

Biology 201: The Axial Skeleton

1) Fill in the table below with the name of the suture that connects the cranial bones.

Suture	Cranial Bones Connected
1)	Frontal and parietal bones
2)	Left and right parietal bones
3)	Occipital and parietal bones
4)	Temporal and parietal bones

Source Lesson: Cranial Bones of the Skull: Structures & Functions

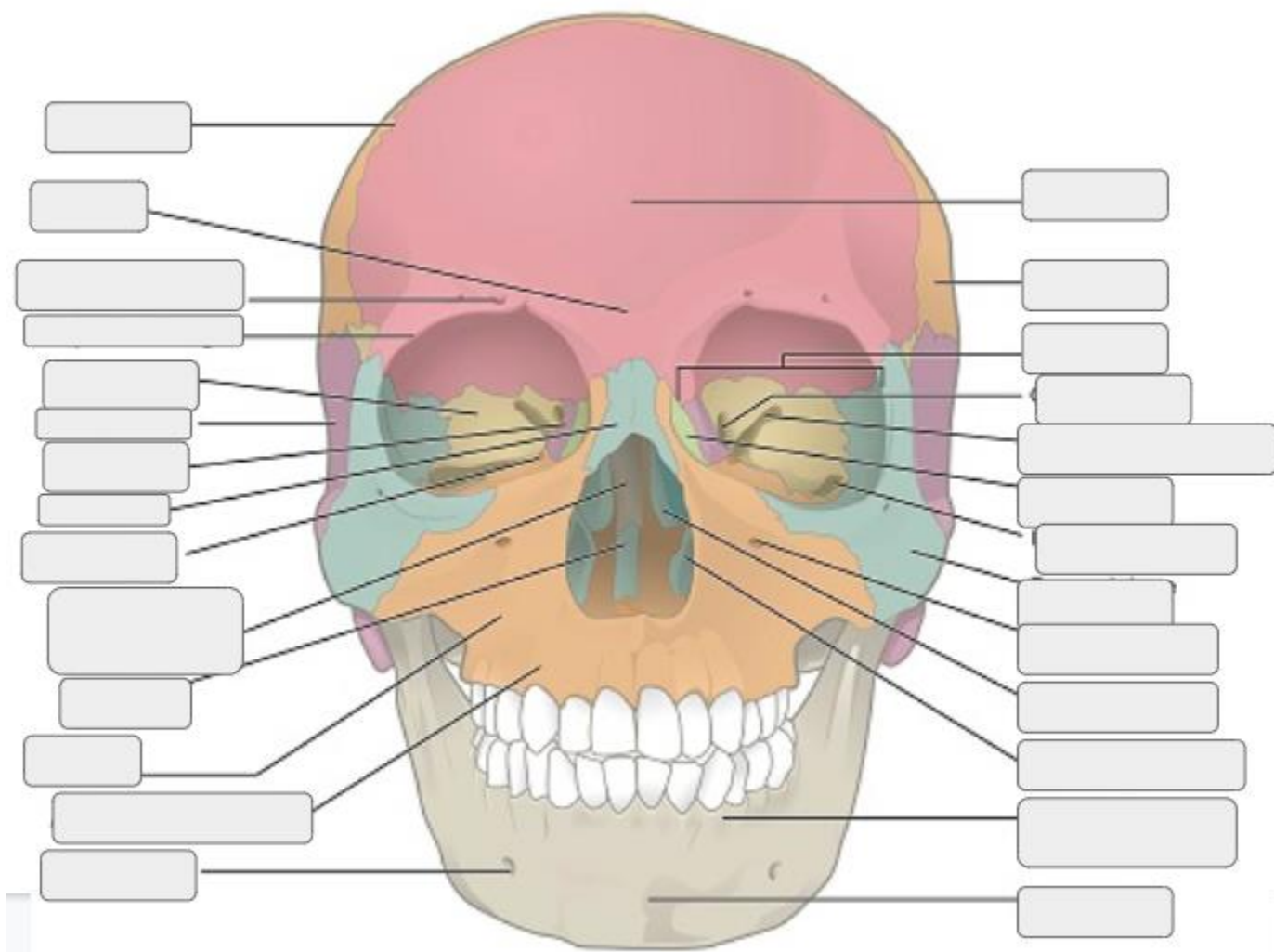
2) Fill in the table below with the name of the bony opening associated with the specific nerve or blood vessel.

Bones and Foramina	Associated Blood Vessels and/or Nerves
Frontal Bone	
1)	Ophthalmic nerve, supraorbital nerve, artery, and vein
Temporal Bone	
2)	Internal carotid artery
3)	Internal jugular vein, glossopharyngeal nerve, vagus nerve, accessory nerve (Cranial nerves IX, X, XI)
Occipital Bone	
4)	Spinal cord, accessory nerve (Cranial nerve XI)
5)	Hypoglossal nerve (Cranial nerve XII)
Sphenoid Bone	
6)	Optic nerve, ophthalmic artery

3) Label the anterior view of the skull below with its correct feature.

