SI A&P - Full Discipline Demo - Fetal Pig

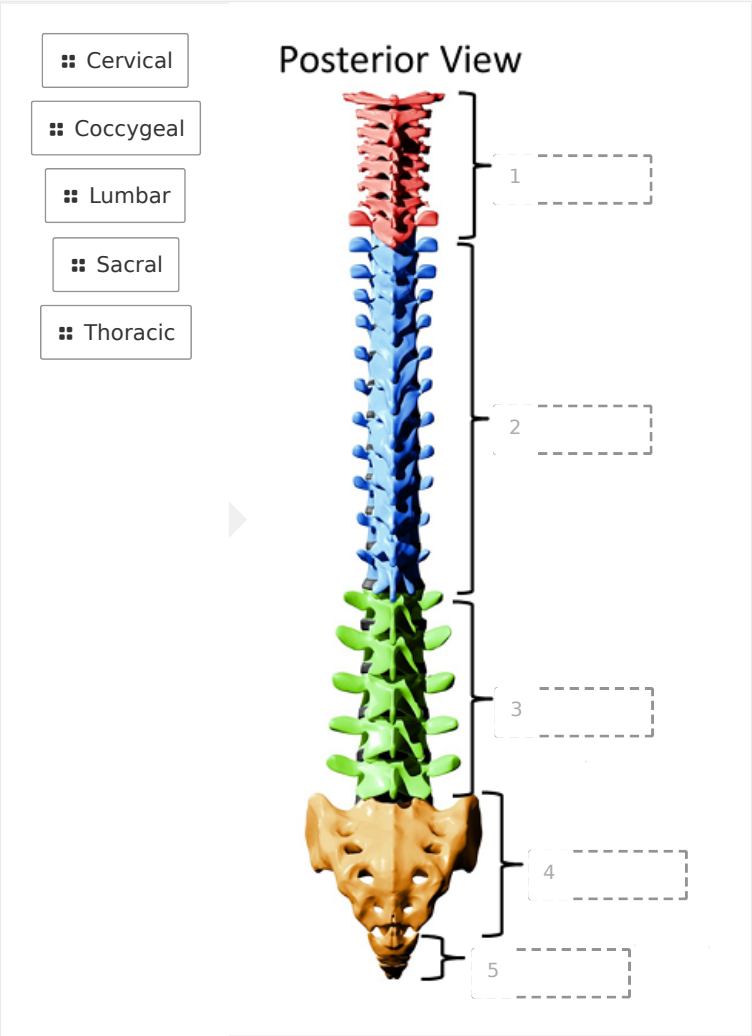
Axial and Appendicular Skeleton

Final Report - Answer Guide

Institution	Science Interactive University
Session	SI A&P - Full Discipline Demo - Fetal Pig
Course	SI A&P - Full Discipline Demo - Fetal Pig
Instructor	Sales SI Demo

Test Your Knowledge

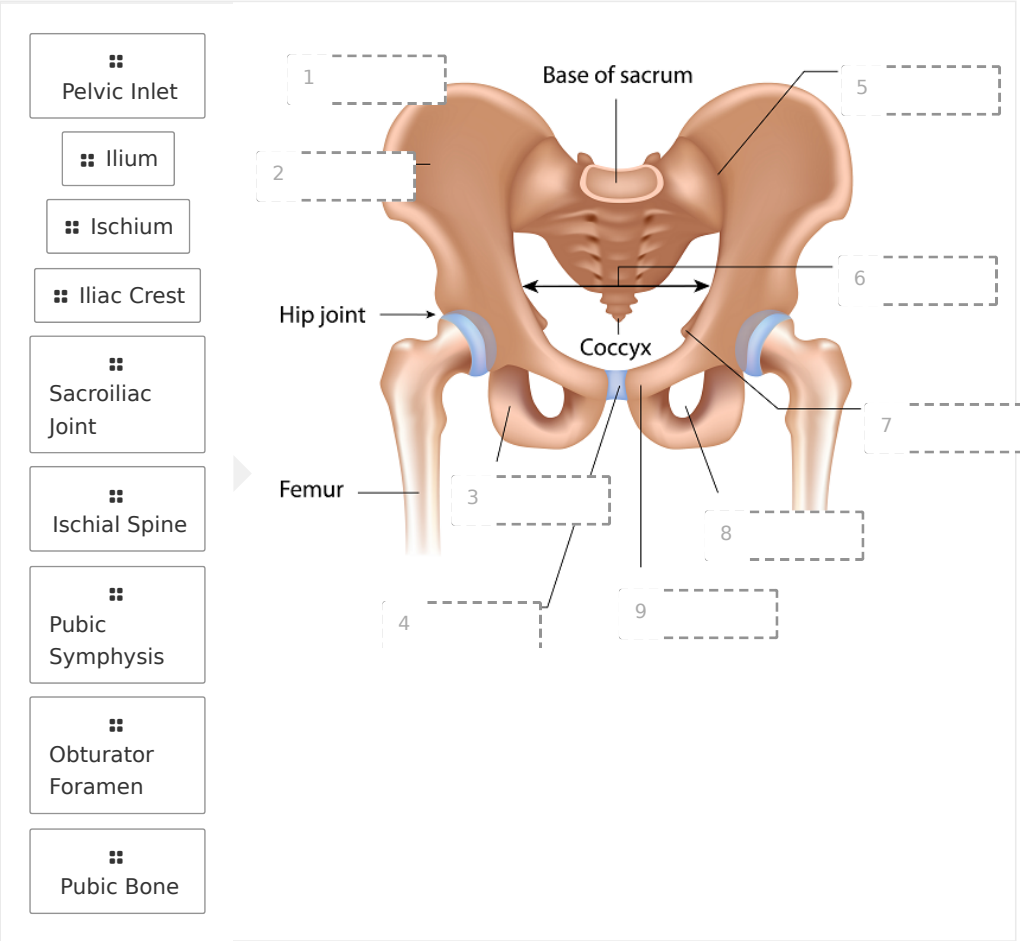
Label the regions of the vertebral column.



