Suggestions for Presentations

Below are some suggestions for each period. Please note that most of these overlap. For example, amniotes are listed in the Permian as that is when these animals, which did not need to lay their eggs in water, began to diversify, but amniotes could also be used as a topic for the Carboniferous as this is when the earliest amniotes *Hylonomus* and *Paleothyris* are seen in the fossil record. Conversely, amniotes would make a good topic for more recent periods as they are the common ancestor of reptiles, birds and mammals.

Cambrian 543 Ma - 490 Ma

Phosphatic and calcitic skeletons evolve.

Trilobites

Pikaia from the Burgess Shale

Ordovician 490 Ma - 443 Ma

Complete primitive fish appear in the fossil record.

Brachiopods

Nautiloid *Ellesmerocerida*

Conodonts

Silurian 443 Ma - 417 Ma

First land plants and animals

Bryozoans

Scorpionida

Crinoidea (Indian Beads)

Devonian 417 Ma - 354 Ma

Modern sharks and bony fishes become plentiful.

Eucarida

Tabulate corals

Condrichthyes *Cladoselache*

Carboniferous 354 Ma - 290 Ma

Lush tropical growth leads to the diversification of tetrapods.

Rugosa corals

Ammonoids (common Devonian - Cretaceous)

Mazon Creek group

Anthracosauria

Permian 290 Ma - 248 Ma

Pangea is fully formed. The end of the Permian is the biggest mass extinction of all time.

Amniotes in general

Temnospondyli *Eryops*

Pelecosaur *Dimetrodon*

Cynodont *Procynosuchus*

Triassic 248 Ma - 206 Ma

Reptiles begin to walk upright.

Crurotarsi *Ornithosuchus*

Anura *Triadobatrachus*

Rauisuchian *Postosuchus*

Eoraptor

Coelophysus

Jurassic 206 Ma - 144 Ma

The climate becomes moist and warm; dinosaurs diversify.

Odonata *Turanophlebia*

Coelacanth *Osteopleurus*

Anura *Vieraella*

Allosaurus

Archaeopteryx

Morganucodon

Diplodocus

Cretaceous 144 Ma - 65 Ma

Flowering plants appear and radiate.

Dienonychus

Oviraptor

Kamptobaatar

Pterosaur *Quetzalcoatlus*

Belemnite

Tyrannosaurus rex

Iguanodon

Didelphidon

Torosaurus

Ankylosaurus

Paleogene 65 Ma - 23.8 Ma

Snake radiation mirrors that of mammals and birds after the KT extinction.

Phororhacos
Falconiformes
Dermopterans
Messel Oil Shale fossils
Pakyicetus
Palaeognathae *Palaeotis*
Ptilodus
Icaronycteris
Mesonychid *Andrewsarchus*
Basilosaurus

Neogene 23.8 Ma - 1.8 Ma

Song-birds radiate dramatically. Grasslands spread across North America.

Passeriformes
Hyaenodon
Allodesmus
Proconsul
Australopithecus afarensis
Astrapotherium
Enaliarctos
Pliohippus
Ardipithecus ramidus
Homo habilis and H. rudolfensis

Quaternary 1.8 Ma - Present

Hominids spread out from Africa.

Procoptodon
Magatherium
Mammoths
Other megafauna
H. erectus
H. heidelbergensis
Thylacoleo
Smilodon
Gigantopithcus
H. ergaster
H. sapiens