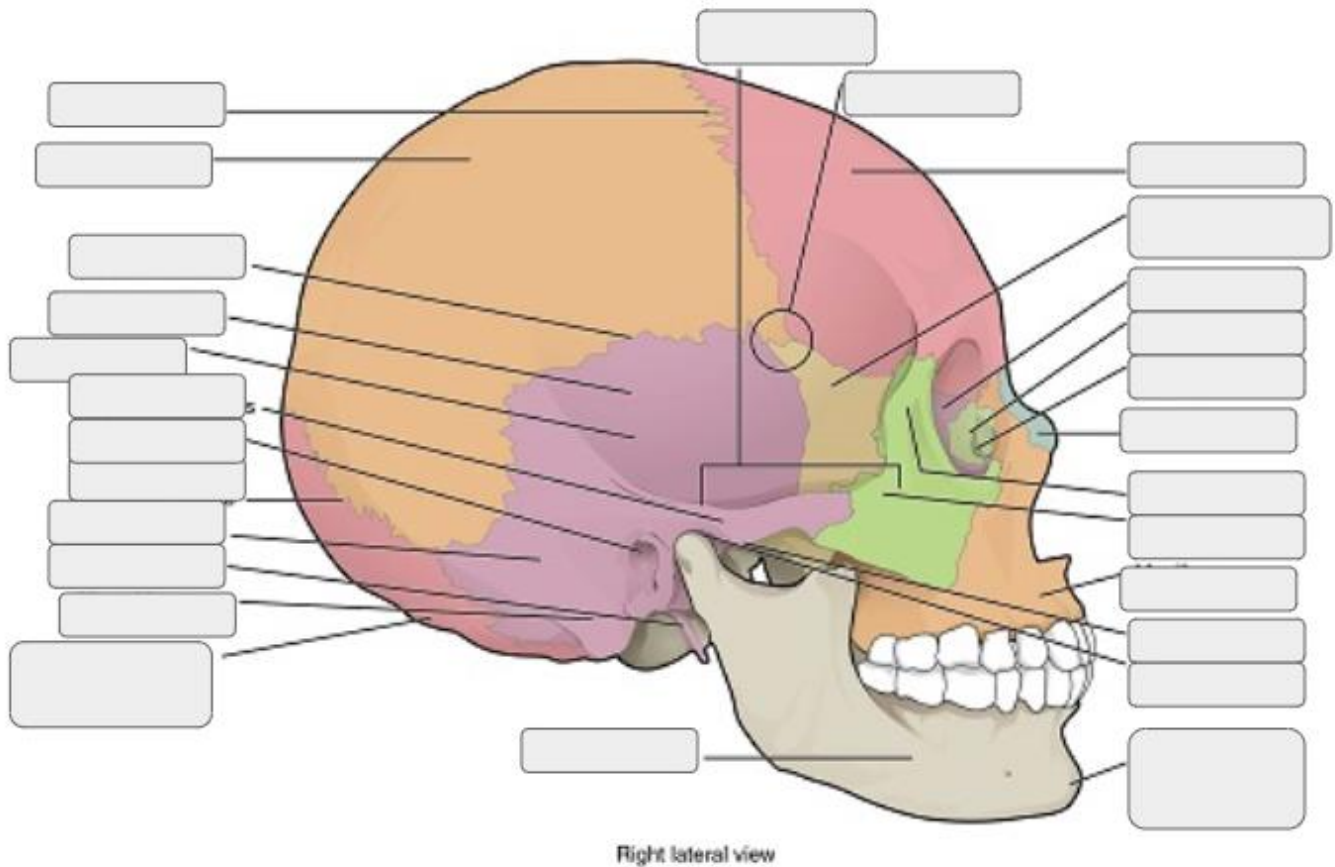
Frontal bone
Ethmoid bone
Sphenoid bone
Inferior nasal concha
Orbit
Supraorbital margin
Middle nasal concha
Coronal suture
Glabella
Nasal bone
Supraorbital foramen
Temporal bone
Orbit
Superior orbital fissure
Infraorbital foramen

Palatine bone
Nasal septum: Perpendicular plate of ethmoid bone
Inferior orbital fissure
Maxilla
Vomer bone
Alveolar process of maxilla
Inferior nasal concha
Mandible
Mental foramen
Parietal bone
Orbital canal
Lacrimal bone
Alveolar process of mandible
Zygomatic bone



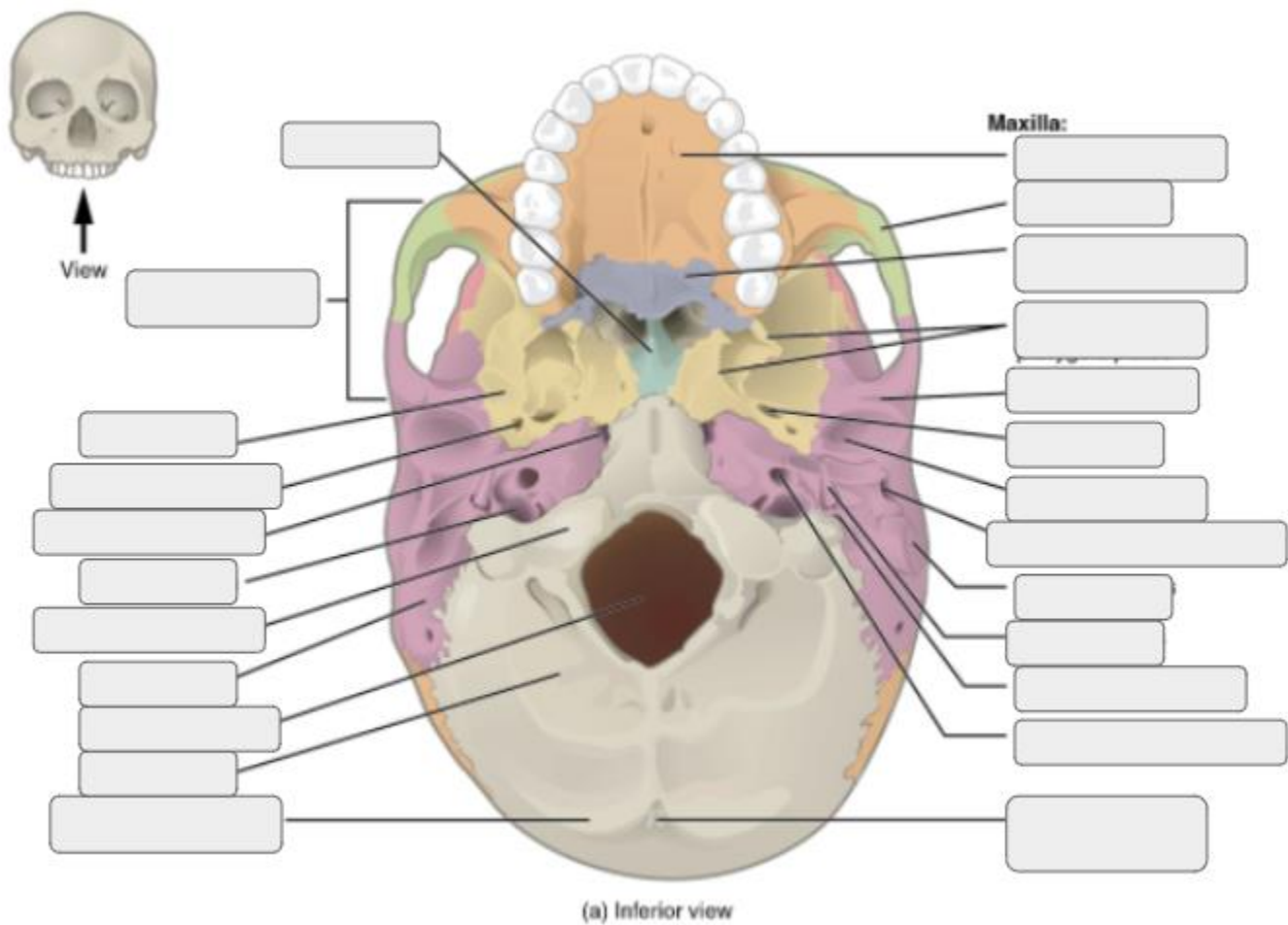
4) Label the right lateral view of the skull below with its correct feature.

