

1

CHORDATE TRAITS

530 million years ago

Branch to Cephalochordates (Amphioxus)

Head end, tail

Notochord

Myotomes (muscle bundles)

Dorsal Nerve Cord

Gill Basket, w/ "Gill Arches"

VERTEBRATE TRAITS

Agnatha (Jawless Fishes)

500 million years ago

Branch to Cyclostomes

Dermal (skin) Bones

Skull

Paired lateral Eyes

Pineal ("third") Eye

Lung

NEW TRAITS

Gnathostomes (Jawed Fishes)

430 million years ago

Branch to Modern Jawed Fishes

Jaws

Teeth

Internal Skeleton

Gill Arches

Paired Appendages

4

NEW TRAITS

Crossopterygians (Lobe-Fin Fishes)

400 million years ago

Branch to Coelacanth

Paired Front and Hind Limbs with...
Internal Bones

NEW TRAITS

Amphibians

360 million years ago

Branch to Modern Amphibians

Walking Legs

Shoulder and Pelvic Girdles

Five Fingers & Toes

Neck

6

NEW TRAITS

Reptiles

300 million years ago

Branch to Modern Reptiles (and Birds)

Tooth Differentiation

Embryonic Membranes

(amnion, etc.)

NEW TRAITS

Mammal-Like Reptiles (Synapsids)

250 million years ago

Branch to More Mammal-Like Reptiles

Incisor-Canine-Cheek Teeth

Sequence

Legs Under Body

Body Temperature Regulation

NEW TRAITS

Mammals

200 million years ago

Branch to Modern Non-Primate Mammals

Complete Bony Palate

Cheek Teeth Crowned

Teeth Replaced Only Once

Molars Double-Rooted

Three Ear Bones

Lumbar Region Rib-Free

Double Occipital Condyle

NEW TRAITS

Primates

65 million years ago

Branch to Modern Prosimian Primates

Grasping Hands

Collar Bone

Closed Eye-Socket

Nails (on Fingers and Toes)

Eyes in Front

Muzzle Reduction

NEW TRAITS

Hoiminoids (Pre-Apes)

30 million years ago

Branch to Modern Apes

2123 Dental Formula

(Upper & Lower)

No Tail

NEW TRAITS

Hominids (Humans)

4 million years ago

Australopithecus spp., to *Homo* spp.

Bipedal (erect posture)

Foramen Magnum more Forward

Small Canine Teeth

Long Arms

Simple Tool Making, Butchering

Precision Grip

NEW TRAITS

1.2 million yrs ago

Homo habilis, Homo erectus

Unusually Large Brain

Makes and Uses Fire

Varied Tool Kit

Long Legs

MORE HUMAN TRAITS

800,000 years ago

Homo sapiens: Modern Humans

Abnormally Large Brain

Symbolic Thinking

More Varied & Refined Tool Kit

Culture: Art, Religion (burial ritual)