

## Bio 241 A&P 1

### Learning Anatomical Bone Features Worksheet:

The study guide, Lab handouts 1 through 3, and your textbook are the resources you will need to complete this worksheet.

1. Define the term Head as it refers to bones. ***(Enlarged rounded end involved in a joint)***
  - a. What bones have a head? ***(Axial Skeleton: Mandible and ribs)***  
***(Appendicular Skeleton: Humerus, radius, ulna, femur)***
2. Define the term Neck as it refers to bones. ***(Constricted area between the head and body)***
  - a. What bone have a neck? ***(Axial Skeleton: Mandible and ribs)***  
***(Appendicular Skeleton: Humerus, radius, ulna, femur)***
3. Define the term Body as it refers to bones. ***(Main portion of a bone, most bones have a body)***
  - a. What bones, have a body? ***(Axial Skeleton: Mandible, ribs, sphenoid, sternum, vertebra)***
4. Define the term Angle as it refers to bones. ***(Bend in a bone)***
  - a. What bones have specific angles? ***(Axial Skeleton: Mandible)***  
***(Appendicular Skeleton: Scapula [inferior and superior])***
5. Define the term Ramus as it refers to bones. ***(Extension of a bone beyond an angle)***
  - a. What bones have specific ramus(i)? ***(Axial Skeleton: Mandible)***  
***(Appendicular Skeleton pubic ramus [inferior and superior])***
6. Define the term Margin as it refers to bones. ***(Border or edge of a bone)***
  - a. What bones have specific Margins? ***(Axial Skeleton: Frontal [supraorbital])***  
***(Appendicular Skeleton Scapula [axillary, superior, vertebral])***
7. Define the term Condyle as it refers to bones. ***(smooth rounded articular surface)***
  - a. What bones have specific condyles? ***(Axial Skeleton: Occipital and Mandible)***  
***(Appendicular Skeleton Humerus (capitulum (lateral) and trochlea (medial)), Tibia[medial & lateral], Femur[medial & lateral])***
8. Define the term Epicondyle as it refers to bones. ***(A rough area near or above a condyle)***
  - a. List bones and their specific epicondyles you need to know.  
***(Appendicular Skeleton: Humerus[medial & lateral], Femur[medial & lateral])***

9. Define the term Linea or line as it refers to bones. **(A low ridge on a bone)**

- a. List bones and their specific linea or lines you need to know.

**(Axial Skeleton: Occipital- Superior nuchal line & Inferior nuchal line)**

**(Appendicular Skeleton: Femur-Linea aspera)**

10. Define the term Crest or crista as it refers to bones. **(A Prominent ridge on a bone)**

- a. List bones and their specific crest or crista you need to know.

**(Axial Skeleton: Ethmoid- Crista galli)**

**(Appendicular Skeleton: Os Coxae-Iliac crest & Pubic crest, Tibia-Tibial crest)**

11. Define the term Spine as it refers to bones. **(A very high ridge on a bone)**

- a. List bones and their specific spines you need to know.

**(Axial Skeleton: All vertebra have a Spinous process)**

**(Appendicular Skeleton: Os Coxae-ileum and ischial portions, Scapula)**

12. Define the term Tubercle as it refers to bones. **(Small, rounded rough process on a bone)**

- a. List bones and their specific tubercles you need to know. **(Axial Skeleton: Ribs)**

**(Appendicular Skeleton: Clavicle-Conoid tubercle)**

13. Define the term Tuberosity as it refers to bones. **(A Knoblike process; larger than a tubercle)**

- a. List bones and their specific Tuberosities you need to know.

**(Appendicular Skeleton: Humerus-Deltoid tuberosity, radius-Radial tuberosity, Os Coxae- ischium portion-Ischial tuberosity, Tibia- Tibial tuberosity)**

14. Define the term Trochanter as it refers to bones. **(Large tuberosity)**

- a. List bones and their specific trochanters you need to know

**(Appendicular Skeleton: Femur-greater and lesser tuberosities)**

15. Define the term Hamulus as it refers to bones. **(Hook-shaped process on a bone)**

- a. List the only bone with hamulus from your labs. **(Appendicular Skeleton: Hamate)**

16. Define the term Foramen as it refers to bones. **(A hole in a bone)**

- a. List bones and their specific foramen you need to know.

