

Eon	Era	Period	Epoch	Ma	Life Forms	North American Events
Phanerozoic	Cenozoic	Quaternary	Holocene	0.01	Modern humans	Cascade volcanoes (W)
			Pleistocene		Extinction of large mammals and birds	Worldwide glaciation
		Neogene	Pliocene	2.6	Large carnivores	Sierra Nevada Mountains (W)
			Miocene	5.3	Whales and apes	Linking of North and South America
			Oligocene	23.0		Basin-and-Range extension (W)
		Paleogene	Eocene	33.9		
				55.8	Early primates	Laramide Orogeny ends (W)
			Paleocene	65.5		
		Mesozoic	Cretaceous		<b>Mass extinction</b> Placental mammals Early flowering plants	Laramide Orogeny (W) Sevier Orogeny (W) Nevadan Orogeny (W)
	Jurassic		145.5	First mammals	Elko Orogeny (W)	
	Triassic		199.6	<b>Mass extinction</b> Flying reptiles First dinosaurs	Breakup of Pangaea begins Sonoma Orogeny (W)	
	Paleozoic	Permian	251	<b>Mass extinction</b> Coal-forming forests diminish	Supercontinent Pangaea intact Ouachita Orogeny (S) Alleghanian (Appalachian) Orogeny (E)	
		Pennsylvanian	299	Coal-forming swamps Sharks abundant	Ancestral Rocky Mountains (W)	
		Mississippian	318.1	Variety of insects First amphibians		
		Devonian	359.2	First reptiles <b>Mass extinction</b>	Antler Orogeny (W)	
		Silurian	416	First forests (evergreens)	Acadian Orogeny (E-NE)	
		Ordovician	443.7	First land plants <b>Mass extinction</b>		
			488.3	First primitive fish Trilobite maximum Rise of corals	Taconic Orogeny (E-NE)	
		Cambrian	542	Marine Invertebrates Early shelled organisms	Avalonian Orogeny (NE) Extensive oceans cover most of proto-North America (Laurentia)	
Proterozoic			First multicelled organisms	Supercontinent rifted apart Formation of early supercontinent Grenville Orogeny (E)		
Archean		2500	Jellyfish fossil (670 Ma)	First iron deposits Abundant carbonate rocks		
Hadean	Precambrian		Early bacteria and algae	Oldest known Earth rocks (≈3.96 billion years ago)		
			≈4000	Origin of life?	Oldest moon rocks (4-4.6 billion years ago)	
			4600	Formation of the Earth	Formation of Earth's crust	

Figure 15. Geologic timescale. Included are major life history and tectonic events occurring on the North American continent. Red lines indicate major unconformities between eras. Radiometric ages shown are in millions of years (Ma). Compass directions in parentheses indicate the regional location of individual geologic events. Drafted by Trista Thornberry-Ehrlich (Colorado State University) with information from the U.S. Geological Survey (<http://pubs.usgs.gov/fs/2007/3015>) and the International Commission on Stratigraphy (<http://www.stratigraphy.org/view/php?id=25>).