

Book #4 Bones of the Head, Face, and Neck

Take a trip to Skull Island in Book 4 and get to know the bones of the head, face, and neck. Dr. Bonyfide makes a hilarious friend in Seymour Seagull, with Lady Lacrima, Maxilla Gorilla, Oliver Ossicle, and Occipital Ox rounding out the crew. Completion of this fourth and final book in our skeletal series means that special congratulations are in order – the entire skeletal system has been learned!



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Welcome to Skullapagos Island!

That sounds scary!

Don't worry, we have a map to find our way around!

MAXILLA GORILLA



SEYMOUR SEAGULL



OLIVER OSSICLE



LADY LANA LACRIMA



OCCIPITAL OX



Overview of the



Heads Up This illustration does not include the palatine bones because they form the back of the roof of the mouth, inside the head.

Head, Face, & Neck

Our skulls are classified into two main sections:
the **viscerocranium** (face), which has **14** bones, and
the **neurocranium** (head), which has **8** bones.

Say them like this:

"viss-uhr-oh-KRAY-knee-uhm"

"nuhr-oh-KRAY-knee-uhm"

In all, your head, face, and neck contain 29 bones.
These bones protect the brain and many of the organs that allow
us to taste, hear, smell, see, and touch.

The skull also contains the **ossicles**, or bones of the ear
(**3** bones in each ear), and the **hyoid**:



Ossicles
Enlarged View

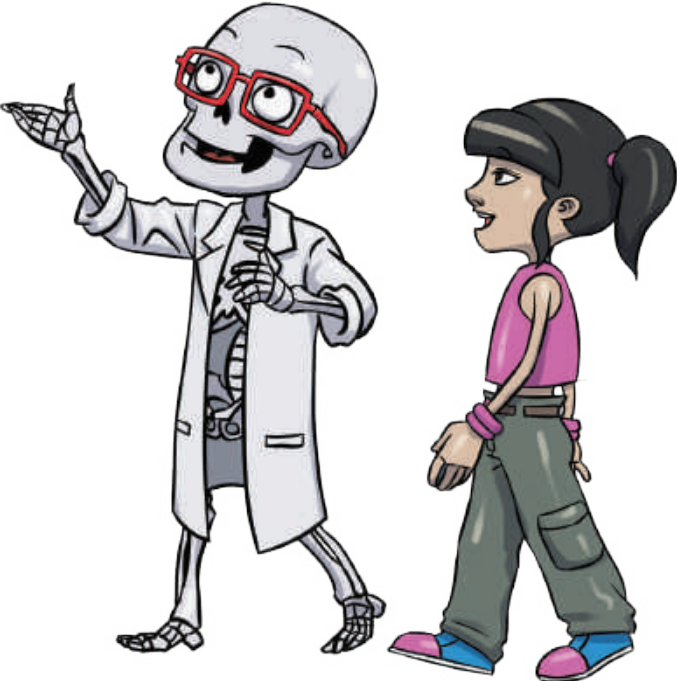


Hyoid

Your head is ROUND like a globe, so we need to see it from the side...