Correct answers:

1 Cervical 2 Thoracic 3 Lumbar 4 Sacral 5 Coccygeal

Label the image of the pelvic girdle.



Correct answers:

1 Iliac Crest 2 Ilium 3 Ischium 4 Pubic Symphysis

5 Sacroiliac Joint 6 Pelvic Inlet 7 Ischial Spine

8 Obturator Foramen 9 Pubic Bone

Exploration

The axial skeleton includes the bones of the skull, vertebral column, and pelvis.

- True
- False ✔

The _____ vertebrae form the curve of the neck.

- [x] cervical
- [ ] thoracic
- [ ] lumbar
- [ ] sacral

Most of the bones of the appendicular skeleton are paired between the right and left sides of the body.

- [x] True
- [ ] False

Exercise 1

Where were suture joints and fused bones present in the structures examined in this exercise? Reference the appropriate photo panels in your explanation.

Suture joints and fused bones were present in the cranium and lower vertebral column that were examined in this exercise as recorded in Photo 1 (sacrum) and Photos 2-7 (bones of cranium).

Describe the different types of ribs. Which ribs are considered “false” and why?

The true ribs are each connected to the sternum by an individual attachment point. Ribs 8-12 are considered false. Ribs 8-10 are connected to the sternum via costal cartilage that merges to one connection point on the sternum, and ribs 11-12 are not connected to the rib cage at all.

What is the difference between the bones of the cranium and the facial bones?

The bones of the cranium enclose and protect the brain and act as attachment sites for muscles of the head and neck. The facial bones are small bones that form cavities for sensory organs, provide openings for the passage of air, ingestion of food, hold the teeth in place, and ultimately form the shape of the face.

Photo 1: Virtual Model Axial Skeleton
(SAMPLE ANSWER BELOW)

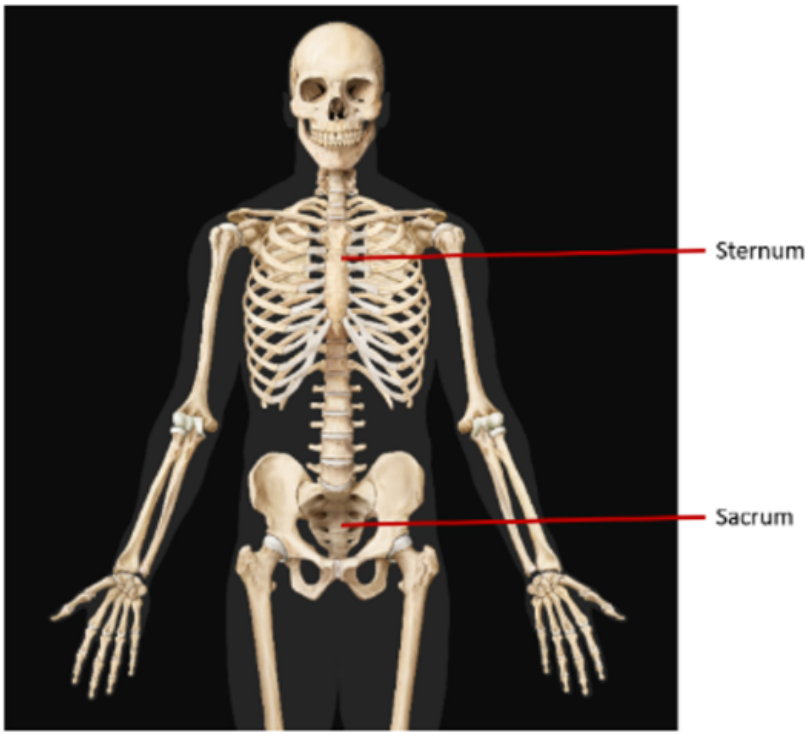


Photo 2: Virtual Model Skull
(SAMPLE ANSWER BELOW)

