

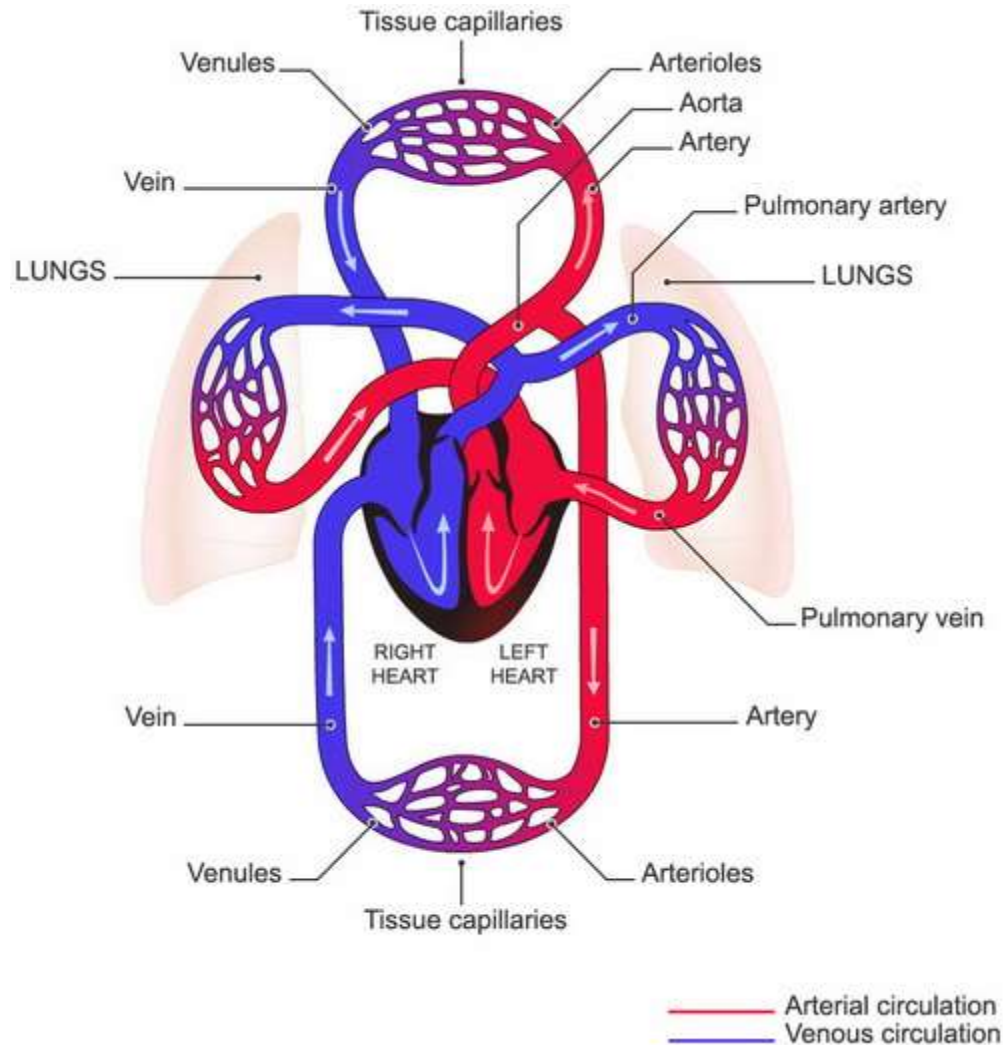
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LESSON NOTES TERM 1 2024
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PRIMARY SIX SCIENCE LESSON NOTES FOR TERM ONE 2024



THEME : THE WORLD OF LIVING THINGS
TOPIC : CLASSIFICATION OF ANIMALS

Living things

- Living things are things that have life.

Main groups of living things.

- Plants
- animals

Examples of living things;

- Plants
- Insects
- Birds
- Human beings
- Worms etc.

Characteristics of living things

- a) Living things respire.
- b) Living things feed.
- c) Living things respond to stimuli.
- d) Living things grow.
- e) Living things reproduce.
- f) Living things excrete.
- g) Living things move

Classification of living things

- Classification is the grouping of things according to common characteristics and features.

Common characteristics and features used in classification of living things.

- 1. Number of legs
- 2. Ways of breathing
- 3. Response to stimuli
- 4. Colour
- 5. Size
- 6. Body divisions
- 7. Ways of movement
- 8. Hair on the body
- 9. Shape
- 10. Adaptation to the environment
- 11. How they get food.

Reasons for classifying living things

- Makes it easy for us to identify them.
- Makes it easy to name them.

