg |
| Donkey | Camel | Horse | oxen |

**Animals, products and things made out of them**

|  |  |  |
| --- | --- | --- |
| **Animal** | **Products** | **Things we make** |
| Goats  Cow | Skins and hides | Belt , drum , shoes , watchstraps , handbags |
| D:\images\milk.jpgMilk | Yoghurt, butter , cheese , ghee |
| Hooves and horns  **Skin**  **Hides**  **Hooves**  **Horns** | Glue , buttons, bungles , necklaces |
| D:\images\bones.jpgBones | Animal feeds |
| Sheep | D:\images\wool.jfifWool | Woolen blankets , sweaters , stockings , jackets , scurvies |
| D:\images\mutton.jpgMutton |  |
| Pigs | D:\images\pork.jpegPork | Bacon and ham, lard |
| Rabbits | D:\images\fur.jfifFur | Blankets |
| D:\images\MEAT.jfifMeat |  |

**Ways of caring for domestic animals**

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

**ACTIVITY**

1. What are domestic animals?

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1. State two reasons why people keep domestic animals.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give two examples of animals used for transport.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two products got from animals.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Name three products got from wool.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Wild animals**

* Are animals which live in the bush?

**Examples:**

* Antelopes
* Giraffes
* Elephants
* Buffalos
* Zebras
* Leopards

|  |  |  |
| --- | --- | --- |
| **D:\images\antelope.jpg** | **D:\images\girrafe.jpg** | **D:\images\elephant.jpg** |
| **Antelopes** | **Giraffe** | **Elephants** |
| **D:\images\zebra.jpg** | **D:\images\buffalo.jfif** | **D:\images\leopard.jfif** |
| **Zebra** | **Buffalo** | **Leopard** |

**Uses of wild animals**

* They attract tourists
* Some wild animal’s give us skins e.g. snakes, leopards, lions.
* Some wild animals gives 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

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| --- | --- | --- |
| D:\images\goat.jfif | D:\images\rabbit.jpg | D:\images\geckoes.jfif |
| Goats | Rabbits | Geckoes |

* **Plants** e.g. caterpillars , slugs , butterflies , chameleon

|  |  |  |  |
| --- | --- | --- | --- |
| D:\images\caterpillar.jfif | D:\images\slug.jfif | D:\images\butterfly.jfif | D:\images\chameleon.jpg |
| Caterpillar | Slug | Butterfly | Chameleon |

**Forest / bush** e.g. monkey, buffalo, elephants

|  |  |  |
| --- | --- | --- |
| D:\images\monkey.jpg | D:\images\buffalo.jfif | D:\images\elephant.jpg |
| Monkey | Buffalo | Elephant |

**Swamps** e.g. mud fish

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| --- | --- | --- |
| D:\images\mud fish.jfif | D:\images\tilapia.jfif | D:\images\frog.jfif |
| Mud fish | Tilapia | Frog |

* **Garden** e.g. rats, squirrels etc.

|  |  |  |
| --- | --- | --- |
| D:\images\rat.jpg | D:\images\squirrel.jfif | D:\images\mole.jpg |
| Rat | Squirrel | Mole |

**Activity**

1. What are wild animals?

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1. List three examples of wild animals.

i. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State three advantages of wild animals.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write down two dangers of wild animals.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is a habitat?

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1. Define animal habitat.

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1. State two animals commonly found on the swamp.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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

|  |  |  |
| --- | --- | --- |
| **D:\images\hippo.jfif** | **D:\images\crocodile.jpg** | **D:\images\fish.jpg** |
| Hippopotamus | Crocodiles | fish |

|  |  |  |
| --- | --- | --- |
| **D:\images\slug.jfif** | **D:\images\frog.jfif** | **D:\images\crab.jfif** |
| Slug | Frog | 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
* Snail

|  |  |  |  |
| --- | --- | --- | --- |
|  | **D:\images\frog.jfif** |  | **D:\images\snail.jfif** |
| **Fish** | **Frog** | **Slug** | **Snail** |

**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.

**Diagram of an aquarium**



**Animals without legs**

* fish
* Snakes
* Slugs
* Earth worm

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| --- | --- | --- | --- |
| **D:\images\fish.jpg** | **D:\images\snake.jpg** |  | **D:\images\earth worm.png** |
| **Fish** | **Snake** | **Slug** | **Earth worm** |

**Animals which lay eggs**

* Lizards
* Tortoise
* Chameleon

|  |  |  |
| --- | --- | --- |
| **D:\images\lizard.jpg** | **D:\images\tortoise.jpg** | D:\images\chameleon.jpg |
| **Lizard** | **Tortoise** | **Chameleon** |

**Animals and their young ones**

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

**Animal movements**

|  |  |
| --- | --- |
| Way of 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 swans * Ducks geese |

**Why animals move from one place to another**

* To get food
* To get water
* To get protection
* To get shelter
* To look for their young ones
* To look for friendship
* To look for new homes

**Activity**

1. Define a swamp.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. State two animals commonly found in wetlands.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. What are aquatic animals?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Give three examples of water animals.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Why is a fish called an aquatic animal?