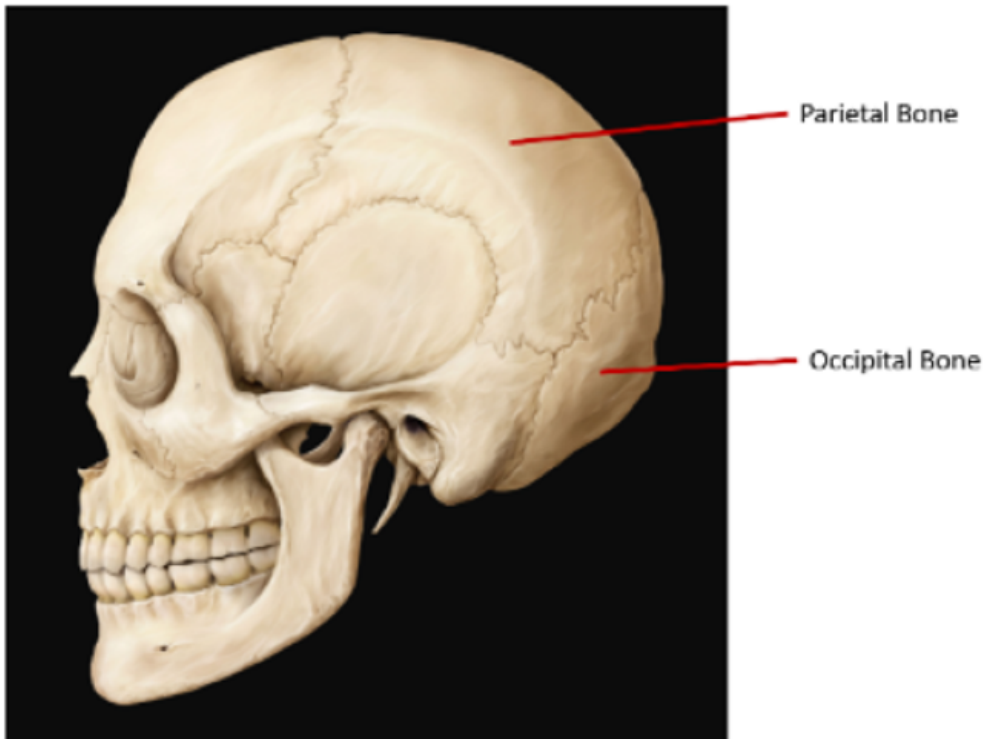


Photo 3: Anterior Skull
(SAMPLE ANSWER BELOW)

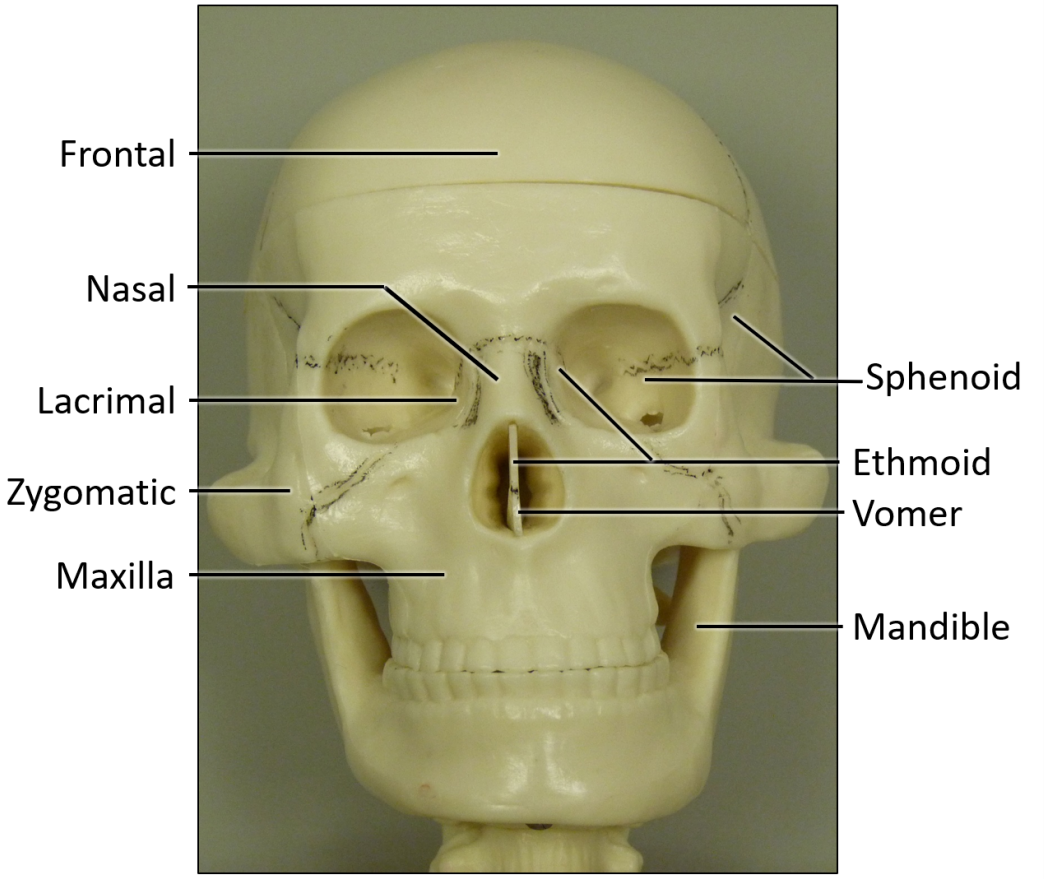


Photo 4: Posterior Skull
(SAMPLE ANSWER BELOW)