Side View



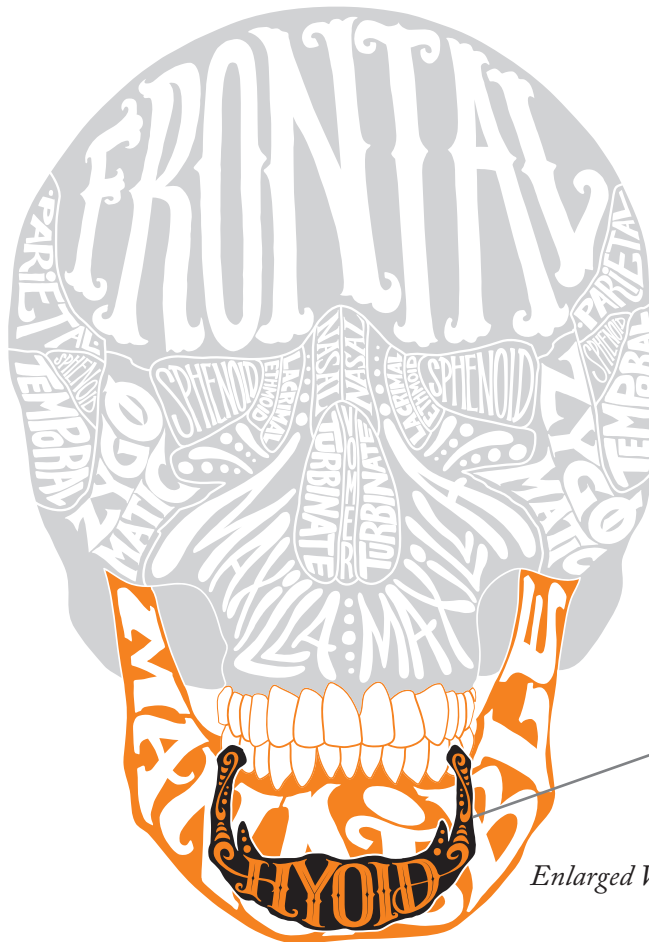
... and from the back. This way we get a better look at all the bones of the skull!



Back View



Enlarged View

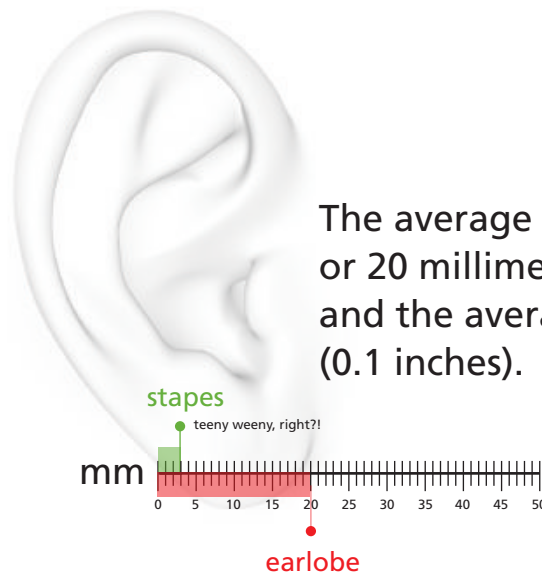


Enlarged View

These bones are teeny weeny.

The **ossicles** are the bones found in the ears. Each ear has three ossicles. They are considered part of the skull, even though they are in neither the viscerocranium nor the neurocranium.

Say it like this: "**AWE-sick-uhl**"



The average earlobe is 2 centimeters, or 20 millimeters (0.8 inches) across, and the average stapes is 3 millimeters (0.1 inches).

The **hyoid** bone is also considered part of the skull, even though it's found in the neck. It lies behind the mandible and plays a role in movement of the tongue and swallowing.

Say it like this: "**HIGH-oyd**"



Heads Up *The smallest bone in the human body is the stapes.*

Paired Bones? Two of a Kind!

Like socks on your feet or gloves in cold weather,
they're a natural match, you will find.
Like bookends or best friends, they're better in twos,
and paired bones are two of a kind!

Throw a party with your **parietal** partners,
a wall-to-wall jubilee!
Sound the drums for your **temporal** team.
Time for cranial festivity!



Face up to your **conchae** companions
which play a role in air blown.
Don't cry—your **lacrimal** duet
won't let you shed tears alone.

Say hello to your **maxillae** amigos,
and go grab a bite to eat.
Then there's our distinctive **nasal** alliance —
two neighbors that smell so sweet.