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6. Differentiate between a pond and an aquarium.

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7. Give two examples of animals that can be found in an

aquarium.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Write two animals without legs.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Name one place where a aquarium can be found.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Give two examples of animals that lay eggs.

i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. Give two examples of swimming animals.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

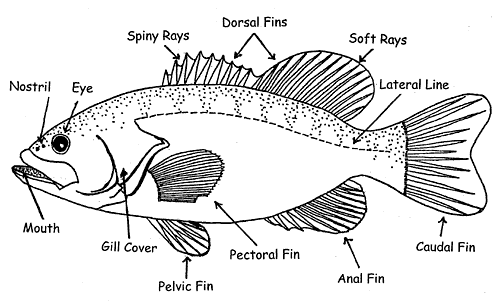
12. How do snakes move?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. Apart from caterpillars name any other animal that moves by wriggling. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Fish**

**External parts of a fish**

****

**Uses of parts of a fish**

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

**NB:** Fins help a fish to swim in water

**Examples of fish common in Uganda.**

* Tilapia (engege)
* Nile perch (empuuta)
* Cat fish
* Silver fish (mukene)
* Lung fish
* Mud fish

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| **D:\images\tilapia 1.jfif** | **D:\images\nile perch.jpeg** | **D:\images\cut fish.jpg** |
| Tilapia(engege) | Nile perch(empuuta) | Catfish |
| **D:\images\lung fish.jpg** | **D:\images\mud fish.jfif** | **D:\images\silverfish.jfif** |
| Lungfish | Mudfish | Silver fish (mukene) |

**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 hooks
* Fishing nets
* Fishing baskets

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| **D:\images\fishing hooks.jfif** | **D:\images\fishing nets.jpg** | **D:\images\bascket.jpg** |
| **Fish hooks** | **Fishing net** | **Fishing basket** |

**Fish preservations**

* Preservation is the way of keeping food safe for a long time without going bad.
* Fish preservation is the way of keeping fish safe for a long period of time without going bad.

**Modern methods of preserving fish**

* Canning / tinning
* Refrigeration

**Local methods**

* By smoking
* By salting
* By sun drying

|  |  |  |
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| D:\images\smoking of fish.jfif | D:\images\salting of fish.jpg | D:\images\sundrying of fish.jfif |
| Smoking of fish | Salting of fish | Sun drying of fish |

**Reasons why we preserve food.**

* For future use
* To prevent wastage

**Activity**

1. How do fish move from one place to another?

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1. State the uses of the following parts to a fish.
2. Lateral line

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Nostril

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Pelvic and pectoral fins

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Tail fin

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Gills

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which part enables the fish move easily in water?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State three uses of fish to human beings.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name the largest type of fish caught from Uganda lakes.

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1. Which is the commonest type of fish caught from Uganda?

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1. Define fish preservation.

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1. State two modern methods of preserving fish.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Which traditional method of fish preservation needs sunny weather to be effective?

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1. State three local methods of preserving fish.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**BIRDS**

**The external parts of a bird.**



Tail feathers

Wing

Spur

Claw

Leg

Wattle

Beak

Nostril

Comb/crown

Eye

**Functions of parts of a bird.**

Beak - It picks food from the ground (feeding)

It is used for protection

Wings - used for flying

Legs - for walking

Claws - for protection

Spur - for fighting/ protection

Eye - seeing

Wings - for flying

- giving birds shape

- cover body of a bird.

- Give birds color

- Feathers give birds warmth

**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

|  |  |  |
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| **D:\images\duck.jpg** | **D:\images\swan.jpg** | **D:\images\swan.jfif** |
| **Duck** | **Goose** | **Swan** |

**Types of birds**

* Domestic birds
* Wild birds

**Domestic birds**

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

**E*x*amples**

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

|  |  |  |
| --- | --- | --- |
|  | D:\images\pigeon.jfif | D:\images\peacock.jpg |
| Duck | Pigeon | Peacock |
| D:\images\guinea fowl.jfif | D:\images\cock.jpg | D:\images\turkey.jpg |
| Guinea fowl | Chicken | Turkey |

***Wild birds***.

* Wild birds are birds found in the bush.

