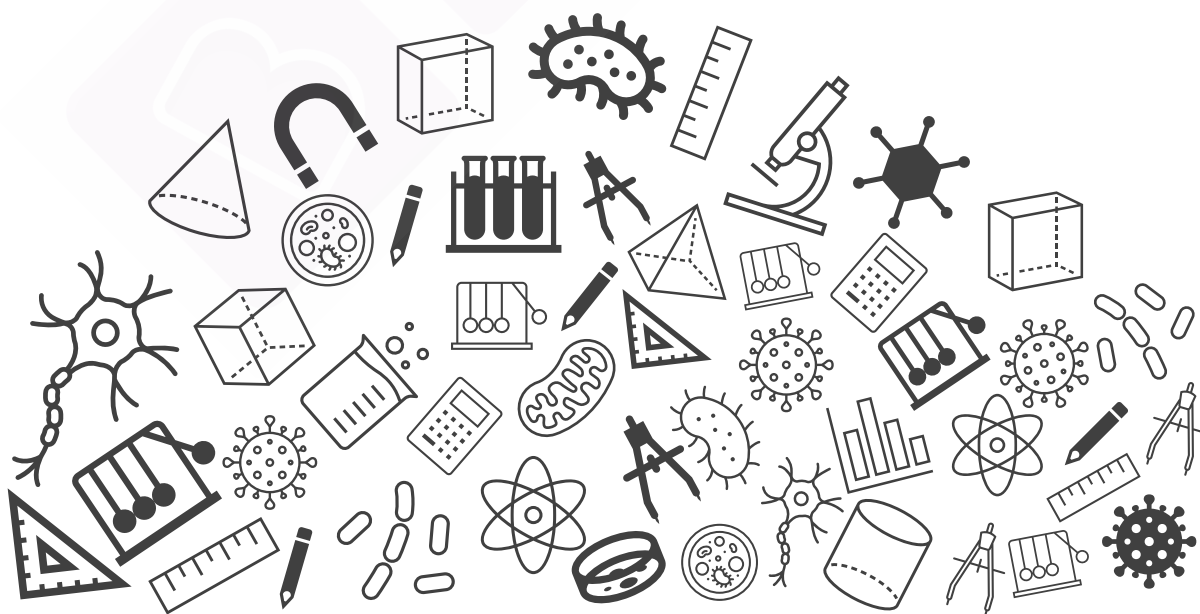




Grade 06

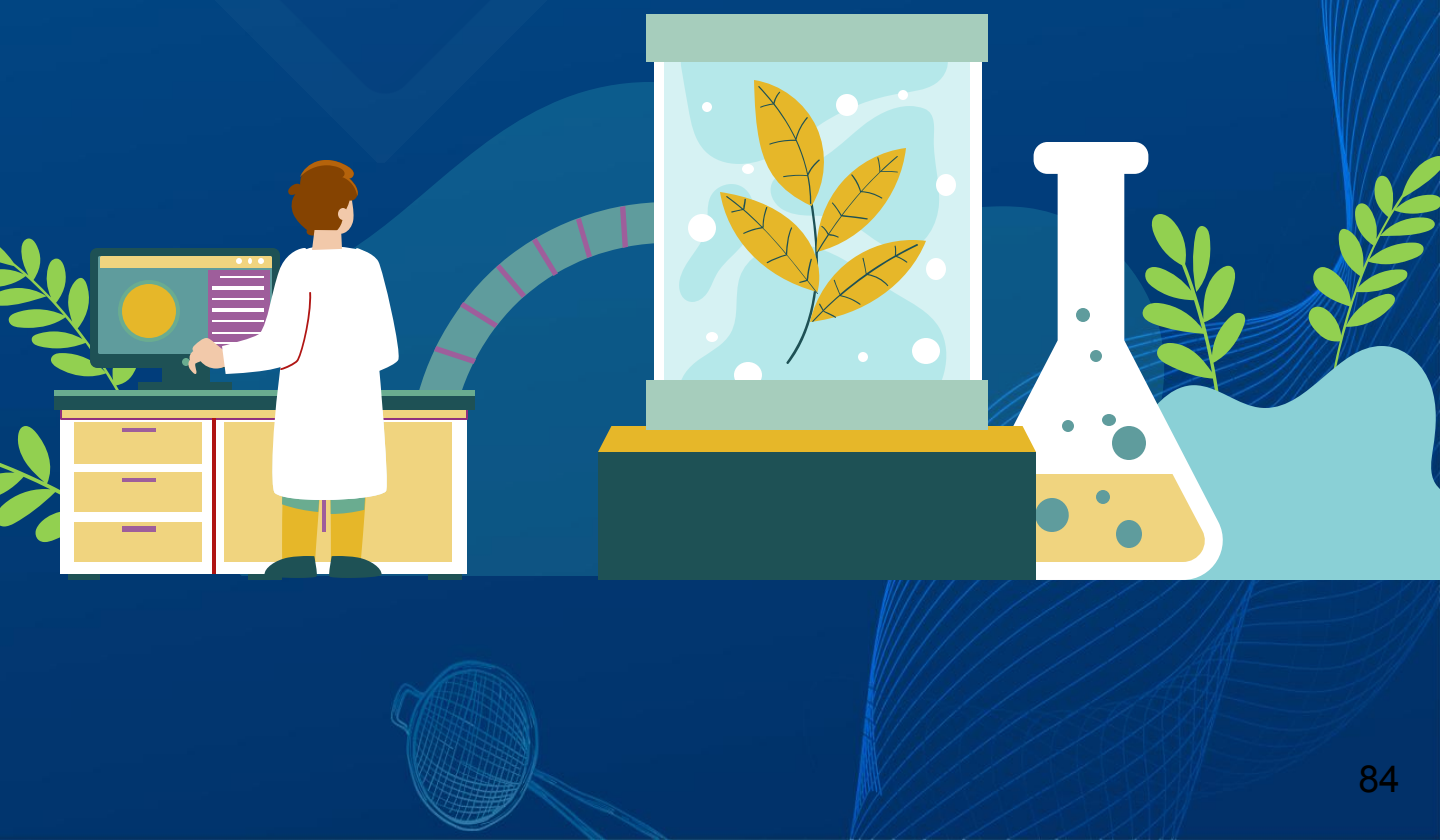
Chapter Notes



 BYJU'S
Classes
Class Notes

Body Movements

Grade 6



Topics to be Covered

1

Human Body and Its Movements

2

Skeletal System

2.1 Bones

- Skull
- Ribcage
- Vertebral column
- Pelvis

2.2 Joints

- Ball and socket joints
- Pivotal joint
- Hinge joints
- Saddle joint
- Fixed joints

2.3 Cartilage

3

Muscles

4

Gait of Animals

- Fish
- Bird
- Earthworm
- Snail
- Cockroach
- Snake



Mind Map

Gait of Animals

Body Movements

Human Body and Movements

Skeletal System

Muscular System

Bones

Joints

Cartilage

Skull

Ribcage

Pelvis

Vertebral column

Ball and Socket

Hinge

Pivotal

Saddle

Fixed

Fish

Bird

Earthworm

Snail

Cockroach

Snake

1. Human Body and its Movement

Bones and muscles are involved in body movements.

