**Ch. 6 Skeletal System Study Guide**

*6 -1 Students can list and describe the primary functions of the skeletal system.*

* Name and briefly describe the 5 primary functions of the skeletal system.

*6-2 Students can use a graphic organizer to classify bones according to shape and internal organization, and give examples of each type.*

* **Sutural bones**
* **Irregular bones**
* **Short bones**
* **Flat bones**
* **Long bones**
* **Sesamoid bones**
* **Bone markings**
* **Diaphysis**
* **Epiphysis**
* **Metaphysis**
* **Compact bone**
* **Medullary cavity**
* **Spongy bone**
* **Cortex**
* Make a chart identifying and describing the 6 broad categories for classifying bone according to shape. Provide an example and picture for each as well.

*6-3 Students can identify the cell types in bones, and list their major functions.*

* **Hydroxyapatite**
* **Osteocytes**
* **Lamellae**
* **Canaliculi**
* **Osteoblast**
* **Osteogenesis/ossification**
* **Osteoid**
* **Osteoprogenitor cells**
* **Osteoclast**
* **Osteolysis**
* Make a flow chart listing the cells in bone from immature to mature and their major functions.
* How would the strength of bone be affected if the ratio of collagen to calcium phosphate increased?
* If the activity of osteoclasts exceeds the activity of osteoblasts in a bone, how will the mass of the bone be affected?

*6-4 Students can compare and contrast the structures and functions of compact bone and spongy bone.*

* **Osteon**
* **Central Canal**
* **Perforating canals**
* **Concentric lamellae**
* **Interstitial lamellae**
* **Circumferential lamellae**
* **Trabeculae**
* **Red bone marrow**
* **Yellow bone marrow**
* **Periosteum**
* **Endosteum**
* Make a Venn diagram comparing and contrasting the structure and functions of compact bone and spongy bone.

6-5 *Students can compare the mechanisms of endochondral ossification and intramembranous ossification.*

* **Calcification**
* **Endochondral ossification**
* **Primary ossification center**
* **Secondary ossification center**
* **Articular cartilage**
* **Epiphyseal cartilage**
* **Epiphyseal line**
* **Intramembranous ossification**
* **Dermal bones**
* **Ossification center**
* In endochondral ossification what is the original source of osteoblasts?
* As briefly as possible describe the process of endochondral ossification, using key words and terms.
* During intramembranous ossification which type of tissue is replaced?
* How could x-rays of the femur be used to determine if a person has reached full height?

6-6 *Students can describe the remodeling and homeostatic mechanisms of the skeletal system.*

* **Remodeling**
* Describe the process of bone remodeling.
* Why is bone remodeling important?

6-7 *Students can discuss the effects of exercise, hormones, and nutrition on bone development and on the skeletal system.*

* Describe the theorized mechanism that controls then internal organization and structure of bone.
* Why would you expect the bones of a weight lifter to be thicker and heavier than a jogger?
* What happens when bone isn’t stressed for long periods of time?
* Make a chart listing the hormone, its source, and its effects on the skeletal system.
* A 7 year old child has pituitary gland tumor involving the cells that secrete GH, resulting in increased levels of GH. How will this condition affect the child’s growth?

*6-8 Students can explain the role of calcium as it relates to the skeletal system.*

* **Parathyroid glands**
* **Parathyroid hormone**
* **Calcitonin**
* Draw a diagram showing how PTH helps increase the calcium ion concentration of blood?
* Draw a diagram showing how calcitonin helps decrease the calcium ion concentration of blood?

*6-9 Students can describe the types of fractures, and explain how fractures heal.*

* **Fracture**
* **Fracture hematoma**
* **External callus**
* **Internal callus**
* Describe in a brief paragraph the repair of a fracture.
* At which point in fracture repair would you find an external callus?

*6-10 Students can summarize the effects of the aging process on the skeletal system.*

* **Osteopenia**
* **Osteoporosis**
* **Osteoclast-activating factor**
* List and describe in order of severity opsteopenia, osteoporosis, and normal bone.
* Why is osteoporosis more common in older women than in older men?