***Examples***

* Weaverbirds
* Kites
* Crested cranes
* Eagles/crows

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| --- | --- | --- | --- |
| D:\images\weaver bird.jfif | D:\images\crested crane.jpg | D:\images\kite.jpg | D:\images\eagle 1.jfif |
| Weaver bird | Crested crane | Kite | Eagle |

**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

**Activity**

1. State two characteristics of birds.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are domestic birds?

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1. State two examples of wild birds.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How are the following parts useful to a bird?
2. Beak

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1. Spur

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Wings

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Claws

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State three uses of feathers to a bird.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State one difference between a cock and a hen.

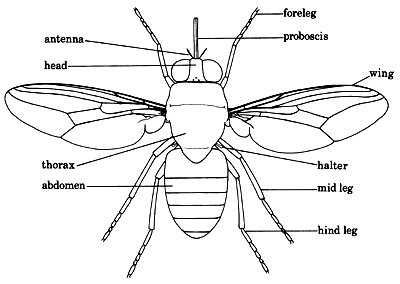
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**INSECTS**

Insects are living things with three main body parts and three pairs of jointed legs.

**Parts of an insect**



**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**

* Feelers - for feeling
* Proboscis - used for sucking food and water
* Wing - for flying
* Spiracles - for breathing
* Halters - for balancing an insect during flight.

**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**

* Wasps
* Crickets
* Locust
* Mosquitoes
* Termites
* Bees
* Houseflies
* Red ants
* Cockroaches

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| --- | --- | --- | --- |
| D:\images\cricket.jfif | D:\images\locust.jfif | D:\images\mosquito.jfif | D:\images\termt.jfif |
| Cricket | Locust | Mosquito | Termite |
| D:\images\house fly.jpg | D:\images\red ant.jpeg | D:\images\cockroach.jfif | D:\images\wasp.jpg |
| Housefly | Red ant | Cockroach | wasp |

**Useful insects to man**

* Bees
* Grasshoppers
* White ants
* Locusts

|  |  |  |  |
| --- | --- | --- | --- |
| **D:\images\bee.jpg** | **D:\images\grasshopper.jpg** |  | **D:\images\locust.jfif** |
| **Bee** | **Grasshopper** | **White ant** | **Locust** |

**Activity**

1. What are insects? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State three examples of insects.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii**.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

ii\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How many body parts has an insect?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. On which body part of an insect are compound eyes found?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How useful are the following parts to an insect?
2. wings

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1. spiracles

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. antenna

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. halters

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State three characteristics of insects.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are useful insects?

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1. Give five examples harmful insects.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iv.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ v. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Insect habitats (homes)**

A habitat is a place where an animal lives.

Insects that live in the soil

* Termites
* White ants
* Red ants

|  |  |  |
| --- | --- | --- |
|  | **D:\images\white ant.jpg** |  |
| Termite | White ant | Red ant |

**Insects that live on plants**

* Butterflies
* Caterpillars

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| --- | --- |
| **D:\images\butterfly.jfif** | **D:\images\caterpillar.jfif** |
| **Butterfly** | **Caterpillar** |

**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 of solitary insects.**

* Houseflies
* Locusts
* Mosquitoes
* Cockroaches
* Dragon flies
* Butterflies
* crickets
* Moth
* Grass hoppers

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | D:\images\moth.jpg |
| Housefly | Locust | cockroach | Moth |
|  |  |  |  |
| Mosquito | Butterfly | Grasshopper | Cricket |

**NOTE**: Moth pollinates flowers at night

**Other insect’s habitats.**

* Bees
* bee hive
* Spider
* web

|  |  |
| --- | --- |
| **D:\images\bee hive.jfif** | **D:\images\spider web.jpg** |
| **Bee hive** | **Spider web** |

**Activity**

1. What is a habitat? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two insects that live;
2. on plants

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. in soil

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1. Differentiate between solitary and social insects.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are social insects?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give two examples of social insects.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Name the homes for the following insects.

a. spider

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. bee

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two insects that help in pollination.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Which insect pollinates flowers at night?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give four examples of solitary insects.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iv \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Worker bee | Drone bee | Queen bee |

***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

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| --- | --- | --- | --- |
| D:\images\candle 1.jpg | D:\images\shoe polish.jpg | D:\images\after shave.jpg | D:\images\crayon.jpg |
| candle | Shoe polish | 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.

**Activity**

1. State three types of bees.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which product do we commonly get from bees?

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1. What name is given to a group of bees?

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1. Write three importance of honey to people.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give one way bees are useful to man apart from providing honey.

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1. Name three products got from wax.

i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two ways you can care for domestic birds.

i. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Identify one sign of a sick bird.

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1. Define poaching as used in wild life.

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**THEME: PLANT LIFE**

**Topic: Plants**

Plants are living things on the earth surface that their own food.