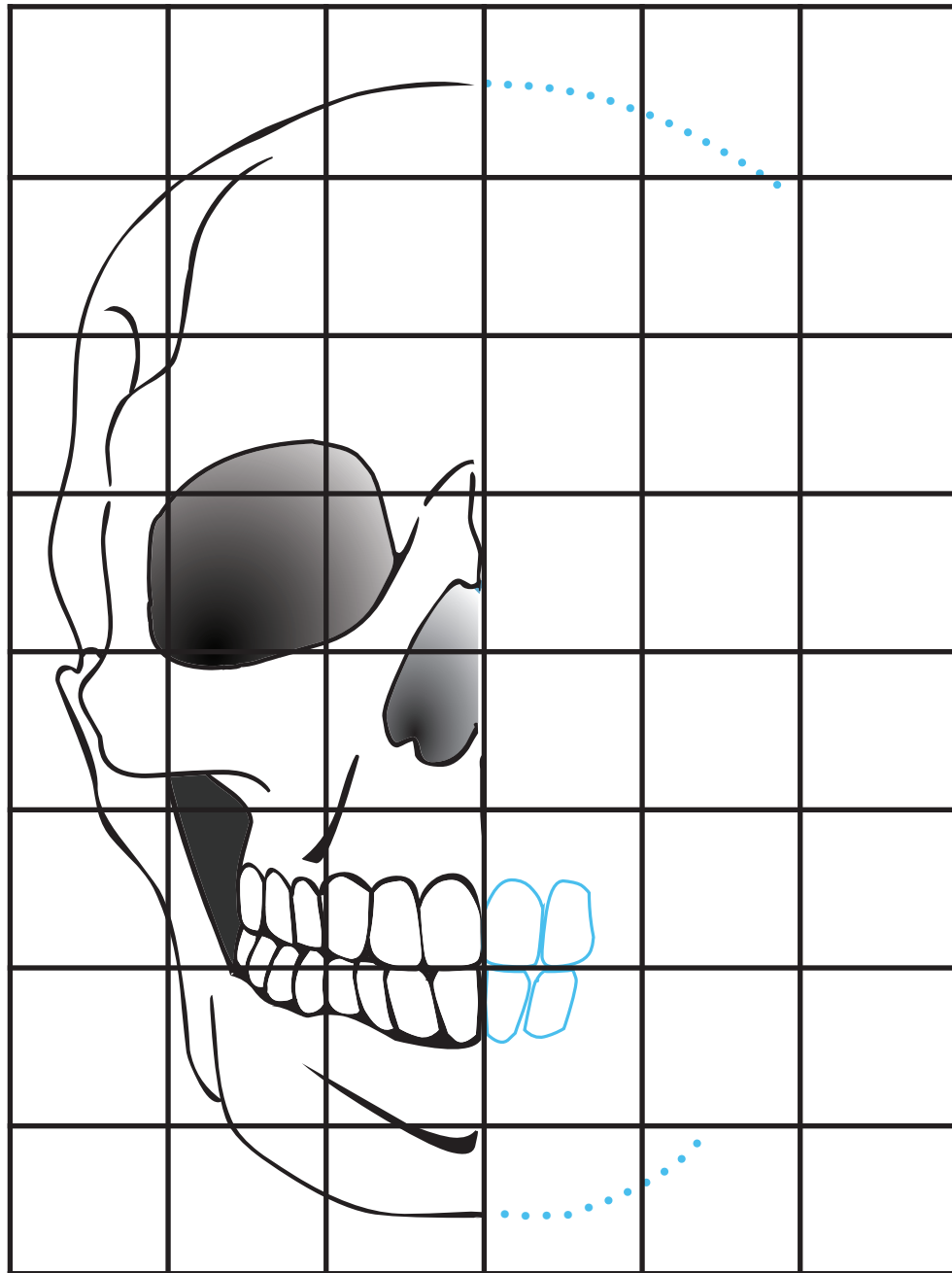


Should we go visit a chateau?
Just **palatines** passing the time...
Eye to eye and cheek to cheek,
zygomatic mates forever...two of a kind!

