# KITENDE MODERN NURSERY &PRIMARY SCHOOL

# PRIMARY FIVE SCIENCE LESSON NOTES

# TERM ONE -2023

## TOPIC ONE

## KEEPING POULTRY AND BEES

### POULTRY KEEPING

**Qn: What is poultry?**

Poultry are domestic birds or fowls.

**Qn: What is poultry keeping?**

Poultry keeping is the rearing of domestic birds or fowls.

**Qn: Explain the following terms as used in poultry.**

**(a) A chick**

A chick is a young chicken.

**(b) A hen**

A hen is a female chicken.

**(c) A cock**

A cock is a male chicken.

**(d) A pullet**

A pullet is a young female chicken.

**(e) A cockerel**

A cockerel is a young male chicken.

**(f) A capon**

A capon is a castrated cock.

**(e) Culling**

Culling is the removal of sick and unproductive birds from the flock.

**(h) Candling**

Is the viewing of an egg in bright light to know if it is fertilized or not.

**(i) Incubation**

Incubation is the providing of necessary conditions to a fertilized egg to enable it hatch into a chick.

**(j) Incubator**

Is a machine that provides necessary conditions to eggs until they hatch into chick.

**(k) Brooding**

This is the providing of special care to chicks below 8 weeks.

**(l) A brooder**

Is a special structure where chicks below 8 weeks are kept.

**(m) A broody hen**

Is a hen incubating its eggs.

**(n) Preening**

Is the act of birds cleaning and arranging their feathers.

**(o) Moulting**

Is the shedding of old feathers from the body of a bird.

**(p) Debeaking**

Is the shortening of the upper beak of a bird.

**Qn: Give any two reasons why people keep poultry**.

- To get eggs
- To get meat

- To sell and get money
- To get manure

**Qn: Identify any two products got from poultry.**

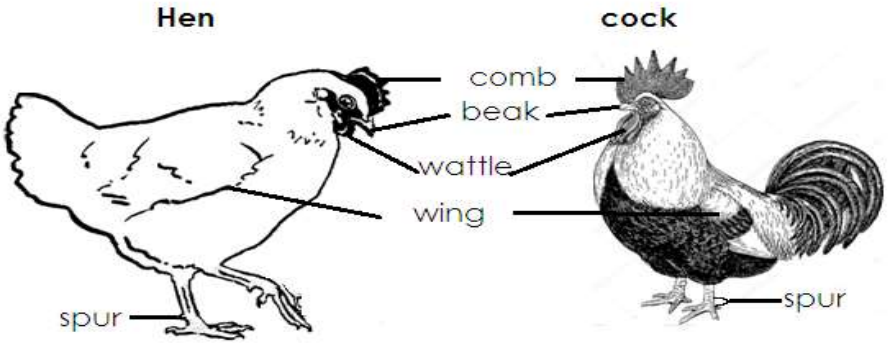
- Eggs
- Meat
- Feathers
- Manure

**Qn: Mention any three types of poultry / Examples of poultry.**

- Hen - Guinea fowl - Geese - cock

- pigeon

## features of domestic fowls.External




**Functions of some parts**

(a) **Beak**

- For protection
- For picking food
- For pecking food
- For building nests

**(b) Comb and wattle**

For identification

**(c) Spur**

For protection

**(d) Feathers**

- To keep the body of a bird warm.
- For flying
- For identification
- For incubating eggs
- For brooding chicks
- They give shape to the bird.

**(e) Toes and claws**

- For scratching the ground when looking for food.
- For protection.

**Ducks**

- Ducks have broad and spoon shaped beaks that help them catch small animals in water.
- Ducks have webs between their toes which help them to swim in water.
- Ducks are swimming birds.

**Meat breeds of ducks**

- Pekin - Aylesbury - Khaki Campbell duck - Muscovy
- Roven

Qn: **Give any two structural differences between a hen and a cock**.

- A hen has a small comb while a cock has a big comb.
- A hen has a small wattle while a cock has a big wattle.
- A hen has dull short neck feathers while a cock has bright and long neck and tail feathers.
- A hen has small earlobes while a cock has big earlobes.
- A hen has a short spur while a cock has a long spur.

Qn: **State any two reasons for the differences between a hen and a cock**.

- A cock protests the chicks and a hen.
- A cock fights and frightens other cock to control the territory.
- A cock attracts the hens.

**FEATHERS**

Qn: Mention any **four** uses of feathers to a bird.

**Types of feathers**.

(i) Quill or flight feathers.

(ii) Body or covert feathers

(iii) Down feathers

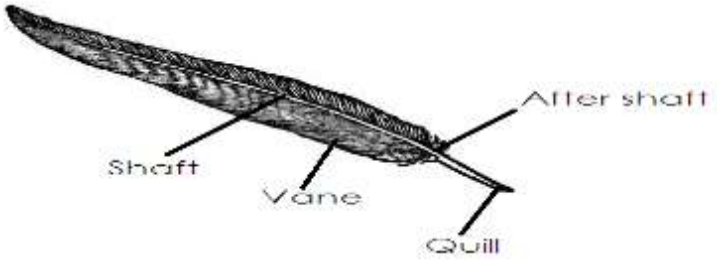
(iv) Filoplume feathers

**QUILL FEATHERS**

Qn: Mention two body parts of a bird where quill feathers are found.

- Wings
- Tail

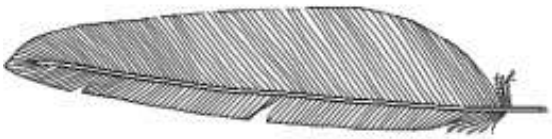
**Illustration showing the quill feather.**




**BODY / COVERT FEATHERS**

- They keep the bird warm.
- They give the bird

**Illustration showing the body feather**.



**DOWN FEATHERS**

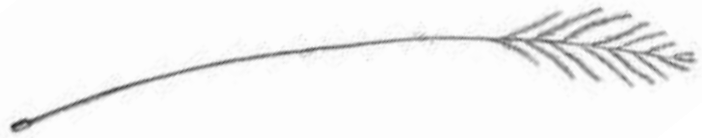
- These are feathers that the chick is hatched with.
- They keep the chick warm.



**FILOPLUME FEATHERS**

- They are the smallest feathers found nearest to the skin of a bird.
- They are seen after removing the body and down feathers.

**Illustration showing a filoplume feather**



**BREEDS OF CHICKEN**

Qn: What is a breed of chicken?

A breed of chicken is a class of chicken having specific characteristics.

**Types of breeds of chicken**

- Local breeds
- Exotic breeds
- Cross breeds
- Hybrids

**Local breeds of chicken**

These are chicken that exist in a country without being brought from outside countries.

**Qn: State any three characteristics of local breeds of chicken**.

(i) They are more resistant to diseases.

(ii) They are more resistant to harsh weather changes.

(iii) They grow slowly

(iv) They have different colours

(v) They are different in size.

(vi) They lay fewer eggs.

**Exotic breeds of chicken**

These are chicken that have been imported into E. African from outside countries.

**Qn: Write down any three characteristics of exotic breeds of chicken.**

(i) They are not resistant to diseases.

(ii) They are not resistant to harsh weather changes

(iii) They grow quickly

(iv) They have the same colour.

(v) They have the small size.

(vi) They provide high quantity of products.

**Qn: Give three examples of exotic breeds of chicken.**

- White leghorn
- Brown egger
- Rhode Island red
- Minorca
- Light Sussex

**Cross breeds**

- These are chicken got by mating the local breed of chicken with exotic breeds of chicken.

**Qn: What is cross breeding?**

Cross breeding is the mating of the local breed with the exotic.

**Qn: Identify one way of improving on the local breeds of chicken.**

(i) By cross breeding

(ii) By selective breeding

**Qn: State any two importance of crossbreeding.**

- It improves on the quality of birds.
- It improves on the productivity of birds.
- It encourages fast growth in birds.

**TYPES OF CHICKEN**

**Qn: What is a type of chicken?**

A type of chicken is a class of chicken kept for a specific purpose.

**These are three types chicken namely:-**

(i) Layers or light breeds

(ii) Broilers or table birds

(iii) Dual purpose chicken.

**LAYERS**

These are chicken that are mainly kept for egg production.

Qn: Write down any two examples of layers or light birds.

(i) White leghorn

(ii)Ancona

(iii) Minorca

(iv) Brown eggers

(v) Sykes

**BROILERS**

These are chicken that are mainly kept from meat production.

**Examples of broilers birds**.

(i) Black australorp

(ii) Plymouth rock

(iii) Newhampshire

(iv) Rhode Island Red

(v) Light Sussex

**Dual purpose Birds**

These are chicken kept for both meat and egg production.

**Examples of dual purpose chicken**

- Ross birds
- Shavers

## SYSTEM OF KEEPING POULTRY

There are four systems of keeping poultry namely.

(a) Free range system

(b) Deep litter system

(c) Battery / cage system

(d) Fold / pen system

### 1. FREE RANGE SYSTEM

This is a system where birds are left to move about and look for their food.

### Advantages of free range system

(i) It is cheap

(ii) Birds get enough exercise

(iii) Birds eat food of their choice

(iv) Birds feed on a balanced diet.

(v) The farmer gets time to do other activities.

(vi) Poultry vices are reduced.

### Disadvantages of free-range system

(i) Birds can easily get lost.

(ii) Birds can easily get stolen

(iii) Birds can easily be eaten by wild animals.

(iv) Birds can destroy people's property.

(v) It is not easy to collect eggs.

(vi) It is not easy to control diseases.

### 2. DEEP LITTER SYSTEM

This is a system where birds are kept in a house all the time.

### Advantages of deep litter system

(i) Birds cannot easily get lost.

(ii) Birds cannot easily be stolen.

(iii) Birds cannot easily be eaten by wild animals.

(iv) Birds are protected from bad weather changes.

(v) It to identify a sick bird.

**Disadvantages of deep litter system**

(i) Birds do not get enough exercise.

(ii) It is expensive

(iii) Birds do not eat food of their choice.

(iv) It is not easily to control poultry vices.

**Qn: What is litter?**
Litter is material put on the floor of a poultry house.

**Qn: State any two importance of litter in a poultry house.**

(i) Litter provides warmth to poultry.

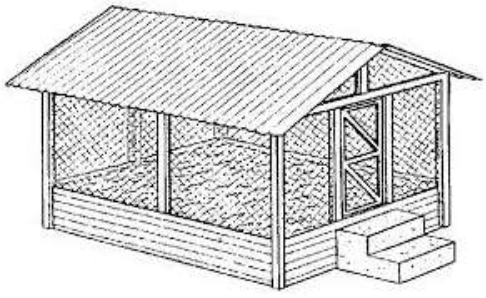
(ii) Litter prevents eggs from breaking.

(iii) Litter absorbs moisture from poultry droppings.

**Qn: Why should litter be changed once it is old?**

- To prevent diseases outbreak.

**Diagram showing deep litter system.**



Qn: State the importance of the following in a poultry house.

**(a) Perches**

- They control boredom in birds.

- They act as resting places for birds.

**(b) A feeding trough**

- It is where food for poultry is put.

**(c) A conical drinking waterer**

It is where chicken drink birds are kept in separate cages.