**Examples of common plants**

* Maize plants
* Bean plant
* Cow pea plant

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| **D:\images\maize plant.jfif** | **D:\images\bean plant.jfif** | **D:\images\ferns.jfif** | **D:\images\bambara nut plant.jfif** |
| Maize | Beans | Ferns | Bambara nut |

**Reasons why they are called plants**

* They make their own food
* They have chlorophyll

**Groups of plants**

1. **Flowering plants**

Flowering plants are plants which bear flowers.

* Maize
* Beans
* Tomatoes
* Peas etc.

1. **Non-flowering plants**

Non flowering plants are plants which do not bear flowers. e.g. Ferns, conifers, mosses, liverworts

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|  | D:\images\conifers.jpg | D:\images\mosses.jfif | D:\images\liverworts.jfif |
| Ferns | Conifers | Mosses | Liverworts |

**Characteristics of plants**

* They grow.
* They reproduce.
* They feed.
* They breathe.
* They excrete

**Activity**

1. Give the two groups of plants.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define the following;
2. Flowering plants \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Non flowering plants\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Write three examples in each of the following.
2. Flowering plants

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Non flowering plants

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State three characteristics of plants.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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.

|  |  |  |
| --- | --- | --- |
| D:\images\pawpaw plant.jfif | D:\images\mango plant.jpg | D:\images\avocado plant.jpg |
| Pawpaw | Mango | Avocado |
| D:\images\palm plant.jpg | D:\images\orange plant.jpeg | D:\images\tree.jpg |
| Palm | Orange plant | Tree |

**Plants in swamps**

* Papyrus
* Yams
* Rice

-Sugarcanes, etc

|  |  |  |  |
| --- | --- | --- | --- |
| D:\images\papyrus.jpg | D:\images\rice plant.jpg | D:\images\yams plant.jpg | D:\images\sugarcane plant.jpg |
| Papyrus | Rice | Yams | Sugarcane |

**Plants in desert/dry areas**

* Cactus
* Sisal

|  |  |
| --- | --- |
| **D:\images\cactus.jfif** | **D:\images\sisal.jpg** |
| **Cactus** | **Sisal** |

**Plants which grow water**

* Water hyacinth
* Water lily
* Water cabbage

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| **D:\images\water hyacinth.jpg** | **D:\images\water lily.jfif** | **D:\images\water cbbage.jpg** |
| **Water hyacinth** | **Water lily** | **Water cabbage** |

**Plants that grow on rocks**

* Liverworts
* Ferns
* Mosses

|  |  |  |
| --- | --- | --- |
| **D:\images\liverworts.jfif** | **D:\images\ferns.jfif** | **D:\images\mosses.jfif** |
| **Liverworts** | **Ferns** | **Mosses** |

**Activity**

1. What is a plant habitat? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Define a habitat.

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1. Give two plants that are commonly found in;
2. School compound

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Garden

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Swamp

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Water

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give a reason why sugarcane plant grows well in a swamp.

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**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.

**Structure of a nursery bed**



Seedlings

**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.

**Activity**

1. State two factors considered when setting a school garden.

I.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write two importance of a school garden.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is a nursery bed?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. State three plants that are first planted in a nursery bed.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two importance of a nursery bed.
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
3. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
4. How useful is shade put on a nursery bed?

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1. State two ways of caring for seedling in a nursery bed.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Define spraying.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**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 weed
* Wondering Jew
* Elephant grass
* Nut grass

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| --- | --- | --- | --- |
| **D:\images\star grass.jpg** | **D:\images\spear grass.jfif** | **D:\images\goat weed.jfif** | **D:\images\finger millet.jpg** |
| **Star grass** | **Spear grass** | **Goat weed** | **Finger millet** |
| **D:\images\black jack.jfif** | **D:\images\soddom apple.jpg** | **D:\images\elephant grass.jfif** | **D:\images\wondering jew.jfif** |
| **Black jack** | **Sodom apple** | **Elephant grass** | **Wondering Jew** |

**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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **D:\images\up rooting.jfif** | **D:\images\mulching 1.jfif** | **D:\images\slashing.jpg** | **D:\images\spraying.jfif** | D:\images\digging.jpg |
| **Up rooting** | **Mulching** | **Slashing** | **Spraying** | **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.

**Crop growing practices.**

**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?

**Pruning**

* This is the removal of un wanted parts from the plant.

**Activity**

1. What is weeding?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Define a weed.

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1. State two examples of weeds.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two effects of weeds to plants.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Mention two ways of controlling weeds in the garden.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write down two importance of weeds to man.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define mulching as used in the control of weeds.