Coronal suture	Frontal bone
Zygomatic arch	Lambdoid suture
Mastoid process	Mandible
Parietal bone	Greater wing of sphenoid bone
Mastoid portion	Mental protuberance of mandible
Styloid process	Articular tubercle
Squamous suture	Temporal process
Mandibular fossa	Temporal bone
Squamous temporal	Maxilla
Zygomatic process	Ethmoid bone
Occipital bone	Zygomatic bone
External acoustic meatus	Lacrimal bone
Lacrimal fossa	Nasal bone



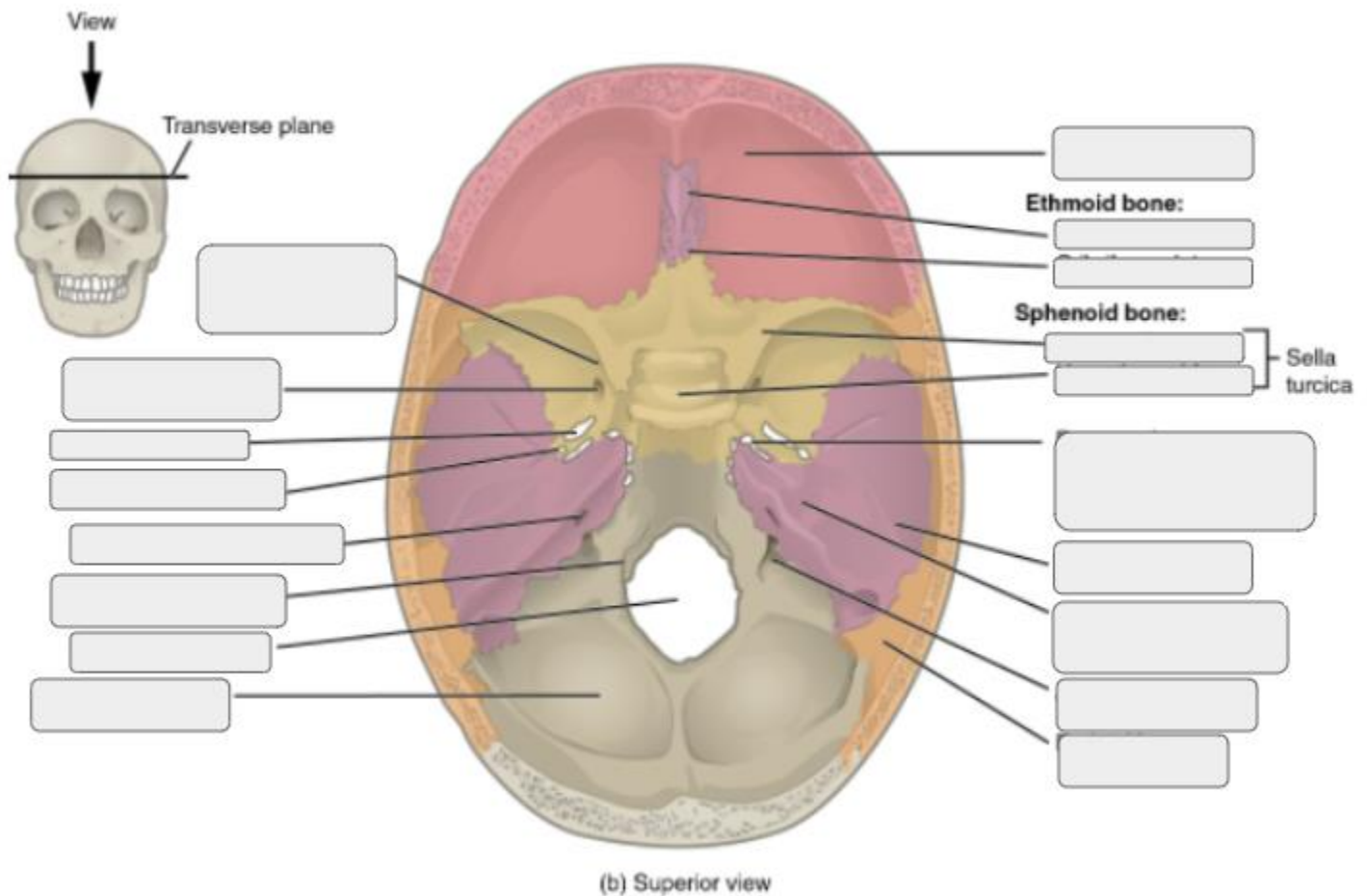
5) Label the inferior view of the skull below with its correct features.

Vomer	External occipital protuberance
Medial and lateral pterygoid plates	Zygomatic arch
Palatine bone (horizontal plate)	Sphenoid bone
Foramen spinosum	Articular tubercle
Zygomatic bone	Foramen lacerum
Mandibular fossa	Entrance to carotid canal
Jugular foramen	Foramen ovale
Mandibular fossa	Occipital bone
Palatine process	Occipital condyle
Temporal bone	External auditory meatus
Styloid process	Superior nuchal line
Foramen magnum	Mastoid process



- Parietal bone
- Crista galli
- Foramen magnum
- Hypoglossal canal
- Internal acoustic meatus
- Hypophyseal fossa
- Foramen ovale
- Foramen rotundum
- Foramen lacerum and exit of carotid canal

- Frontal bone
- Occipital bone
- Lesser wing
- Cribriform plate
- Jugular foramen
- Foramen spinosum
- Petrous portion
- Temporal bone



7) Label the posterior view of the skull below with its correct feature.