**3. Battery / cage system.**

This is a system where birds are kept in separate cages.

**Qn: Write down at least two advantages of battery cage system.**

- It is easy to collect eggs.
- Birds cannot easily be stolen.
- Birds cannot easily get lost.
- It is easy to control poultry vices.
- It is easy to identify sick birds.

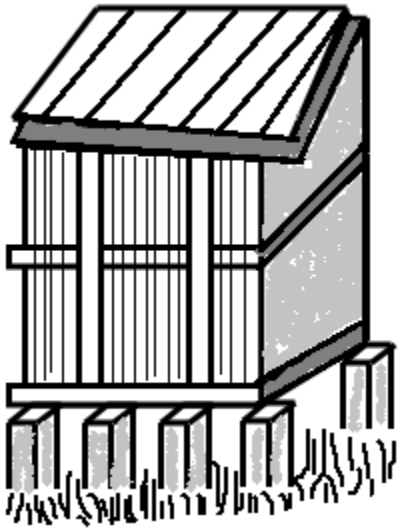
**<u>Disadvantages of battery / cage system</u>**

(i) Birds do not get enough exercises.

(ii) Birds do not eat food of their choice.

(iii) It is expensive.

**<u>Diagram showing battery / cage system</u>**



**4. Fold or pen system**

This is a system where birds are kept in small houses called folds or pens.

**Advantages of fold / pen system.**

(i) Birds are protected from wild animals.

(ii) Birds cannot easily get lost.

(iii) Poultry feeds are not wasted.

(iv) It is cheap compared to battery / cage system.

(v) The farmer gets time to do other activities.

**Disadvantages of fold / pen system.**

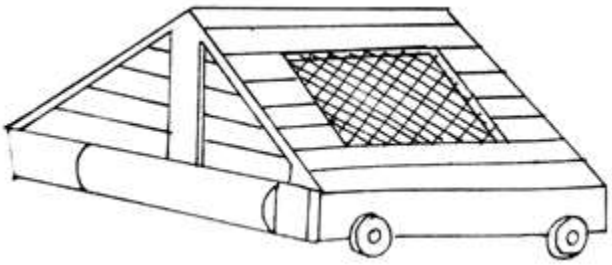
(i) Few birds are kept.

(ii) Birds do not get enough exercise.

(iii) Birds do not eat food of their choice.

(v) It is tiresome to move the pens.

**A diagram of a fold / pen system**



**FEEDING CHICKEN**

**Qn: Give two importance of feeding chicken.**

(i) To enable them grow.

(ii) To enable birds lay many eggs.

(iii) To enable birds form muscles.

**Qn: Mention the type of feeds given to the following groups of birds.**

(a) Chicks - Chick mash

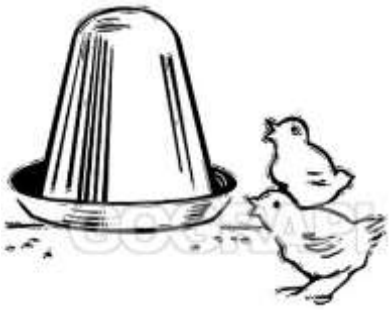
(b) Layers - Layers mash

(c) Broilers - Broilers mash

(d) Layers between 4 – 16 weeks - Growers mash

(e) Broilers between 4 – 8 weeks - Growers mash

**Qn: Name the items drawn below.**

| | |
|---|---|
|  |  |
| A feeding trough | Conical drinking waterer |

**Qn state the function of a feeding trough in a poultry house.**
It is where food for poultry is put.

**Qn: State the importance of a swivel bar on a feeding trough.**
A swivel bar rolls to prevent birds from stepping in feeds.

**Give the function of a water trough in a poultry house.**

It is where birds drink water from.

**Qn: Mention the minerals salts that make the bird's egg shells and bone strong.**

- Calcium
- Phosphorous

**Qn: State the importance of calcium in poultry feeds.**

Calcium enable birds lay hard shelled eggs.

**Qn: Why do poultry farmers hang greens in a poultry house?**

To enable birds to get exercises.

**Qn: State the importance of greens to poultry.**

Greens are sources of vitamins and minerals salts.

**Practices done in poultry management**.

(i) Regular cleaning of the house.

(ii) Culling

(iii) Debeaking

(iv) Vaccination

(v) Regular feeding

(vi) Egg collection

**POULTRY PARASITES**

Qn: What are parasites?

Parasites are living organisms that depend on other organisms for food.

**Types of parasites**.

(i) Ecto parasites/external parasites

(ii) Endo parasites/internal parasites

**Ecto parasites**

These are parasites that live outside on the body of a bird.

(i) Lice

(ii) Red mites

(iii) Depluming mites

(iv) Fleas

**(b) Endo parasites**

These are parasites that live inside the body of a bird.

**Examples of endo parasites**

(i) Tape worms

(ii) Hook worms

**Qn: State any two ways of controlling parasites in poultry.**

(i) Regular deworming

(ii) Regular deforming

(iii) Swab the body of a bird using paraffin.

(iv) Dust the body of a bird using chemicals.

(iv) Regular cleaning of the poultry house.

**INCUBATION**

**Qn: What is incubation?**

This is the providing of necessary conditions to a fertilized egg to enable it hatch into a chick.

**Good conditions for eggs to hatch.**

(i) Presence of warmth

(ii) Presence of moisture

(iii) Presence of oxygen

**Qn: Write down any three factors that can make a fertilized egg fail to hatch.**

(i) When the egg is too dirty.

(ii) When the egg has a soft shell.

(iii) When the egg has two yolks.

(iv) When the egg does not have air space.

(vi) Over heating during incubation

**Qn: What is incubation period?**

Is the time taken for an egg to hatch into a chick.

**Qn: State the incubation period of each of the following birds.**

(a) Hen - 21 days

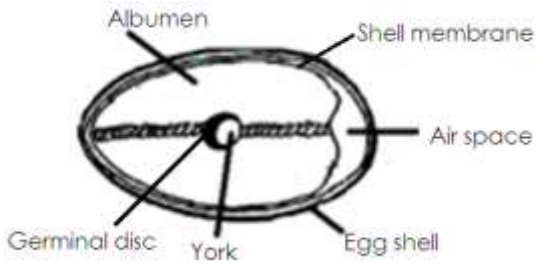
(b) Pigeon - 14 days

(c) Geese - 30 days

(d) Turkey - 28 days

(e) Duck - 30 – 31 days

**Structure showing parts of an egg**.




**Function of each part**.

**(a) Egg shell**.

Protects the inside parts of the egg.

**(b) Air space**

- Provides oxygen to the embryo.
- It takes out carbon dioxide which is given off by the embryo.

**(c) Chalaza/twisted albumen**

- It holds the York and embryo in position.
- It carries food and water to the embryo.
- It carries oxygen from the air space to the embryo.

**(d) Albumen / egg white**

- It is a source of proteins to the embryo.

**(e) Egg yolk**

- It provides food for the embryo.

**(f) Germinal disc**

- Develops into a chick
- **Qn: Why is the egg shell porous?**

  To allow gaseous exchange

**<u>TYPES OF INCUBATION</u>**

(i) Natural incubation

(ii) Artificial incubation

**<u>Natural incubation</u>**

- Is the type of incubation where a hen provides necessary conditions to eggs in order to hatch into chicks.

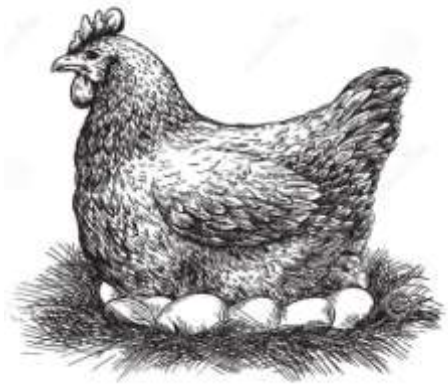
**Qn. State the advantages of natural incubation**

- It is cheap.
- It does not require skilled knowledge.
- Eggs are turned by the broody hen.

**<u>Disadvantages of natural incubation</u>**

- Few eggs are hatched.
- Eggs may not hatch in case the mother hen dies.

**<u>Diagram showing natural incubation</u>**



**<u>Artificial incubation</u>**

Is the type of incubation where an incubator provides necessary conditions to eggs until they hatch into chicks.

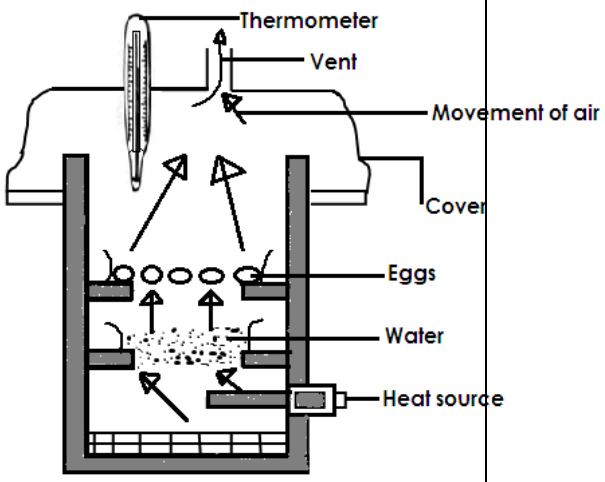
**Advantages of artificial incubation**

- Many eggs are hatched at once.
- An incubator can be used at any time.

**Disadvantages of artificial incubation**

- It is expensive.
- It requires skilled labour.
- It needs much care and attention.

**Diagram showing an incubator**

| | |
|---|---|
|  |  |
| Natural incubation | An incubator |

## NATURAL BROODING

**Qn: What is natural brooding?**
Is the type of brooding where the mother hen provides care to its chicks.

### Advantages of natural brooding
(i) It is cheap

(ii) It does not need a lot of care and attention.

(iii) A farmer gets time to do other activities.

(iv) Toe pecking is reduced.

### Disadvantages of natural brooding
(i) Chicks may be eaten by wild animals.

(ii) Chicks can easily be stolen.

(iii) Chicks can easily get lost.

(iv) It gives little profit.

**Qn: Mention any two things a broody hen provides to her chicks.**
- Warmth
- Food
- Security

## ARTIFICIAL BROODING
**QnWhat is artificial brooding?**

Is the type of brooding where chicks are kept in a special structure called a brooder.

### Advantages of artificial brooding
- Many chicks are kept in one place.
- Chicks cannot easily be eaten by wild animals.
- Chicks cannot easily be stolen.
- Chicks cannot easily get lost.
- Chicks are protected from bad weather.
- It is easy to feed chicks in one place

### Disadvantages of artificial brooding
- It is expensive

- Chicks can die in case heat is not enough.
- It needs a lot of care and attention
- Toe pecking among chicks is difficult to control.