Bones



- Hard
- Give structure to the human body

Muscles



- Soft and flexible
- Help the bones to move

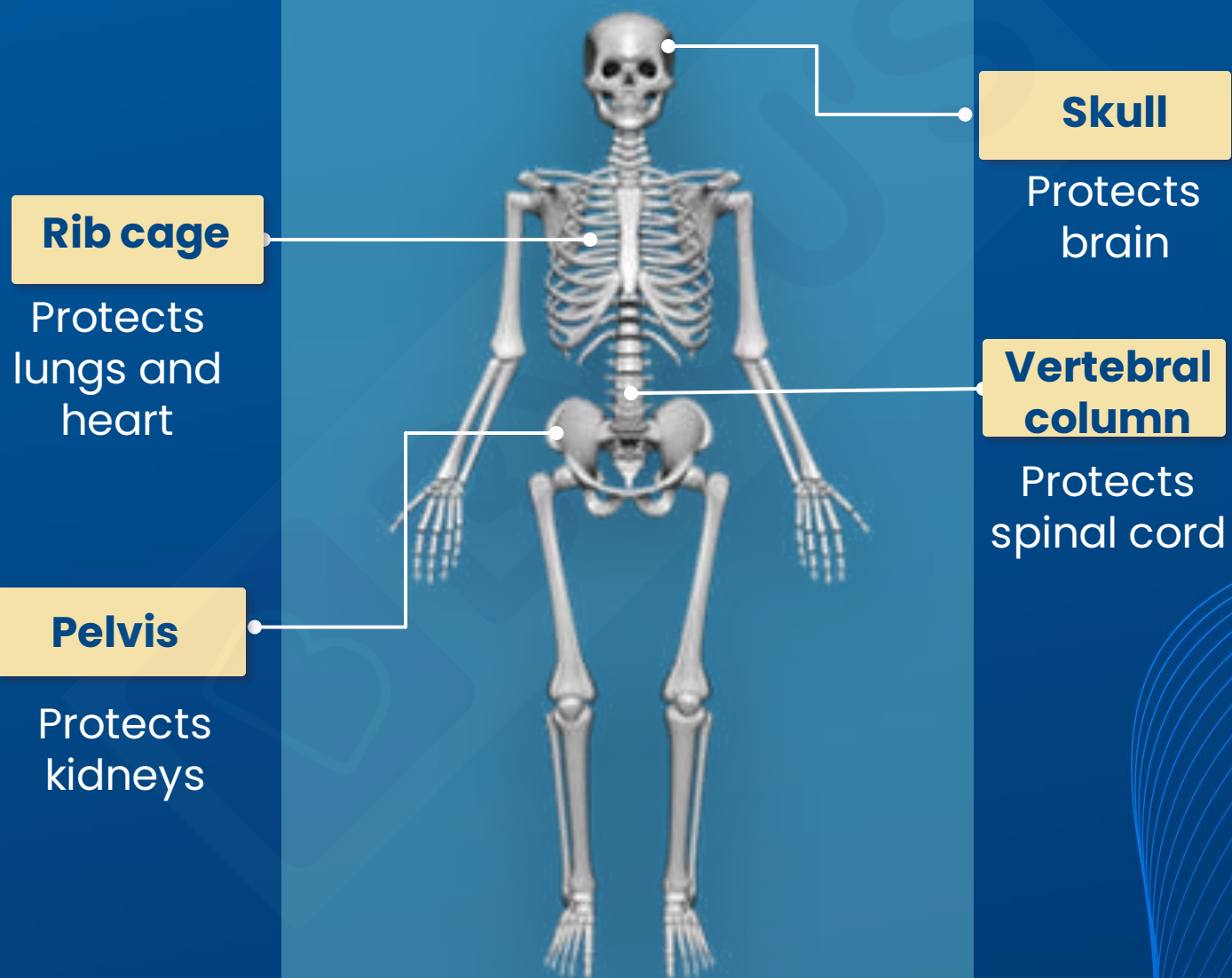


2. Skeletal System

2.1 Bones

All the bones in the body collectively form a bony framework called skeletal system.

Human Skeletal System



Number of Bones

The human skeleton is composed of around 305 bones at birth. It decreases to 206 bones by adulthood after some bones fuse together.

2.2 Joints

Joints are the point at which two bones meet .

Types of Joints



Pivotal joint



Ball and socket joint



Hinge joint

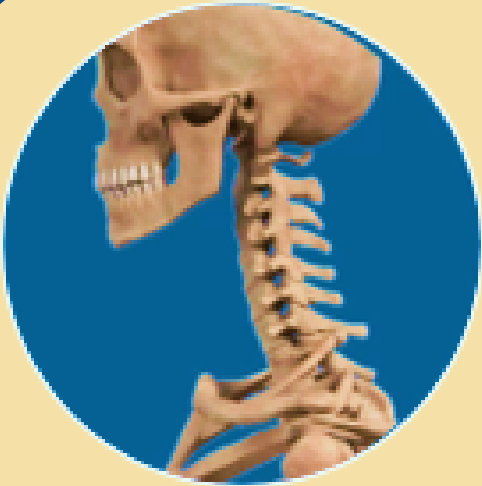


Saddle joint

Role of Joints

The bones cannot be bent as they are hard and rigid. The joints therefore help to bend where the bones meet.