Zygomatic bone

Parietal bones

Occipital condyle

Occipital bone

Foramen magnum

Lambdoid suture

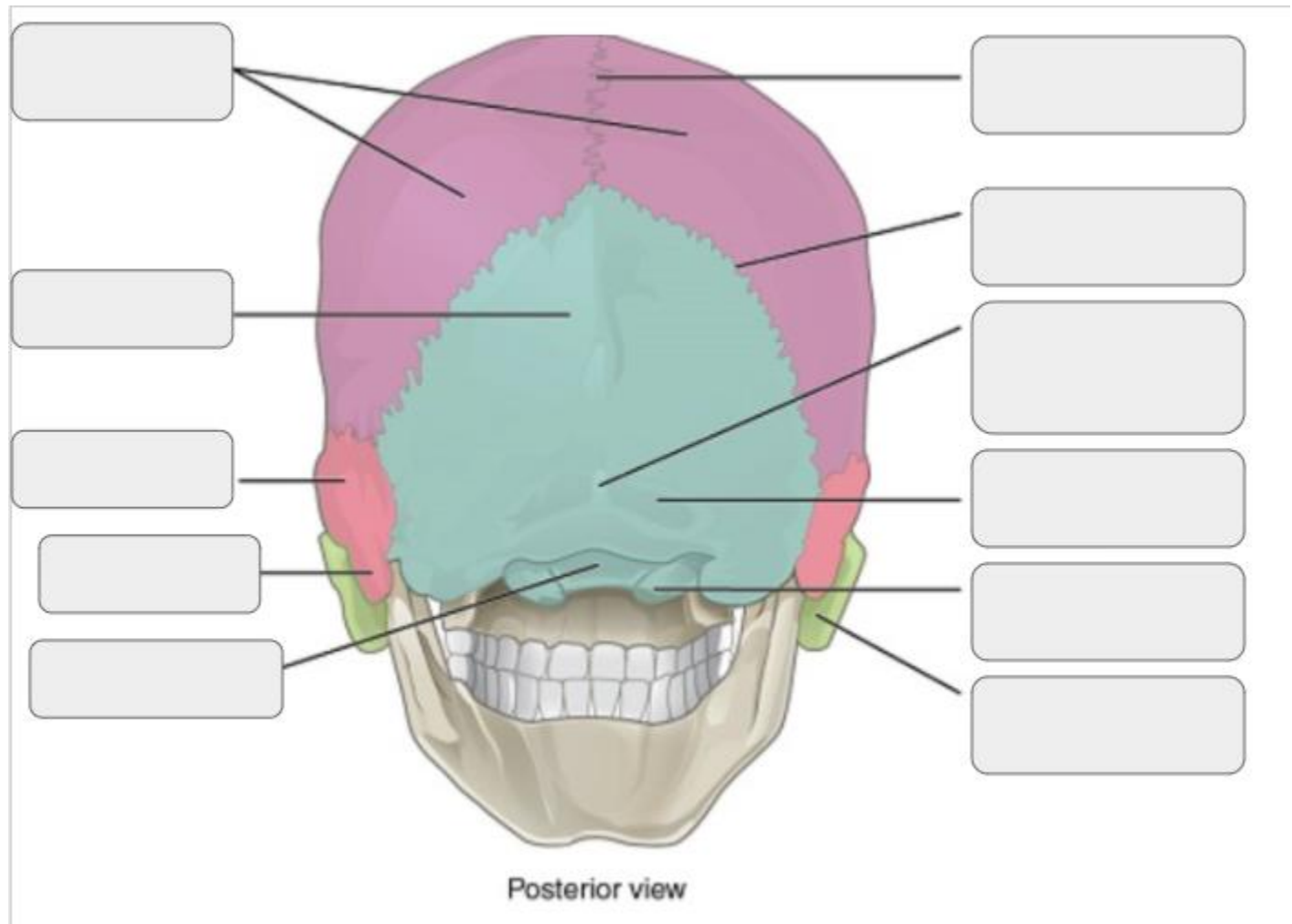
Sagittal suture

Mastoid process

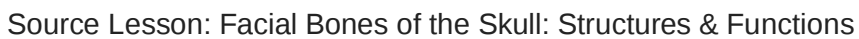
Temporal bones

Superior nuchal line

External occipital protuberance



Vomer	Parietal bone
Cristal galli	Medial and lateral pterygoid plates
Frontal sinus	Parietal bone
Temporal bone	Temporal bone
Internal acoustic meatus	Mandibular foramen
Occipital bone	Hypoglossal canal
Cribriform plate	Hyoid bone
Mandible	Perpendicular plate
Lingula	Inferior nasal concha
Mylohyoid line	Nasal bone
Sphenoid bone	Palatine bone
Maxilla	Hypophyseal fossa



9) Label each part of the vertebral column below.