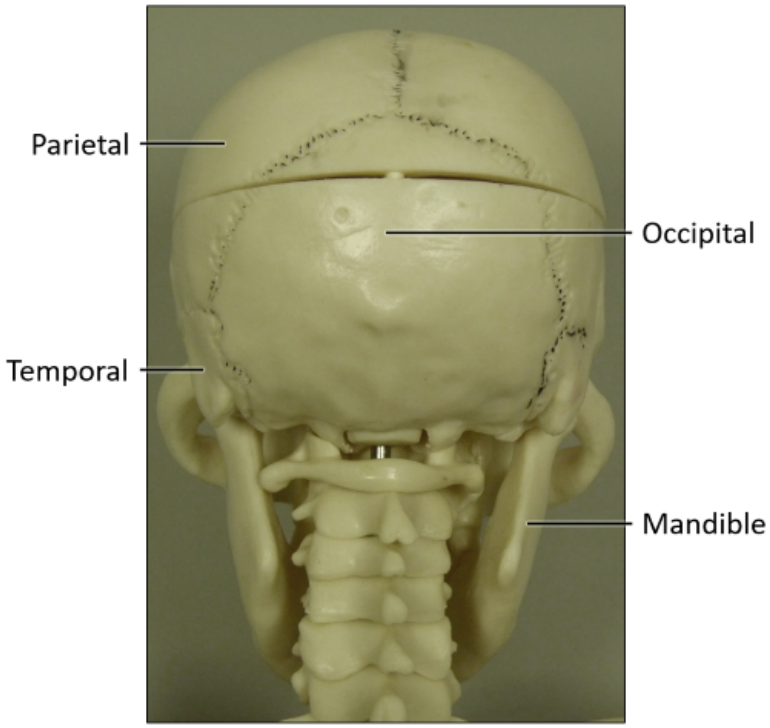


Photo 5: Lateral Skull
(SAMPLE ANSWER BELOW)

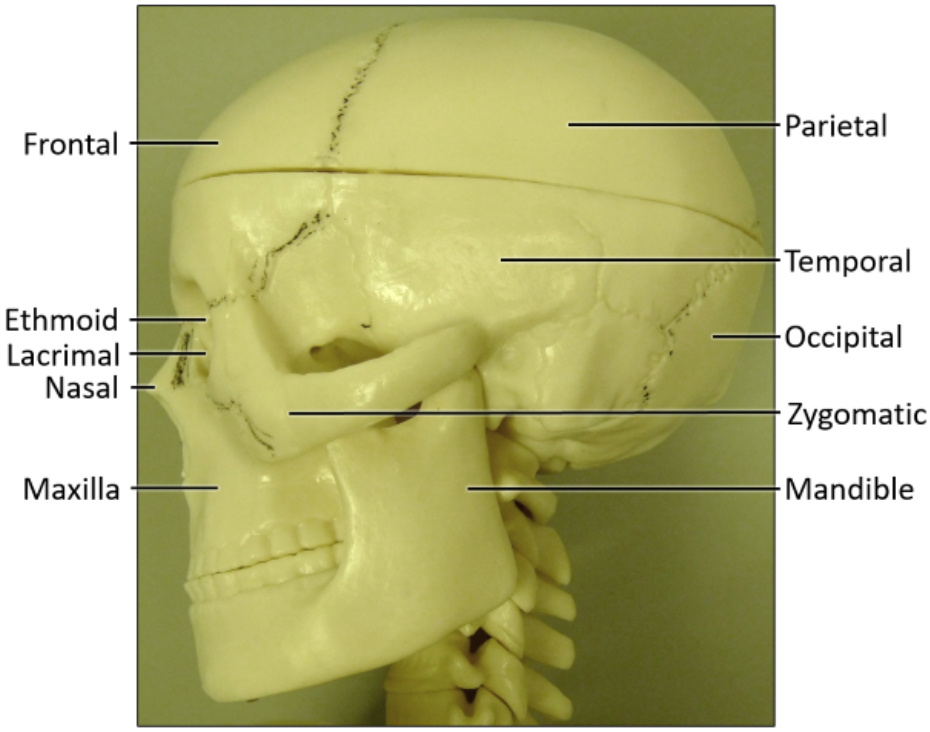


Photo 6: Inferior Skull
(SAMPLE ANSWER BELOW)

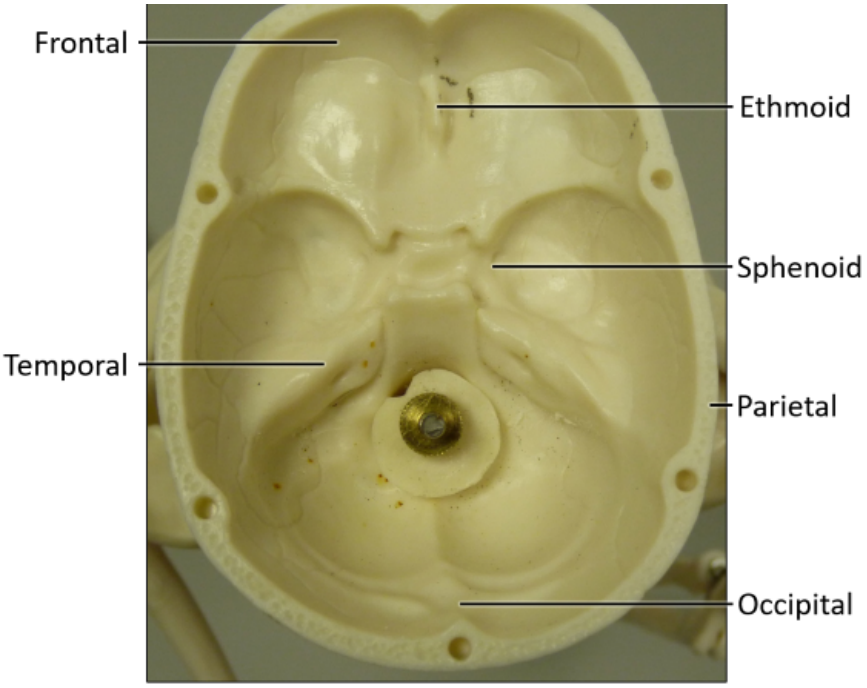
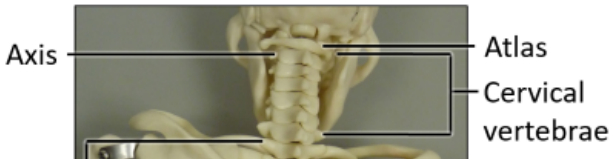