Note:

Living things are classified into five groups called **kingdoms**

- Animal kingdom
- Plant kingdom
- monerans
- Fungi kingdom
- protocista kingdom(prototists)

1. Animal kingdom

Characteristics of animals

- Animals are multicellular.
- Animals cannot make their own food because they do not have chlorophyll
- They feed on already made food.
- Animal cells have a cell membrane.

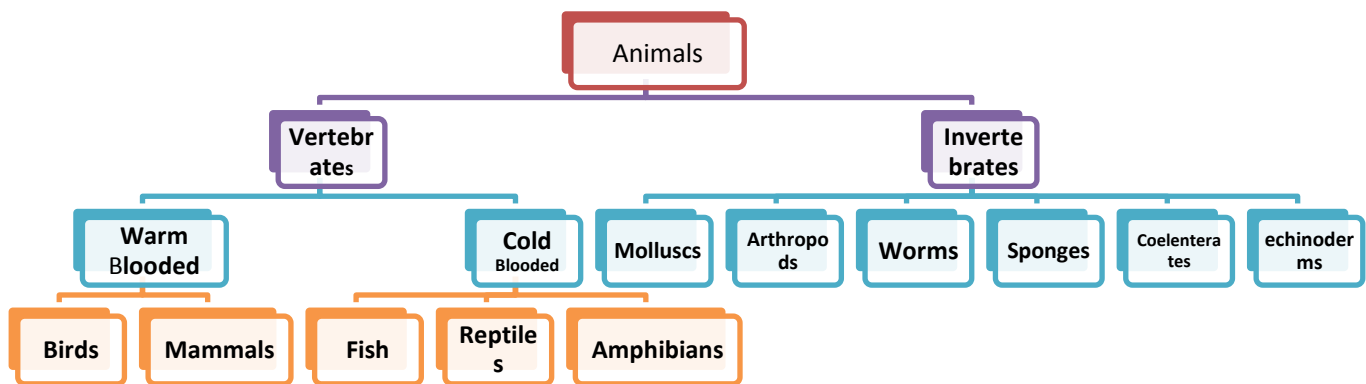
Differences between plants and animals

| Plants | Animals |
|--|---|
| <ul style="list-style-type: none"> ○ Make their own food ○ Green plants contain chlorophyll ○ Growth occurs only at the tips of roots and shoots ○ React slowly to stimuli ○ Continue growing throughout their life | <ul style="list-style-type: none"> ○ Feed on already made food. ○ Don't have chlorophyll ○ Growth occurs equally on all parts of the body ○ React quickly to external stimuli ○ Stop growing long before their death |

Animals are divided into two major parts.

- Vertebrates
- Invertebrates

Classification of animals



Vertebrates:

- Vertebrates are animals with backbones.

Characteristics of vertebrates

- They have an Endo (internal) skeleton.
- They have a large brain protected by the skull (cranium).
- They have back bones.

NB: Vertebrates are also grouped into two;

- Warm blooded (homoeothermic or homoeothermic)
- Cold blooded (poikilothermic)

Warm blooded (homoeothermic)

- Are animals that have a constant body temperature.
 - ✓ Mammals
 - ✓ Birds

Cold blooded (poikilothermic)

- Are animals whose body temperature changes according to the surrounding.
 - ✓ Fish
 - ✓ Reptiles
 - ✓ Amphibians

1. Mammals

- Mammals are groups of vertebrates with mammary glands.
- Mammary means breasts.

Characteristics of mammals

- They are warm blooded.
- Their bodies are covered with fur: **prevent heat loss from the body.**
- All mammals care for their young ones.
- They give birth to live young ones except the egg laying mammals.
- They feed their young ones on milk from their mammary glands.
- They breathe through lungs.
- They have well developed ear lobes (**Pinnae**).
- Their hearts are divided into four chambers.
- They undergo internal fertilization.
- They have teeth which differ in shape and function (**heterodont dentition**).

Main characteristics of mammals.

- They give birth to live young ones.
- Their bodies are covered with fur.
- Have mammary glands.

Groups of mammals

- | | |
|--|--|
| • Primates (flexibly fingered mammals) | • Marsupials (pouched mammals) |
| • Cetaceans (sea mammals) | • Insectivores (insect eating mammals) |
| • Carnivores (flesh eating mammals) | • Chiroptera (flying mammals) |
| • Ungulates (hoofed mammals) | • Monotremes (egg laying mammals) |
| • Rodents (gnawing mammals) | |

A. Primates

- Primates are mammals with a well-developed brain.
- Primates are the most advanced group of mammals.

Characteristics of primates

- They have a well-developed brain.
- They have five fingers on their hands and five toes on their feet.
- They have five fingers on each hand and five toes on each foot.
- They are omnivores i.e. feed on both meat and vegetation.
- They use front limbs for holding and hind limbs for walking.
- They have four sets of teeth.

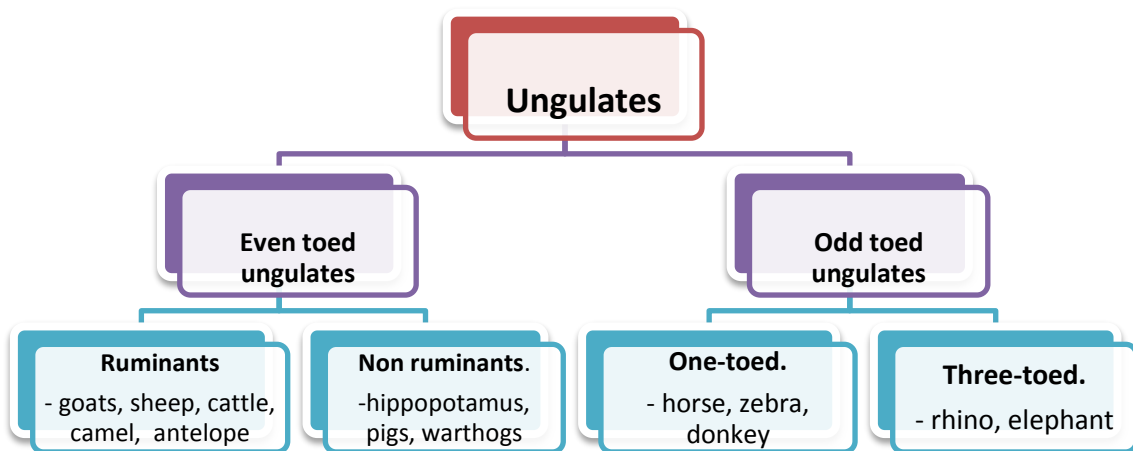
Examples of primates

- Man
- Gorilla
- Baboon
- Monkeys
- Bush baby
- Chimpanzee

B. Ungulates (hoofed mammals)

- Are hoofed mammals that feed on vegetation.
- They are herbivorous mammals.

Classification of ungulates



Even toed ungulates

- Are animals whose toes are in even numbers.

Groups of even toed ungulates.

- Ruminants
- Non-ruminants

Ruminants.

- Are ungulates that chew cud and have four chambered stomachs.

Non-ruminants.

- Are ungulates that have a single stomach and do not chew cud.

C. Carnivores (flesh eating mammals)

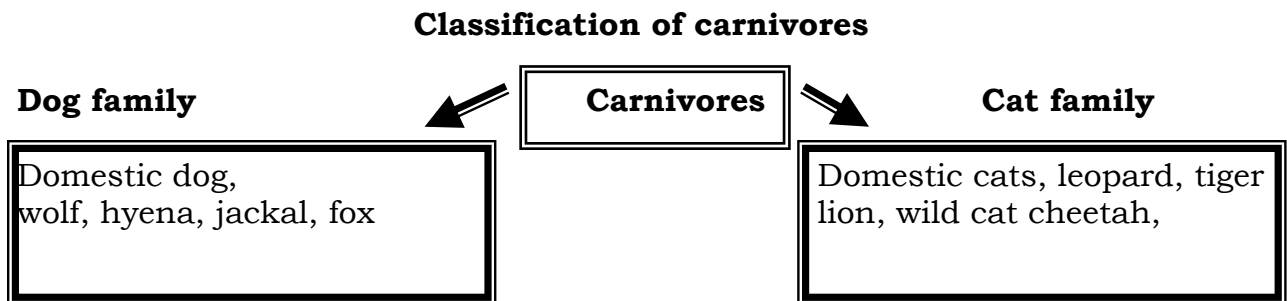
- They are mammals which feed on flesh (meat).
- They are also called **preying mammals**.

Characteristics of carnivores

- They have long stout legs: **for running very fast.**
- They have well-developed canines for **tearing flesh.**
- They have strong curved claws for **grabbing prey.**
- They have a very good sense of smell.
- They have good eye sight.
- They have soft pads in their feet to move softly.

NB: Carnivores are sub-divided into two groups namely;

- Cat family: **resemble cats.**
- Dog family: **resemble dogs.**



Note:

- Some carnivores (dog family) are scavengers e.g. the hyena and jackals.
- Others are predators (cat family). They hunt and kill prey.