**(Axial Skeleton: Frontal-Supraorbital foramen, Occipital-Foramen magnum & Hypoglossal foramen, Temporal bone-Stylomastoid foramen, Jugular foramen, and Carotid canal, Sphenoid bone-Foramen ovale & foramen rotundum, Mandible-Mandibular foramen & Mental foramen, All vertebra-Spinal**

**foramen & Intervertebral foramen, Cervical vertebra-Transverse foramen, Sacrum-Pelvic & dorsal foramine)**

**(Appendicular Skeleton: Os Coxae-Pubic portion-Obturator foramen)**

17. Define the term Meatus as it refers to bones. **(A tunnel or canal in a bone)**

- a. List bones and their specific meatus you need to know.

**(Axial Skeleton: Temporal bone-Petrous portion [External auditory meatus & Internal auditory meatus])**

18. Define the term Fissure as it refers to bones. **(A Cleft in a bone)**

- a. List bones and their specific fissure you need to know.

**(Axial Skeleton: Sphenoid bone-Superior orbital fissure, Maxilla bone-Inferior orbital fissure)**

19. Define the term Sinus as it refers to bones. **(Cavity, labyrinth, or hollow space in a bone)**

- a. List bones and their specific sinus you need to know.

**(Axial Skeleton: Frontal bone-Frontal sinus, Sphenoid bone-Sphenoidal sinus, Ethmoid bone-Ethmoidal sinus, Maxilla-Maxillary sinus, Temporal bone-Mastoid portion-Mastoid sinus)**

20. Define the term Fossa as it refers to bones. **(General term for a depression, or depressed area of a bone)**

- a. List bones and their specific Fossa you need to know

**(Axial Skeleton: Occipital bone-Hypoglossal fossa, Temporal bone-petrous portion-Mandibular fossa, Sphenoid bone-Hypophyseal fossa, Maxilla bone-Incisor fossa)**

**(Appendicular Skeleton: Scapula bone-subscapular fossa, supraspinatous fossa, infraspinatous fossa, Scapula-Glenoid fossa, Os coxae-Ileum portion-Iliac fossa, Femur-Intercondylar fossa)**

21. Define the term Notch as it refers to bones. **(A depression in the margin of a bone)**

- a. List bones and their specific notch you need to know

**(Axial Skeleton: Frontal Bone-Supraorbital notch, Mandible-mandibular notch, Sternum-jugular notch)**

**(Appendicular Skeleton: Ulna-Semilunar or trochlear & Radial notch, Radius-Ulnar notch, Os Coxae, Ileum portion-Greater sciatic notch & Ischium portion-Lesser sciatic notch, Tibia-Fibular notch)**

22. Define the term Sulcus as it refers to bones. **(A groove or deeper narrow depression on a bone)**

- a. List bones and their specific sulcus or sulci you need to know.

**(Axial Skeleton: Superior sagittal sulcus (frontal, parietal, and occipital bones, Transverse sulci (occipital and possibly Temporal bones), Sigmoid sulci (temporal bones))**

**(Appendicular Skeleton: Humerus-Intertubercular or bicipital groove or sulcus)**

23. What are wormian or sutural bones? **(bone islands in sutures)**

a. Where would you find them?

**(Axial Skeleton: (most common in Lambdoidal suture, but also can be found in other sutures)**

24. What bones make up the “axial” skeleton? **All skull bones, all Vertebra, Sacrum, Coccyx, Hyoid, Sternum and Ribs)**

25. What bones make up the “appendicular” skeleton? **All bones of the pectoral girdle, arms and hands, All bone of the Pelvic girdle, legs and feet.**

26. List and describe the functions of the skeleton system.

1. **Support:** *Underlining bone* serves as structural support of overlying soft tissue. Your outward appearance is due to underlying bones particularly the face.
2. **Protection:** *Note the brain is provided the greatest protection being completely surrounded by the skull bones. Also RBC producing tissue, red bone marrow is found in the spaces of spongy bone. Spinal cord is protected by vertebra, The heart and lungs protected by ribs and sternum, Kidneys by 11<sup>th</sup> and 12<sup>th</sup> rib, bladder, vagina, uterus, and ovaries are protected by the pelvis girdle. Sorry guys your reproductive organs are just left hanging out without boney protection.*
3. **Assistance in Movement:** *Bones provide attachment for tendons of skeletal muscles, Bones interact at joints to provide levers for movement.*
4. **Mineral Homeostasis:** *Your major reservoir (99%) of  $Ca^{2+}$  is bone tissue as mineral salts.*
5. **Blood Cell Production:** *Hemopoiesis, RBC production, occurs in red bone marrow.*
6. **Triglyceride Storage:** *Long bones contain a medullary cavity that is used to store adipose tissue that is referred to as yellow bone marrow*