

Geologic Time Scale (not to scale)

Eon		Era	Period	Epoch	Age	Events	
Phanerozoic		Cenozoic	Quaternary	Holocene	10 Ka		
				Pleistocene		Wisconsin ice age (10-25 Ka) Fort Funston marine terrace formed (100 Ka) (CALIF) Illinoian ice age (130-270 Ka) Homo Sapiens first appear (100-300 Ka)	
			Tertiary	Pliocene		1.6 Ma	Kansan ice age (350-600 Ka) San Francisco Bay forms (400 Ka) (CALIF) Nebraskan ice age (1-2 Ma) Merced formation begins accumulating (1 Ma) (CALIF)
						5.3 Ma	Ancient hominids first appear (3.4-3.8 Ma) Purisima Formation deposited (Moss Beach) (3-5 Ma) (CALIF) Uplift of Coast Ranges and Mt. Diablo begins (5 Ma) (CALIF)
				Miocene	23.7 Ma		
				Oligocene	36.6 Ma	San Andreas fault formed (25 Ma) (CALIF)	
				Eocene	57.8 Ma		
			Paleocene	66.4 Ma			
			Mesozoic	Cretaceous	Upper	97.5 Ma	Last dinosaur (66.4 Ma) Montara Mountain granite forms in Sierras (88 Ma) (CALIF) First modern mammal (90 Ma)
					Lower	144 Ma	Marin Headlands Terrane accretes in Franciscan Subduction Zone (100 Ma) (CALIF)
		Jurassic		208 Ma	Pangaea break up (Atlantic Ocean) (175 Ma) Franciscan subduction zone (65-175 Ma) (CALIF) Marin Headlands Chert and Shale accumulate on seafloor (100-200 Ma) (CALIF) Marin Headlands Pillow Basalt forms at spreading center (200 Ma) (CALIF)		
		Triassic		245 Ma	Pangaea formation is complete (225 Ma) Smartville subduction zone (175-225 Ma) (CALIF) First dinosaur (228 Ma)		
		Paleozoic	Permian		286 Ma	Mass extinction event (245 Ma)	
			Carboniferous	Pennsylvanian	320 Ma	First reptiles	
				Mississippian	360 Ma	First bony fish (360 Ma)	
			Devonian		408 Ma	First amphibians Sonomia subduction zone (225- 375 Ma) (CALIF) First forests and insects (400 Ma)	
			Silurian		438 Ma	First land plants	
			Ordovician		505 Ma	First primitive fishes	
			Cambrian		570 Ma	First trilobite (540 Ma) First organisms with shells (570 Ma)	
		Precambrian	Proterozoic	Late		900 Ma	First multicelled organisms (670 Ma) North American western margin is passive (900-400 Ma) (CALIF)
Middle				1.6 Ga			
Early				2.5 Ga	First one-celled organisms with nucleus (2.2 Ga)		
Archean	Late		3.0 Ga				
	Middle		3.4 Ga				
	Early		3.8 Ga	First evidence of photosynthesis (stromatolites) (3.5 Ga) First evidence of life (bacteria – single celled with no nucleus) (3.8 Ga)			
Hadean			4.6 Ga	Formation of oceans and oldest known rocks (4.4 Ga) Formation of Earth and its immediate differentiation into layers (4.6 Ga)			

*Age is when division begins: Ka = thousands of years old; Ma = millions of years old; Ga = billions of years old.