**Qn: Define a brooder.**
A brooder is a special structure where chicks are reared.

**Qn: State any two things provided to chicks in a brooder.**
- Warmth
- Food
- Water
- Security
- **Types of brooders**

(a) Charcoal brooders

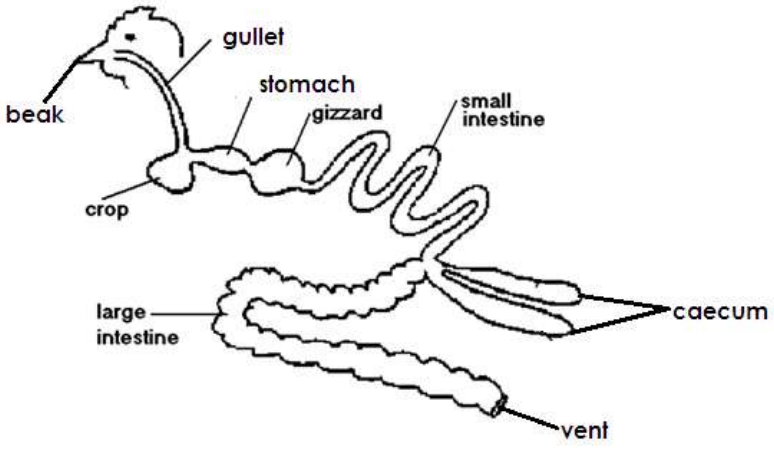
(b) Infrared lamp brooders

(c) Kerosene brooders

**Qn: State any two sources of heat in a brooder.**
- Charcoal stove
- Kerosene brooders.

| | |
|---|---|
|  |  |
| Natural brooding | A simple brooder |

**The digestive system of a domestic bird**.




**Uses of each part**.

**(a) The beak**

For picking food.

**(b) Gullet**

It is a passage of food from mouth to the crop.

**(c) Crop**

It stores, softens and moistens food.

**(d) Stomach**

It is where food is mixed with digestive enzymes.

**(e) Gizzard**

It contains grit which crush food into small particles.

**(f) Small intestines**

It is where absorption of digested food takes place.

**(g) Large intestines**

It is where absorption of water takes place.

**(h) Caeca**

It stores waste materials before they are passed out.

**(g) Large intestine**

It is where absorption of water takes place.

**(h) Caaca**

It stores waste materials before they are passed.

**(i) Vent**

It is a passage of waste materials.

**Qn: How is the nostril useful to a bird?**

It is used for smelling.

**Qn: State what happens to the food while in the crop of a bird.**

- It is softened.
- It is moistened

**Qn: Give the function of grit found in the gizzard of a bird.**

For crushing food.

## POULTRY DISEASES

**Qn: Give any two causes of diseases in poultry.**

- Poor feeding
- Poor hygiene in a poultry house.
- Overcrowding of birds
- Poor housing
- Feeding birds with contaminated food and water.

**Examples of poultry diseases and their causes**.

| **Disease** | **Cause** |
|---|---|
| Coccidiosis | Protozoa |
| Black head | Protozoa |
| Fowl typhoid | bacteria |
| Pneumonia | bacteria / virus |
| Fowl pox | Virus |
| New castle disease | Virus |
| Gumboro | Virus |
| Avian leucosis | virus |

**Poultry diseases, their prevention and treatment**

| **Disease** | **Signs and symptoms** | **Prevention and treatment** |
|---|---|---|

| | | |
|---|---|---|
| **Pneumonia** | • Coughing<br>• Mucus comes out of the nose<br>• Dullness<br>• Difficulty breathing | • Keep the house clean.<br>• Make the house well ventilated.<br>• Cull the sick birds |
| **Coccidiosis** | • Dropping wings<br>• Rough feathers<br>• Yellowish diarrhoae<br>• Droppings with blood<br>• Dropping wings. | • Keep the house clean.<br>• Cull the sick birds |
| **Fowl typhoid** | • Yellowish – green diarrhea<br>• Rough feathers<br>• Sleepy eyes<br>• Dullness | • Burn or bury dead birds.<br>• Cull the sick birds<br>• Vaccinate the birds. |
| **New castle disease** | • Mucus from mouth and nose.<br>• Coughing<br>• Lameness<br>• Sudden death of birds in large numbers. | • Keep the house clean.<br>• Vaccinate<br>• Kill and bury infected birds. |
| **Fowl pox** | • Discharge of liquids from eyes and nostrils.<br>• Tiny wounds on the comb, wattle, wings and mouth.<br>• Eyes get sleepy and stuck. | • Regular vaccination.<br>• Keep the house clean.<br>• Cull all sick birds. |
| **Gumboro disease** | • Dropping wings.<br>• Diarrhoea with blood stains.<br>• Rough feathers<br>• Birds peck their feet. | • Cull the sick birds.<br>• Vaccinate<br>• Burn or bury dead birds. |

**Qn: Write down any three ways of preventing and controlling disease in poultry.**

(i) Keep the poultry house clean.
(ii) Regular vaccination
(iii) Put coccidiostats in poultry feeds.
(iv) Culling all sick birds
(v) Burn or burry dead birds.
(vi) Have a foot bath at the door of a poultry house.

**Qn: List down any four effects of diseases and parasites on a poultry farm.**

(i) They lead to stunted growth.

(ii) They reduce production

(iii) They reduce profits

(iv) They reduce income.

## POULTRY VICES

**Qn: What are poultry vices?**

(i) Poultry vices are bad habits in poultry.

**Qn: Write down any two causes of poultry vices.**

(i) Hunger

(ii) Poor feeding

(iii) Overcrowding birds

(iv) Boredom

(v) Too much light in a poultry house.

(vi) Lack of calcium in poultry feeds.

(vii) Failure to collect eggs in time.

### Examples of poultry vices

- Cannibalism
- Egg eating
- Feather pecking
- Toe pecking

## CANNIBALISM

It is the act of a bird eating another bird.

### Causes of cannibalism

- Prolapse
- Crowding in the poultry house.
- Lack of proteins in poultry feeds.
- Starving birds

### Prevention of cannibalism

- Hanging enough green vegetables in the poultry house.

- Regular feeding of birds.
- Providing enough space for birds.
- Avoiding overstocking

**EGG EATING**

- It is the act of birds eating their own eggs.

**Causes of egg eating.**

- Hunger
- Boredom
- Too much light in the nesting area.
- Lack of enough calcium in their bodies.
- Failure by the farmer to collect eggs in time.
- Presence of broken eggs.

**Control of egg eating**

- De-beaking the birds
- Hanging green vegetables.
- Nesting places should be kept dark.
- Provide feeds which contain calcium.
- Collect eggs regularly.
- Turn and change the litter regularly.

| | |
|---|---|
|  |  |
| Egg eating vice | De-beaked bird |

**Qn. How does debeaking help to control egg eating?**

It makes the beak of a bird blunt.

**Qn. Mention any two devices used for debeaking.**

- Hot knife
- Debeaking tool
- Sharp pair of scissors

**FEATHER AND TOE PECKING**

**Feather pecking** is where birds pluck off feathers from other birds.

**Toe pecking** is where birds peck the toes of other birds.

**Control of feather and toe pecking.**

- Avoiding crowding birds.

**FARM RECORDS**

**Qn: What are farm records?**

Farm records are written information about various activities carried out on a farm.

**Qn: What is record keeping?**

This is the keeping of information about various activities carried out on a farm.

**Types of farm records**

(i) Health records

(ii) Flock records

(iii) Feed records

(iv) Production records

(v) Sales and expenses records.

**Importance of farm records**.

(i) Farm records enable the farmer to plan for the farm.

(ii) Farm records enable the farmer to know the history of the farm.

(iii) Farm records help a farmer to know his income and expenditure.

(iv) Farm records help farmer to know if he is making profits or losses.

## BEE KEEPING

### Terms used

**(a) Apiculture**
Is the rearing of honey bees.

**(b) An a piarist**
Is a bee farmer

**(c) An a piary**
Is a place where we find many bee hives.

**(d) A colony**
Is a large group of bees in a hive.

**(e) A swarm**
A swarm is large group of bees moving in the same direction.

**(f) Swarming**
This is the movement of bees from one place to another.

**(g) A nuptial / maiden / wedding flight**
This is the flight during which a drone bee notes with a queen bee.

**(h) Stocking the bee hive**
Is the encouraging of bees to occupy an empty bee hive.

**(i) Setting or setting a bee hive**
Is the selecting of a suitable place in which to put a bee hive.

### Social insects

These are insects which move, live and work together in large groups.

**Qn: Write down any examples of social insects**

- Honey bees
- Wasps
- Termites
- Red ants
- White ants
- Black ants

**Qn: What are solitary insects?**

These are insects that do not live, move and work together.

**Qn: Identify any two examples of solitary insects.**

- Houseflies
- Mosquitoes
- Moths
- Cockroaches
- Tsetse flies
- Bumble bees

**Types of honey bees / castes of honey bees.**

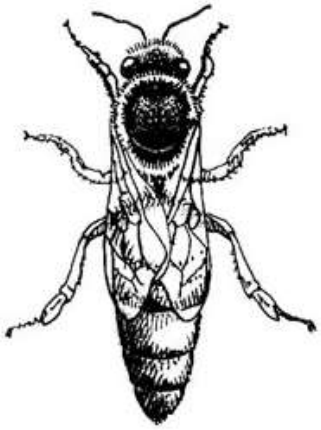
- Queen bee
- Drone bee
- Worker bees

**QUEEN BEE**

- It is the largest in a bee hive.
- It has a longer abdomen
- It is a female bee.
- It lays eggs.
- It has an ovipositor for laying eggs.
- It feeds of a special food called royal jelly.
- It develops from the fertilized eggs.

**Qn: State the role of a queen bee in the hive.**

- To lay eggs
- **Structure of a queen bee**.



**DRONE BEES**

- They are the male bees in a hive.
- Drones drove from unfertilized eggs.

- Drones do not have a sting.
- They make a buzzing sound while flying.

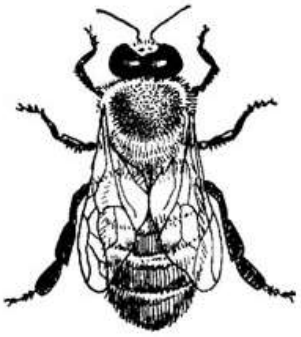
**Qn: State the role of s drone bee in a hive.**

To fertilize the eggs of a queen bee.

**Qn: Why does a drone bee die shortly after mating with the queen?**

- The sexual organ breaks off during mating damaging the abdomen.
- The abdomen is damaged.

**Structure of a drone bee**.



**WORKER BEES**

- They are female sterile bees in a hive.
- They are smallest in the hive.
- They have pollen basket on their hind legs
- They develop from the fertilized eggs.
- They do not have ovipositor.
- They have a sting.

**Duties of worker bee**.

- They build and repair the hive.
- They collect pollen and propolis.
- They protect the hive.
- They feed the queen.
- They feed the grub.
- They defend the hive.
- They produce wax.
- They make honey.

**Structure of a worker bee**.



**Qn: Why is a worker bee unable to lay eggs?**

It does not have an ovipositor.

**Qn: Why are worker bees called female sterile bees?**

They do not lay eggs.

**Qn. Why does a worker bee die after stinging a person?**

- The loss of sting results in damaging of the bees abdomen.
- The abdomen is damaged.

**Qn. How do worker bees control temperature in a hive?**

By rapid flapping of their wings.

