

Geology Glossary
Chuck Hill Winter Quarter 2018

Eons	Largest interval of geologic time: Phanerozoic, Pre-Cambrian
Eras	Subdivision of time within Eons: Cenozoic, Mesozoic, Paleozoic
Periods	Subdivision of time within Eras: Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, Permian, Triassic, Jurassic, Cretaceous, Tertiary, Quaternary
Epochs	Subdivision of time within periods: Paleocene, Eocene, Oligocene, Miocene, Pliocene, Pleistocene, Holocene
Plate Tectonics	Movement of continents across the globe, due to convection or heat in core
Convergent Boundary	Where two plates collide head on
Divergent Boundary	Where two plates separate by the up welling of molten material
Transform Boundary	Where two plates slide by each other
Thrust Fault	A low angle reverse fault where top block moves over bottom block
Normal Fault	Top block slides down fault plain relative to bottom block
Strike-Slip	Left or right lateral when looking across fault relative motion of block across fault has moved left or right
Ice Sheet	A large continental glacier – Antarctica, Greenland
Ice Cap	Smaller glaciers such as in Iceland
Ice Fields	Smallest glacial areas – Columbia Ice Field Canadian Rockies
Terminal Moraine	A mound of sediments deposited by glacier at its terminus
Lateral Moraine	A mound of sediments smeared along the sides of a glacier
Ester	A serpentine mound of sediments deposited within a stream under a glacier
Drumlin	A hill reshaped by a glacier
Erratic	A rock carried by the glacier, often miles to hundreds of miles, then left after the glacier retreats
Kames	Steep sided mound of sand and gravel
Kettle Ponds	Shallow sediment filled water bodies due to blocks of ice creating a depression

Ware Cut Terrace	A platform cut by wave action along steep shorelines
Transgression	The rising of sea level relative to land inundating the land
Regression	The fall of sea level relative to land draining the land
Rift Valley	Divergent boundary where thinning of the crust allows molten rock to well up
Stratigraphy	The layers of rock (geologic units) at a given place
Sea Stack	A rock pillar eroded from a receding cliff by the sea
Sea Arch	A rock arch eroded by the sea
Igneous	Rocks that cool from molten materials (basalt, granite)
Sedimentary	Rocks weathered from the erosion of other rocks (sand, clay) or created by deposition of shells created by invertebrate organisms (limestone, dolostone) or precipitates (halite gypsum)
Metamorphic	Sedimentary and igneous rocks that have been deeply buried and are changed by the heat and pressure of that burial (marble, gneiss, schist)
Extrusive	Igneous rocks that are molten at ground surface (lava, basalt, tuft, ash)
Intrusive	Igneous rocks that are cooled at depth (granite)
Rhyolite	A felsic (silica rich) volcanic extrusive rock (light)
Basalt	A mafic (silica poor) volcanic extrusive rock (dark)

Four Laws of Geology

Uniformitarianism`	The processes acting on the earth today (weathering, volcanism, plate tectonics, meteorite impacts) have always been active on earth
Original Horizontality	Sedimentary layers are deposited in horizontal beds
Lateral Continuity	Sedimentary beds extend to the boundaries of the depositional environment
Super Position	The rocks at depth (lower in stratigraphic column) are older than those shallow (higher in stratigraphic column)

Evolution of Life

Earth Forms	4.5 billion years ago (BYA)
Life on Earth	4.0 BYA
Stromatolites,	3.5 BYA
Sexual Reproduction	1.85 BYA,
Multi-cellular algae	1.4 BYA
First communities (Plants)	650 Million Years Ago (MYA),
First shelled animals	545 MYA
First Corals	482 MYA
First Jawless Fish	463 MYA
First Land Plant Spores	458 MYA
First Vascular Plants	428 MYA
First Jawed Fish	424 MYA
First Land Animals	417 MYA
First Insects	405 MYA
First Amphibians	359 MYA
First Reptiles	327 MYA
First Dinosaurs	226 MYA
First Mammals	209 MYA
First Hominids	3.5 MYA
First Homo sapiens	0.20 MYA