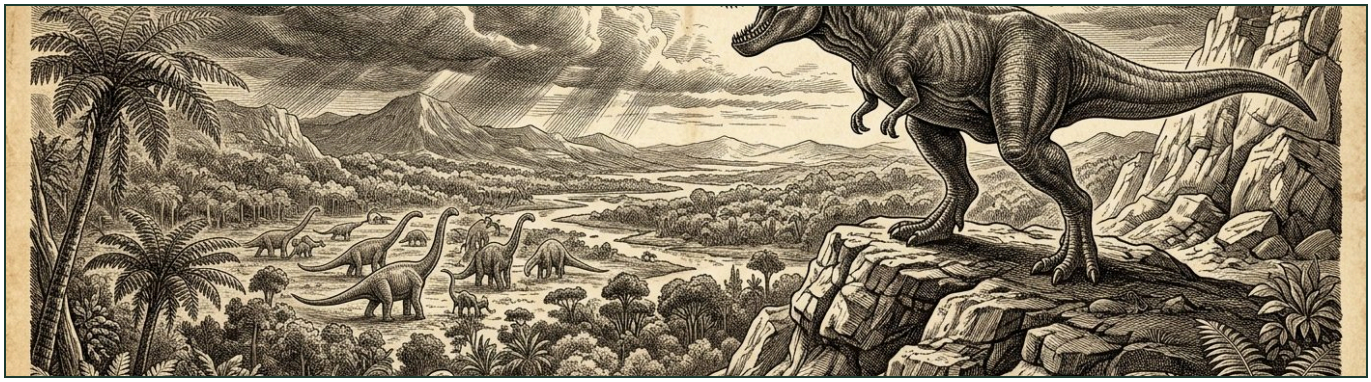


252 million – 66 million years ago

Dinosaurs Timeline

Dinosaurs ruled the Earth for over 165 million years — rising after a mass extinction, dominating every ecosystem on every continent, and disappearing in a sudden catastrophe that gave rise to the mammals, and eventually, to us.

252 million years ago

The Great Dying — Permian Mass Extinction

The largest mass extinction in Earth's history kills an estimated 90–96% of all species on Earth — most marine life, most plants, and most land animals — in what scientists call the Great Dying.

> **Why it mattered:** *The Permian extinction cleared the ecological slate — without it, the dominant reptiles of the Permian would likely have continued to rule and dinosaurs might never have evolved; mass extinction, as catastrophic as it is, is also one of evolution's great reshuffling forces.*

245–230 million years ago

First Dinosaurs Appear

The first true dinosaurs appear in the Triassic period — small, upright-walking reptiles with a posture more like a bird or mammal than a sprawling lizard, giving them a significant advantage in speed and endurance.

> **Why it mattered:** *The upright stance of the earliest dinosaurs — combined with more efficient breathing — gave them an edge over the other reptiles they competed with; these advantages would eventually allow their descendants to grow into the largest land animals Earth has ever seen.*

200 million years ago

End-Triassic Extinction Opens the Door

A mass extinction at the end of the Triassic period kills most large land reptiles and many marine animals — leaving dinosaurs as the dominant large land vertebrates on Earth.

> **Why it mattered:** *The End-Triassic extinction was the dinosaurs' great opportunity: most of their competitors were eliminated, leaving a world that dinosaurs would rule for the next 135 million years.*

201–145 million years ago

Jurassic Period — Age of Giants

The Jurassic period produces the largest animals ever to walk the Earth — sauropods like Brachiosaurus and Diplodocus stretch over 80 feet and weigh more than 50 tons; Allosaurus is the dominant apex predator.

> **Why it mattered:** *Dense Jurassic forests provided enough vegetation to sustain enormous plant-eaters, which in turn supported massive predators; the Jurassic was the golden age of giant dinosaurs, when these animals reached sizes never seen before or since on land.*

c. 150 million years ago

First Birds Evolve

Archaeopteryx — a creature with both dinosaur features (teeth, clawed wings, long bony tail) and bird features (feathers, wishbone) — appears in the fossil record, marking the origin of birds from small feathered theropod dinosaurs.

> **Why it mattered:** *Archaeopteryx is one of the most important fossils ever found — it proved that birds are living dinosaurs, that feathers evolved before flight (likely for insulation or display), and that the line between 'dinosaur' and 'bird' is blurry by design.*

68–66 million years ago

Cretaceous Peak — T. rex and Triceratops

The late Cretaceous produces the most famous dinosaurs — Tyrannosaurus rex (the most powerful land predator ever), Triceratops, Ankylosaurus, and the long-necked titanosaurs; flowering plants spread across the world alongside new species of insects and mammals.

> **Why it mattered:** *The late Cretaceous was dinosaurs at their most diverse and extreme — T. rex had the most powerful bite force of any land animal in history, and the variety of species (horned, armored, duck-billed, crested) was greater than at any earlier time.*

66 million years ago

Chicxulub Asteroid Impact — Mass Extinction

An asteroid roughly 6 miles (10 km) wide strikes what is now the Yucatán Peninsula in Mexico at 40,000 mph, triggering planet-wide wildfires, a 'nuclear winter' that blocks the Sun for years, and the collapse of food chains — killing all non-avian dinosaurs and 75% of all species.

> **Why it mattered:** *The Chicxulub impact ended the Age of Dinosaurs in geological terms instantly — but it also cleared the way for mammals to diversify from small nocturnal creatures into the dominant large animals on Earth, eventually including primates, and human beings.*

1842

Richard Owen Names the Dinosaurs

British scientist Richard Owen studies fossil bones and recognizes that some ancient reptiles were fundamentally different from anything alive today — he coins the term 'Dinosauria' (from the Greek for 'terrible lizard') to describe them.

> **Why it mattered:** *Owen's naming of the dinosaurs was the founding moment of vertebrate paleontology — it established that an entirely different world of giant reptiles had once existed and gave scientists a framework for identifying and classifying fossil finds.*

1877–1892

The Bone Wars

American paleontologists Othniel Charles Marsh and Edward Drinker Cope wage a bitter rival fossil-hunting competition across the American West, discovering over 100 new dinosaur species between them — including Stegosaurus, Allosaurus, Diplodocus, and Triceratops.

> **Why it mattered:** *The Bone Wars were science through intense competition — the rivalry produced extraordinary discoveries but also sabotage, bribery, and the deliberate destruction of fossil sites; despite the chaos, Marsh and Cope assembled the foundation of what we know about North American dinosaurs.*

1980–91

Asteroid Impact Theory Proposed and Confirmed

Luis and Walter Alvarez publish evidence that the non-avian dinosaur extinction was caused by an asteroid impact — identifying a worldwide layer of iridium (rare on Earth but common in asteroids) at the exact geological boundary where dinosaurs disappear from the fossil record.

> **Why it mattered:** *The Alvarez hypothesis transformed how we understand mass extinctions — before 1980 the dinosaur extinction seemed mysterious and gradual; after, we understood that a single catastrophic event could abruptly end the dominant life forms on Earth, with the Chicxulub crater confirmed in 1991.*