Sacrococcygeal curve

Sacrum

Thoracic vertebrae

Lumbar vertebrae

Atlas

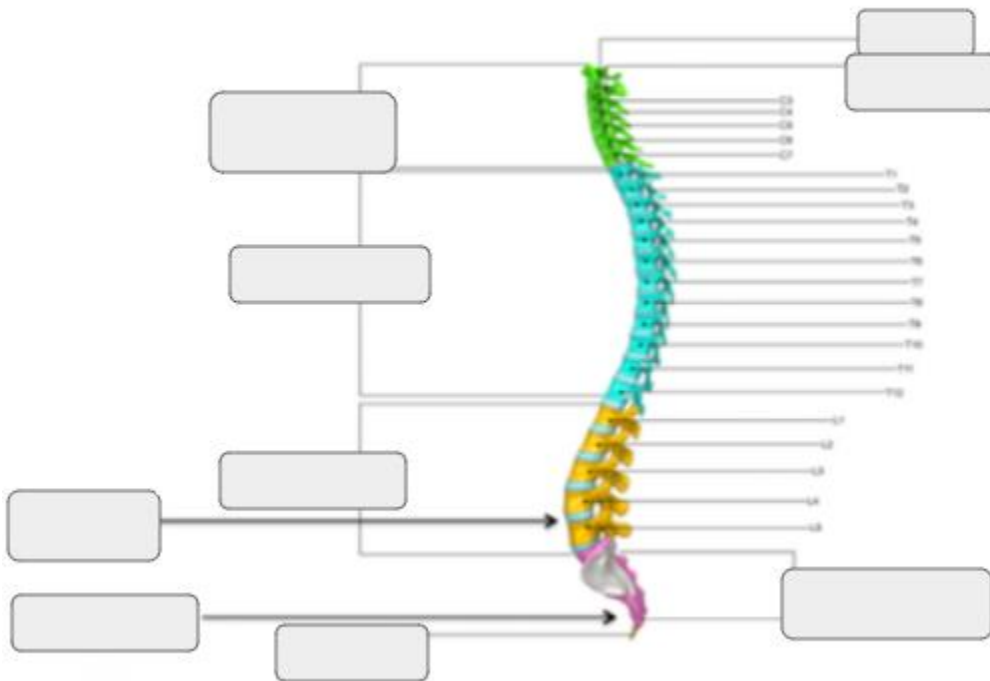
Coccyx

Cervical vertebrae

Axis

Intervertebral disc

Vertebral column: Lateral view

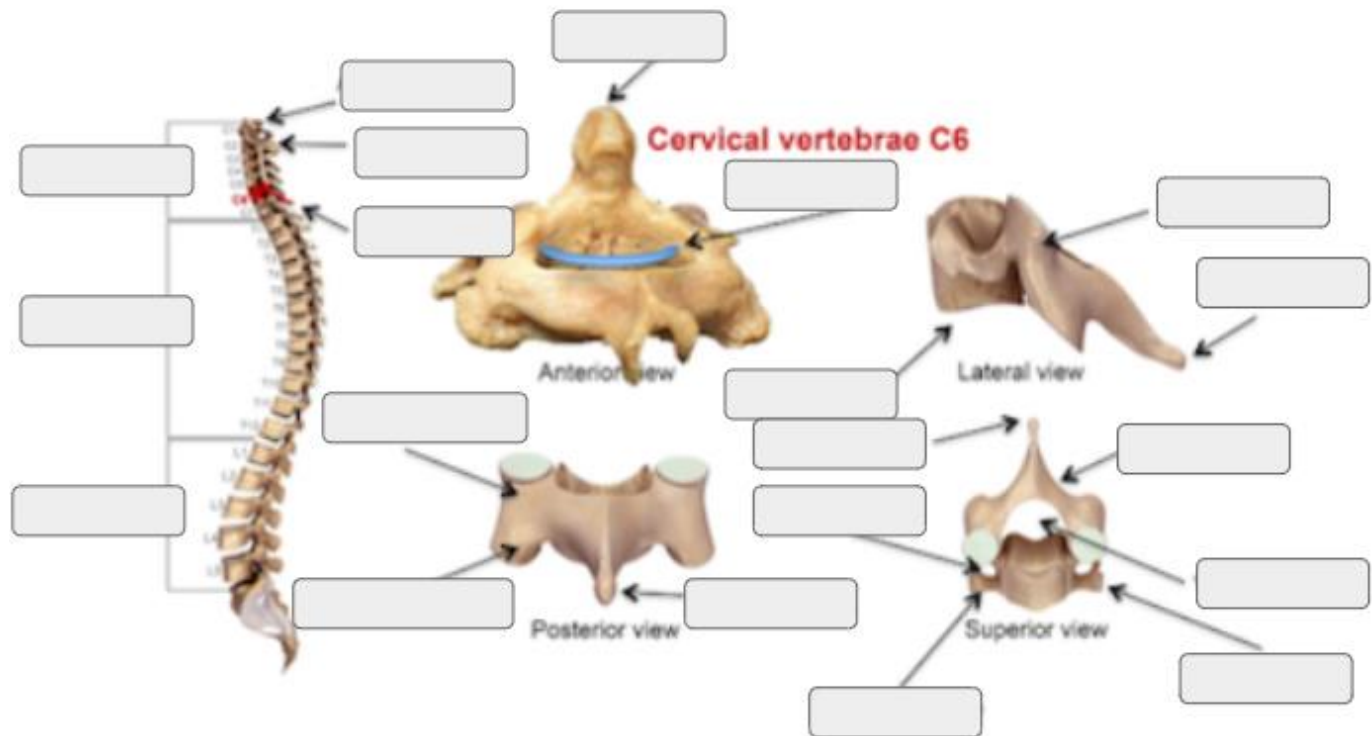


Source Lesson: The Thoracic Cage: Bones, Structure & Classifications

10) Label the anatomy of the cervical vertebrae shown below. Some answers may be used more than once.

Dens of the axis
Superior articular process
Atlas
Axis
Prominera
Cervical vertebrae
Thoracic vertebrae
Lumbar vertebrae
Vertebral foramen

Transverse ligament
Inferior articular process
Spinous process
Pedicle
Groove for spinal nerve
Transverse process
Body
Lamina

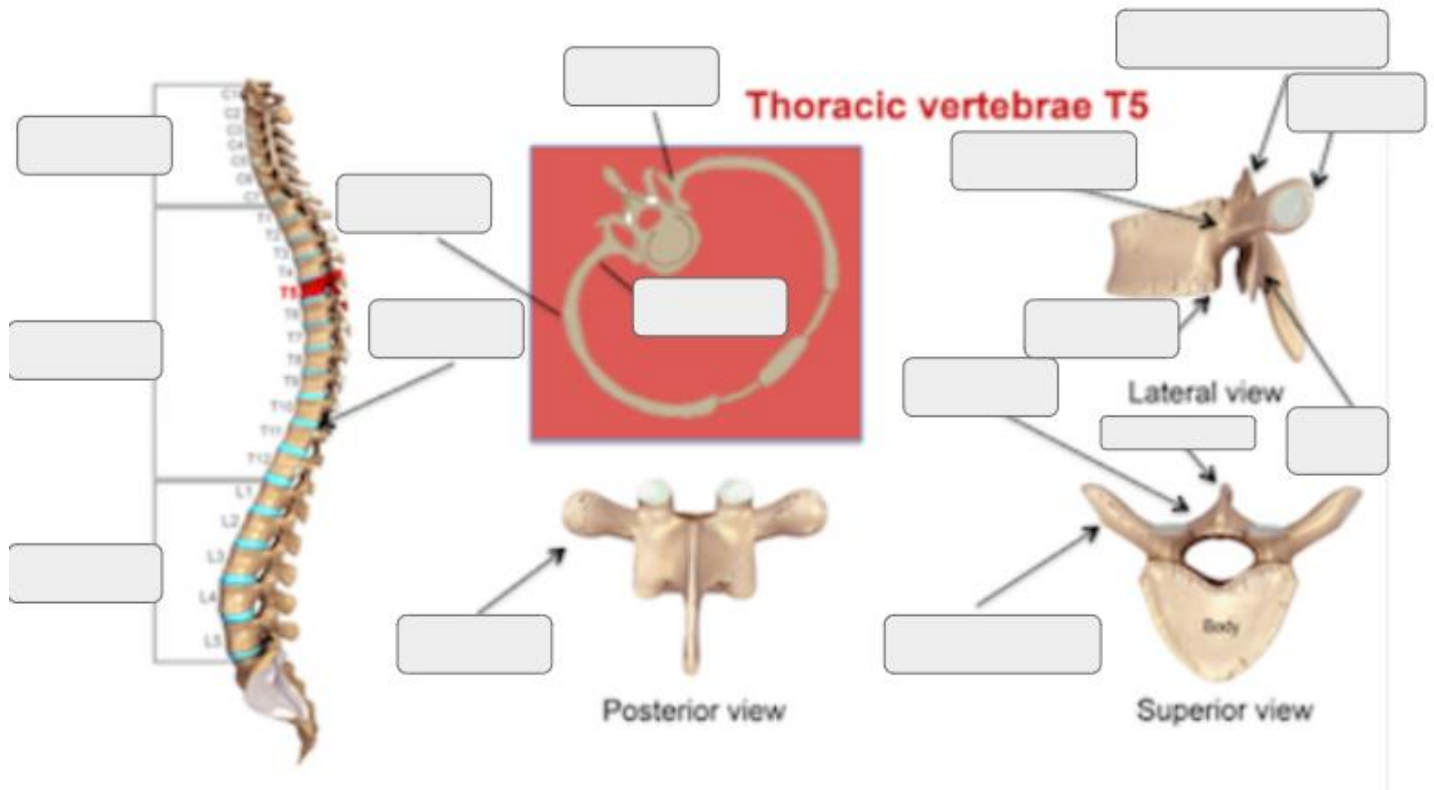


Source Lesson: The Thoracic Cage: Bones, Structure & Classifications

11) Label the structure and anatomical parts of the thoracic vertebrae image shown below.