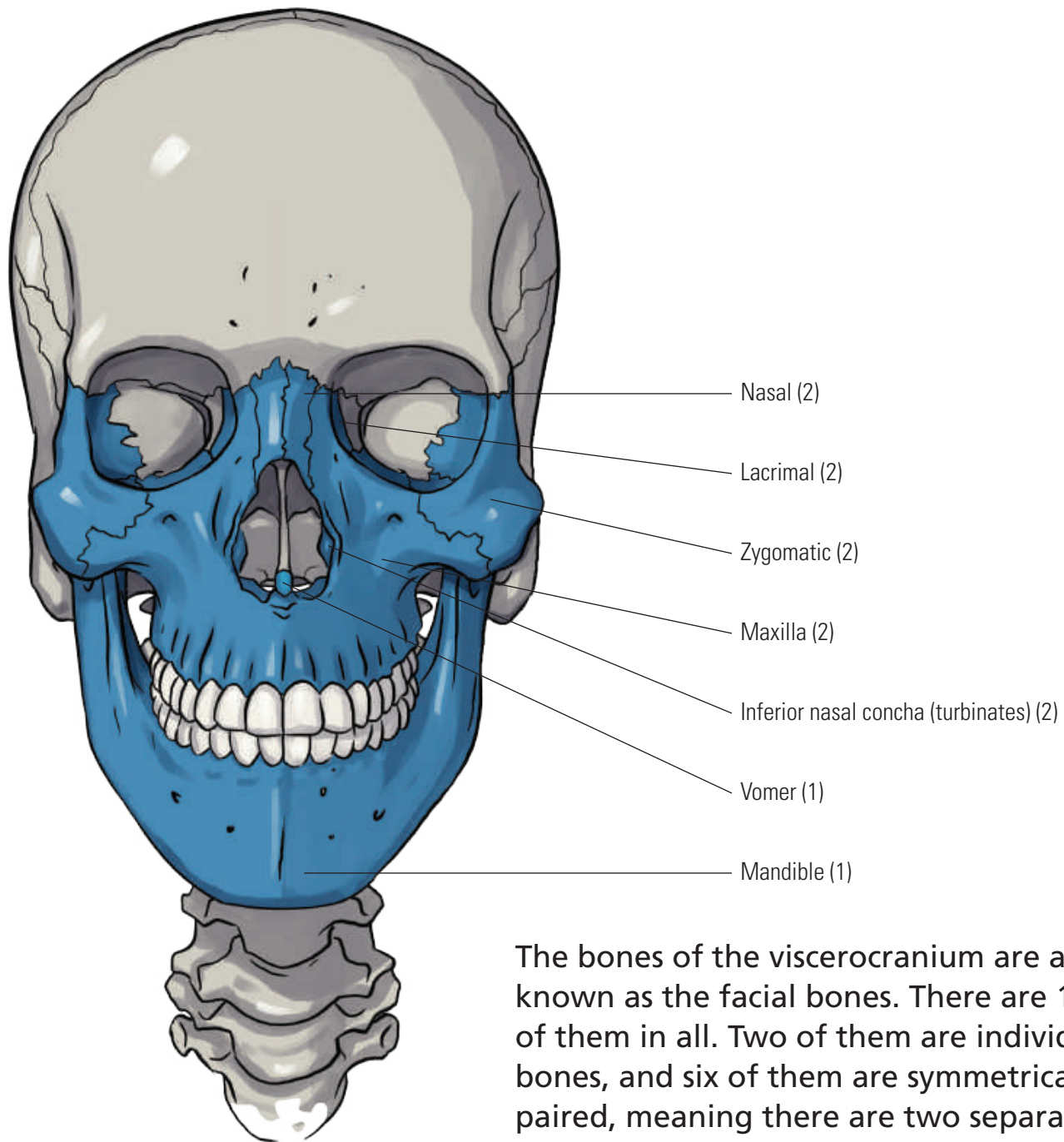


Activity: Skull Symmetry

Help Pinky fix the skull by using the grid to finish the half skull.
See how accurately you can finish the rest!



Overview of the



Front View

The bones of the viscerocranium are also known as the facial bones. There are 14 of them in all. Two of them are individual bones, and six of them are symmetrically paired, meaning there are two separate bones on each side of the face.



Heads Up “Cranium” comes from the medieval Latin word for skull. The prefix “viscero” is from the Latin viscera, which refers to the internal organs. The viscerocranium contains organs such as your tongue and tonsils and forms part of your eye sockets.

Viscerocranium

You may have noticed a pair of bones missing in the two images shown here. The bones are called palatine bones, and they help form the back of the roof of the mouth and other spaces in the skull. The vomer and inferior nasal conchae (turbinates) aren't visible from the side.