D. Rodents (gnawing mammals)

- Have well developed incisors for biting even hard surfaces.
- They produce many young ones at once.
- Most rodents feed on vegetables.
- They have strong claws for digging the ground.
- They are called gnawing mammals, because **they use their incisor teeth to bite hard surfaces to keep them short.**

Examples of rodents

- | | |
|---------------|-------------|
| • Rats | • Squirrels |
| • Porcupines | • Mice |
| • Guinea pigs | • Hare |

NB. Porcupines have spines for protection.

E. Insectivores (insect eating mammals)

- These are mammals which feed on insects.

Characteristics of insect eating mammals

- They have a high sense of smell.
- They have strong claws for digging the ground to get food.
- They mostly hunt at night.
- Have sticky tongues for catching insects.
- Have long snouts.

Examples of insect eating mammals

- hedgehog,
- moles
- antbears

NB A hedgehog has spines on its body for protection.

F. Chiroptera (flying mammals)

- They are mammals that move by flying.

Characteristics of flying mammals

- Their fore limbs are modified into wings.
- They are nocturnal.
- They can find their food at night using echoes.
- They give birth to live young ones.
- Have mammary glands.

NB: Bats are the major examples of flying mammals.

Moths, hedgehogs are other examples of nocturnal animals.

Types of bats

a) **Fruit eating bats**

b) **Insect eating bats**

c) **Blood sucking bats.**

G. Marsupials (pouched mammals)

- Marsupials are mammals with a pouch.
- Pouch is used to carry its young one until it matures.
- Have breasts inside the pouch.

Characteristic of pouched mammals:

- They have a pouch for carrying young ones.

NB: Marsupials are found in Australia and South America

Example of pouched mammals:

- Kangaroo
- Wallabies
- Koala bear
- wombat



H. Monotremes (Egg laying mammals)

- These are mammals which lay eggs.
- Feed their young ones on milk from their mammary glands.

Note:

- They are regarded as the most primitive mammals because;
 - ✓ They have characteristics of reptiles, birds and mammals.
 - ✓ They lay eggs and have beaks similar to those of birds.
 - ✓ They feed their young ones on milk from their mammary glands.

Examples of egg laying mammals:

- Duck billed platypus
- Spiny ant eater(**echidna**)

**I. Cetaceans (sea mammals)**

- Cetaceans are mammals that live in the sea and oceans.
- They have a layer of fats called **blubber** which keep them warm in water.

Characteristics of cetaceans

- They live in seas.
- They breathe by means of lungs.
- Have a high level of intelligence next to primates.

Examples include;

- | | | |
|----------|------------|-------------|
| • Whales | • Dolphins | • Seals |
| • otter | • walrus | • Porpoises |

Importance of mammals to man.

- Some ungulates and rodents are a source of food to man
- Some mammals are used for transport.
- Some mammals provide raw materials such as hides and skins, horns and tusks for industries.
- Oxen are used to plough land for man.
- They are tourist attractions
- Some rodents can be used to reduce or kill pests on a farm.

Dangers of mammals

- Some rodents are crop pests.
- Dogs and cats are diseases vectors.

Differences between mammals and birds.**Similarities between mammals and birds.**

2. Birds

Characteristics of birds.

- Have streamlined bodies.
- Their bodies are covered with feathers.
- Have scales on their legs.
- They are warm blooded (**homoeothermic**).
- They breathe by means of lungs
- Their front limbs are modified as wings.
- They reproduce by laying eggs.
- They have four chambered hearts.
- They take care of their young ones.
- They undergo internal fertilization.

Groups of birds

- Swimming birds
- Climbing birds
- Birds of prey
- Perching birds
- Scratching birds
- Wading birds
- Scavenger birds
- Flightless birds

A. Birds of prey

- These are birds which hunt and kill prey.

Characteristics of birds of prey:

- They feed on flesh (meat).
- They have strong eye sight to spot their prey even at a distance.
- They have strong, sharp, hooked beaks for tearing their prey.
- They have strong, sharp curved talons for gripping and killing their prey.
- Do not have a crop in their alimentary canal.

Why?

- They feed on already moistened food.

Examples of birds of prey:

- Hawks
- Vultures.
- eagles
- secretary birds
- owls
- kites
- falcons



Structure of the beak and feet



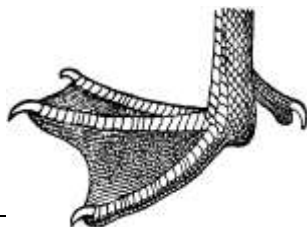
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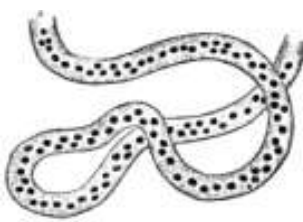




