

Skull 1 Checklist  
Bones of the Skull

Axial skeleton	Skull Auditory ossicles Hyoid bone Vertebral column Thoracic cage
Appendicular skeleton	Limbs and their girdles
Auditory ossicles (6 bones)	Connect the ear drum (tympanic membrane) to the inner ear. The auditory ossicles are the malleus, incus, and stapes.
Hyoid bone	Functions as an anchor point for throat and tongue muscles.
Brain case (8 bones)	The brain case surrounds, supports, and protects the brain. It consists of the:  Occipital bone Parietal bones (2) Temporal bones (2) Sphenoid bone Ethmoid bone Frontal bone
Facial bones (14 bones)	The facial bones form the inferior part of the face, including the inferior parts of the orbits, most of the walls of the nasal cavity, and the jaws. The facial bones consist of the:  Zygomatic bones (2) Maxillae (2) Mandible Lacrimal bones (2) Nasal bones (2) Inferior nasal conchae (2) Palatine bones (2) Vomer
Joint (articulation)	Where two or more bones are united.
Suture	The type of joint that unites most skull bones, consisting of small, interlocking processes of bone held together by dense, fibrous connective tissue.
Orbit	An eye socket in which an eye is located.

Skull 2 Checklist  
Joints and Muscle Attachments

Four major sutures	Sagittal, lambdoid, coronal, and squamous
Synovial joint	A synovial joint contains a slippery fluid that allows the ends of bones to move freely relative to each other.
Mandibular condyle/mandibular fossa	The rounded mandibular condyle fits into the mandibular fossa (depression) to form a synovial joint that allows the mandible to move.
Occipital condyle	The rounded occipital condyles join to the vertebral column, allowing the head to move in either a “yes” movement or a side-to-side “tilt” movement.
Alveolar processes	Ridges on the mandible and maxillae that help to form the sockets that hold the teeth.
Coronoid process	Projection of the mandible to which a muscle moving the mandible attaches.
Zygomatic arch	A bridge of bone formed by the projections of the temporal and zygomatic bones. It functions as an attachment site for a muscle moving the mandible and for ligaments holding the mandible in place.
Lateral pterygoid plates	Flat extensions of the sphenoid bone functioning as an attachment site for muscles moving the mandible from side to side.
Medial pterygoid plates	Flat extensions of the sphenoid bone functioning as an attachment site for throat muscles.
Angle of mandible	Pulling the angle of the mandible anteriorly can move the tongue anteriorly and increase air flow through the throat in an unconscious person.
Styloid process	Slender projection of the temporal bones functioning as an attachment site for tongue, throat, and hyoid muscles.

Skull 2 Checklist  
Joints and Muscle Attachments

External occipital protuberance	A midline, bulging prominence of the occipital bone. It functions as an attachment site for muscles moving the skull. The nuchal ligament, which helps to hold the skull erect, also attaches here.
Superior and inferior nuchal lines	Raised ridges on the occipital bone functioning as attachment sites for muscles moving the skull
Mastoid process	Large, rounded projection of the temporal bone functioning as an attachment site for muscles moving the skull.
Facial muscles	Facial muscles attach skin to bones and produce facial expressions, move the lips, and open and close the eyelids.
Eye muscles	Eye muscles attach to the orbits and move the eyes.
Condyle	The smooth, rounded part of a bone within a joint.
Ligament	A band or sheet of connective tissue connecting bones together.