Types of Joints and Movement allowed



Pivotal joint

- Neck region
- Allows forward and backward, side-to-side movement



Ball and socket joint

- Shoulders and hips
- Allows movement in all directions



Hinge joint

- Fingers, elbows and knees
- Front and back movement



Saddle joint

- Wrist and thumb
- Rotational movement



Immovable Joint



Fixed joint

- Fixed joints do not allow any movement and thus are called immovable joints.
- Fixed joint is present in the skull.
- It attaches the upper jaw to the rest of the head.

2.3 Cartilage

Cartilage are additional parts of the skeleton but are not as hard as the bones and can be bent.



Ear



Nose



Between joints

- It provides structural support to nose and ears.
- It is present in between joints and provides cushioning effect.

3. Muscles

Muscles



- Muscles work in pair.
- A muscle can only pull but it cannot push.
- When one muscle contracts the other relaxes.

Contraction



Relaxation



Difference Between Movement and Locomotion

Movement

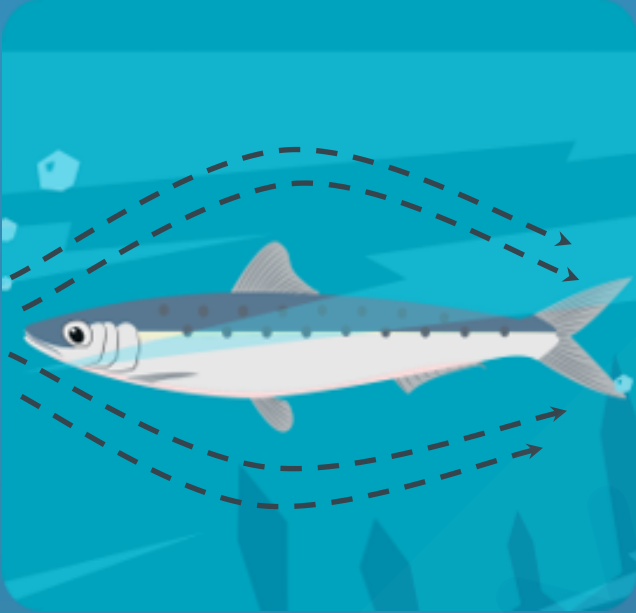
Movement is when the living organism moves a body part without a change in the position of the organism.

Locomotion

Locomotion is when the movement of a part of the body leads to change in the position and location of the organism.

3. Gait of Animals

Locomotion in Fishes



- Fishes have streamlined body that help them to swim in water.
- Fins and tail help the fishes in movement while swimming.

Locomotion in Birds



- Birds have wings which they use for flying.
- Birds also have hindlimbs which they use for walking and perching.