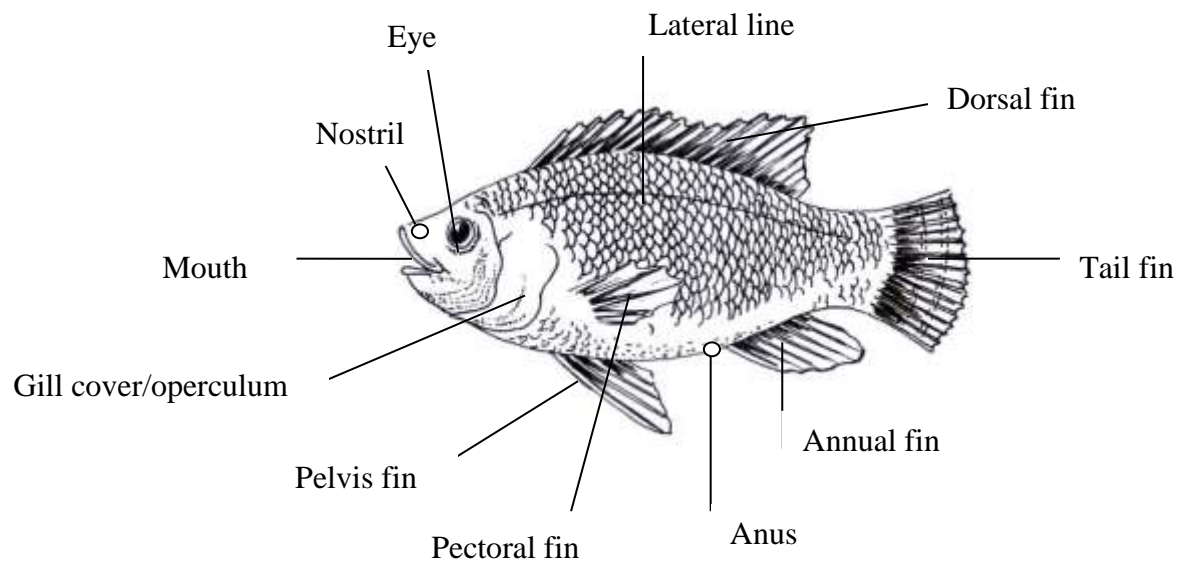


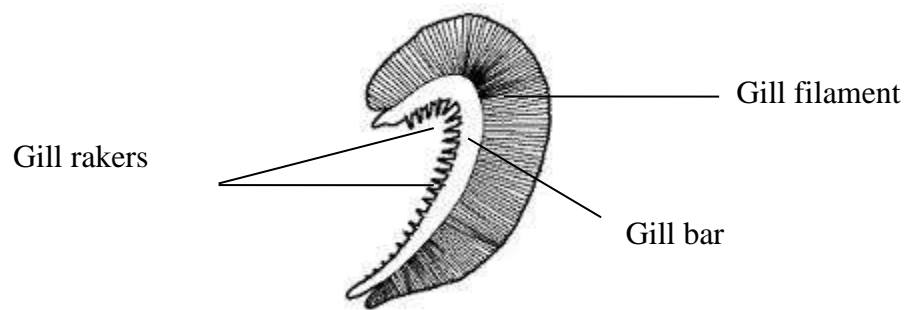
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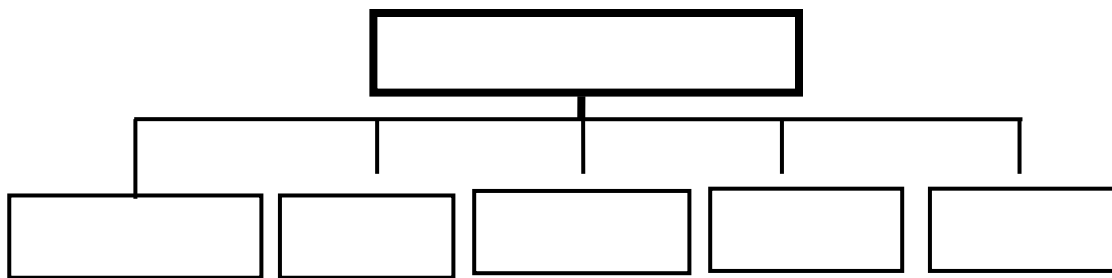