Angle of rib
Cervical vertebrae
Head of rib
Lamina
Neck of rib
Intervertebral disc
Transverse process
Pedicle

Articular Face of tubercle rib
Superior costal facet
Thoracic vertebrae
Spinous process
Superior articular process and facet
Inferior articular process
Lumbar vertebrae
Inferior costal facet

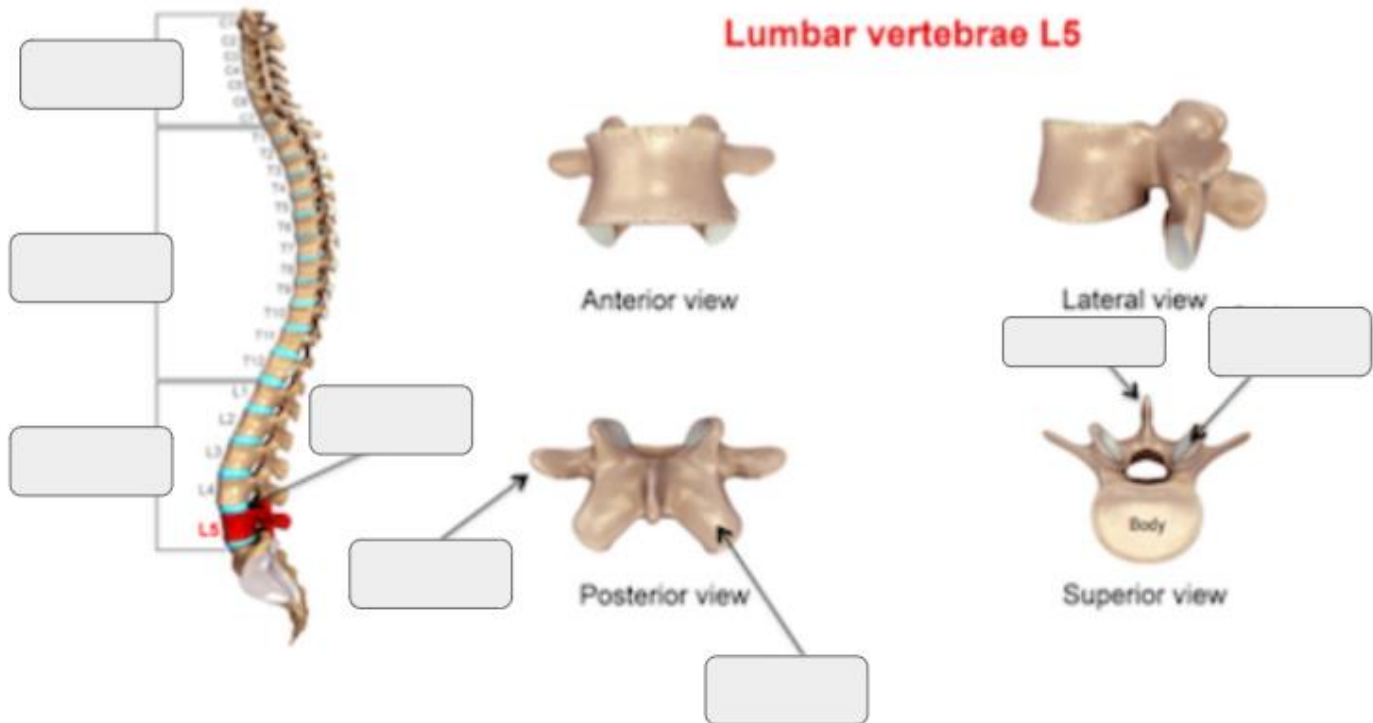


Source Lesson: The Thoracic Cage: Bones, Structure & Classifications

12) Label the parts of the lumbar vertebrae shown below.

Cervical vertebrae
Spinous process
Thoracic vertebrae
Superior articular process

Transverse process
Intervertebral disc
Inferior articular process
Lumbar vertebrae



Source Lesson: The Thoracic Cage: Bones, Structure & Classifications

13) Label the parts of the sacrum and coccyx in the image below.

Apex

Transverse ridges

Anterior sacral foramina

Body of first sacral vertebra

Lateral sacral crest

Sacral canal

Sacral hiatus

Facet of superior articular facet

Coccyx

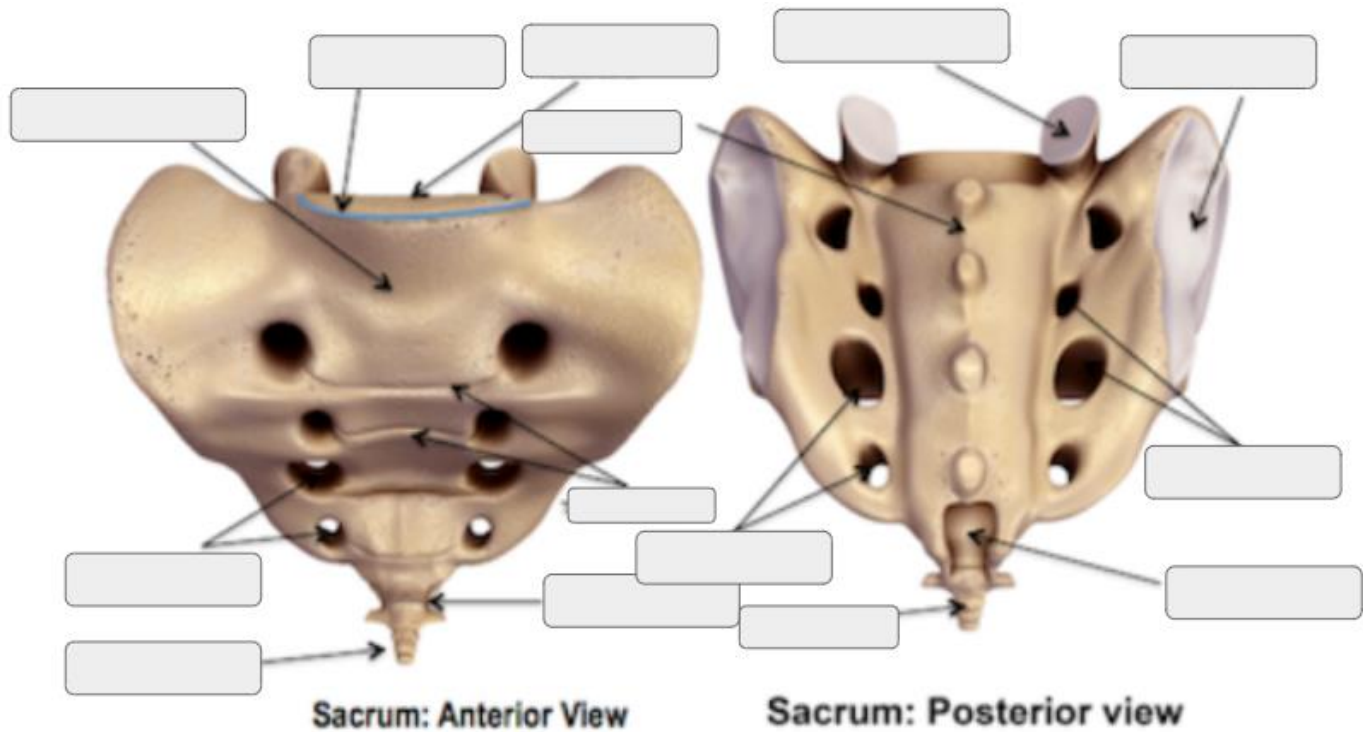
Articular surface

Posterior sacral foramina

Sacral promontory

Body

Median sacral crest



Source Lesson: The Vertebral Column: Regions, Bones & Ligaments

14) Label the parts of the sternum shown below, using the terms provided in the word bank. Some words may not be used.

