The Skeletal System

Mr. Hanson

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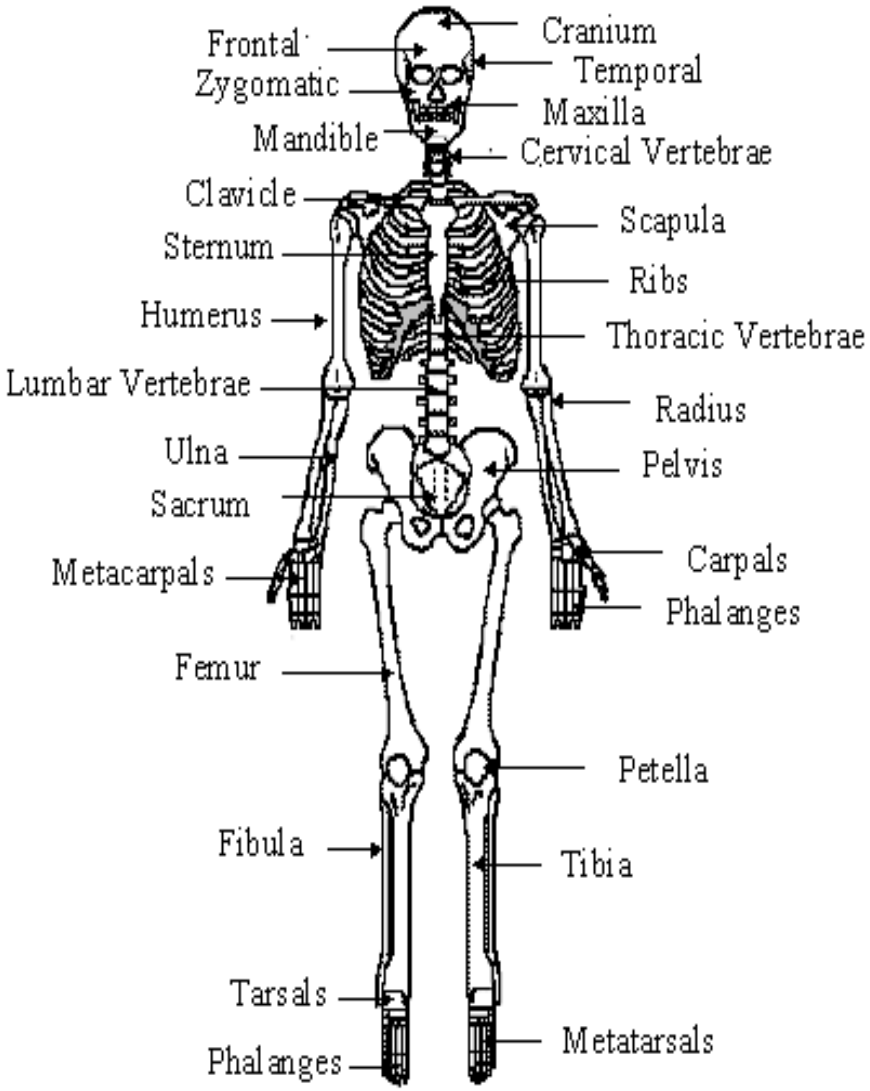
Mr. Hanson's Science Class