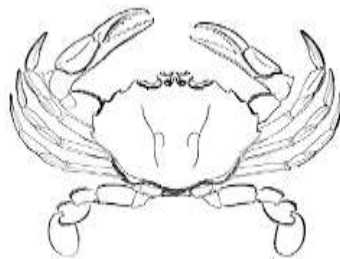
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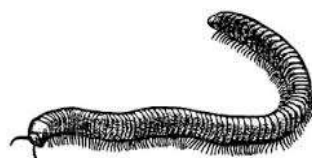
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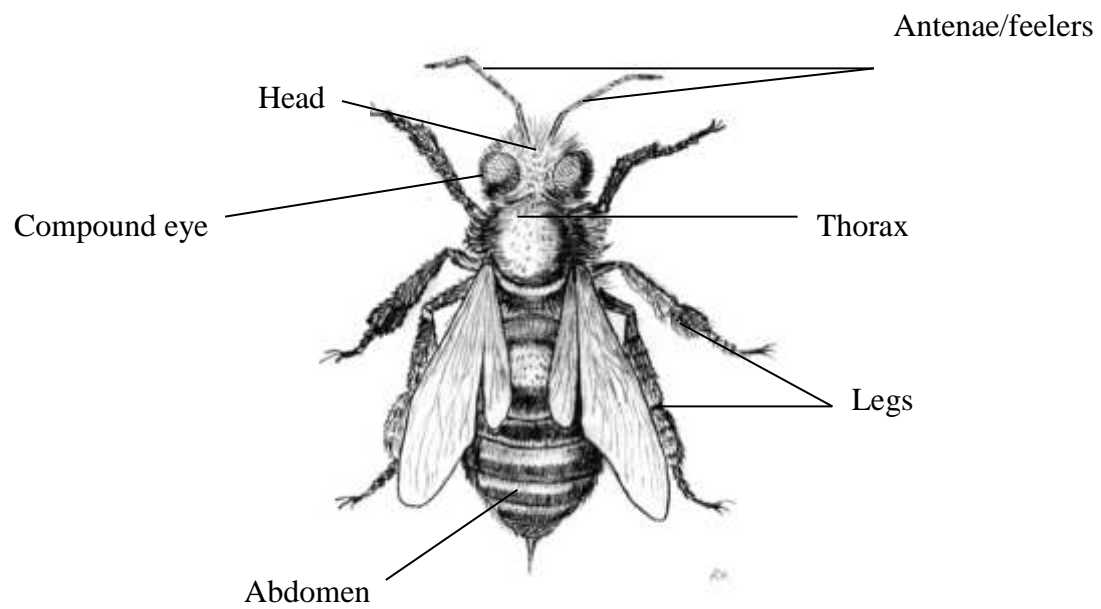