A) _____

C) _____

B) _____

D) _____

Word Bank:

Manubrium

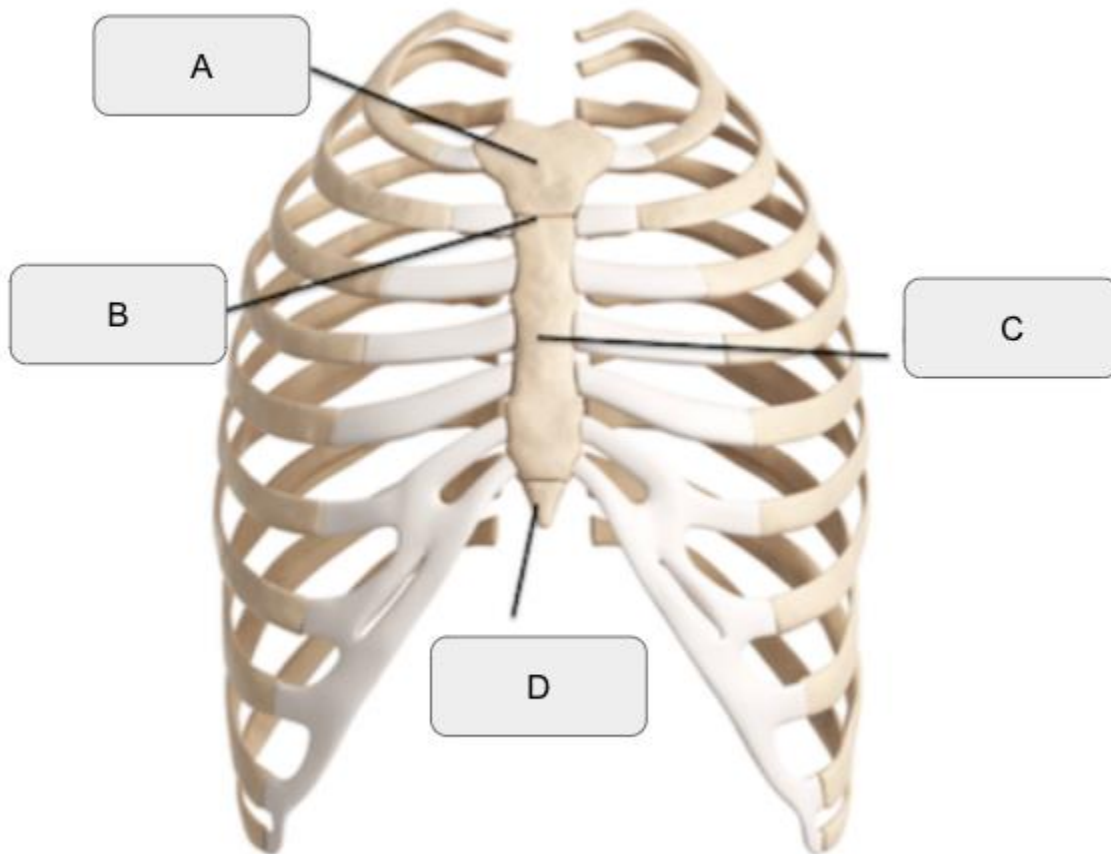
Intercostal space

Body of sternum

Clavicle

Sternal angle

Xiphoid process



Source Lesson: The Thoracic Cage: Bones, Structure & Classifications

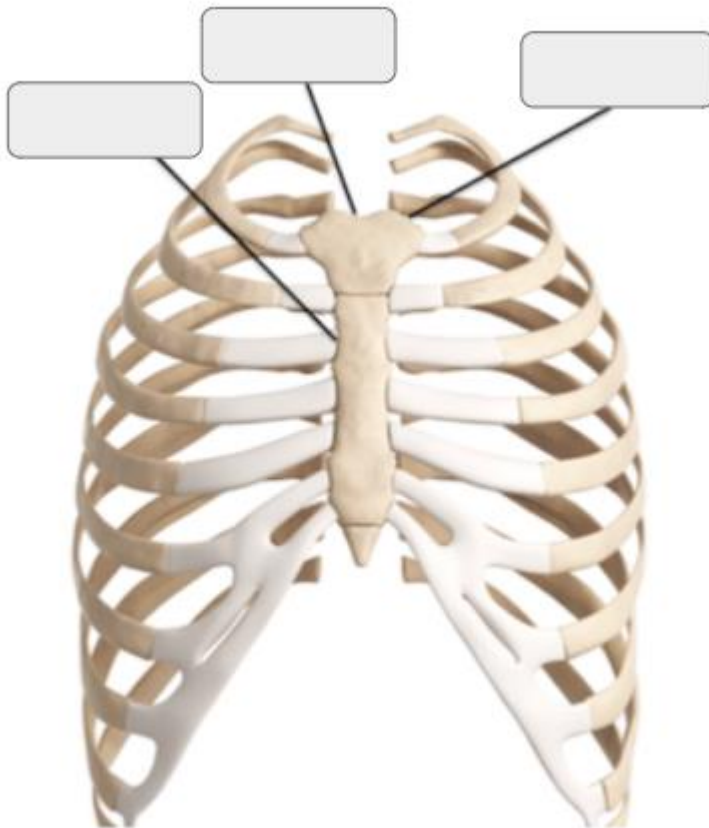
15) Label the three notch locations found on the sternum.

Clavicular notch

Costal notch

Jugular notch

Source Lesson: The Thoracic Cage: Bones, Structure & Classifications



Source Lesson: The Thoracic Cage: Bones, Structure & Classifications

16) Fill in the table below with the name of the anatomical structure that connects the identified bones.

Costal notch

Jugular notch/Suprasternal notch

Clavicular notch

Anatomical Structure	What It Connects
1)	Sternum with the right & left clavicle
2)	Space between the clavicular notches
3)	Sternum with costal cartilage

Source Lesson: The Thoracic Cage: Bones, Structure & Classifications

17) Label the anatomical parts of the thoracic cage.