**Qn. Name the food given to the queen bee by the worker bee.**

- Royal jelly

**Qn. Write down any two things collected by bees from the environment.**

- Nectar
- Propolis
- Pollen
- Water

**Qn. Why do worker bees collect water and nectar?**

- For making honey.

**Qn. State the use of propolis to bees?**

- For repairing the hive.
- For smoothing the inside of the bee hive.
- Water proofs the hive.

**Qn. Name the part of a worker bee that produces wax.**

- Wax glands

**<u>Importance of bees to people</u>**.

- People get honey
- People get bee wax from bees.
- Bees pollinate flowers.

**<u>Importance of bees to plants</u>**.

- Bees help in pollination of plants.
- Bees keeping encourages people to preserve trees.

**Products got from bees**.

- Honey
- Bee wax

**Qn. Give any two uses of honey.**

- Honey is used as medicine.
- Honey is eaten as food.
- Honey is used to sweeten bread.
- Honey is used to sweeten tea.
- Honey is a source of income when sold.

**Qn. What food value is obtained from eating honey?**

- Carbohydrates.

**Uses of bee wax**

(i) Bee wax is used to make candle wax.
(ii) Bee wax is used to make shoe polish.
(iii) Bee wax is used to make floor polish.
(iv) Bee wax is used to make cosmetics.
(v) Bee wax is used to make ice cream.
(vi) Bee wax is used to make crayons.

**Products obtained from bee wax**

- Candle wax
- Shoe polish
- Floor polish
- Cosmetics

**LIFE CYCLE OF A HONEY BEE**

**Qn. How do bees reproduce?**

- By laying eggs.

**Qn. Which type of life cycle do honey bees undergo?**

- Complete life cycle.

**Qn. Name the stages of development a honey bee undergo.**

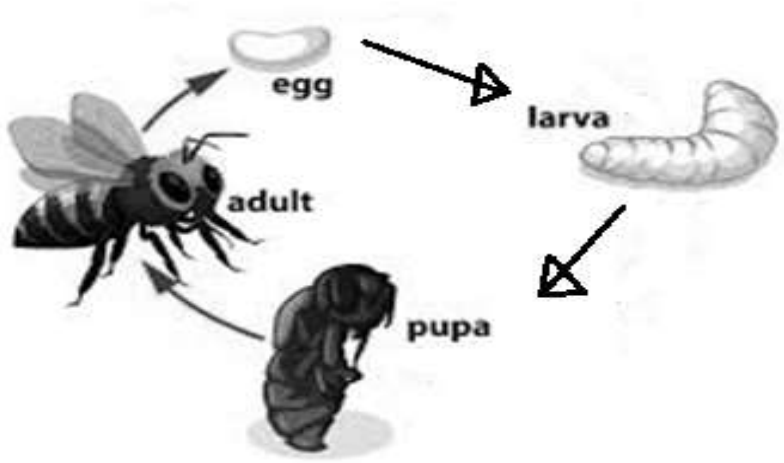
- Eggs
- Larva

- Pupa
- Adult

**Qn. What name is given to the larva stage of a honey bee?**

- Grub

**<u>Illustration showing the life cycle of a honey bee</u>.**




**Qn. Name the organ where the queen bee stores sperms.**

- Sperm sac / spermatheca

**<u>SWARMING</u>**

Swarming is the movement of bees from one place to another looking a new hive.

**<u>Causes of swarming in bees</u>**.

- Direct sunlight to the hive.
- Direct smoke into the hive.
- Too much noise around the bee hive.
- Bad smell in the bee hive.
- When the queen bee hive.
- When another queen is hatched.
- Leaking bee hive.
- Shortage of flowers and water in a place.
- Overcrowding of bees in a hive.
- Attacks from their enemies.
- Bad smell around the hive.

**<u>ENEMIES OF BEES</u>**

- Honey badgers

- Safari ants
- Wax moths
- Termites
- Hive beetles

**Ways of preventing and controlling bee enemies**

(i) Smearing oil on poles of bee hives.

(ii) Spraying using insecticides.

(iii) Spraying using insecticides.

(iv) Hang bee hives between two poles.

(v) Keep grass around bee hives short.

**Diseases of bees**

- Stone brood
- American foul brood
- European foul brood.

**TYPES OF BEESHIVES**

(a) Traditional bee hives.
(b) Modern bee hive.

**Traditional bee hives**

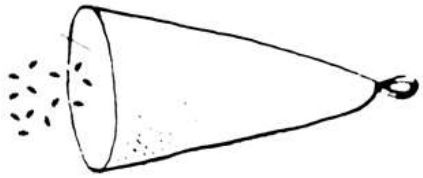
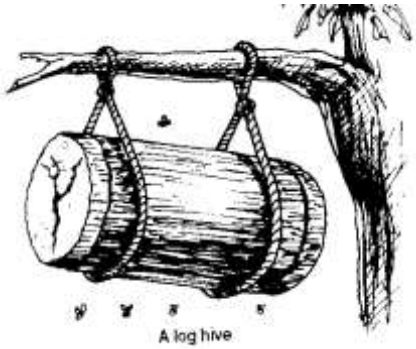
A **hive** is a home of bees.

**Examples of traditional bee hives**

(i) Kigezi bee hive

(ii) Dugout log hive.

(iii) Tin hive

| | |
|---|---|
|  |  |
| Kigezi hive | Dug out lo hive |

**Advantages of traditional bee hives**.

(i) They are cheap and easy to make.

(ii) The colony is not disturbed by the bee keeper.

**Disadvantages of a traditional hive**.

(i) The colony cannot be inspired.

(ii) The hive is damaged in the process of harvesting honey.

(iii) The honey harvested is not always clean.

(iv) The hive does not last for long.

(v) It is not easily to inspect the colony.

**MODERN BEE HIVES**

**Examples of modern bee hives**

(a) Box hive

(b) Top bar hive

**Parts of a modern bee hive**

**(a) Queen excluder**

It prevents the queen from going to the honey chamber.

**(b) The holes**

To allow worker bees pass through

**(c) Honey chamber**

It is where honey is stored.

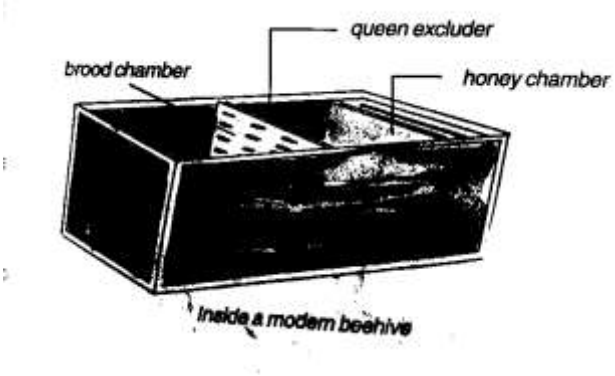
**(d) Brood chamber**

It is where the queen lays her eggs.

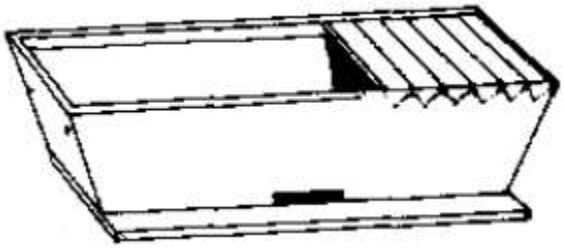
**Qn. Why is the excluder made of tiny holes?**

To allow only the worker bees which have to prepare honey.

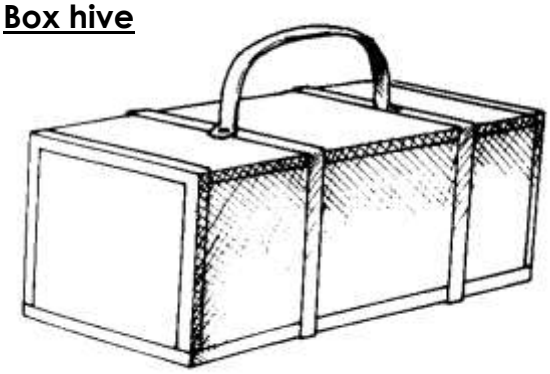
**<u>Inside a modern bee hive</u>**.




**<u>A diagram of a top bar hive</u>**



**<u>Box hive</u>**



**Advantages of a modern hive**

- Clean honey is harvested.
- It is easy to inspect the colony.
- A modern bee hive lasts for a long time.
- A hive is not destroyed during honey harvested.
- The colony develops undisturbed.

**Disadvantages of a modern hive**.

- It is expensive to make.
- The colony is disturbed by the bee keeper.

**Sitting the hive**

This is the selection of a suitable place in which to put bee hives.

**Factors to consider when selecting a suitable place in which to put bee hives**.

(i) The place should be free from noise.

(ii) The place should be away from the main road.

(iii) The place should be near flowering plants.

(iv) The place should be near a water source.

(v) The place should be far from people and animals.

(vi) The place should be sheltered from direct sunlight.

**STOCKING THE HIVE**

- Is encouraging bees to occupy an empty hive.

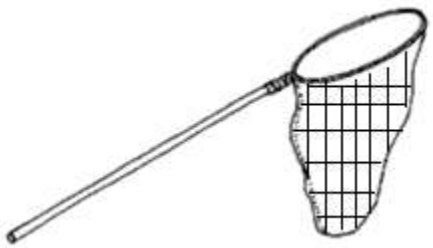
**Qn. Give any two ways of stocking a bee hive.**

(i) By smearing bee wax in a hive.

(ii) By using a swarm catcher or catcher box.

(iv) By using a swarm catching net.

**A swarm catching net**.



## HARVESTING HONEY

**Qn. Equipments needed by a honey harvester.**

- Bucket - bee veil - Gumboot - gloves - smoker
- knife

**Harvesting honey** is removing honey combs from the bee hive.

**Qn. State the function of each of the following equipment when harvesting honey.**

**(a) Bucket**

It is where harvested honey is put.

**(b) Knife**

For cutting honey combs.

**(c) Overall**

It protects the body of the honey harvester from bee stings.

**(d) Bee veil**

Protects the head of the honey harvester from bee stings.

**(e) Gloves**

Protects the hands of the honey harvester from bee stings.

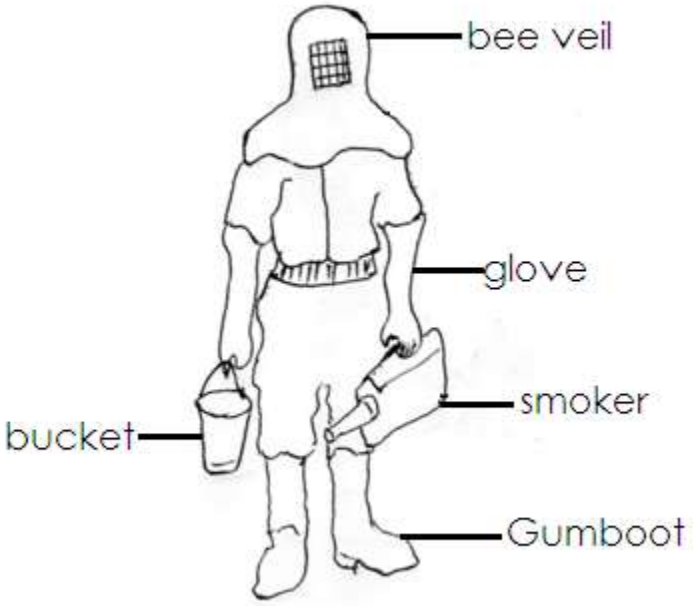
**(f) Gum boots**

Protect the feet of the honey harvester from bee stings.

