LITTERA PUBLIC SCHOOL

CLASS 6. CHAPTER 8. SCIENCE

BODY MOVEMENTS

Locomotion

There are two kinds of movements:

- The organisms move their body parts without changing their position.
- Animals move from one place to another. This kind of movement is called locomotion.

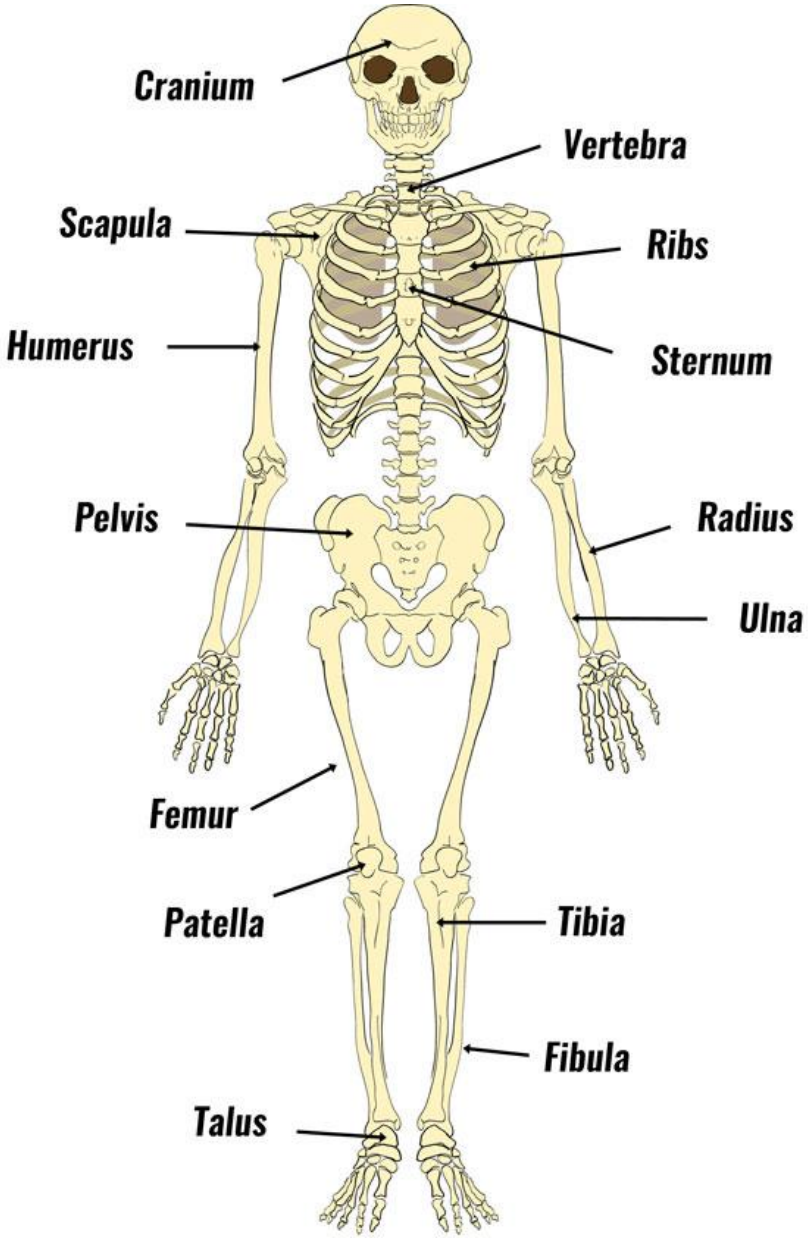
Skeletal System

- Bones in our body form the framework that supports the whole body. This framework is called the skeleton.
- Our skeleton is made up of a number of bones and cartilages.
- There are about 650 muscles attached to the various bones in our body.
- The bones are hard and rigid.
- Cartilages are comparatively soft and elastic.

Functions of skeleton

- Skeleton system gives support to the body.
- It protects the inner organs.
- Together with muscles, it gives the body its shape.

- Red blood cells and some white blood cells are produced in the marrow of the bone.