Jugular notch

Ribs

Manubrium

Sternal angle

Clavicular notch

Intercostal space

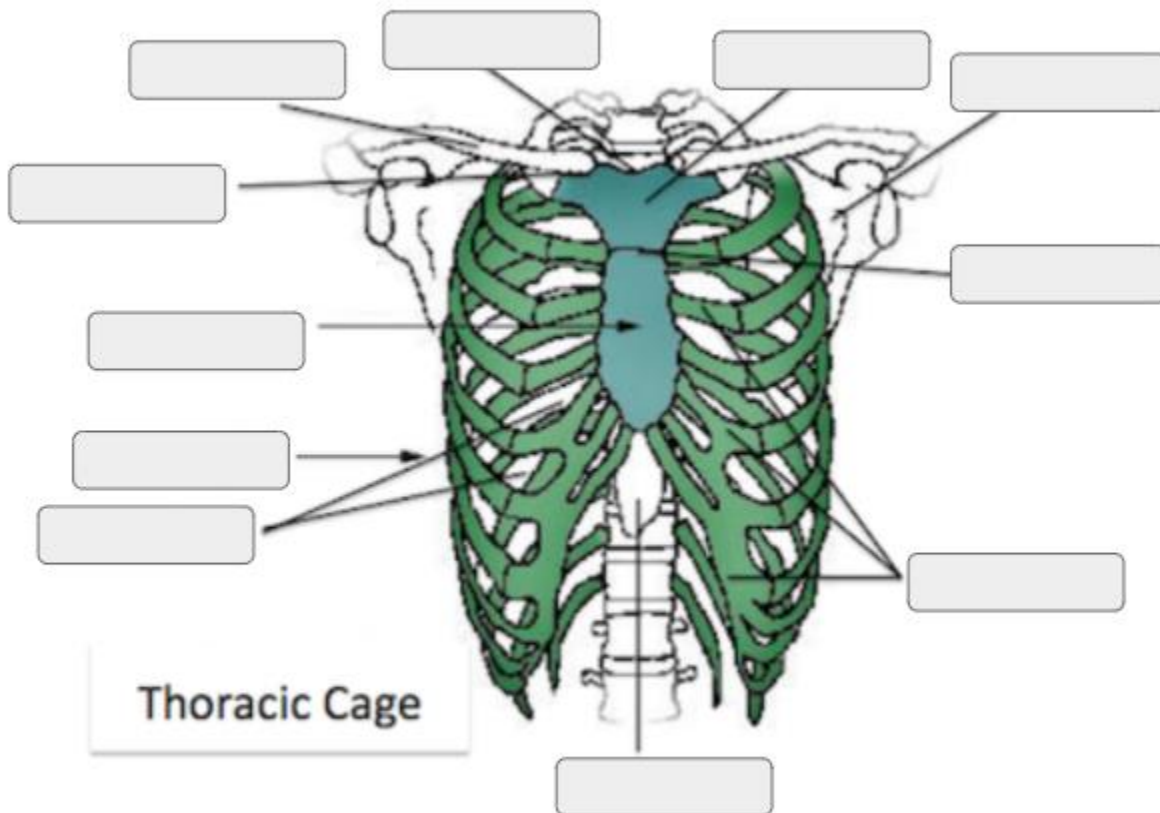
Clavicle

Scapula

Xiphoid process

Costal cartilage

Body of sternum

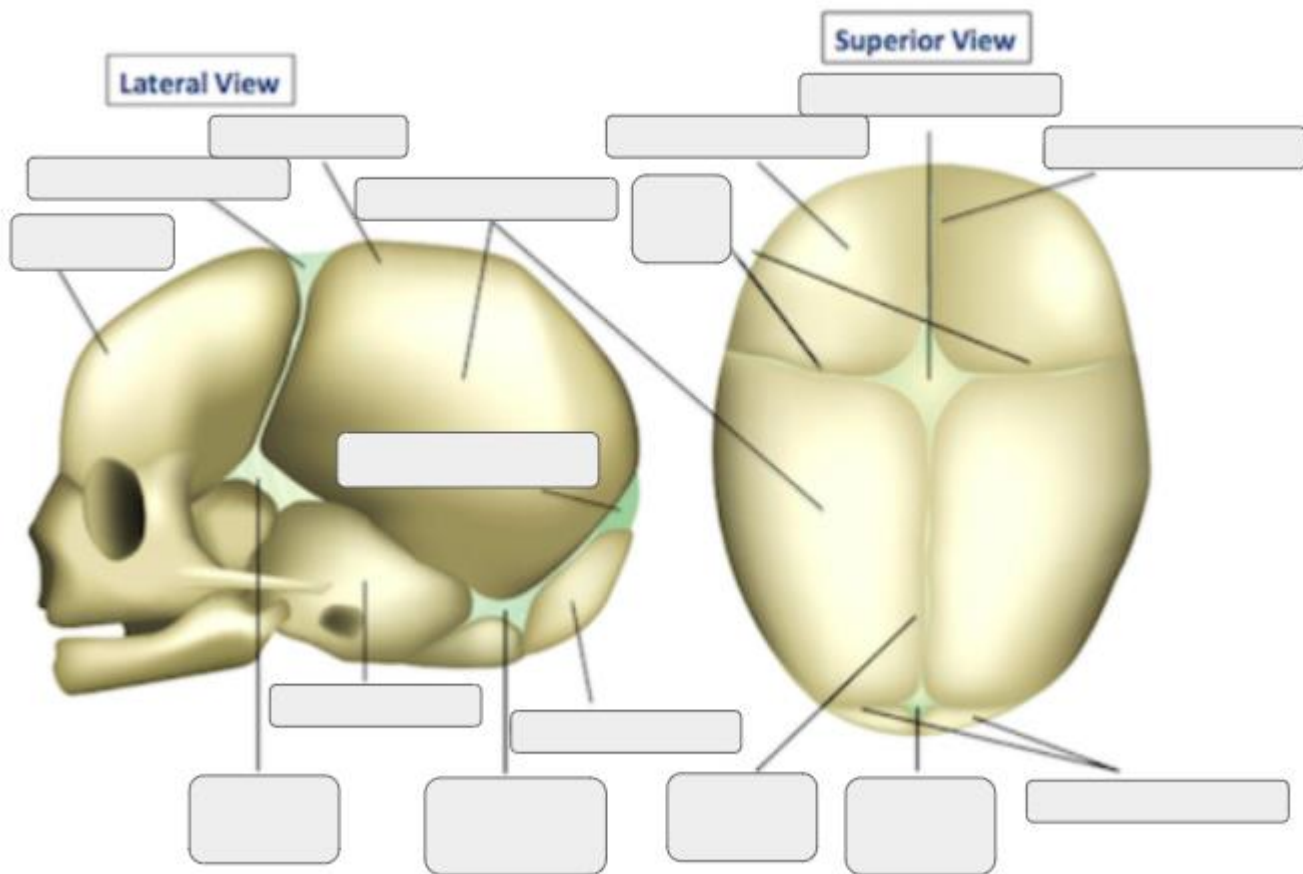


Source Lesson: The Thoracic Cage: Bones, Structure & Classifications

18) Label the bones of the skull of an infant at birth. Some words may be used more than once.

Occipital bone
Posterior fontanelle
Parietal bone
Frontal bone
Temporal bone
Mastoid fontanelle

Sphenoidal fontanelle
Ossification center
Pfeilnaht
Coronal suture
Frontal suture
Anterior fontanelle



Source Lesson: Embryonic Development of the Axial Skeleton

19) Fill in the table below with the bone developed by the type of ossification. Some bones may be used more than once.

Sphenoid
Part of the occipital
Frontal

Parietal
Part of the temporal
Mandible

Zygomatic
Maxillae
All remaining bones

Intramembranous ossification	Endochondral ossification
1)	1)
2)	2)
3)	3)
4)	4)
5)	
6)	

Source Lesson: Embryonic Development of the Axial Skeleton