Skeletal System

What is the skeletal system, and what are its functions?

- ***Skeletal system*** consists of bones, teeth, joints, & structures that connect bones to other bones or muscles (ligaments, tendons, & cartilage).

Support

- Many bones provide support, but long bones especially important
  - long bones in legs help support the trunk
  - other than long bones
    - the first vertebra supports the skull

Protection

- Protect vital internal organs
  - skull ->the brain, rib cage ->heart, lungs, & abdominal organs

Movement

- Combination w/muscular system, the skeletal system helps movement
  - Skeletal muscles are attached to bones by tendons that act as a lever to move bones.

Mineral Storage

- Outer layers of bony tissues are used for the storage of minerals (primarily calcium and phosphorus)

Blood Cell Formation & Energy Storage

- Inner core of bone ->bone marrow
  - ***Red marrow*** is a major site of blood cell & platelet formation.
- Yellow marrow ->long bones & other mature bones
  - ***Yellow marrow*** consists mostly of fat & serves as an energy reserve.

3 Cell Types Found in Bones

- 1. ***osteoblasts*** form a bone structure by secreting collagen, become enclosed in the matrix, & develop into osteocytes.

- 2. ***osteocytes*** **-** exchange of nutrients & wastes with blood
- 3. ***osteoclasts*** secrete enzymes that digest bone.
  - Bone is a living tissue that is continually remodeled in response to the body's need for calcium
  - Osteoclasts are important in the development, growth, maintenance, & repair of bone

How are Bones Classified?

- ***Long bones – femur***
- ***Short bones – knee***
- ***Flat bones – ribs, scapula***
- ***Sesamoid bones –knee cap***
- ***Irregular bones – vertebrae***