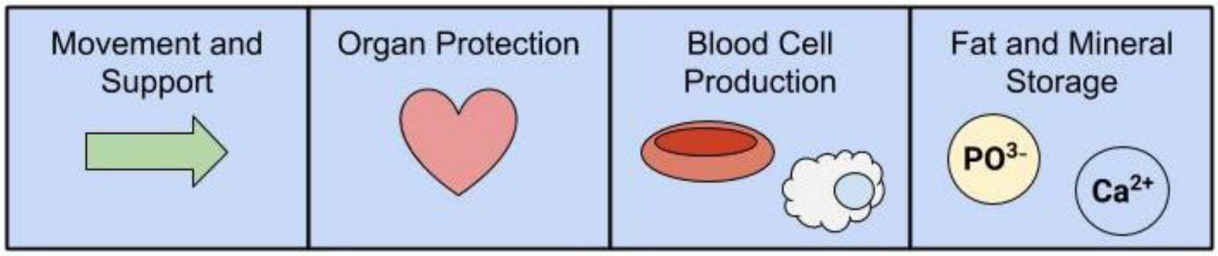
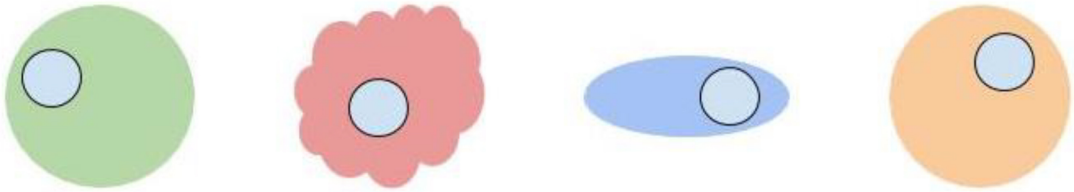
Bone, Cartilage, & Joints

Major Functions of Bone



Bone Cells



Osteoprogenitor
Stem cells that give rise to all other bone cells. They are found lining the bones.

Osteoclast
Break down and reabsorb bone. Remodeling allows bone maintenance and repair.

Osteoblast
Secrete calcified bone matrix.

Osteocyte
These are osteoblasts that have become trapped within the matrix and are relatively inert.

OsteoClasts Crack bone
OsteoBlasts Build bone

Bone Type	Example
Long	Femur
Short	Carpel bones
Flat	Frontal
Irregular	Vertebrate

Joint Type	Definition	Example
Fibrous	Immovable joint. Bones are connected by fibrous connective tissue	Skull
Cartilaginous	Allows very little movement. Bones are connected by cartilage	Vertebrate and pubic bone
Synovial	Mobile joint with fluid filled space between bones	Shoulder, hip, elbow, knee

Cartilage is a lightweight flexible tissue that serves a structural function and absorbs shock in joints. It is avascular which is why damaged cartilage is slow to heal relative to bone.

Epiphyseal (Growth) Plate
Thin layer of cartilage within bones that allows longitudinal growth during development. It is ossified after bones reach their final length.