

## ACCUMULATING TRAITS in the VERTEBRATE FOSSIL RECORD

530 mya	500 mya	440 mya	400 mya	365 mya	320 mya	310 mya	220 mya
<b>CEPH-CHORDS</b> head end, tail notochord myotomes (muscle bundles) dorsal nerve cord gill basket with gill slits	<b>JAWLESS FISH</b> head end, tail notochord myotomes (muscle bundles) dorsal nerve cord gill basket with gill slits  dermal bones skull lungs	<b>JAWED FISH</b> head end, tail notochord myotomes (muscle bundles) dorsal nerve cord gill basket with gill slits  dermal bones skull lungs  jaws, teeth bony skeleton gill arches paired appendages	<b>LOBE-FIN FISH</b> head end, tail notochord myotomes (muscle bundles) dorsal nerve cord gill basket with gill slits  dermal bones skull lungs  jaws, teeth bony skeleton gill arches paired appendages  appendages with internal bones	<b>AMPHIBIANS</b> head end, tail notochord myotomes (muscle bundles) dorsal nerve cord gill basket with gill slits  dermal bones skull lungs  jaws, teeth bony skeleton gill arches paired appendages  appendages with internal bones  walking legs shoulder and pelvic girdles five fingers / toes	<b>PRE-MAMMALS</b> head end, tail notochord myotomes (muscle bundles) dorsal nerve cord gill basket with gill slits  dermal bones skull lungs  jaws, teeth bony skeleton gill arches paired appendages  appendages with internal bones  walking legs shoulder and pelvic girdles five fingers / toes  embryonic membranes tooth differences  incisor-canine-cheek teeth sequence legs under body body temperature regulation	<b>REPTILES</b> head end, tail notochord myotomes (muscle bundles) dorsal nerve cord gill basket with gill slits  dermal bones skull lungs  jaws, teeth bony skeleton gill arches paired appendages  appendages with internal bones  walking legs shoulder and pelvic girdles five fingers / toes  embryonic membranes  Sauropsids: Anapsids -turtles Diapsids Lizards/snakes Crocodiles, etc. Dinosaurs BIRDS (150) fused clavicles feathers	<b>MAMMALS</b> head end, tail notochord myotomes (muscle bundles) dorsal nerve cord gill basket - gill slits  dermal bones skull lungs  jaws, teeth bony skeleton gill arches paired appendages  appendages with internal bones  walking legs shoulder and pelvic girdles five fingers / toes  embryonic membranes tooth differences  incisor-canine-cheek teeth sequence legs under body body temperature regulation  full bony palate molars: two-roots three ear bones no ribs in lumbar single-bone jaw
(Cephalochordate = pre-vertebrate, e.g. Amphioxus)							