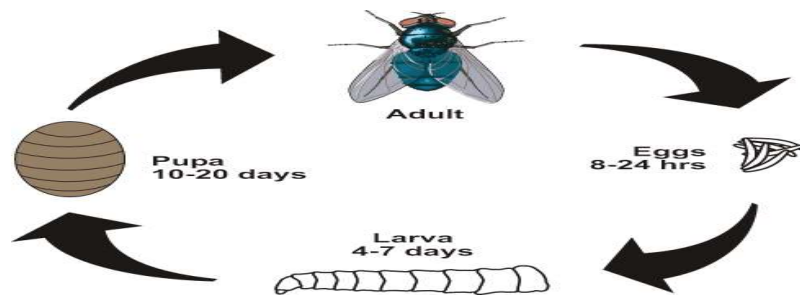


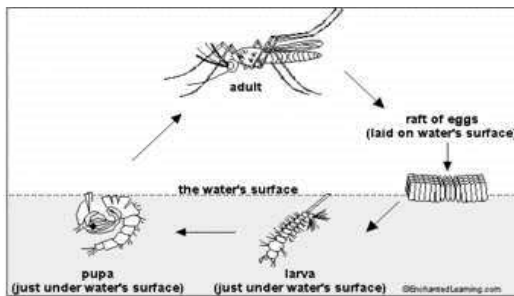




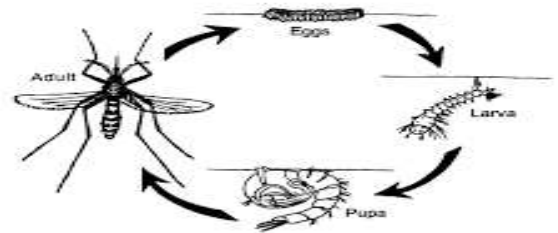




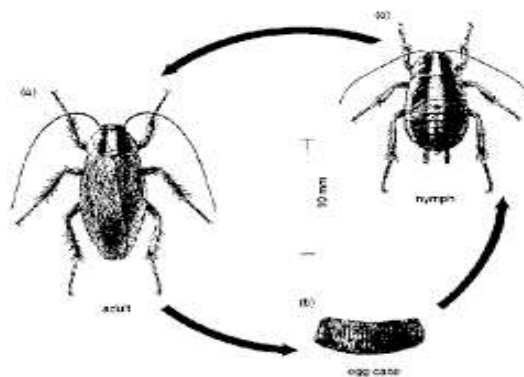
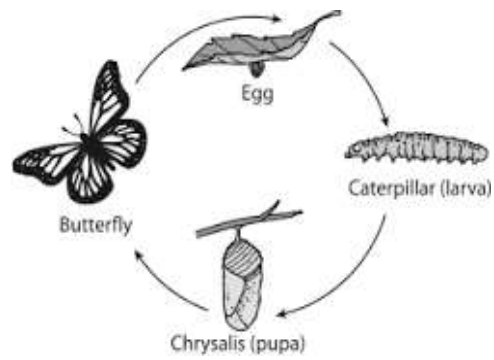


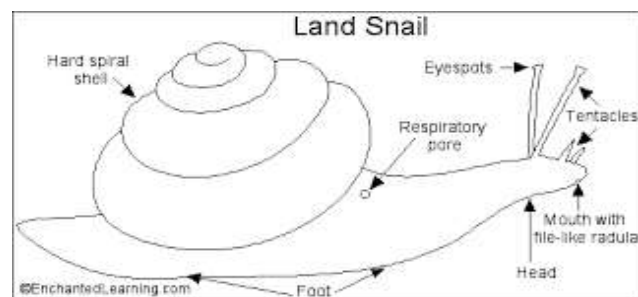


Life Cycle of the Mosquito

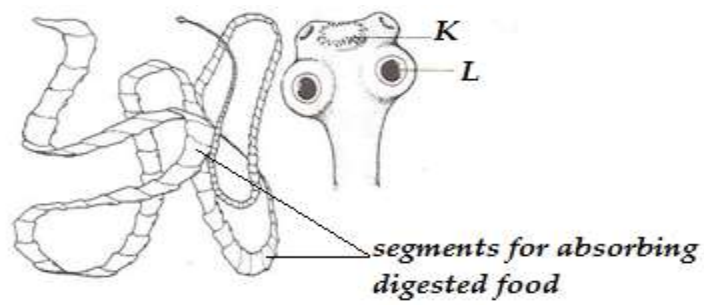


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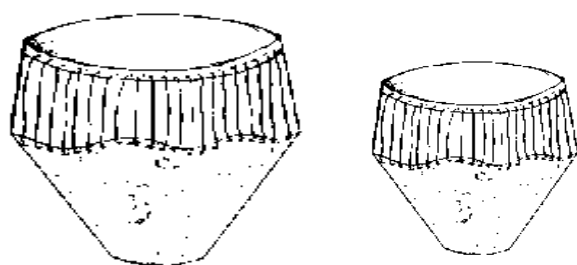


