

## The Geologic Time Scale

GEOLOGIC ERA OR EVENT	GEOLOGIC PERIOD	GEOLOGIC EPOCH	TIME (MYA)	MAJOR EVOLUTIONARY EVENT
Earth is formed	—	—	4,500	There is no free oxygen.
Archean	—	—	4,300	Hydrosphere forms and supports life. At 3,500 mya, prokaryotes diversify.
Proterozoic	—	—	2,500	Eukaryotes evolve.
Paleozoic	Cambrian	—	542	Marine animals diversify.
Paleozoic	Ordovician	—	488	First vertebrates (jawless fish) evolve.
Paleozoic	Silurian	—	444	Earliest vascular plants and arthropods on land. Jawed fishes evolve.
Paleozoic	Devonian	—	416	Bony fishes diversify. Amphibians, insects, ferns, and seed plants evolve.
Paleozoic	Carboniferous	—	359	Insects and amphibians diversify. First “reptiles” evolve.
Paleozoic	Permian	—	299	Mostly mammal-like reptiles exist. Major mass extinction occurs at end of period.
Mesozoic	Triassic	—	251	“Reptiles,” including first dinosaurs, diversify. Cone-bearing plants are dominant. First mammals evolve.
Mesozoic	Jurassic	—	200	Dinosaurs diversify. First birds evolve. Cone-bearing plants are still dominant. First flowering plants evolve.
Mesozoic	Cretaceous	—	145	Dinosaurs, birds, mammals, flowering plants continue to diversify. Mass extinction of many taxa including dinosaurs, occurs at end of period.
Cenozoic	Tertiary	Paleocene	65	Mammals, birds, snakes, flowering plants, pollinating insects, bony fishes diversify.
Cenozoic	Tertiary	Eocene	55.8	Mammals, birds, snakes, flowering plants, pollinating insects, bony fishes diversify.
Cenozoic	Tertiary	Oligocene	33.9	Mammals, birds, snakes, flowering plants, pollinating insects, bony fishes diversify.
Cenozoic	Tertiary	Miocene	23	Mammals, birds, snakes, flowering plants, pollinating insects, bony fishes diversify.
Cenozoic	Tertiary	Pliocene	5.3	Mammals, birds, snakes, flowering plants, pollinating insects, bony fishes diversify.
Cenozoic	Quaternary	Pleistocene	1.8	Extinctions of large mammals and birds occur. <i>Homo erectus</i> and <i>Homo sapiens</i> evolve.
Cenozoic	Quaternary	Recent (Holocene)	0.01	Extinctions of large mammals and birds occur.