Adaptation in Birds for Flying

Breastbone

It holds the muscles of flight

Forelimb

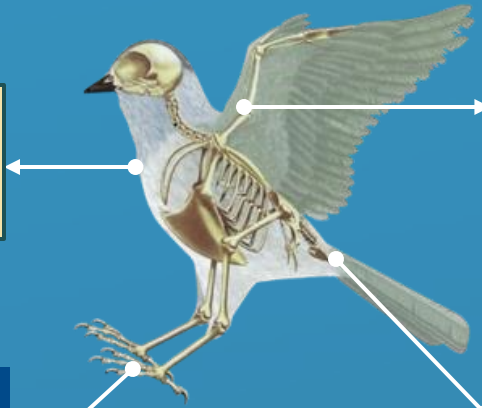
It gets modified to the wings

Hindlimb

It helps them to perch and walk

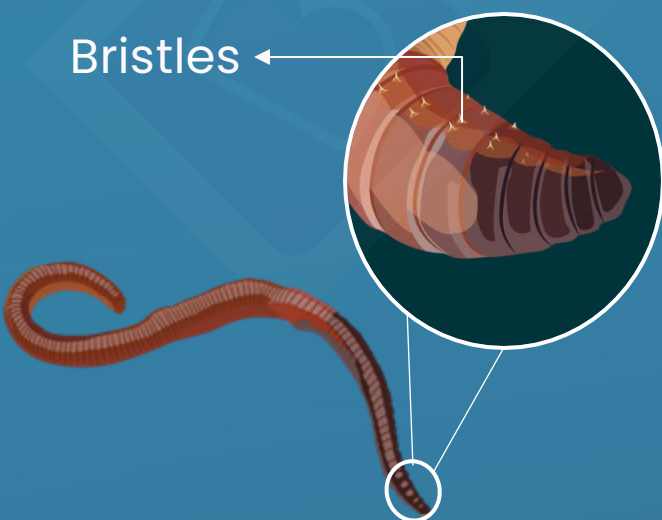
Tail bone

It supports the tail feathers



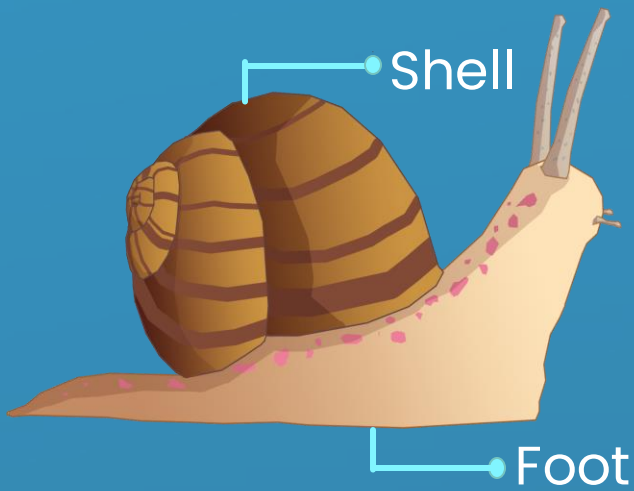
Locomotion in Earthworm

Bristles



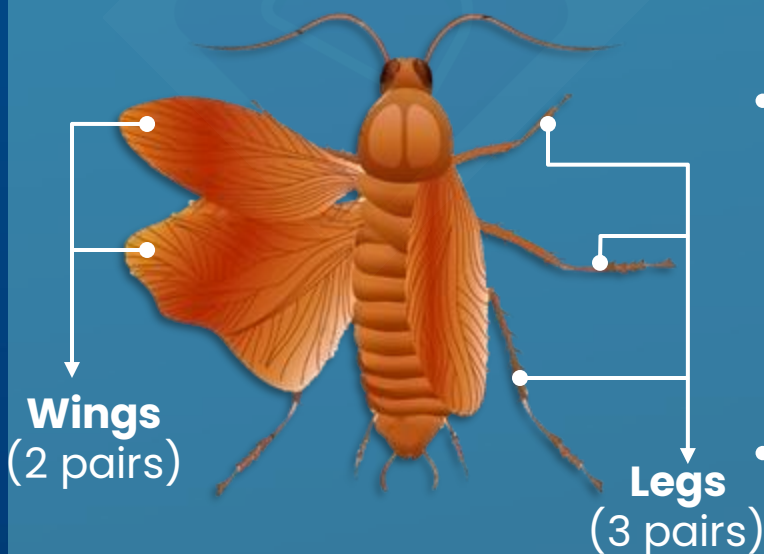
- Earthworms have muscles which help them in movement.
- They also have tiny bristles connected to muscles which help to get grip on ground.