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1. Mention the garden tools used for ;
2. Weeding

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1. Slashing

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1. Spraying

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write short notes about the following crop growing practices.
2. Hardening off

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1. Thinning

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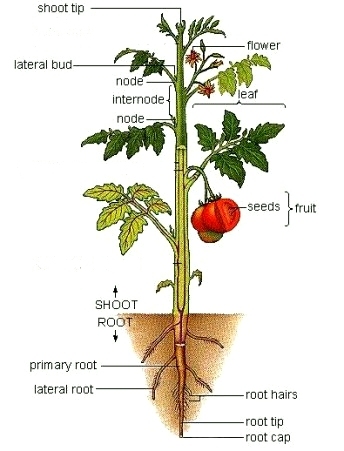
1. Transplanting

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Pruning

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**Parts of a flowering plant**



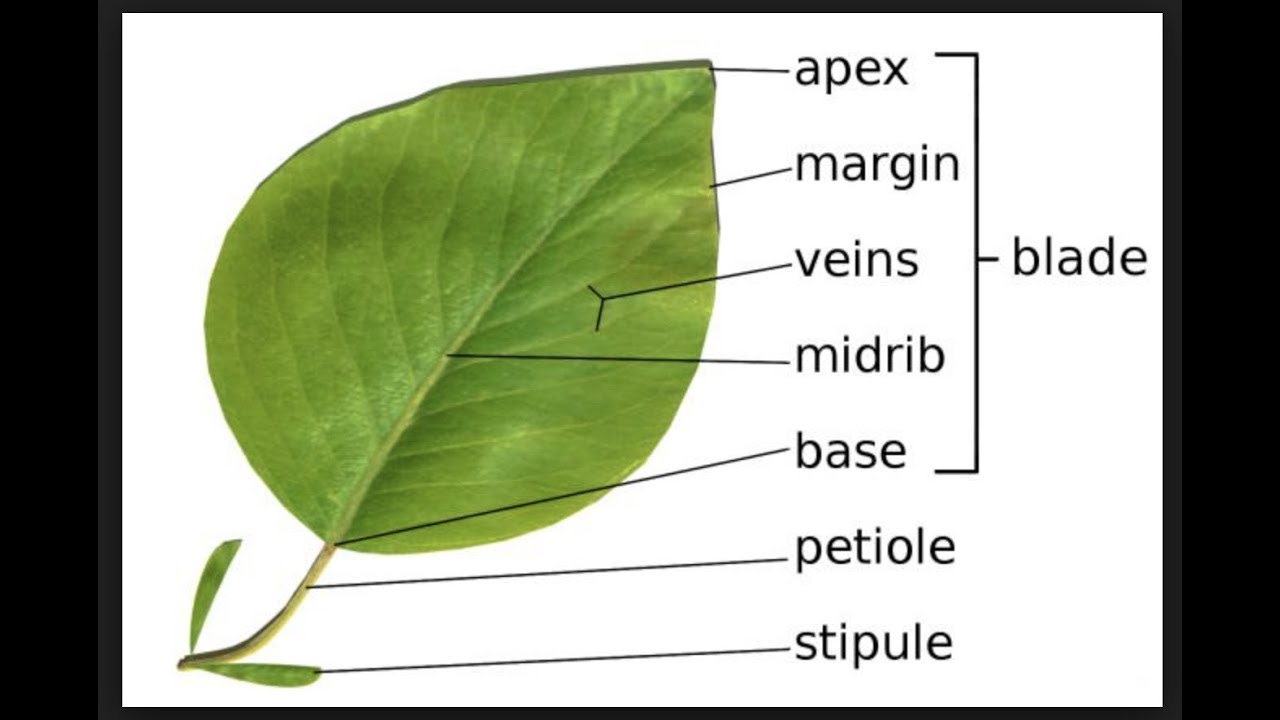
**Systems of plants**

* Shoot system
* Root system

**Parts of a flowering plant.**

* It has 3 major parts namely **leaves**, **stem** and **roots**

**Parts of a leaf.**



**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

**Activity**

1. What is a shoot system of a plant?

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1. Name three parts of a plant found on the shoot system.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define the root system of a plant.

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1. State two parts of the plant found on the root system.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name the three major parts of a plant.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. How useful are stomata found on a leaf of a plant.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name any two parts of a leaf.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State three uses of leaves to plants.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Types of leaves**

1. Simple leaves

Simple leaves are leaves with one leaflet on the stalk.

|  |
| --- |
|  |
| Simple leaf |

**Examples of plants with simple leaves**

* Mango plant
* Orange
* Jack fruit

|  |  |  |
| --- | --- | --- |
| D:\images\mango plant.jpg | D:\images\orange plant.jpeg | D:\images\jack fruit plant.jpg |
| Mango plant | Orange plant | Jackfruit plant |

b) Compound leaves

**** Compound leaves are leaves with many leaflets on the stalk.

**Examples of plants with compound leaves**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **D:\images\bean leaf.jfif** | **D:\images\cassava leaf.jfif** | **D:\images\soya beans leaf.jfif** | **D:\images\acasia leaf.jpg** | **D:\images\molinga leaf.jpg** |
| Bean leaf | Cassava leaf | Soya bean leaf | Acacia leaf | Molinga leaf |

**PHOTOSYNTHESIS**

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

NB: Food made by plants is called starch.