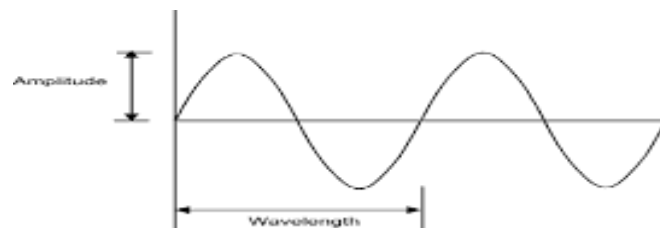


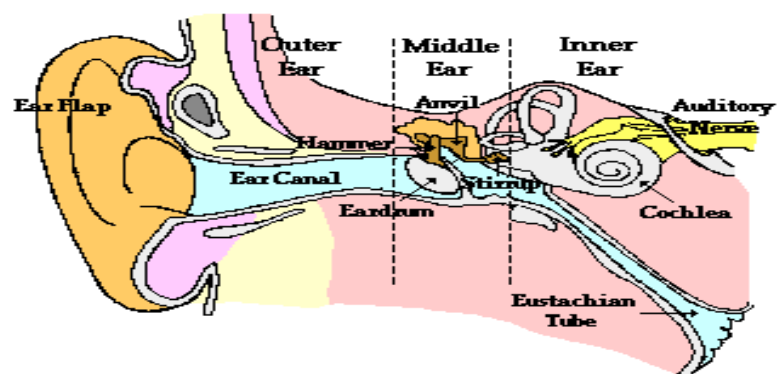


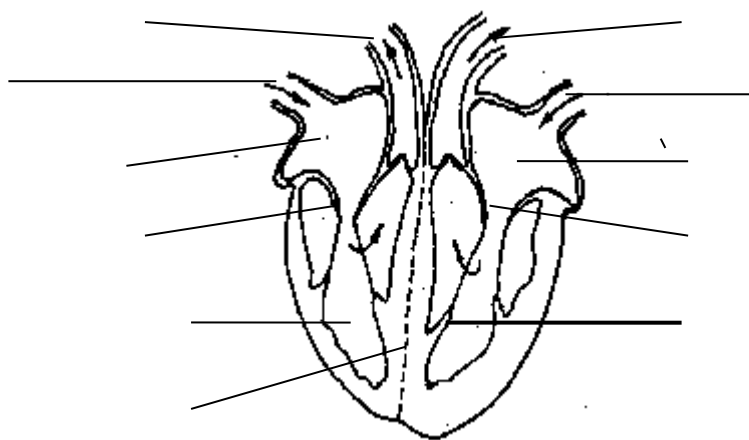


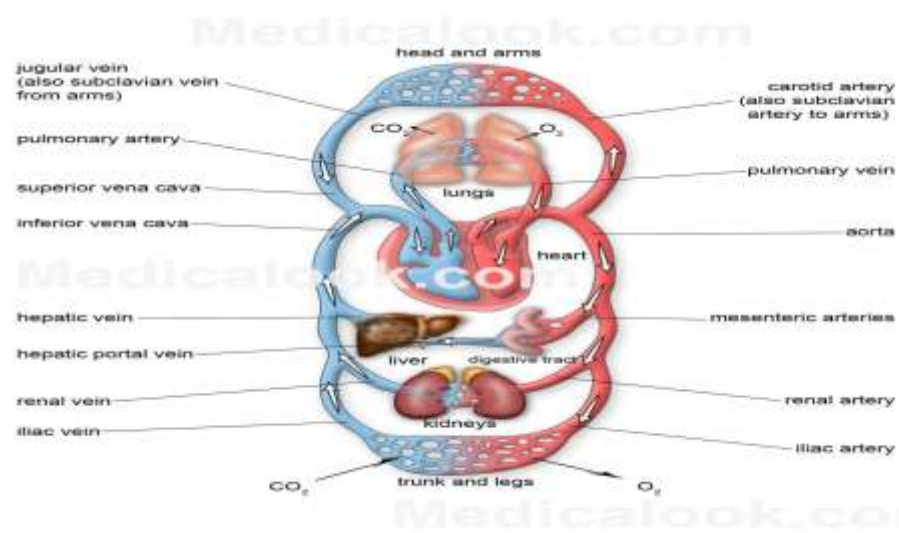
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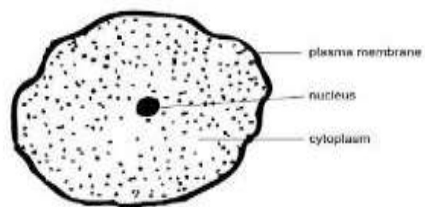


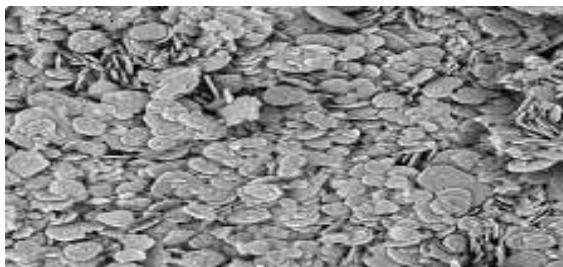
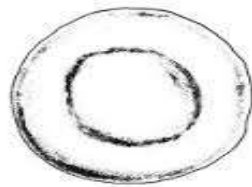




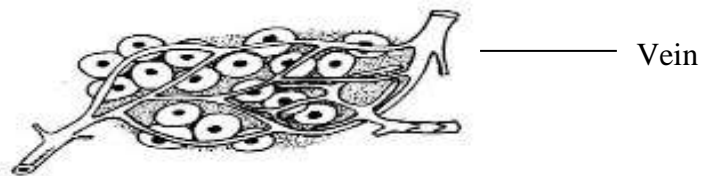
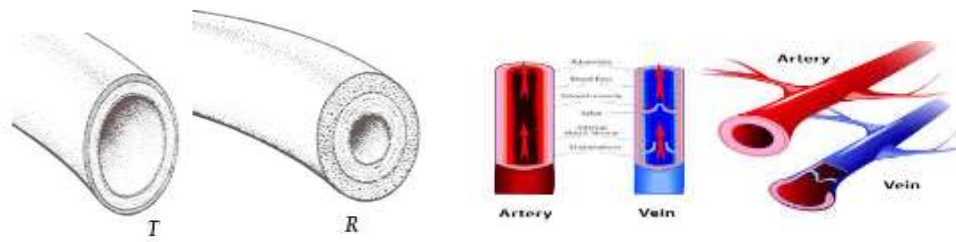








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