**(g) Smoker**

Produces smoke that calms bees.

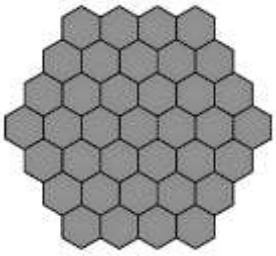
**Diagram showing a honey harvester**



**Methods of harvesting honey**

(a) Traditional method.
(b) Modern method

**Honey combs**



**Qn. Why is harvesting of honey best done in the evening?**

All bees are in the hive and in active.

**EXTRACTION OF HONEY**

Extracting honey means removing honey from the honey combs.

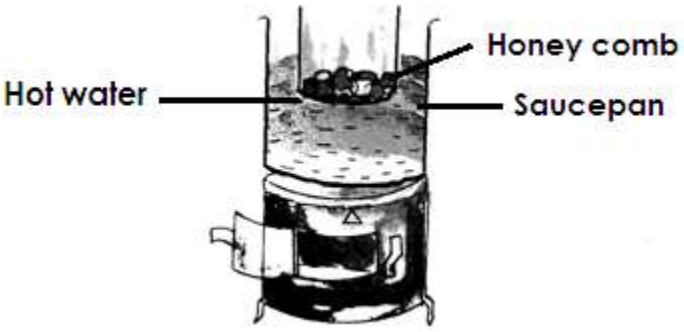
**Methods of extracting honey**

(a) Floating the wax method.
(b) Pressing the honey method.
(c) Centrifuging method

**Floating the wax method**

- Break the honey combs and put them in a large container.
- Put some water in a big sauce pan and place it on fire.
- Place the container with honey combs on a big saucepan with boiling water.
- The wax and honey will melt and wax will float on honey.

**An illustration showing floating wax**.



**Pressing the honey method**.

(i) The honey comb is placed on a piece of cloth.

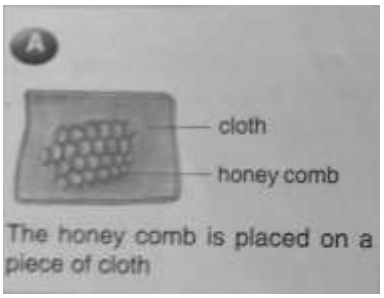
(ii) Honey combs are then wrapped in a clean piece of cloth.

(iii) Dip the wrapped honey combs in warm water.

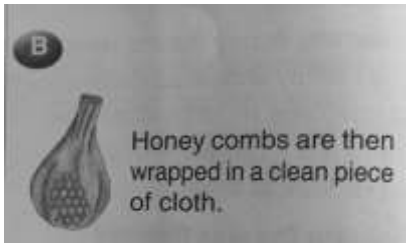
(iv) Squeeze the honey combs wrapped in a cloth to make honey come out.

**Illustration showing steps for pressing the honey method**.

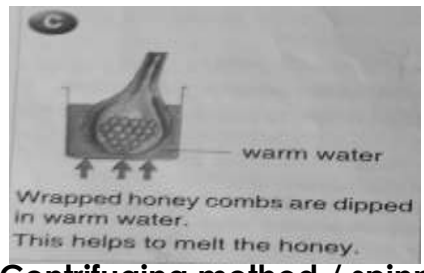
**Step 1**



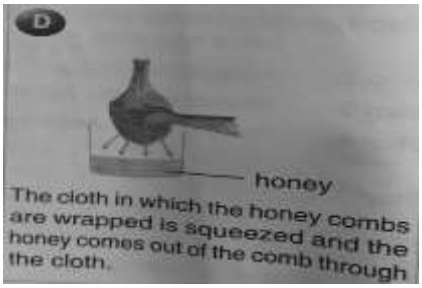

**Step II**




**Step III**




**Step IV**




**Centrifuging method / spinning method**

This is where a mechanic is used to extract honey from the honey combs.

**Qn. What name is given to a machine used to extract honey from the honey combs?**

- Centrifugal honey extractor.

**Steps**:

- Remove the wax that seals the comb and put the honey comb in the machine.
- The machine spins the honey combs round at a very high speed forcing honey to filter out.
- The honey then settles at the bottom of the machine.
- Boil the honey and store it a clean container.

**A centrifugal honey extractor / machine**.



**Qn. State the importance of warm water during floating the honey method.**

- To make wax and honey melt.

**Qn. Why can't honey go bad?**

- Honey has a lot of sugars and less water.

## MEASUREMENTS

**Qn. What is a measurement?**

Is the process of finding how long, short, small, big, heavy or light an object is .

**Examples of measurements quantities**.

- Mass - capacity - Time - volume
- Temperature
- Density - speed - weight - Distance

**Measuring mass**

**Qn. What is mass?**

Mass is the amount of matter in an object.

**Qn. State the basic unit for measuring mass.**

- Grams

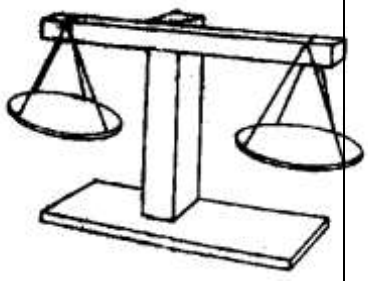
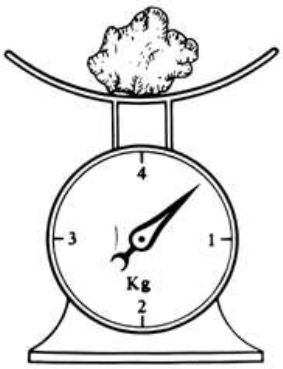
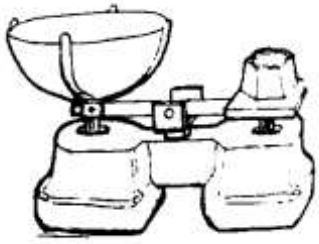
**Qn. State the S.1 unit for measuring mass.**

- Kilograms

**Qn. Identify any two instruments used to measure mass.**

- Beam balance
- Clock balance
- Lever balance

**<u>Illustration showing common weighing balance</u>**.

| | | |
|---|---|---|
|  |   |  |
| Beam balance | Clock balance | Lever balance |

**<u>Measuring weight</u>**

**Qn. What is weight?**

Weight is a measure of how much force of gravity is acting on an object.

**Qn. State the units in which weight is measured**.

- Newton

**Qn. Name the instrument used to measure weight.**

- Spring balances

**<u>Illustration of spring balances</u>**





**Qn. What is gravity?**

- Gravity is a force of attraction that pulls things down towards the centre of the earth.

**Qn. Give a reason why objects thrown up come down on earth.**

- Due to gravity force.

**Qn. Name the force that objects thrown up come down on earth.**

- Gravity force.

**Difference between weight and mass**.

(i) Mass is measured in grammes while weight is measured in Newtons.

(ii) Mass is measured using **a beam balance** while weight is measured using a spring balance.

(iii) Mass of an object does not change wherever it is measured while weight changes when measured in different places.

(iv) Mass is the amount of matter is a body while weight is a measure of how much force of gravity is acting on an object.

**Measuring capacity**

**Qn. What is capacity?**

- Capacity is the amount of liquid any container can hold.

**Qn. State the basic unit for measuring capacity.**

- Litre

**Qn. Mention any two examples of liquids people buy in litres.**

- Paraffin - cooking oil - water - milk

**Qn. Name the instrument used to measure capacity of liquids.**

- Hydrometer

**Measuring volume**

**Qn. What is volume?**

- Volume is the space occupied by an object.

**Qn. State the units in which volume is measured.**

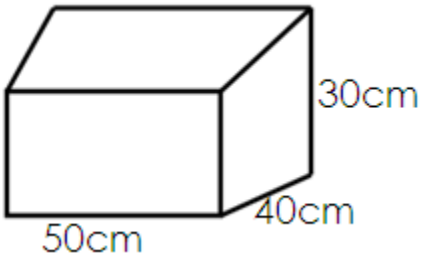
- Cubic units

**Finding capacity of a container**.

To find the capacity of a container, first find its volume.

**Example 1**

Find the capacity of the container below.




To find volume we multiply length with the width and weight.

Volume = Length x Width x Height

= 50cm x 40cm x 30cm

= $6000cm^3$

To find the capacity of the container, we change the volume to litres.

1litre = 1000cm3

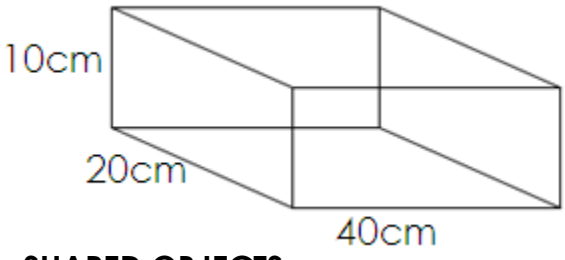
= 6000cm3

= 1000cm3

= 6litres.

**Activity:**

Find the capacity of the container below.




**SHAPED OBJECTS**

There are two groups of shaped objects namely;

(a) Regular objects

(b) Irregular objects

**Regular objects**

These are objects with well defined shapes.

**Examples of irregular objects**.

- A rectangular block
- A triangular prism
- A cylindrical tank
- A circular clock
- Cuboids
- Cube
- Chalk box

**Finding the volume of irregular objects**

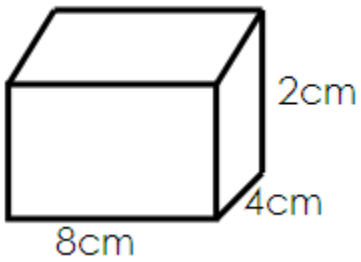
To find the volume of a regular object, we multiply area of the base by the height.

Volume = Length x Width x Height

V = L x W x H

**Example I**

Find the volume of the brick below.




Volume = Length x Width x Height

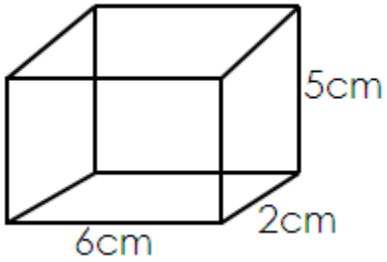
= 8cm x 4cm x 2cm

= $64cm^3$ or 64cc

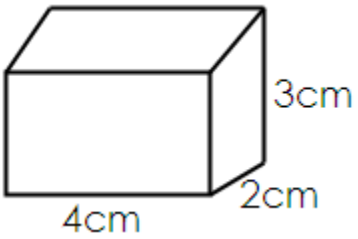
**Activity:**

Find the volume of the figures below.

(a)




(b)




**Irregular objects**

Irregular objects are objects that do not have a well defined shape.

**Qn. Mention any two examples of irregular objects.**

- Stones
- Broken glasses
- Sweet potatoes
- Irish potatoes
- Mango

**Measuring volume of irregular objects**.

- Displacement method.