**Conditions necessary for photosynthesis**

* Chlorophyll (Green coloring matter that trap sunlight)
* Carbon dioxide 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 used f or thatching houses
* They are used for decoration
* People sell leaves and get money.

**Activity**

1. Define the following types of leaves.
2. Simple leaves

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Compound leaves

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two plants with;
2. Simple leaves

i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Compound leaves

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Identify the types of leaves below.

|  |  |
| --- | --- |
|  | Unit 2: Plants > Simple Leaf Diagram | Quizlet |
|  |  |

1. State two importance of leaves to people.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define photosynthesis.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What name is given to the food made by plants?

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1. How important is chlorophyll during photosynthesis?

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1. State one raw material for photosynthesis.

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1. Give one bi product of photosynthesis.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define transpiration.

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**STEM**

**Types of stems**

1. **Upright stems/erect stems**



Upright stem

**These types of stems are found in woody plants like**

* Mahogany
* Eucalyptus
* Ficus tree
* Mango tree
* Muvule

1. **Climbing stems**

They are also called weak/clasping stems.

**Examples of plants with climbing stems**

* Passion fruits
* Vanilla
* Some bean plants
* Loofah plants
* Water melon
* Pumpkin
* Some yams
* Cucumber

**How climbing plants climb others.**

* By twinning /clasping
* Using hooks or thorns
* Using tendrils

|  |  |  |
| --- | --- | --- |
| D:\images\clasping.jpg | D:\images\using hookes.jfif | D:\images\using tendrils.jpg |
| Twinning | Using hooks | Using tendrils |

1. **Underground stems**

These are stems found below the ground e.g.

* Spear grass
* Couch grass
* Ginger

**Uses of stems**

1. **To plants**

* stems store food for the plants
* Transport and food
* Support branches and leaves
* Stems make plants to stand

1. **To animals**

* Stems are eaten as food
* Provide animals medicine
* Provides building materials
* We get timber/poles from woody plants

**Activity**

1. Name two plants with erect stems.

i.**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are underground stems?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Give two examples of plants with underground stems.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two reasons why plants with weak stems climb others.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give three methods plants use for climbing others.

I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ii \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two importance of stems to:
2. Animals

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Plants

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

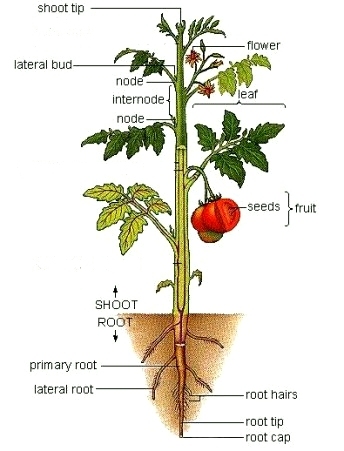
ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Roots**

It is part of a flowering plant found under the ground.

**Types of roots**

**(a Tap roots**



**Root systems**

There are two types of root systems namely:-

a) Tap root system

b) Fibrous root system

**N.B. Root cap**

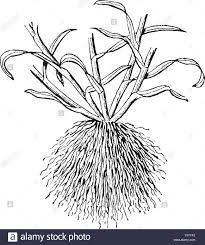
- protects the growing tip of the root.

**Examples of plants with tap root system (legumes)**

* Beans
* Peas
* Soya
* Ground nuts
* Simsim

1. **Fibrous roots**

They are common in cereals/grains e.g. Sorghum



Fibrous roots

**Examples of plants with fibrous roots**

* Maize
* Sorghum
* Millet
* Wheat
* Rice
* Barley
* Oats
* Some grasses

1. Prop roots

They develop from the stem of the plant



Prop roots

**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

1. **Adventitious roots**
2. These also develop from the stem of the plant. They are common in plants like onions, some yams



Adventitious roots

**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 buttress roots
* Some people sell roots and get money

**Activity**

1. What is a root system? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Name the two types of root system.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give two examples of plants with tap root system.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which type of root system do cereals have?

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1. Give the function of a root cap in the tap root system.

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1. Give the main function of prop roots.

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1. State two examples of plants with prop roots.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write two uses of roots to people.

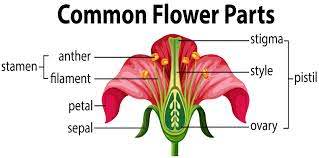
i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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

**Use of flowers to plants**

* They help a plant to reproduce.

