

BIOLOGY 14
HUMAN ANATOMY

LABORATORY EXERCISE 6

Bone Tissue and Skeleton

Ex. 6

PROCEDURE:

1. Due to budget cuts, the County Coroner's office has become way behind in its work. They have asked my BC Anatomy students to help them by identifying some bones that have recently been discovered in the desert.

You have been given a box of bones. (These may be plastic casts of bones or they may be real human bones.) Bones are very fragile so handle them carefully. Using the diagrams on p. 152 of your text, do the following:

- a. Identify all bones by name.
- b. Remove any bones that do not appear to be human.
- c. Reconstruct the body by placing each bone in its proper place with the body lying in the anatomical position. Check the diagram in your text to make sure you have done this correctly.
- d. Ask your professor to check your placement of the bones.
- e. How many bodies does your collection represent? Is your skeleton complete or are parts missing? In the real world, how do you think found skeletons might have become incomplete?

- f. When you have finished, look at other students' reconstructions and see if they have done it correctly.
2. Examine slides of bone tissue x-section. Sketch the tissue and label the following structures:
 - Lamella
 - Osteocyte
 - Lacuna
 - Haversian canal

- Canaliculus
- Osteon or Haversian system

3. Examine a longitudinally sectioned long bone. Sketch the bone and label the following structures:

- Diaphysis
- Epiphysis
- Epiphyseal line (or plate)
- Articular cartilage
- Periosteum
- Compact bone
- Spongy bone
- Medullary cavity
- Trabeculae
- Endosteum
- Marrow (red, yellow)

BONE DEVELOPMENT:

1. Describe the steps in the development of long bones:

BONY MARKINGS:

Below is a list of bony markings. These are generic terms which are used in naming specific spots on bones. Write the definition for each term and give an example for each in the table.

BONY MARKING	DEFINITION	EXAMPLE
Fovea		
Foramen		
Fossa		
Sulcus		

Meatus		
Fissure		
Sinus		
BONY MARKING	DEFINITION	EXAMPLE
Process		
Condyle		
Head		
Trochanter		
Tubercle		
Tuberosity		
Crest		
Spine, Spinous Pr.		
Nutrient Foramen		
Neck		
Epicondyle		

COMPLETE THE FOLLOWING STATEMENTS:

1. A bone that is plate-like is classified as a(an) _____ bone.
2. The bone of the upper leg is an example of a(an) _____ bone.
3. The bones of the wrist are examples of _____ bones.
4. The kneecap is called the _____ and is an example of a(an) _____ bone.
5. Explain where cartilage is found in a long bone. _____

6. The bones that form a protective covering around the back and sides of the brain are examples of _____ bones.

7. Explain the differences between the epiphysis and diaphysis of a bone.

8. Explain the differences between the periosteum and the endosteum.

9. Describe where you would expect to find fibrocartilage associated with bones?

10. List the locations where you would expect to find red bone marrow in a newborn?

11. List the locations where you would expect to find red bone marrow in an adult?

12. What would you find in the adult in place of the red bone marrow found in a baby?

13. Where is the bone marrow found in the long bones? _____

PROCEDURE:

Examine the fully articulated skeleton in your laboratory and, comparing it to the diagram on p. 152, answer the following questions.

1. List the bones which make up the appendicular skeleton:

2. List the bones which make up the axial skeleton:

3. Define Sesamoid bone:

4. List at least 2 examples of sesamoid bones:

5. Name the bones which protect the organs located in the thoracic cavity.

6. Name the bones which protect the organs of the abdominopelvic cavity.

7. List the steps in the healing of a bone fracture:
