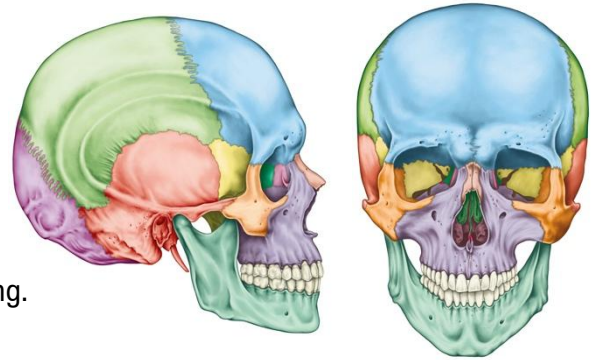


TOPIC: THE SKULL

Introduction to the Skull

- The skull is a complex bony structure, including:
 - **Cranial bones:** bony house for the _____.
 - **Facial bones:** structure of the _____.
 - **Associated bones:** bones used for _____ and swallowing.
 - **Cavities & Sinuses:** _____.
- The bones of the skull perform many functions:



1) Protect the _____.	2) Create _____ structures.	3) Openings for _____ and food.	4) Anchor teeth.	5) House _____ organs.

PRACTICE: True or False; if false, select the answer that best corrects the statement.

Associated bones provide a house for the brain.

- a) True, the associated bones make up the cranium.
- b) False, the associated bones provide the structure of the ear and nose.
- c) False, the associated bones are involved in hearing and swallowing.
- d) False, the associated bones create facial features.

TOPIC: THE SKULL

Overview of Cranial Bones

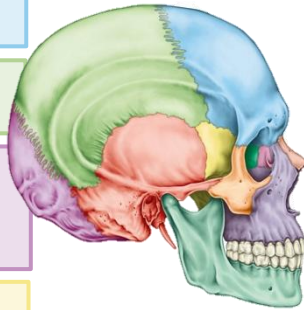
- Cranium is made of _____ bones: connected by **sutures**.

1. **Frontal** (1): _____ bone.

2. **Parietal** (2): upper _____ of the head.

3. **Occipital** (1): _____ of your head.
- Foramen Magnum: spinal cord opening.

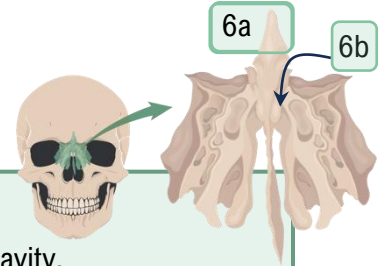
5. **Sphenoid** (1): looks like a _____,
makes up the front wall of cranium.
- 5a. Sella turcica: houses _____.



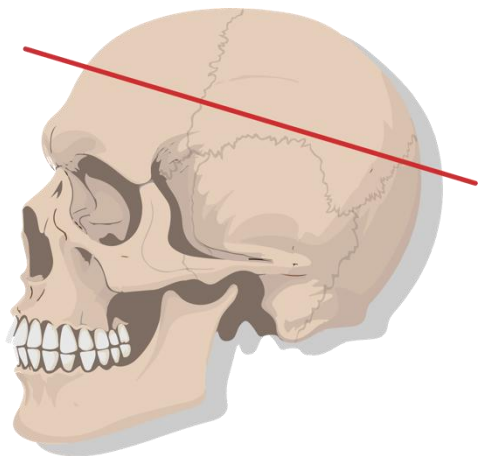
4. **Temporal** (2): where your _____ are.

- Auditory Meatus: canal into the ear.
- Processes: styloid, mastoid, zygomatic.

6. **Ethmoid** (1): _____ like
bone between orbits & nasal cavity.
- 6a. Crista galli: brain membrane _____.
- 6b. Cribriform plate: foramina for olfactory nerves.



EXAMPLE: To remove the brain as part of an autopsy, the top of the skull will be removed by cutting roughly along the red line as shown in the diagram. Which bones would be cut as part of this procedure?



TOPIC: THE SKULL

PRACTICE: If a patient has a tumor on the pituitary gland, a surgeon will often make an incision in the nose before cutting into which bone to reach the pituitary?

- | | |
|--------------|---------------|
| a) Frontal. | c) Occipital. |
| b) Sphenoid. | d) Temporal. |

PRACTICE: Damage to which bone is most likely to cause problems with hearing?

- | | |
|--------------|---------------|
| a) Frontal. | c) Occipital. |
| b) Sphenoid. | d) Temporal. |

TOPIC: THE SKULL

Overview of Facial Bones

- Face is made up of _____ bones, many of them paired:

1. **Maxilla** (1): main facial bone.

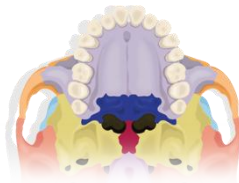
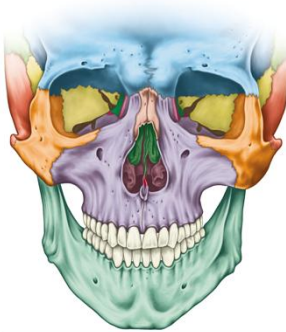
- Attachment site for _____.

2. **Mandible** (1): _____ jaw.

- Attachment site for teeth.

3. **Zygomatic** (2): _____ bones.

- Zygomatic arch touches temporal bone.



4. _____ (2): bridge of the nose.

5. **Lacrimal** (2): Inner wall of _____.

- Lacrimal fluid is tears—near eyes.

6. **Inferior Nasal Conchae** (2): walls of the _____ cavity.

7. **Vomer** (1): part of nasal _____.

8. **Palatine** (2): _____ of your mouth.

EXAMPLE: In a cleft palate, the roof of the mouth (or palate) does not fuse properly during development. Without surgical correction, a cleft palate can lead to complications surrounding feeding, ear infections and hearing, and speech.

What bones would you expect may be surgically repaired in the case of a cleft palate?



PRACTICE: During a baseball game, the batter hits a line drive that strikes the pitcher directly in the face breaking a bone. Among the four bones listed, which bone would you expect to be the *least* likely to be the bone that is broken in this situation?

a) Zygomatic.

b) Mandible.

c) Maxilla.

d) Lacrimal Bone.

TOPIC: THE SKULL

PRACTICE: If you are moving the only freely moving bone in the skull, what activity are you doing and what bone are you moving?

a) Humming; the palatine bone.

c) Crying, the lacrimal bone.

b) Chewing; the mandible.

d) Sneezing, the ethmoid bone.

TOPIC: THE SKULL

Cavities of the Face

- Cranial _____ facial bones come together to form functional cavities:

- Nasal cavity: _____ holes:

- Maxilla
- Nasal
- Sphenoid
- Vomer
- Inferior Nasal Conchae
- Palatine
- Ethmoid



My Nose Smells Very Interesting Perfume Extracts.

- **Septum:** Separates R & L side of nose: made of cartilage, _____ bone and vomer.
 - Piercing your septum is **Very E**_____.

- Orbital cavity: _____ holes:

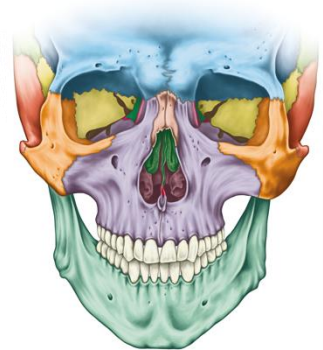
- Maxilla
- Lacrimal
- Ethmoid
- Sphenoid
- Palatine
- Frontal
- Zygomatic



My Little Eye Spies Pretty Fast Zebras.

EXAMPLE: The following lists each have *at least* one bone that does not belong. Cross out any bones that do not belong.

Bones that contribute to the <i>nasal cavity</i> .	Bones that contribute to the <i>orbital cavity</i> .	Bones that <i>anchor teeth</i> .
a) Zygomatic b) Ethmoid c) Vomer d) Maxilla	a) Lacrimal b) Sphenoid c) Zygomatic d) Mandible	a) Ethmoid b) Maxilla c) Palatine d) Mandible



PRACTICE: One of the occupational hazards of boxing is a deviated septum, where the cartilage of the septum is damaged shifted to one side. What two bones may also be involved in a deviated septum?

- a) The vomer, sphenoid, and ethmoid bones.
- b) The sphenoid and ethmoid bones.
- c) The vomer and sphenoid bone.
- d) The vomer and ethmoid bone.

TOPIC: THE SKULL

PRACTICE: Which bone creates the lateral wall of the orbital cavity?

- a) Zygomatic.
- b) Lacrimal.
- c) Sphenoid.
- d) Maxilla.

TOPIC: THE SKULL

Overview of Sinuses

- **Sinuses:** air filled cavities lined with mucosa, _____ of bones, connected to nasal cavity.
- Function to:

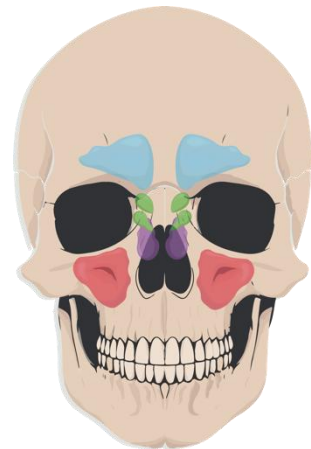
1) _____ the skull.	2) Warm & _____ air.	3) Enhance vocal resonance.
		

- **Paranasal Sinuses** found in the:

- Frontal Bone — Frontal Sinus
- Ethmoid Bone — Ethmoid Air Cells
- Maxilla — Maxillary Sinus
- Sphenoid Bone — Sphenoidal Sinus



EXAMPLE: Dmitry is traveling on a plane while suffering from a cold. As the plane takes off, he begins to feel pressure and develops an intense pain just above the medial side of his right eye. What might the source of this pain be?



PRACTICE: Which of the following bones is both classified as a facial bone and also contains a sinus?

- a) Palatine bone. b) Nasal bone. c) Frontal. d) Maxilla.