**Qn. Name the method used to find the volume of irregular objects.**

- Displacement method.

**Qn. Write down any two equipments use to find the volume of irregular objects.**

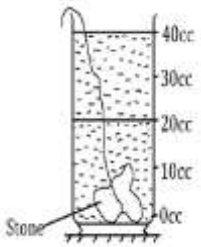
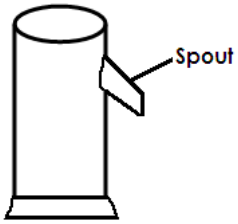
(i) Overflow can / Eureka can / Displacement can
(ii) Measuring cylinder
(iii) String

**Measuring cylinder** - Measuring the volume of an irregular object.

**String** - to lower the irregular object gently in water.

**(a)<u>Measurement the volume of an irregular object using a measuring cylinder</u>**

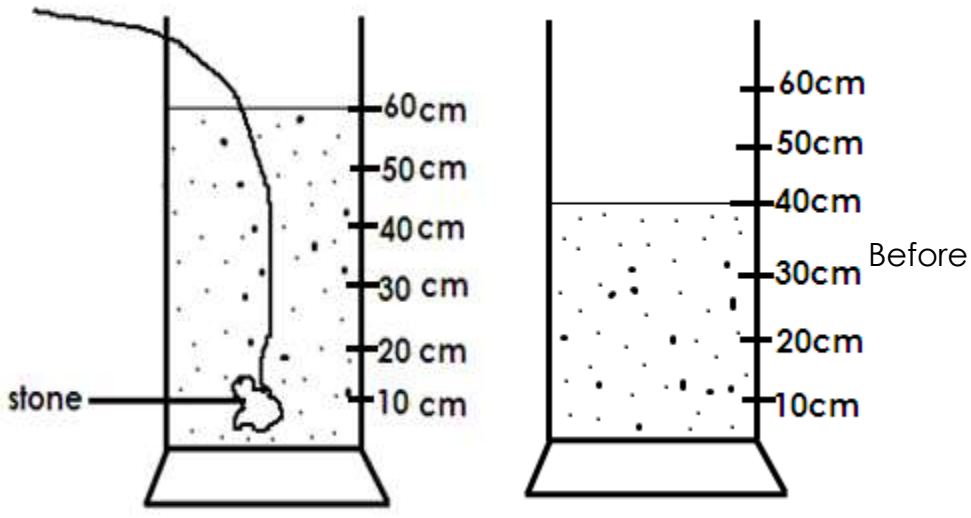
2. **<u>The experiment below was carried out by the P.5 class of ST Anthony primary</u>**

| | |
|---|---|
|  |  |
| measuring cylinder | Eureka can |

**<u>school.</u>**

**<u>Study it carefully and use to answer the question that follows</u>**

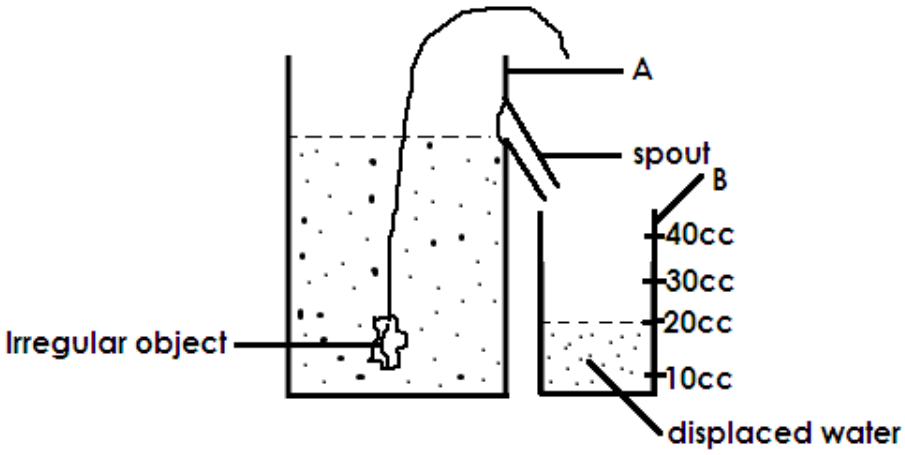
After




Before

| | | | | |
|---|---|---|---|---|
| Volume | = | 2nd level | - | 1st level |
| | = | 60cm | - | 40cm |
| | = | **20cm³** | **or** | **20cc** |

**(b) Measuring the volume of an irregular object using a Eureka can and a measuring cylinder.**




**(i) Calculate the volume of the irregular object.**

20cc

**(ii) Give a reason for your answer above.**

The volume of the water displaced is equal to the volume of the irregular object.

**(iii) Name the container marked A and B.**

A - Overflow can

B - Measuring cylinder

**(iv) Why is the above method used when find the volume of an object like a stone?**

A stone has no definite shape.

**(v) When is the above method used?**

When measuring the volume of an irregular object.

**(vi) State the function of the measuring cylinder in the above experiment.**

To measure the volume of displaced water.

## DENSITY

**Qn.What is density?**

- Density is mass per unit volume.

**Qn. State the units in which density is measured.**

- Grammes per cubic centimeters or milliliters (gm / cc or gm $/m^3$)

**Finding density**

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

$$D = \frac{M}{V}$$

**Example I**

An object has mass 24gm and volume 8cc. Find its density.

$$D = \frac{M}{V}$$

$$= \frac{24\text{gm}}{8\text{cc}}$$

$$= 3\text{gm /cc}$$

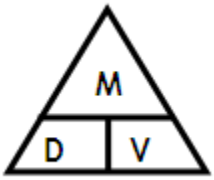
## Activity

1. Find the mass of an irregular object with density 4gm / cc and volume 10cc.
2. Find the volume of the irregular object if its mass is 50gm and the density is 5gm / cc.
3. Calculate the density of the irregular object if its mass is 40gm and the volume is 20cc.

4. A brick has mass of 72gm and density of 6gm/cc. Calculate its volume.

5. Find the mass of an object whose density is 3gm / cc and volume 8 cc.

**NOTE:** You can use this triangle to remember the formulae




M = Mass
D = Density
V = Volume

| |
|---|
| **M = D x V** |
| **D = $\frac{M}{V}$** |
| **V = $\frac{M}{D}$** |

**Behavior of objects with water.**

**Qn. What happens to a leaf when put in water?**

- It floats on water

**Qn. What happens to a coin of sh. 500 when put in water?**

- It sinks in water

**Floating and sinking objects**

**Qn. What are floating objects?**

- These are objects which remain on top of water when put in it.

**Qn. Why do some objects float on water?**

- Some objects have less density than water.

**Examples of floating objects**.

- Leaf
- A feather

- A paper
- Dry wood

**Qn. Give a reason why a leaf floats on water.**

- The density of a leaf is less than that of water.

**Qn. What are sinking objects?**

- These are objects which settle at the bottom of water when put in it

**Qn. Why do some objects sinkin water?**

- Some objects have more density than water.

**<u>Examples of sinking objects</u>**.

(i) A stone

(ii) A coin

(iii) Nail

(iv) Sand

**Qn. Give a reason why a stone sinks in water.**
The density of a stone is more than that of water.

**Qn. Name the force that makes objects weigh less when put in water.**
Up thrust force / buoyancy force

**Qn. What is buoyancy force?**
Is the force that makes objects weigh less when put in water.

**Qn. Mention the instrument used to measure the density of liquids.**
Hydrometer.

## <u>TOPIC 3</u>

## <u>IMMUNITY AND IMMUNISATION</u>

**Qn. What is immunity**?
Immunity is the ability of the body to fight against disease causing germs.

**<u>Importance of immunity</u>**.
Immunity enables the body to resist against diseases.

**Qn. What is immunization?**

Immunisation is the introduction of vaccines into the body.

**Qn. What are vaccines?**

Vaccines are special drugs that are introduced into the body to make it produce antibodies against certain disease.

**Types of vaccines**

(i) Toxoid vaccines e.g. tetanus toxoid.

(ii) Attenuated living vaccines e.g. BCG vaccine, measles, vaccine, Rubella vaccine, OPV vaccine

(iii) Killed vaccines e.g. IPV vaccine, rabies vaccine, cholera vaccine, influenza vaccine, hepatitis A vaccine

**Importance of vaccines**

Vaccines enable the body to produce antibodies against certain disease.

**Types of immunity**

(a) Natural immunity

(b) Acquired artificial immunity

**Qn. What is natural immunity?**

This is the type of immunity where the body builds its own antibodies.

**Qn. Give three ways how a baby can acquire natural immunity.**

(i) Through breast feeding

(ii) Recovering from an illness

(iii) From a pregnant woman to her unborn child.

**Qn. Mention two diseases whose immunity can be built after recovering from it.**

- Measles
- Mumps

**Qn. What is artificial immunity?**

Is the type of immunity got through immunization.

**Qn. State one way how the body can acquire artificial immunity.**

Through immunization

**Importance of immunization**.

(i) It boosts the immunity of the body.

(ii) Immunisation enables that body to produce antibodies.

(iii) Immunisation protects the body against childhood killer disease.

(iv) Immunisation reduces infant mortality rate.

**Qn. State any two methods how vaccines are introduced into the body.**

(i) Oral method
(ii) Injection method

**CHILDHOOD OR INFANT KILLER DISEASES**

**Qn. Identify any four examples of immunisable childhood diseases.**

- Polio
- Tuberculosis
- Diphtheria
- Hepatitis B
- Tetanus
- Whooping cough (pertussis)
- Measles
- Haemophilus influenzaetypeb

**POLIOMYELITIS (POLIO)**

**Qn. What causes polio?**

Viruses

**Qn. How is polio spread?**

- Through drinking water contaminated with polio viruses.
- By house flies

**Signs and symptoms of polio**

- Weakness of bones and muscles
- Lameness
- Paralysis of limbs
- Fever

**Diagram showing a child with polio**.



**Prevention of polio**

- Drinking boiled water
- Proper disposal of human faeces.
- Immunizing all children at birth using polio vaccine.

**Qn. How is the polio vaccine given to babies?**

Orally or drop in the mouth.

**TUBERCULOSIS**

**Qn. What causes tuberculosis?**

Bacteria

**Qn. How is tuberculosis spread?**

Through air

**Qn. What name is given to diseases which spread through air?**

Air borne disease.

**Signs and symptoms of tuberculosis**

(i) Chronic cough
(ii) Loss of weight
(iii) A lot of sweating at night
(iv) Loss of appetite
(v) Pain in the chest.

**Prevention of tuberculosis**

- Immunizing children with the BCG vaccine
- Always drink boiled milk
- Treatment is isolation

**DIPHTHERIA**

- It is caused by bacteria
- It spreads through air.

**Signs and symptoms of diphtheria**

- Swollen neck
- Sore throat
- Fever
- Difficulty in breathing
- Headache

**Prevention of diphtheria**

Immunizing children with the DPT vaccine.

**(PERTUSSIS (WHOOPING COUGH)**

- It is caused by bacteria
- It spreads through air

**Signs and symptom of pertussis**

- Runny nose
- Severe coughing
- Loss of weight
- Wheezing sound while coughing

**TETANUS**

It is caused by bacteria.