### Skull 3 Checklist Cavities and Spaces

Sella turcica	Part of the sphenoid bone forming a space containing the pituitary gland
Crista galli	Midline project of the ethmoid bone to which a membrane holding the brain in place attaches.
Nasal cavity	Part of the passageway for air flowing to and from the lungs.
Inferior nasal conchae	Paired bones on the lateral wall of the nasal cavity that increase surface area. Air flowing over the mucous membranes covering the nasal conchae is moistened, warmed, and cleaned.
Middle and superior nasal conchae	Parts of the ethmoid bone increasing surface area in the nasal cavity.
Nasal septum	A partition, consisting of cartilage and bone, dividing the nasal cavity into two parts. It increases surface area within the nasal cavity.
Vomer	Forms the inferior, bony part of the nasal septum.
Perpendicular plate of the ethmoid bone	Forms the superior, bony part of the nasal septum.
Oral cavity	The oral cavity is a passageway for ingested materials and air to reach the throat. The mechanical and chemical process of food digestion begins in the oral cavity.
Hard palate	The hard palate forms the floor of the nasal cavity and the roof of the oral cavity. It prevents ingested materials from passing from the oral cavity into the nasal cavity. Thus, it is possible to eat and breathe at the same time.
Palatine process of maxillae	The two palatine processes form the anterior part of the hard palate.
Horizontal plate of the palatine bones	The two horizontal plates form the posterior part of the hard palate.

### Skull 3 Checklist Cavities and Spaces

Paranasal sinuses:

- Ethmoidal
- Frontal
- Maxillary
- Sphenoidal

The paranasal sinuses are air-filled cavities within skull bones that open into the nasal cavity. The sinuses are named according to the bone in which they are found.

The paranasal sinuses decrease the weight of the skull and act as resonating chambers during sound production.

Mastoid air cells

Air-filled cavities within the mastoid process.

Orbit

Cone-shaped space consisting of seven bones: zygomatic, sphenoid, frontal, palatine, ethmoid, lacrimal, and maxilla. It holds and protects the eye and associated structures.

## Skull 4 Checklist Foramina and Passageways

Foramen magnum	The brain stem extends through the foramen magnum to connect to the spinal cord. Blood vessels (vertebral arteries) carry blood to the brain.
Carotid canal	The internal carotid artery, which supplies blood to the brain, passes through the carotid canal.
Jugular foramen	The jugular vein, which drains blood from the brain, and the vagus nerve, which supplies the thoracic and abdominal organs, pass through the jugular foramen.
Optic canal	Contains the optic nerve for the sense of vision.
Superior and inferior orbital fissures	Nerves and blood vessels pass through the orbital fissures to supply the eye, muscles that control the eye, and the lacrimal (tear) glands.
Nasolacrimal canal	Passageway for the nasolacrimal duct, which drains tears from the surface of the eye to the nasal cavity.
External acoustic meatus	Passageway for sound waves to reach the tympanic membrane (ear drum).
Internal acoustic meatus	Contains the vestibulocochlear nerve for the sense of hearing and balance.
Olfactory foramina in cribriform plate	The olfactory foramina are small openings in the cribriform plate through which the olfactory nerves for the sense of smell pass to the nasal cavity.

## Skull 5 Checklist More Foramina

Foramen rotundum	Contains the maxillary nerve, which subdivides to form the superior alveolar nerves supplying the upper teeth.
Infraorbital foramen	A branch of the maxillary nerve passes through the floor of the orbit to supply the skin of the cheek, nose, and upper lip.
Incisive fossa	Contains a branch of the maxillary nerve supplying the upper front teeth.
Foramen ovale	Contains the mandibular nerve.
Mandibular foramen	The mandibular nerve branches to form the inferior alveolar nerve, which passes through the mandibular foramen to supply the lower teeth.
Mental foramen	A branch of the inferior alveolar nerve passes out the mental foramen to supply the skin of the chin and lip.
Superior and inferior orbital fissures	Nerves and blood vessels pass through the inferior and superior orbital fissures to supply the eye, muscles of the eye, and lacrimal glands.
Supraorbital foramen	Nerves pass through the orbit and out the supraorbital foramen to supply the skin of the forehead and nose.
Foramen spinosum	Contains a major blood supply to the bones of the brain case and the dura mater.
Hypoglossal canal	Contains the nerve supply to the tongue and muscles attached to the tongue.
Stylomastoid foramen	Contains the facial nerve for the muscles of facial expression.
Condylar canal	Contains a small vein draining blood from the brain.
Foramen lacerum	Mostly filled with cartilage; a few blood vessels pass through to supply the dura mater. The carotid canal opens into the superior part of the foramen lacerum.