Photo 7: Vertebral Column
(SAMPLE ANSWER BELOW)



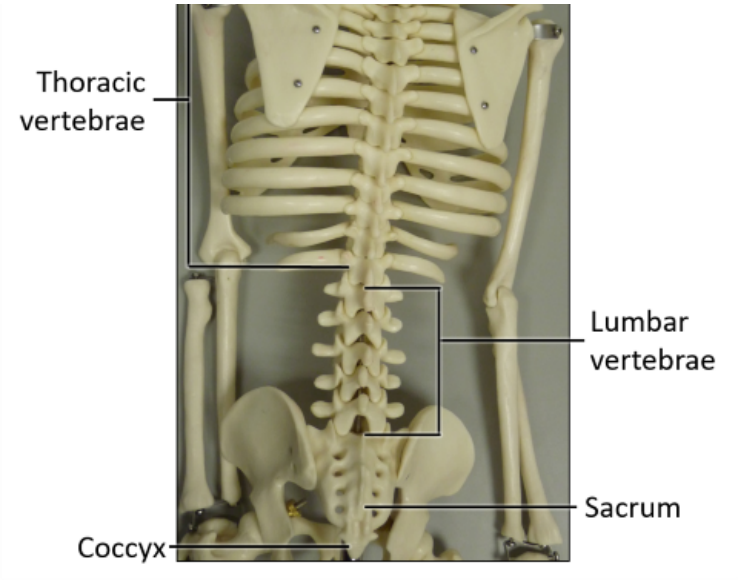
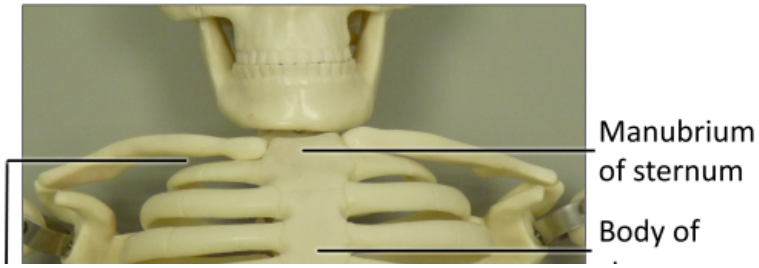
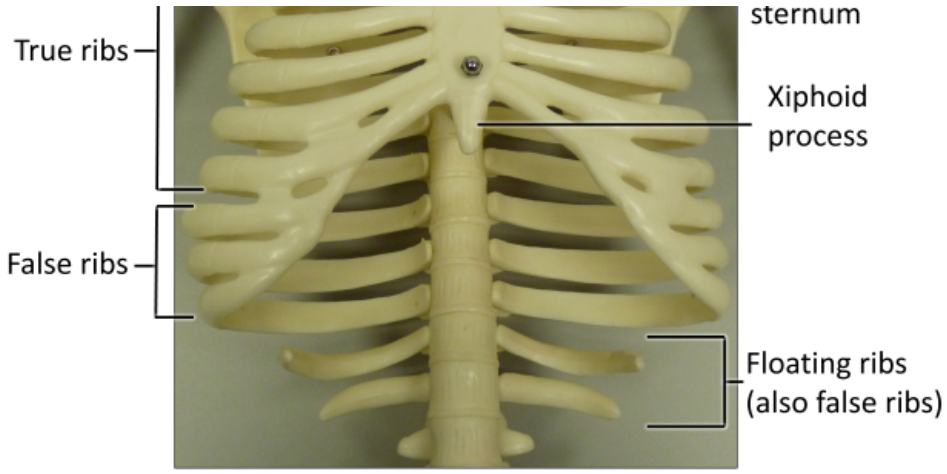


Photo 8: Thoracic Cage
(SAMPLE ANSWER BELOW)





Exercise 2

What is the function of the pectoral and pelvic girdles? Which bones identified in this exercise belong to each of these structures? Reference Data Table 1 and the appropriate photo panels in your explanation.

The pelvic and pectoral girdles function as supports that connect the limbs to the axial skeleton. The scapula, clavicle, ilium, ischium, and pubic bones were identified and recorded as part of the pectoral and pelvic girdles in Data Table 1 and Photos 9, 11, and 13.

What is the primary bone type found in the upper and lower limbs? Reference examples labeled in the appropriate photo panels in your answer.

Long bones are the primary bone type found in the upper and lower limbs. The radius, tibia, humerus, ulna, femur, and fibula are long bones that were labeled in Photos 9, 10, 11, and 13.

Photo 9: Virtual Model Upper Appendicular Skeleton
(SAMPLE ANSWER BELOW)

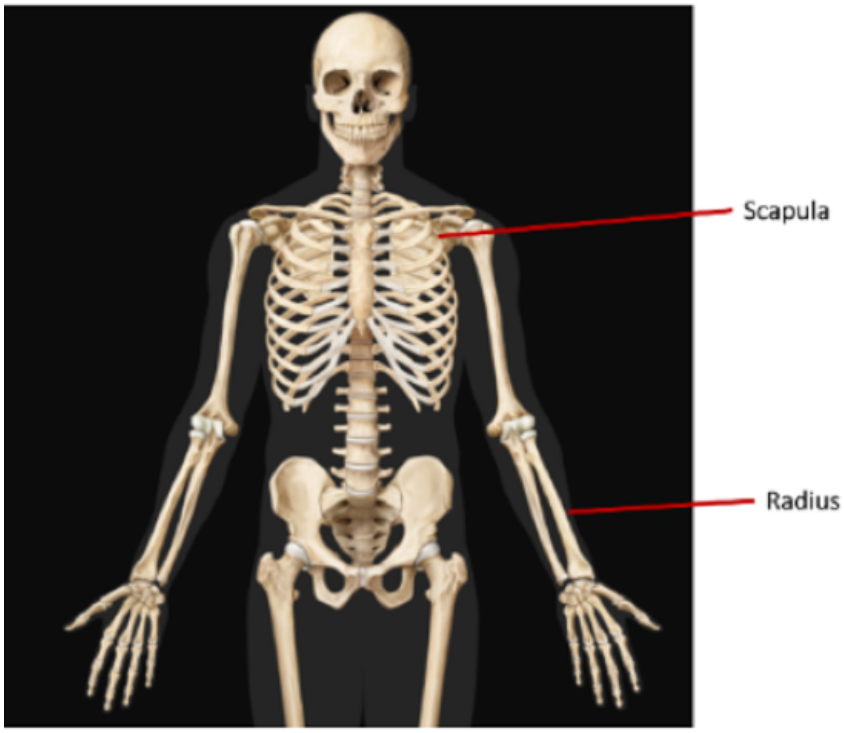


Photo 10: Virtual Model Lower Appendicular Skeleton

(SAMPLE ANSWER BELOW)

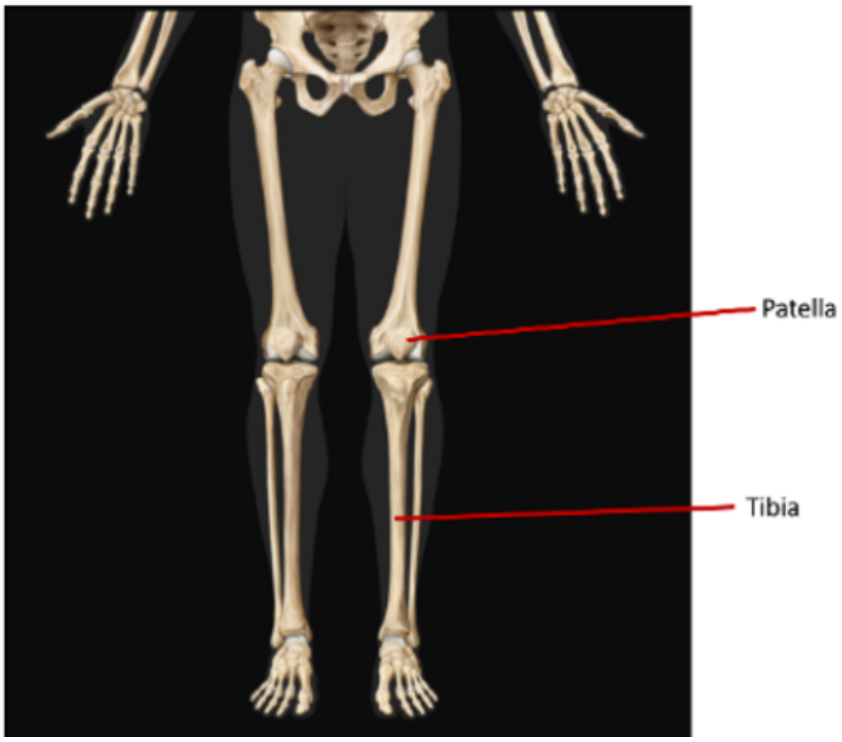


Photo 11: Pectoral Girdle and Upper Limbs

(SAMPLE ANSWER BELOW)

Data Table 1: Appendicular Skeleton
(SAMPLE ANSWER BELOW)

Bone Structure	Bones of Girdles	Bones of Limbs
Pectoral Girdle and Upper Limbs	Scapula, Clavicle	Humerus, Radius, Ulna
Wrist and Hand	None	All
Pelvic Girdle and Lower Limbs	Ilium, Ischium, Pubic Bone	Patella, Femur, Tibia, Fibula
Ankle and Foot	None	All

Photo 12: Wrist and Hand
(SAMPLE ANSWER BELOW)

