Embryology of skull and bones

we have 3 mesoderms that will make the entire skeleton
paraxial mesoderm - parietal layer of lateral plate mesoderm - neural crest

Paraxial mesoderm

Parietal layer of lateral plate of mesoderm

Neural crest

Mesenchyme of the dermis

forms

somitomeres in head region

cells in the ventromedial
give rise to sclerotome

somites in occipital region

cranial vault and base of the skull

pelvic girdle, shoulder girdles, limbs and
sternum

bones of the skull and face, Sagittal suture

flat bones of the skull

Neurocranium develops
from two sources

Neurocranium

protective case surrounds
the brain and special
sensory organs

Viscerocranium

facial skeleton, the ear ossicles, hyoid bone,
laryngeal and tracheal cartilages

skull

skull is made
from 2 parts

Membranous neurocranium

forms

flat bones of the vault of skull

Cartilaginous neurocranium

forms

bones of the base of skull

Cartilages that lie in front of the rostral end of notochord ---> derived from neural crest
Cartilages that lie posterior to the pituitary gland ---> arise from occipital somites

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Note: I made this notes for some info that i found it overlapped and need some regulation to understand and memorize , go back to slides for the details.
we said viscerocranium made the bones of the face

so bones of the face came from 1st, 2nd pharyngeal arches and neural crest cells

1st pharyngeal arch

- dorsal (maxillary process) portion forms maxilla, zygomatic bone, and part of the temporal bone
- Ventral (mandibular process) portion contains the Meckel cartilage --> Meckel cartilage gives rise to the mandibular ligament and disappears

2nd pharyngeal arch

- dorsal forms ear ossicles, the Incus, Malleus and Stapes

Mesenchyme derived from Neural crest cells gives rise to the Nasal and Lacrimal bones