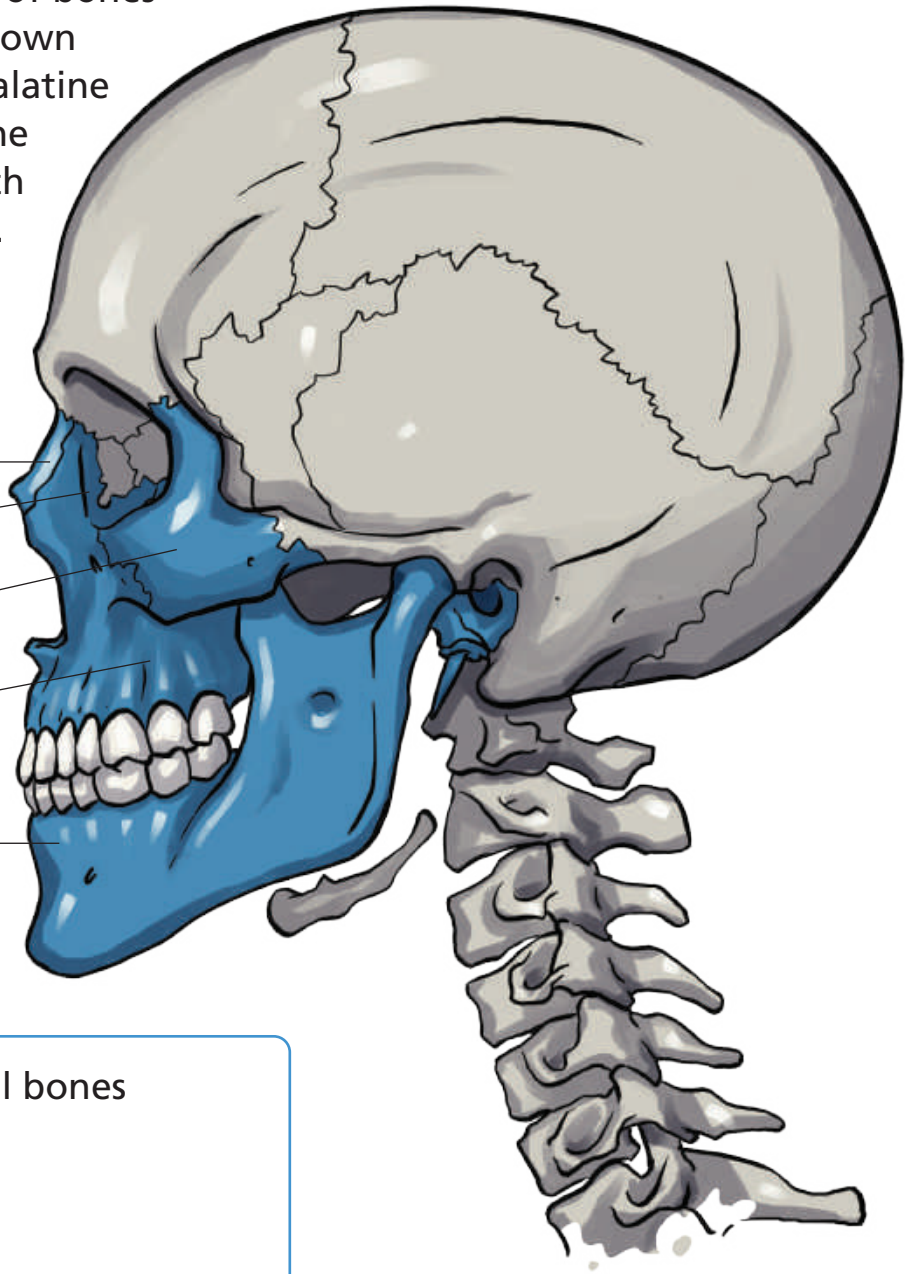
Nasal (2)

Lacrimal (2)

Zygomatic (2)

Maxilla (2)

Mandible (1)



Side View

six pairs of symmetrical bones

$6 \times 2 = \underline{\hspace{2cm}}$

two single bones

$1 + 1 = \underline{\hspace{2cm}}$

 paired bones

+ single bones

 viscerocranium bones