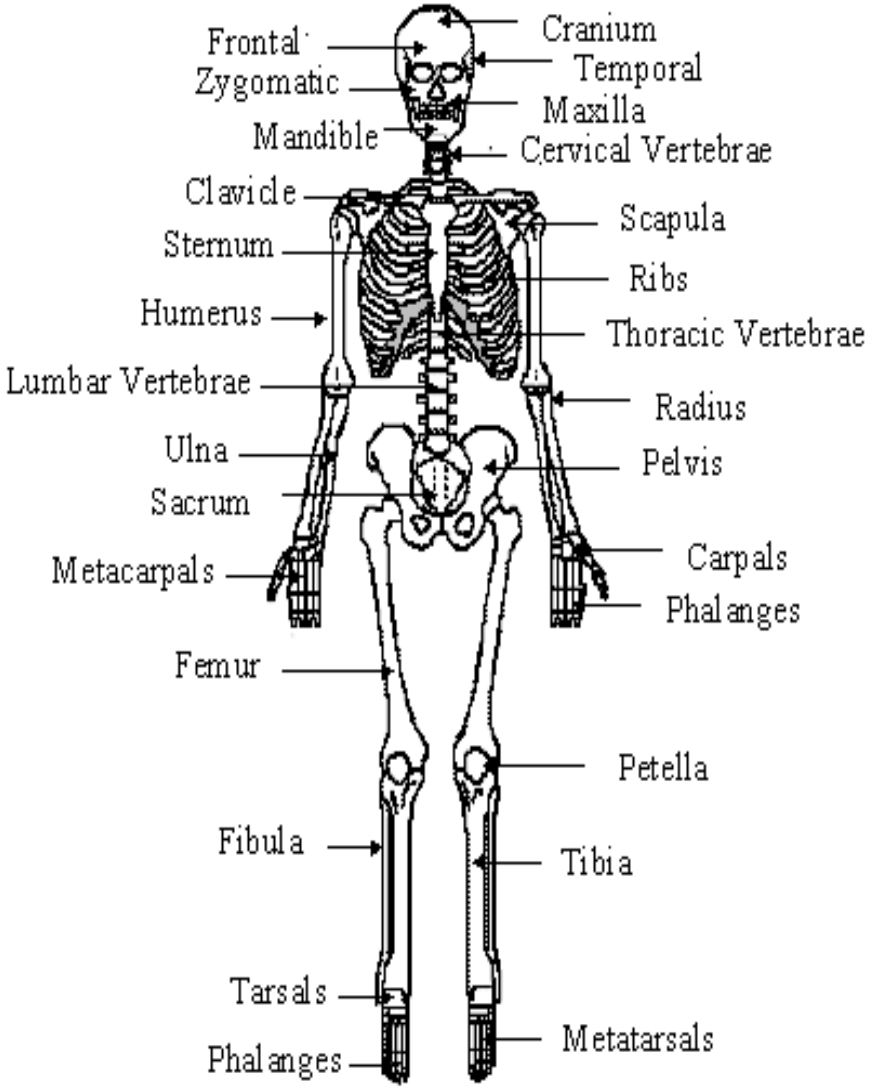
Skeletal System Structure

- Consists of bone, joints, ligaments, cartilage, bone marrow.
- A newborn baby has 300 bones, and they fuse together over time.
- Adult has 206 bones.
- Axial Skeleton (80 bones) is the skull, hyoid, auditory ossicles, ribs, sternum, vertebral column.
- Appendicular skeleton (126 bones) is the upper and lower Limbs, pelvic girdle, and pectorial shoulder girdle.



Skeletal System Structure

- **Skull**: has 22 bones fused together.
- **Types of bone**: long, short, flat, irregular, sesamoid.
- **Articulations:** are joints or points of contact between bones.
- **Growth and Development**: Flexible skeleton made of hyaline cartilage that eventually forms a bony skeleton when growing.

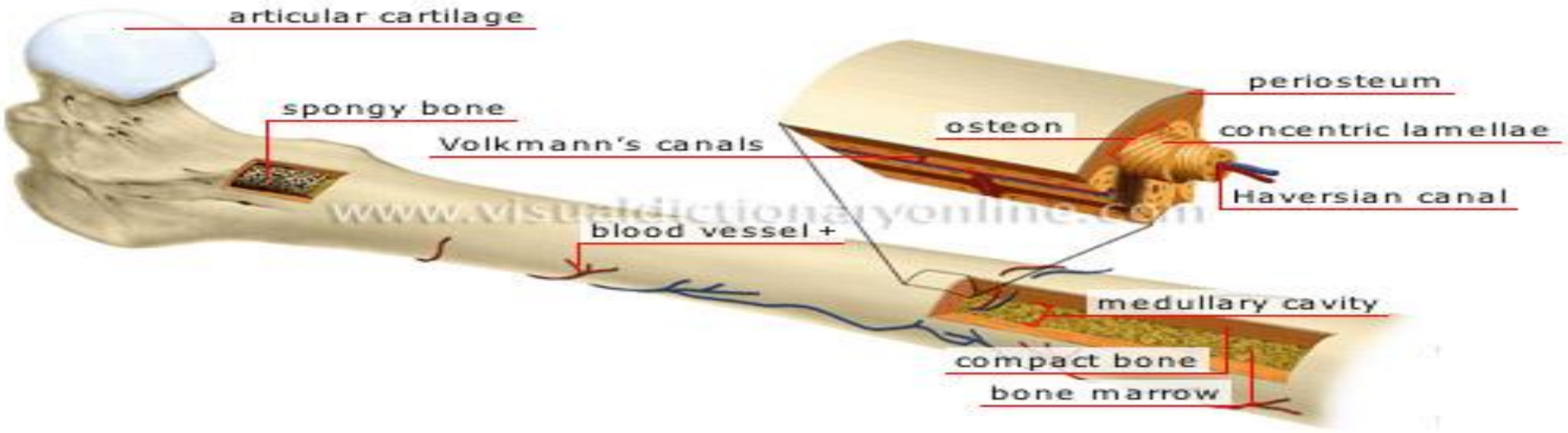


Skeletal System Function

- **Support** The skeleton is the framework of the body, it supports the softer tissues and provides points of attachment for most skeletal muscles.
- **Protection** The skeleton provides mechanical protection for many of the body's internal organs, reducing risk of injury to them.
  For example, cranial bones protect the brain, vertebrae protect the spinal cord, and the ribcage protects the heart and lungs.
- **Assisting in Movement** Skeletal muscles are attached to bones, therefore when the associated muscles contract they cause bones to move.
- **Storage of Minerals** Bone tissues store several minerals, including calcium (Ca) and phosphorus (P). When required, bone releases minerals into the blood - facilitating the balance of minerals in the body.
- **Production of Blood Cells** The red bone marrow inside some larger bones, blood cells are produced - Red Blood Cells, White Blood Cells and Platelets.
- **Storage of Chemical Energy** With increasing age some bone marrow changes from 'red bone marrow' to 'yellow bone marrow'.
  Yellow bone marrow consists mainly of adipose cells, and a few blood cells. It is an important chemical energy reserve.

Diagram of Bone

- This is the structure of bone and of bone marrow inside bone.



Diseases of the Skeletal System

- **Osteochondroma(Bone Tumor)**: It may originate in the bones or spread there from another part of the body. In the United States, bone cancer accounts for only about 1 percent of cancer cases.
- **Leukemia**: is a cancer that primarily affects the blood, the skeletal system is involved as the cancer starts in the marrow of the bone. With this type of cancer, abnormal white blood cells multiply uncontrollably, affecting the production of normal white blood cells and red blood cells.
- **Scoliosis**: a side-to-side curve in the back or spine, often creating a pronounced "C" or "S" shape when viewed on an x-ray of the spine. This condition is typically becomes evident during adolescence.

Treatments for Bone Diseases

- **Osteochondroma(Bone Tumor):**
- **Leukemia:**
- **Scoliosis:**