**Activity**

1. What is a flower? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which part do plants use for reproduction?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name the following parts of a flower.
2. Pistil

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Stamen

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State four functions of a flower to people.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iv.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How are flowers useful to plants?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SEEDS**

**A seed is a developed ovule**

**Groups of seeds**

* Monocotyledons 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.

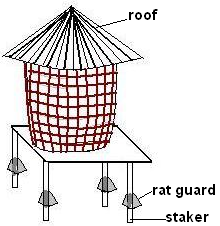
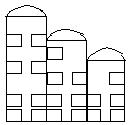
**Spraying**: Application of chemicals on plants to control pests and diseases.

**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

|  |  |  |  |
| --- | --- | --- | --- |
| D:\images\sorghum.jfif | D:\images\rice.jfif | D:\images\maize.jfif | D:\images\millet.jfif |
| Sorghum | Rice | Maize | Millet |

**Activity**

1. What is a seed? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two groups of seeds.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are monocotyledonous seeds?

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1. State three uses of seeds to people.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give three dangers of plants.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State two methods of planting.

I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define the following;
2. Row planting

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1. Broadcasting

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define the following terms.
2. Weeding

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1. Mulching

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1. Pruning

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Thinning

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Crop pests**

A pest is a living organism that destroys crops.

**Examples of storage pests.**

|  |  |  |
| --- | --- | --- |
| **D:\images\rat.jpg** | **D:\images\bean weevil.jfif** | **D:\images\harvest mite.jpg** |
| Rat | Bean weevil | Harvest mite |

**Marketing**

It is the selling of crops

**Places of marketing**

* Markets
* Shop
* Vending

**Pests and diseases**

A pest is an animal which destroys farmers’ crops.

**Examples**

* Monkey
* Rats
* Weevils
* Goat
* Birds
* Cows

|  |  |  |
| --- | --- | --- |
| **D:\images\animals.png** | **D:\images\birds pests.jpg** | **D:\images\goats pests.jpg** |
| cows | bird | goat |
| D:\images\weevils destroying beans.jfif | D:\images\rats pests.jfif | D:\images\monkey pest.jpg |
| weevils | rat | monkey |

**Pests control measures**

* Weeding
* Crop rotation
* Using scare crows
* Spraying using pesticides
* Row planting
* Early planting

**NOTE**: Crop rotation, early planting and proper spacing are natural methods of controlling pests

* Removing infected parts from the plant
* Uprooting the plants which are severely attacked.

**Crop diseases**

* Mosaic ,
* potato blight ,
* rust ,
* blast ,
* panama smut and rot

**Effects of diseases to plants.**

* They cause the crop to rot.
* Crops wither
* Crops dry out before time
* Fruits ripen prematurely
* Leaves fall off or become pale.
* Roots dry

**Disease control measures in crops.**

* Practice crop rotation
* Weeding
* Early planting
* Prune/remove the diseased parts
* Uproot the infected crops and burn them.
* Spray crops with medicine to control the diseases.

**Activity**

1. What are pests? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give two examples of storage pests.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What is marketing? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State three pest control measures.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Write down two natural methods of controlling pests.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Define crop rotation.

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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Identify two crop diseases.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write down four ways of controlling pests.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iv.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Garden tools**

Garden tools are equipment used for doing garden work.

|  |  |
| --- | --- |
| **Garden tools** | **Importance** |
| D:\Ben images\Ben images\images.pngRake | * For collecting or gathering rubbish |
| Watering can  D:\Ben images\Ben images\51qvGY7nAuL._AC_SY355_.jpg | * For watering crops. |
| D:\Ben images\Ben images\3ba87df0819e8c61b1e9c6c6d8468260.jpgPick axe | * For digging hard soil and stony areas |
| D:\Ben images\Ben images\imagesWSY4SP5G.jpgTrowel | * For transplanting |
| D:\Ben images\Ben images\imagesCWLAT0Y4.jpgHoe | * For digging * For weeding * For harvesting root crops. |
| D:\Ben images\Ben images\Machetes-and-Pangas.jpgPanga | * For cutting down small trees. * For harvesting ready crops |
| D:\Ben images\Ben images\imagesRJYYSWF6.jpgSpade | * For carrying soil |
| D:\Ben images\Ben images\untitled.pngSlasher | * For slashing |
| D:\Ben images\Ben images\Martindale-16-Inch-Grass-Sickle-Front.jpgsickle | * For cutting grass * For harvesting cereals. |
| D:\Ben images\Ben images\51zfoJsKrSL._AC_SL1100_.jpg  Pruner | * For pruning |
| D:\Ben images\Ben images\468b3fa068f036917edf8e93cef7618b_d5d04230-bd07-4f4e-9a7e-ddfc65bf7b9c_2000x.pngGarden fork | * For turning manure * For light weeding |
| Wheel barrow  D:\Ben images\Ben images\wheelbarrow.png | * For carrying soil * For carrying and transporting tools and harvested crops. |
| D:\Ben images\Ben images\images7JH74ADA.jpgAn axe | * For chopping and splitting wood. * For cutting down big trees. |
| Knapsack sprayer  D:\Ben images\Ben images\hand-sprayer-500x500.jpg | * For spraying crops. |
| Tape measure  D:\Ben images\Ben images\hand-tool-tape-measures-measurement-portable-network-graphics-adhesive-tape-png-favpng-yJXcZWGcF59Hm5g1enpYqvwDE.jpg | * For measuring spaces during raw planting. |

