

Geologic Time Scale

Eon	Era	Period	Millions of years ago	Major biological events
Phanerozoic Eon	Cenozoic Era	Neogene	Today – 23	The beginning of the Neogene is when the first hominids (early humans) appeared. Modern humans appeared and developed civilization by the end of this period. Mammoths, sabre-toothed cats, and giant camels dominated until 10,000 years ago when many large mammals went extinct.
		Paleogene	23 – 65	Rise of the mammals and birds. Rodents, primates, pigs, cats, dogs, bears and whales appear. Flowering plants spread across the globe.
	Mesozoic Era	Cretaceous	65 – 145	Dinosaurs continue to dominate the land. Marsupials, modern sharks, bees and butterflies appear. Flowering plants appear. Period ends with the mass extinction of the dinosaurs and many plants.
		Jurassic	145 – 200	Dinosaurs dominate the land. Mammals are common but small. Feathered dinosaurs and birds appear. The most common land plants are ferns, palm-like trees called cycads, and grasses.
		Triassic	200 – 251	The few survivors of the Permian extinction go on to populate the land and oceans. New species like mammals, dinosaurs and crocodiles appear.
	Paleozoic Era	Permian	251 – 299	Amphibians dominate the land. Early cone-bearing plants like pine trees appear. Period ends with the largest mass extinction known with 95% of all marine species and 50% of all animals going extinct.
		Carboniferous	299 – 359	Many swamps on land and sponge reefs in the oceans. Reptiles appear. Early winged insects and cockroaches appear.
		Devonian	354 – 417	Fish spread across the oceans. Amphibians appear. The first trees and other plants spread across the land creating the first forests.
		Silurian	417 – 443	Spiders, scorpions, insects, complex plants, and fish with bony jaws appear. Fish adapt to living in rivers and fresh water for the first time.
		Ordovician	443 – 488	First land plants appear. Primitive fungi and sea weed appears. The oceans are full of corals, mollusks, worms, primitive fish, and echinoderms like starfish.
		Cambrian	488 – 543	A large number of new animal species appear in a relatively short time. First fish appear. No known life on land yet.
Proterozoic Eon			543 – 2,500	First multi-celled organisms like sponges appear. Earliest complex life forms are algae from 1.4 billion years ago. Oxygen begins to accumulate in the atmosphere.
Archean Eon			2,500 – 3,800	Earliest life on Earth are bacteria from 3.5 billion years ago. Earth is very different from today. The atmosphere is mostly methane and ammonia. The continents only just have begun to form.
Hadean Eon			3,800 – 4,570	No known life. The Earth’s crust cools and solidifies. The moon forms.

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