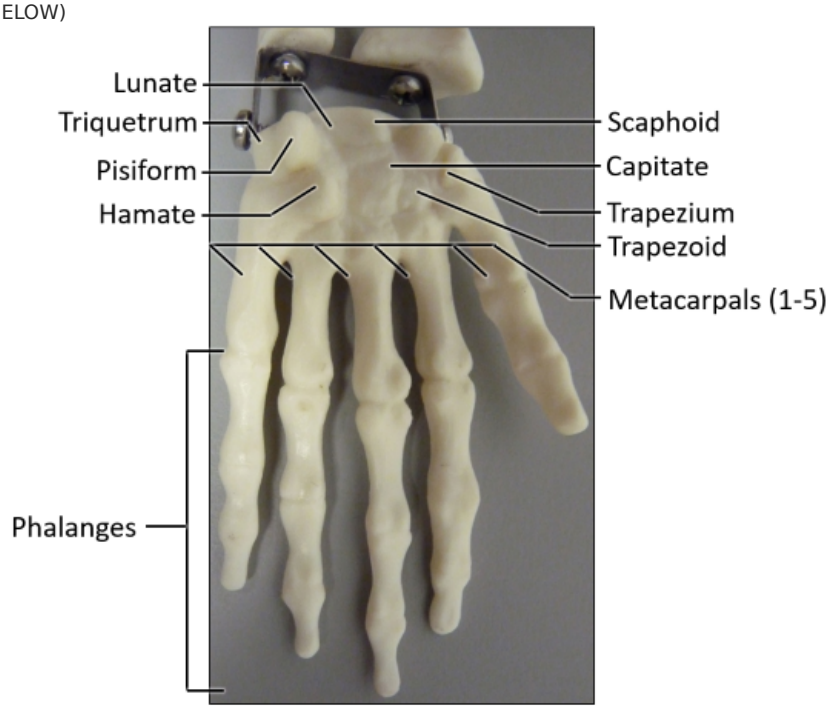


Photo 13: Pelvic Girdle and Lower Limbs
(SAMPLE ANSWER BELOW)

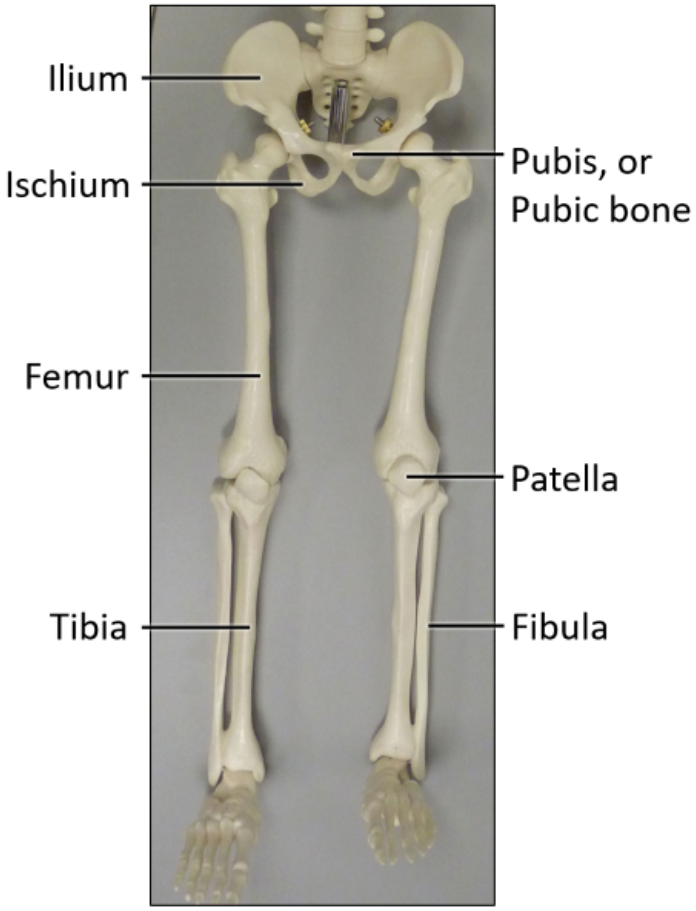
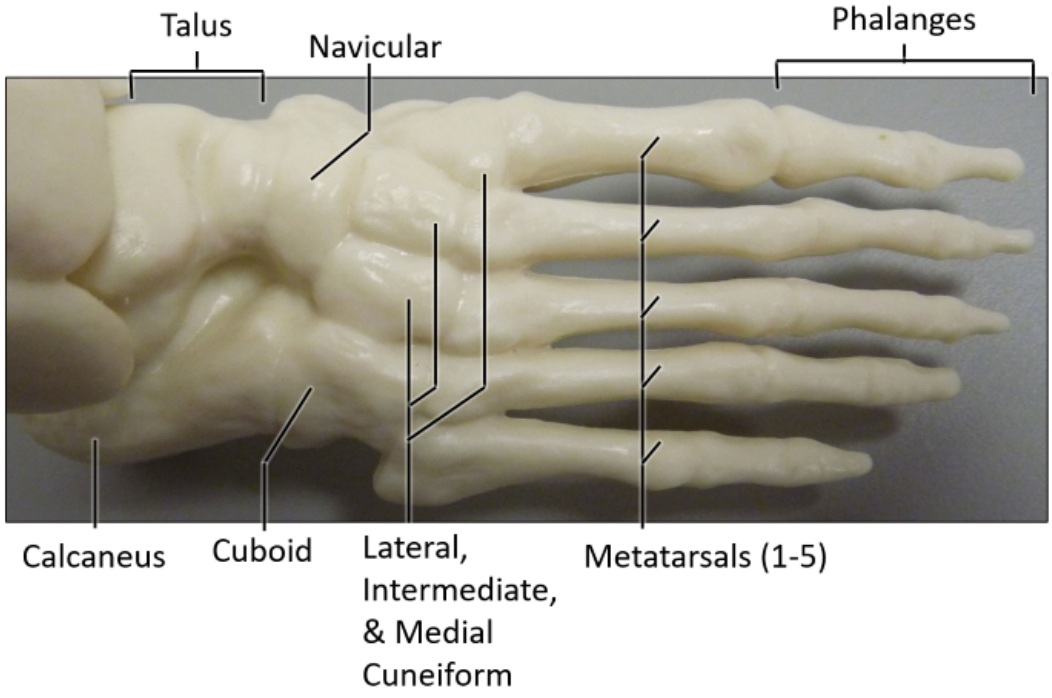


Photo 14: Ankle and Foot
(SAMPLE ANSWER BELOW)



Competency Review

The skull is part of the axial skeleton.

