Chapter 22-2
The Skeletal System
p584-587

Functions of the Skeletal System

- _____- bone provides a framework and anchoring point for all soft organs, leg bones support body, etc.
- _____- skull protects brain, rib cage protects heart and lungs
- _____- Skeletal muscles use bones as levers to move the body
- _____- Fat is stored in _____ bone marrow, minerals (Ca) are also stored in bone matrix
- Blood cell formation- occurs in _____ marrow cavities

Types of bone tissue

- **compact bone**- _____
- **spongy bone** - composed of _____, lots of open spaces

Bone Formation

- in fetus, a model of the skeleton is made from hyaline _____, or fibrous membranes
- osteoblasts form calcium matrix on cartilage (=**ossification**), until they are trapped (become mature osteocytes)
- Once cartilage is completely covered, it is digested away, leaving medullary _____
- cartilage on the end of bone is kept to help protect joints (**articular cartilage**)
- cartilage is also kept along the _____
  - cells along the epiphyseal plate continue to produce bone, which results in lengthening of bone
  - epiphyseal plate is completely ossified after adolescense

Bone remodeling

- Bone is a dynamic tissue, constantly changing in response to stress
- Bone becomes _____ where stress is applied, and _____ where stress is less
- Osteoblasts (a type of bone cell) produce bone matrix wherever stress is detected
- Osteoclasts (another type of bone cell) destroy bone where it is not needed

Bone fractures

- **fracture**- _____
- fractures mended by **bone reduction**- the realignment of the broken ends of bones
- **closed reduction-** physician uses _____ to realign bone
- **open reduction**- surgery with _____/etc is used to realign bone

The Skeleton

- Consists of 206 bones
- **axial skeleton**: consists of the _____
- **appendicular skeleton**: consists of the _____

  _____

Joints (= Articulations)

- locations where two bones meet
- two main functions:
  - ☐ holds bones together securely (attached with _____)
  - ☐ allows mobility

Types of Joints

- _____
  - bones may slide past one another
  - found in _____
- _____ Joints
  - bones free to move in many directions (shoulder)
- _____Joint
  - pivots around one axis
  - ex: knee, elbow

Levers 101…

- **lever**: a rigid bar that moves on a fixed point
  - **_____:** the point around which the lever rotates
  - _____: the resistance force the lever is trying to move
  - _____: the applied force to a lever
- The arrangement of these three points determines the **class** of the lever

1st Class Levers

- The fulcrum is between the load and effort forces

Draw a 1st class lever above

2nd Class Lever

- The **load** is between the effort and the fulcrum

Draw a 2nd class lever above

3rd Class Lever

- The **effort** force is between the fulcrum and the load

Skeleton Lever Examples

Draw a 3rd class lever above

- Here's some examples of each lever in the skeletal system!