**Qn. How is tetanus spread?**

- Through dirty wounds and cuts.
- At birth cutting the umbilical cord with a contaminated object.

**Signs and symptoms of tetanus**

- Stiff muscle all over the body.
- Spasm when touched
- The baby stops suckling
- Fever and headache

**Prevention of tetanus**

- Immunising children with DPT vaccine.
- Pregnant given (TT) Tetanus Texoid vaccine.
- Wounds and cuts should always be dressed and kept clean.
- Use clean objects to cut the umbilical cord of a baby.

**Qn. Why are pregnant women and girls of child bearing age given Tetanus toxoid vaccine?**

- To protect them and their unborn babies against tetanus.

**Qn. Give a reason why DPT vaccine is called a triple vaccine?**

It is given against three immunisable childhood diseases.

**Qn. Why is polio vaccine given to babies at birth?**

Babies are not born with immunity against polio.

**Qn. Name the vaccine given to a baby once in life time.**

BCG vaccine

**HEPATITIS B**

It is caused by virus.

**Qn. Name the body organ which is affected by hepatitis B.**

Liver

**Qn. How is hepatitis B spread?**

- Through sharing sharp skin piercing objects.
- Through blood transfusion with contaminated blood.
- Through unprotected sexual intercourse with an infected person.

**Signs and symptoms of hepatitis B**

- Dark urine
- Greyish stool
- Yellowish eyes
- Vomiting
- Tiredness
- Fever

**Prevention of hepatitis B**

- Immunise all chicken with Hepatitis vaccine.
- Abstain from sex.
- Do not share sharp skin piercing objects.

**HAEMOPHILUS INFLUENZAE TYPE B**

- It is caused bacteria
- It is spread through air.

**Signs and symptoms of haemophilus influenza b**

- Immunisation of children with Hib vaccine.
- Treating the infected person in isolation.

**MEASLES**

- It is caused by virus
- It spreads through air.

**Signs and symptoms of measles**

- Skin rash all over the body.
- Sore mouth
- Red eyes
- Running nose.

**Prevention of measles**

- Immunize children using measles vaccine.
- Isolate infected children

**Qn. Why is measles vaccine given to babies at nine months?**

The babies are born with immunity against measles which weakens at 9 months.

**Qn. What is a pentavalent vaccine?**

Is a vaccine with five antigens.

**Qn. Mention any two examples of a pentavalent vaccine.**

- DPT vaccine
- Hep B vaccine
- Hib vaccine

**Qn. Why is DPT + Hep B + Hib vaccine called a pentavalent vaccine?**

It is administered against five diseases.

**A table showing the child's immunization schedule.**

| DISEASE | VACCINE | AGE | METHOD OF ADMINISTRATION |
|---|---|---|---|
| Tuberculosis | BCG vaccine | At birth | by injection on the right upper arm. |
| Polio | Polio vaccine | At birth<br>6 weeks<br>10 weeks<br>14 weeks | Orally<br>(drops in the mouth) |
| - Diphtheria<br>- Pertussis<br>- Tetanus<br>- Hepatitis B<br>- Haemophilus<br>- influenza b | DPT – Hep B + Hib | 6 weeks<br>10 weeks<br>14 weeks | By injection on the left upper arm. |
| Measles | Measles vaccine | 9 months | injection on the left upper arm. |

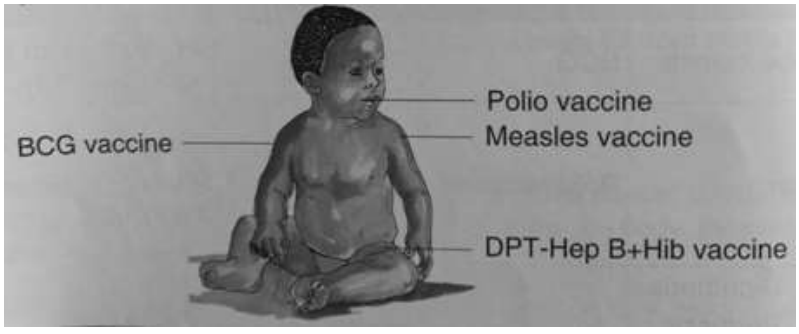
**Qn. Name the vaccines given to babies at birth.**

- BCG vaccine
- Polio vaccine

**Qn. Mention two diseases whose vaccine are administered to babies at birth.**

- Polio
- Tuberculosis

**An illustration showing the immunization sites and vaccine.**



**<u>Other immunisable diseases and their vaccines</u>**.

- Chlolera - oral cholera vaccine
- Meningitis - Meningococal vaccine
- Yellow fever - Yellow fever vaccine
- Rabies - Rabies vaccine
- Rubella / German measles - Rubella vaccine
- Pneumonia - Pneumoccocal conjugate vaccine (PCV)
- Diarrhoea - Rotavirus vaccine
- Cancer of the cervix - HPV vaccine

**<u>CHILD HEALTH CARD</u>**

Is a card which contains the child's growth and health records.

**Qn. Write down at least four important information found on a child health card.**

- Child's name
- Child's sex
- Child's date of birth
- Child's birth order
- Child's weight at birth
- Mother's occupation
- Father's name

**Qn. State the importance of a child health card to a parent.**

- It helps the parent to monitor the growth of the child.
- It helps the parent to know the date of the next immunization.

**Qn. How is a child health card important to a health worker?**

It helps the health worker to know which dose of immunization was given and what is remaining.

**Qn. How can a P.5 teacher tell that a child was immunized against tuberculosis without using a child health card?**

Checking for the immunization scar on the right upper arm.

**Qn. How is a child health card useful to a school?**

It helps the school management to know if the child was immunized or not.

**Qn. How can a P.5 pupil participate in the immunization programme?**

- Reminding the parent of the dates of immunization.
- Taking the siblings for immunization.
- Singing songs that interest people about immunization.
- Acting plays about immunization.
- Organizing the immunization centres.

**Qn. State one way a family can participate in the immunization programmes.**

Taking all children in a family for immunization.

**Qn. State one way a community can participate in the immunization programme.**

Setting up immunization centres.

**Qn. How can the government of Uganda promote immunization programme?**

- Providing vaccines
- Building health centres
- Training health workers

**Qn. Why is immunization free in Uganda?**

To enable all parents take their children for immunization.

**Qn. Write the following in full.**

(a) **UNEPI** - Uganda National Expanded Programme on

(b) Immunisation.

(c) **NIDs** - National Immunisation Days

**Qn. Suggest the roles played by UNEPI**

- To supply vaccines to different health centres.
- To teach people the importance of immunization.
- Training health workers on how to carry out immunization.

**Qn. Name the special refrigerator in which vaccines are stored.**

Vaccine carrier

**Qn. Why are vaccines stored cool conditions.**

To prevent them from going bad easily.

## A child health card



REPUBLIC OF UGANDA MINISTRY OF HEALTH

# CHILD HEALTH CARD

| | | |
|---|---|---|
| District:<br>Health Unit: | | Child's Registration No.: |
| Child's Name: | | Birth Weight(Kg): |
| Sex: | Date of Birth: / / | Birth Order: |
| Mother's Name: | | Mother's Occupation: |
| Father's Name: | | Father's Occupation: |
| Where the Child lives:<br>Sub County/Division: | | |
| Parish: | | |
| L.C.I: | | |

TICK REASONS FOR SPECIAL CARE:

| | | | |
|---|---|---|---|
| Birth weight less than 2.5 kg | | Brothers or Sisters undernourished | |
| Birth defect | | Mother dead | |
| Other handicaps or illness | | Father dead | |
| Fifth child or more | | 3 or more children in family dead | |
| Birth less than 2yrs after last birth | | Twin child | |

ANY OTHER REASON FOR SPECIAL ATTENTION:

Please carry this card every time you bring your child for care or attention.

## TOPIC FOUR

## THE DIGESTIVE SYSTEM

**Qn. What is the digestive system?**

Is a group of organs which help to break down food making it usable by the body.

**Qn. What is digestion?**

Is the process by which food is broken down into smaller soluble particles that can be absorbed into the blood stream.

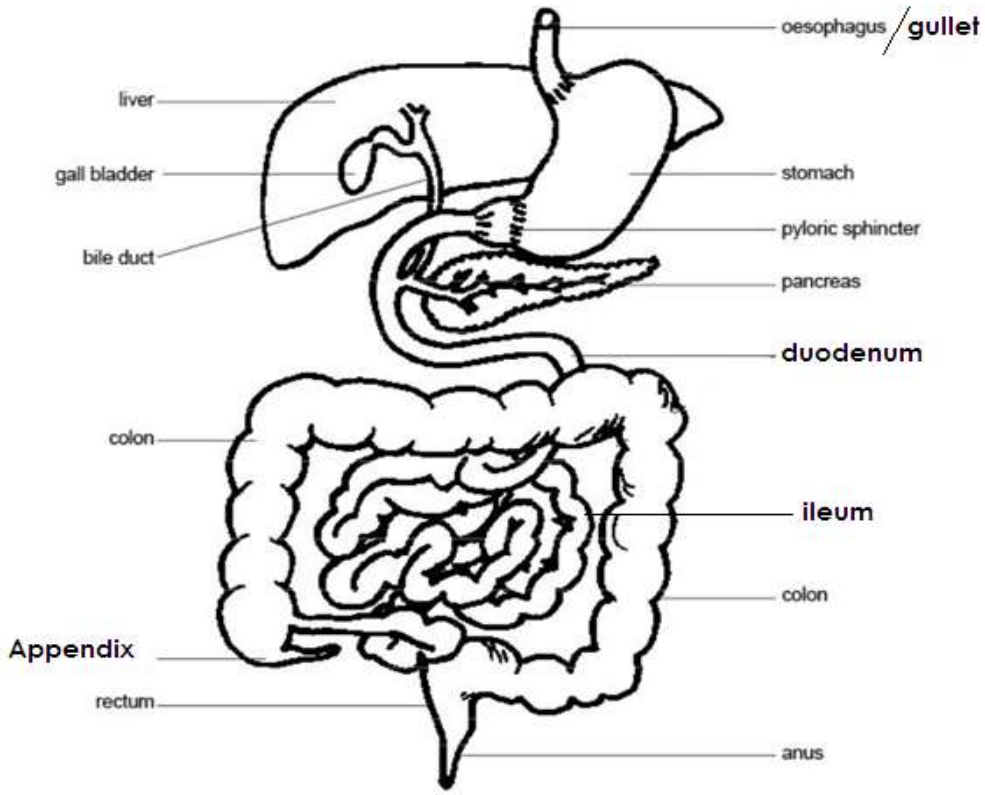
**Qn. Who is the alimentary canal?**

Is a muscular tube running from the mouth to the anus.

**Qn. Mention the parts that make up the alimentary canal.**

- Mouth
- Gullet
- Stomach
- Small intestine
- Large intestine

**Diagram showing the digestive system**.



**Qn. Write down the types of digestion.**

(i) Chemical digestion

(ii) Mechanical digestion

**Qn. What is mechanical digestion?**

Is the type digestion carried out by the action of the teeth in the mouth.