- True ✔
- False

The appendicular skeleton consists primarily of flat bones.

- True
- False ✔

The _____ are small bones that form cavities for sensory organs.

- cervical vertebrae
- facial bones ✔
- ribs
- carpal bones

The ischium, ilium, and pubic bones are bones within the _____.

- upper limbs
- vertebral column
- pelvic girdle ✔
- pectoral girdle

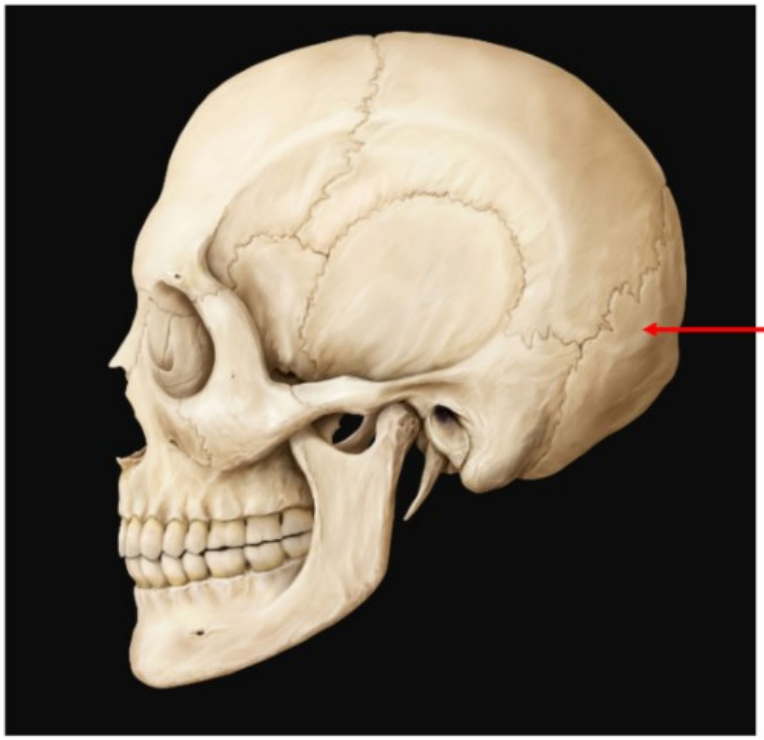
The _____ supports the upper limbs.

- mandible
- pelvic girdle
- occipital bone
- pectoral girdle ✔

The _____ are located in both the upper and lower limbs.

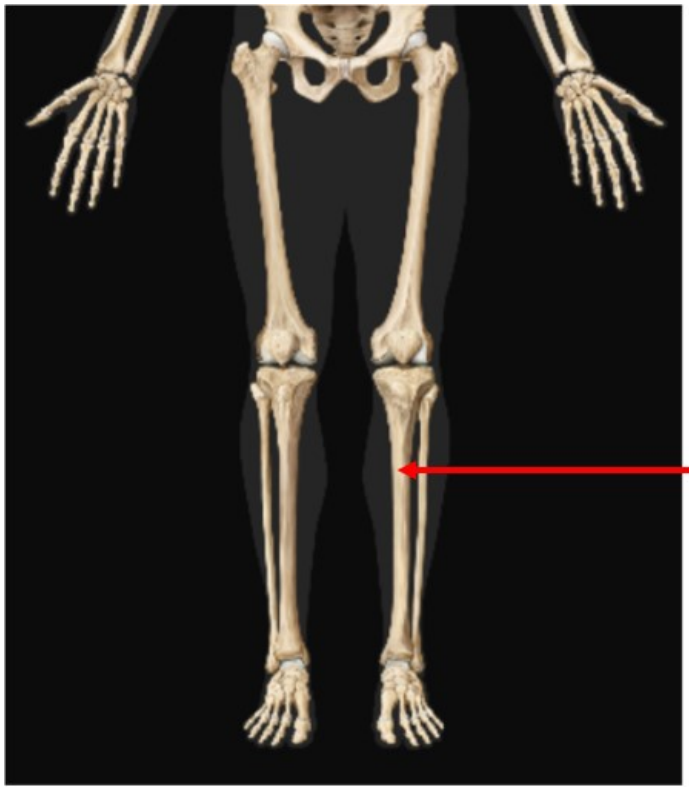
- phalanges ✔
- carpals
- vertebrae
- tarsals

The ____ bone is depicted by the red arrow in the image of the Virtual Model skull below.



- parietal
- occipital ✔
- patella
- ulna

The _____ is depicted by the red arrow in the image of the Virtual Model lower appendicular skeleton below.



- patella
- femur
- ulna
- tibia ✔

Extension Questions

Based on their structure, which bones would you predict are more prone to fracture, bones from the axial skeleton or bones from the appendicular skeleton? Would a fracture in the bones of the axial skeleton or bones from the appendicular skeleton be more damaging to the body? Explain your answers. (SAMPLE ANSWER BELOW)

The bones from the appendicular skeleton are more prone to fracture because their long structure and higher degree of movement makes them easier to break. It is more damaging to break a bone in the axial skeleton because those bones protect the internal organs, and so if one of them breaks they could damage one of the underlying organs.