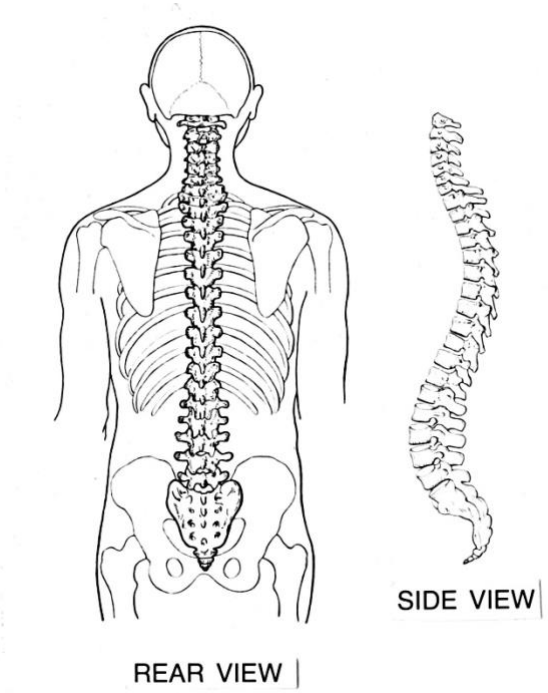


The skull: The skull has two main parts:

- **Cranium:** The bones of cranium are flat. They are held firmly like a zipper. It covers and protects the brain.
- **Facial bones:** The facial bones comprise the upper jaw, lower jaw and few other bones. The lower jaw is movable.

The movement of lower jaw enables us to eat, talk and sing.

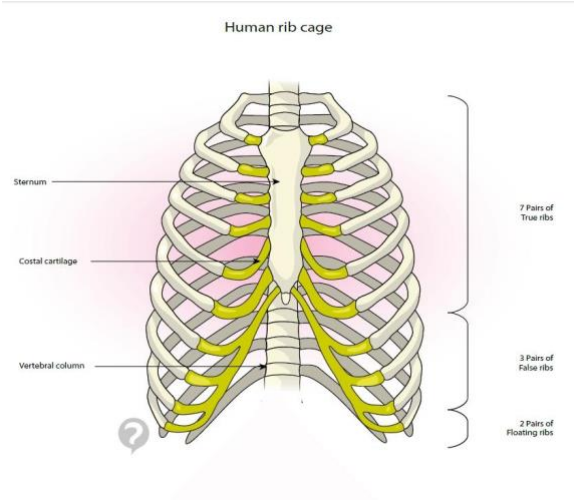
Eye sockets: The skull also includes a pair of eye sockets. These form a safe pocket for eyes.



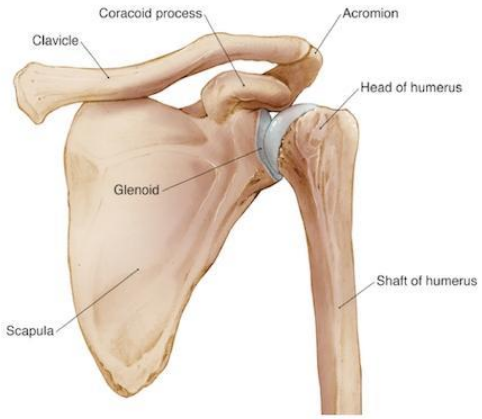
The backbone: Backbone or vertebral column is composed of 33 small, ring like vertebrae joined end to end. It forms a hollow bony tube. The main nerve cord passes through it.

The Chest bones: 12 pairs of ribs along with backbone make a cone-shaped cage, called rib-cage, which protects the heart.

Rib cage: Ribs join with the chest bone and the backbone together to form a box. This is called rib cage.



The Shoulder bones: The shoulder bone is formed by the collor bone and the shoulder blade. The shoulder bones are flat and large. They help in forming joints with long bones.



Hip bones: The hip bone is formed by the fusion of three bones. Like shoulder bones, the hip bones are also flat and large. They help in forming joints with long bones. Together with the last two

parts of backbone, it forms a large bony bowl called pelvis.