Locomotion in Snail



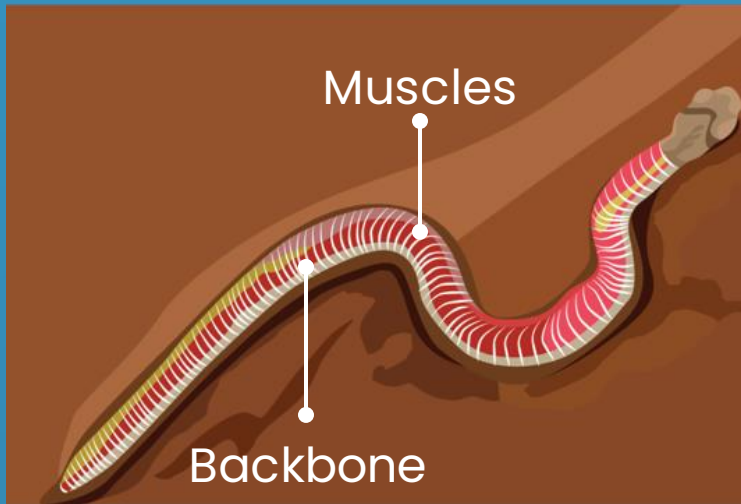
- Snail moves with the help of muscular foot.
- Snails secrete a slippery slime which help them in movement.
- Snail also have shell which needs to be dragged during locomotion.

Locomotion in Cockroach



- Cockroaches can walk, climb and fly in air.
- Cockroaches have two pairs of wings and three pairs of legs.
- They also have distinct muscles near legs and wings which help them in walking and flying respectively.

Locomotion in Snake



- Snakes have a long and flexible backbone.
- Snakes have muscles that are interconnected to the backbone.

Important Questions

B

Question 1:

What is a ball and socket joint?

2
Marks

Solution:

- It is a joint in which the rounded end of one bone fits into the cavity (hollow space) of the other bone. (1 mark)
- Such a joint allows movements in all directions. (0.5 marks)
- It is present in hips and shoulders. (0.5 marks)

Question 2:

Why can our elbow not move backwards?

1 Mark

Our elbow cannot move backwards because the elbow has a hinge joint that allows back and forth movement. (1 mark)



Question 3:

What are fixed joints?

2
Marks

Solution:

- Fixed joints do not allow any movement and thus are called immovable joints. (1 mark)
- Fixed joints are present in the skull. (0.5 marks)
- They attach the upper jaw to the rest of the head. (0.5 marks)

Question 4:

Which of the skull bones are movable?

1 Mark

Solution:

- Lower jaw bone of the skull is the only movable bone present in the skull. (1 mark)



Question 5:

How is the skeleton of a bird well-suited for flying?

2
Marks

Solution:

The features that help in the locomotion of a bird are:

- Feathers and hollow bones: The bones are hollow with air spaces in between which makes the body of the birds light to be able to fly. (0.5 marks)
- Forelimbs: They are modified into wings that help them to fly. (0.5 marks)
- Breastbone: It holds the muscles of flight. (0.5 marks)
- Hindlimbs: They help to walk and perch. (0.5 marks)

Question 6:

Explain how an earthworm moves?

2
Marks

Solution:

- Earthworms move with the help of muscles in their body. (0.5 marks)
- Muscle contraction and relaxation are important parts of earthworm's locomotion. (0.5 marks)
- They have a highly segmented slimy body with a hair-like structure called bristles present on it. (0.5 marks)
- Body segments contract and push the body forwards while the bristles help to maintain the grip on the surface. (0.5 marks)



Question 7:

Explain the mode of locomotion of the following animals.

i) Snake ii) Snail

4
Marks

Solution:

i) Snake:

- Snakes have a long and flexible backbone that facilitates their movement by forming S-shaped loops. (1 mark)
- Hard structures known as scales on their body also aids in locomotion. (1 mark)

ii) Snail:

- Muscular foot is the locomotory organ of a snail which is made of strong muscles. (1 mark)
- Snail also secrete slimy mucus which coats the ground under the snail and this helps to move along easily. (1 mark)

Question 8:

What are the different types of locomotion shown by cockroach?

2
Marks

Solution:

- Cockroaches can walk, climb as well as fly. (1 mark)
- They have three pairs of legs that help in walking and two pairs of wings that help in flying. (1 mark)