

Skeleton, Skin and Scales

Dermal v Cartilage replacement bones

Skull (Cranium)

Neurocranium v. Chondrocranium

Skulls (3 major types) - Agnatha (Cyclostomata) – no jaws; Chondrichthyes – single cartilaginous structure; Bony fish

Neurocranium: Ethmoid region (vomer, parasphenoid and lateral ethmoids), Orbital Region (lacrimal and frontal), Otic Region, Basicranial Region (basioccipital, exoccipital and supraoccipital)

Mandibular Arch: Upper jaw – Cartilage in Chondrichthyes and Bony – Premaxilla, Maxilla
Lower jaw – Meckel's Chondrichthyes; Bonyfish = Dentary, Angular (articular)
Pharyngeal jaw – cyprinids, cichlids etc

Palatine Arch - part suspensorium = Palatine, Ectopterygoid, Enopterygoid, Metapterygoid

Hyoid Arch - Hyomandibula, Symplectic and Quadrate; Hyoid complex (basihyal and ceratohyal, brachioistegal rays)

Opercle, Subopercle, Preopercle, Interopercle

Branchial Arch = basibranchial, hypobranchial, ceratobranchial, epibranchial and pharyngobranchials

Post Cranial Notochord

Vertebrae - precaudal (end body cavity; bearing ribs) v caudal (posterior – 1st w/ haemal spine);
Neural Spine, Neural arch, neural canal
Haemal arch - Haemal canal
Ribs

Caudal Complex - discuss in detail later

Appendicular Skeleton - Pectoral Girdle = posttemporal, cleithrum, scapula and coracoid
Radials - support fins rays

Pelvic Girdle - not attached, usually free floating

Median Fins – Dorsal, anal and adipose

Spines - hard, pointy, not branched, solid

Rays – soft, segmented, bilateral

Scales – Placoid, Cosmoid, Ganoid, Cycloid and Ctenoid (ctenii)