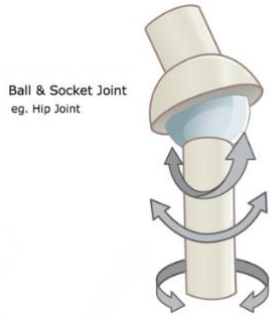
Bones of hands and legs: Bones of arms, thighs, etc., are long. They give strength to our body. Bones of fingers and toes are short. They help us in holding things. The hands and legs are constructed in same pattern as described below:

Part of hand	**Part of leg**	**Number of Bones**
Upper arm	Thigh	One long bone
Fore arm	Lower leg	Two long bones
Wrist	Ankle	Several small bones

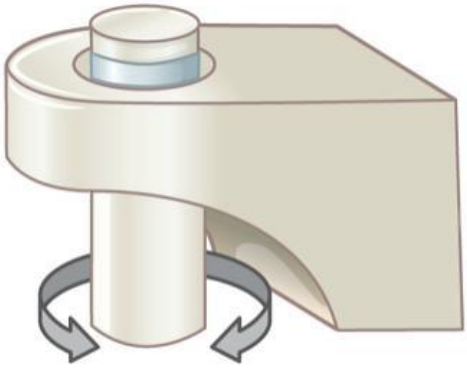
Palm	Foot	Five bones
Fingers	Toe	Each has three small bones (except thumb, which has two small leaves)

Bone joints: The place where two or more bones meet together is called a joint. In our body, five types of joints are present namely:

- **Fixed joints** which do not allow movement, e.g., joints of cranium.
- **Ball and socket** joint allow movement in all directions, e.g., joints between upper arm and shoulder, thigh and hip.

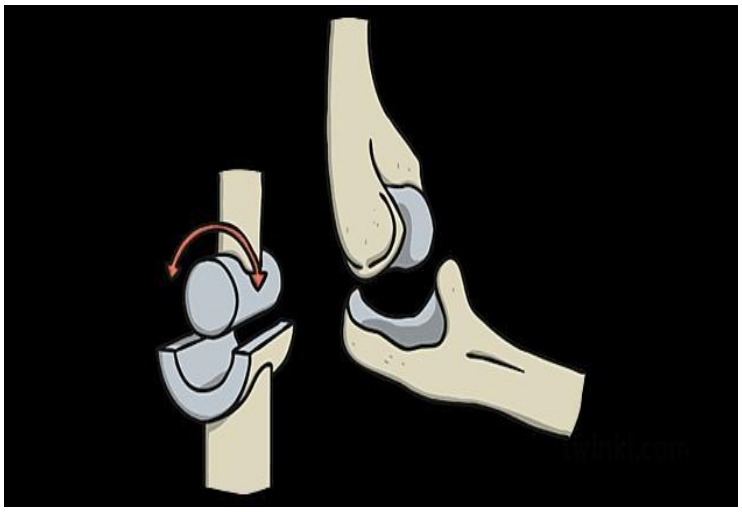


- **Pivotal joint** allows movement in many planes, e.g., skull makes such joint with first two vertebrae.



Pivot Joint

- **Hinge joints** allow movement only in one direction, e.g., fingers, the knee, etc.



- **Gliding joints** allow only a limited amount of movement, e.g., joints of backbone.

- **Muscles:** The bones are moved by the alternate contractions and relaxations of two sets of muscles.

- **Tendons:** join muscles to the bones.

- **Ligament:** joins two bones.

- **Cavity:** It is the hollow space or cavity in one bone, into which the other bone fits. Such joint allows movements in all directions

Locomotion in some Animals

- **Birds**
  Most of the birds have two kinds of locomotion. They walk with legs on the ground. They also fly in the air. Ducks and swans also swim in water.
  Flying adaptations: Streamlined body, bones with air spaces, forelimbs modified into wings, air sacs connected to lungs and massive flight muscles are some adaptations in birds for flying.
- **Fish:** The fish swims by forming loops alternately on the two sides of the body. The tail pushes them forward. The vertebrae and the muscles attached to them work for it.
- **Snakes:** Similarly, the snakes crawl on the ground by alternately looping sideways. A large number of vertebrae and associated muscles push the body forward. The ventral scales also help in the process.
- **Insects:** The body and legs of insects have hard joined coverings, forming an exoskeleton. The muscles of the breast connected with three pairs of legs and two pairs of wings help the cockroach to walk and fly.
- **Snails:** The snails are moved by the muscular foot. The hard unjoined shell have no relation with the foot.
- **Earthworm:** The earthworm moves by alternate extension and contraction of the body affected by the muscles. The minute movable bristles help in gripping the ground.