**Care for garden tools.**

* Cleaning garden tools after use.
* Sharpening cutting tools when blunt.
* Keeping them in clean dry places.
* Painting metallic garden tools to avoid rusting.

**Activity**

1. What are garden tools?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. State the garden tool used for digging in rocky places.

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1. Which garden tool is used for transplanting?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How is a watering can useful as a garden tool to a farmer?

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. State the garden tool used for harvesting cereals.

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1. How are the following garden tools useful to farmers?
2. Rake

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Pruner

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Panga

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Hoe

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State three ways of caring for garden tools.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Seed germination**

Is the process by which a seed develops into a young plant.

A seedling is a young plant that develops from a seed.

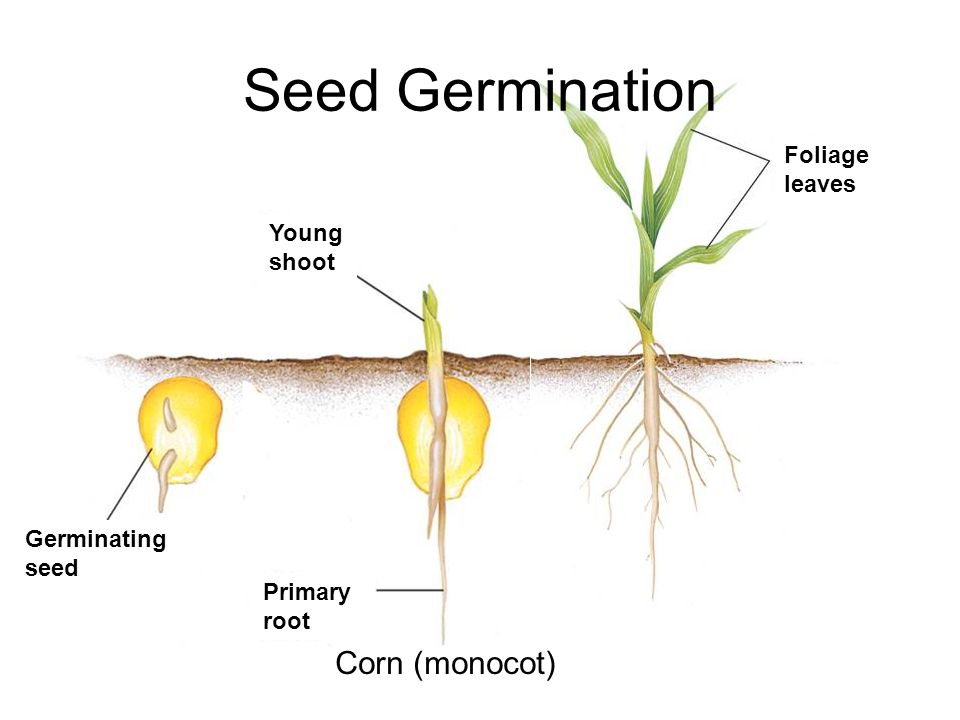
**Conditions necessary for germination.**

* Water , air , warmth

**Types of germination**

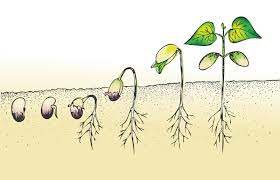
* Epigeal
* Hypogeal
* **Hypogeal germination** is where the cotyledons remains under the ground level in the soil.
* It is common in cereals or monocots e.g. maize, millet, sorghum, rice, wheat, barley

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

**Activity**

1. What is seed germination?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Define the following terms as used in seed germination.
2. A seedling

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1. Hypogeal germination

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1. Epigeal germination

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1. Give three conditions needed for seed germination of a healthy seed.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

iii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give two plants that undergo epigeal germination.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name two plants whose seeds undergo hypogeal germination.

i.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ii.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. In which type of germination do cotyledon(s);
2. Come above the ground level

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1. Remains below the ground level

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