**Qn. What chemical digestion?**

Is the type of digestion carried out by enzymes.

**ENZYMES**

**Qn. What are enzymes?**

Enzymes are chemical substances that speed up the digestion of food.

**Qn. State any four characteristics of enzymes.**

- They are destroyed by heat.
- They are proteins in nature.
- They always form the same end product.
- They act on one kind of food.

**Digestion in the mouth**

**Qn. Where does digestion of food in man begin?**

In the mouth

**Qn. Where in man does digestion of food end?**

In the ileum

**Qn. State the role of the following in the mouth during digestion.**

(a) Teeth - To break food into small particles.
(b) Tongue - To roll food into a bolus.
(c) Salivary glands -To produce saliva
(d) Saliva -Softens down food

**Qn. Name one enzyme found in saliva.**

Salivary amylase (ptyalin)

**Qn. Under what condition does salivary amylase work?**

Alkaline condition

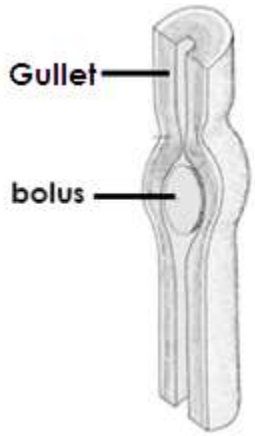
**Qn. State the use of salivary amylase in the mouth.**

Digests cooked starch in the mouth

**Qn. What is peristalsis?**

- Peristalsis is the wave-like movement of food through the alimentary canal.
- Movement of substances through tubular organ.

**Diagram showing peristalsis**




**DIGESTION IN THE STOMACH**

The stomach stores food for a short period of time.

**Qn. Name the gland found in the stomach.**

Gastric gland

**Qn. State the function of the gastric gland.**

To produce gastric juice.

**Qn. Give the function of the gullet.**

Passes food from the mouth to the stomach.

**Qn. Mention the two enzymes contained in gastric juice.**

- Pepsin
- Rennin

**Qn. State the function of each of the following enzymes in the stomach.**

(i) Pepsin - Digests proteins

(ii) Rennin - Clots milk protein in babies.

**Qn. Name the enzymes found in the stomach of babies.**

Rennin

**Qn. Name the acid produces by the stomach walls.**

Hydrochloric acid

**Qn. State the function of hydrochloric acid found in the stomach.**

- To kill germs that come along with food.
- To provide favourable conditions for enzymes in the stomach to act upon food.

**Qn. Under what condition do pepsin and Rennin work?**

Acidic condition

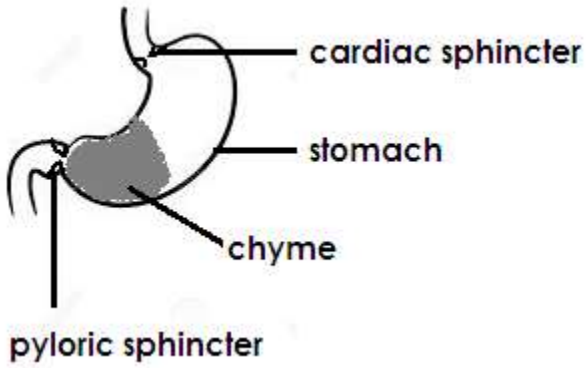
**Qn. What is churning?**

Is the process by which food is mixed with digestive juices in the stomach.

**Qn. What name is given to the food which has been churned in the stomach.**

Chyme

**<u>The stomach</u>**




**Qn. State the function of each of the following sphincter muscle.**

(a) Cardiac sphincter muscles

- To allow little food from the gullet to the stomach at a time.

(b) Pyloric sphincter muscle

- To allow a little chyme to the duodenum at a time.

**Qn. Mention any two substances that are absorbed in the stomach.**

- Alcohol
- Common salt
- Simple sugars
- Drugs

**Digestion in the duodenum**

**Qn. Write down three enzymes found in the duodenum.**

- Lipase
- Amylase
- Trypsin

**Qn. State the function of the pancreas.**

- To produce pancreatic juice.
- To produce insulin hormone

**Qn. State the function of the following pancreatic enzymes.**

(i**) Lipase** - It changes fats into fatty acids and glycerol.

(ii**) Amylase** - It changes uncooked starch into maltose.

(iii**) Trypsin** - Changes peptides into amino acids.

**Qn. State the functions of the liver.**

- It produces bile juice
- Stores important vitamins
- Stores important mineral salts.
- To control blood sugars
- The liver act as a detoxicating agent.

**Qn. State the function of bile juice.**

It breaks fats / emulsifies fats.

**Qn. Give the function of the gall bladder.**

It stores bile juice.

**<u>Digestion in the ileum</u>**

**Digestion of food ends in the ileum.**

**Qn. Write down three enzymes found in the ileum.**

- Lactose - Peptidase - Galactase - Erepsin - Maltase
- Sucrase

**Qn. Identify the importance process that takes place in the ileum.**

Absorption of digested food.

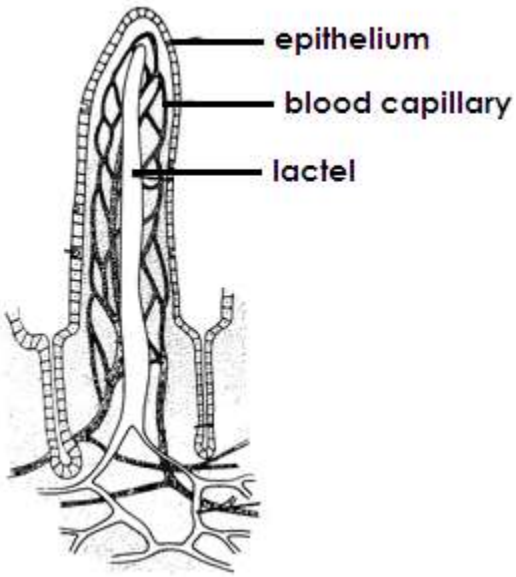
**Qn. State two ways how the ileum is adapted to its function.**

- It has the villi
- It is fairly long and coiled.

**Qn. Name the finger like structure that helps in the absorption of food in the ileum.**

Villi

**Structure of the villus**




**Qn. How are the villi adapted to their function?**

- They are thick walled.
- The villi are surrounded by a great network of blood capillaries.

**Qn. Mention two parts that make up the small intestines.**

- Duodenum
- Ileum

**Large intestines**

**Qn. Outline any three parts that make up the large intestines.**

- Colon
- Rectum
- Anus

**Qn. State one important process that takes place in the large intestines.**

Absorption of water.

**Qn. Give a reason why digestion of food cannot take place in the colon.**

There is no enzyme in the colon to digest food

**Qn. Why can't absorption of digested food take place in the colon?**

There is no villi in the colon

**Qn. State the function of the appendix.**
Stores undigested materials like stones

**Qn. What is absorption?**
Is the process by which digested food is taken into the blood stream.

**Qn. By what process is digested food absorbed into the blood stream in the ileum?**
Diffusion

**Qn. Give the function of the rectum.**
Stores faeces before they are passed out.

**Qn. Mention the end products of digestion of each of the following food values.**

(a) **Proteins** - Amino acids

(b) **Carbohydrates** - Glucose

(c) **Fats** - fatty acids and glycerol

**Qn. Give a reason why vitamins and mineral salts are not digested.**
Vitamins and mineral salts are soluble.

**Qn. Name one blood vessel that transports blood rich in digested food from the ileum to the liver.**
Hepatic portal vein

**<u>Diseases of the digestive system</u>**

- Cholera - Diarrhoea - Peptic ulcers - Typhoid
- Hepatitis B - Dysentery - Appendicitis

**<u>Disorder of the digestive system</u>**

- Vomiting - Constipation - Heart burn
- Intestinal obstruction - Indigestion

**Qn. State any two cause of constipation**

- Lack of enough water
- Lack of roughages

**Qn. State two ways of preventing constipation.**

- Eat fruits and vegetables regularly.

- Drink water or juice after eating food.
- Eat food rich in roughages

**Qn. Which disorder of the digestive system in Dube who eats hurriedly without chewing food properly likely to face?**

Indigestion

**Qn. State any two ways a P.5 pupil can avoid indigestion.**

- Do not eat too much.
- Chew food properly.
- Drink water after eating food.

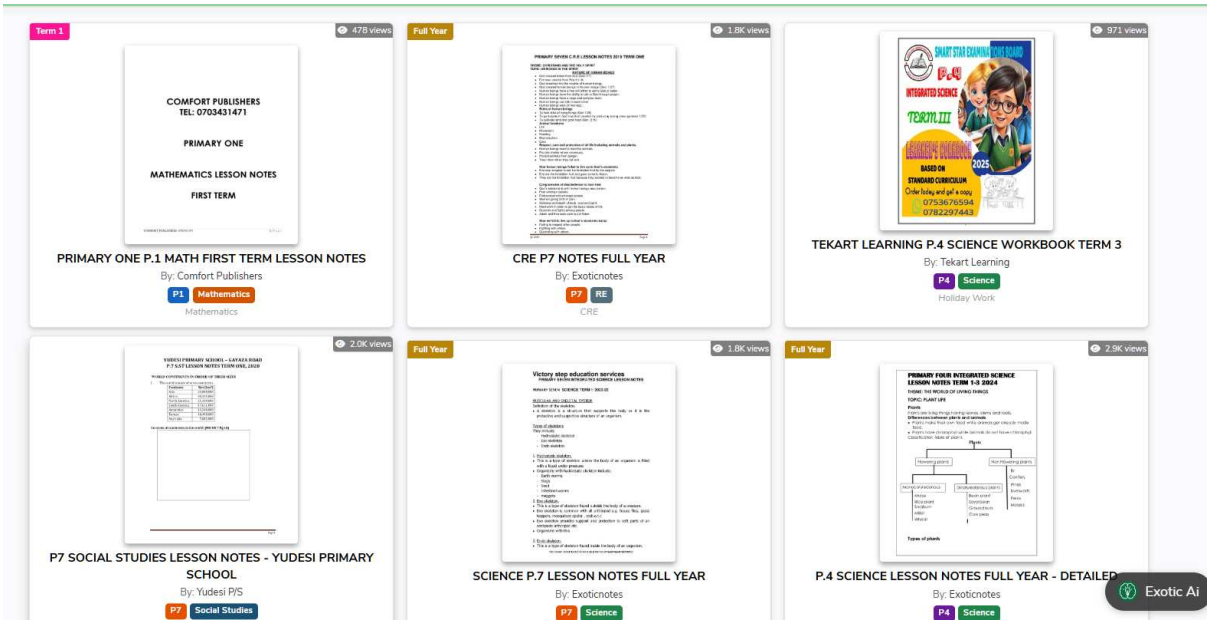
**<u>Ways of preventing diseases of the digestive system</u>.**

- Drinking boiled water
- Washing hands before handling food.
- Washing hands after visiting a latrine or toilet.
- Maintaining proper sanitation.

**<u>Ways of keeping the digestive system in good health working conditions</u>.**

- Maintaining good eating habits.
- Eat a balanced diet.
- Doing physical exercises daily.
- Drinking clean boiled water.

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