

FOSS Earth History Course

Glossary

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abrasion the grinding and bumping of rocks that cause physical weathering (SRB, IG)

active in terms of volcanoes, a volcano that has erupted during recorded history, is currently erupting, or is likely to erupt in the near future (IG)

asthenosphere the fluid portion of the mantle that has special properties (SRB, IG)

atmosphere the air that surrounds Earth (SRB)

atom the smallest particle of an element (SRB)

basin a low-lying area where water may accumulate (SRB, IG)

bedrock the rock that forms Earth's crust (SRB, IG)

biosphere all the living things on Earth (SRB)

calcite a carbonate mineral with the chemical formula CaCO_3 (SRB, IG)

caldera a volcanic landform created when part of the land collapses (SRB)

carbonate a substance made of carbon and oxygen (CO_3) (SRB)

cement the material that holds particles together to make stone (IG)

cementation the deposition of cement in the spaces between particles of sediment (IG)

Cenozoic an era when mammals exist; means "recent animal life" (SRB, IG)

chemical reaction the process in which two or more substances combine to make one or more new substances that have different properties from the original ones (SRB, IG)

chemical weathering the process by which rocks are weathered due to reactions with substances in water and air (SRB, IG)

clay particles that are smooth or slick; smaller than sand and silt, it is difficult to see just one (IG)

coal a rock that can be burned to release stored energy (SRB)

compaction decreasing the volume of accumulated sediments by using pressure to decrease the size and number of the spaces between the particles (IG)

continental drift the theory that the continents had once been one big continent that broke up and moved around to their present-day positions (IG)

continental shelf a relatively shallow area of the ocean, usually less than 200 meters deep, that surrounds a continent; the flooded part of a continent (IG)

convection the heat transfer in a fluid in which hot fluid rises and cold fluid sinks, setting up a cycle (SRB, IG)

converge to come together (SRB)

convergent boundary a boundary where plates move toward each other (IG)

correlation the process of matching up rock layers from different locations (SRB, IG)

crossbedding patterns in rock resulting from sand dunes that were blown into patterns by the wind (SRB, IG)

cross section the surface that is revealed when something is cut through, typically at a right angle to its axis (SRB, IG)

crude oil unprocessed oil, also called petroleum (SRB)

crust the rigid outer layer of Earth (SRB, IG)

crystal an orderly arrangement of atoms and molecules with a specific shape determined by its chemical composition (SRB, IG)

crystallize to form into crystals (IG)

deposition the settling of sediments (SRB, IG)

differential erosion the different rates at which layers of weathered earth materials are carried away by water, wind, or ice (SRB, IG)

divergent boundary a boundary where plates move away from each other (IG)

dome formed when magma pushes up from below Earth's surface but doesn't erupt. The rocks above are uplifted and the cooling magma forms an igneous core beneath (IG)

dormant in terms of volcanoes, a volcano that is not presently erupting but is likely to in the future (IG)

Earth-imaging satellite a device launched into space to orbit Earth to record images of its surface, such as GeoEye-1 (SRB)

earthquake a sudden movement of plates within Earth's crust (SRB, IG)

ecosystem a community of organisms interacting with each other and with the nonliving environment (SRB)

elevation the vertical distance of the land's surface above sea level (IG)

eon the largest division of geological time (SRB)

epoch a subdivision of a geological period (SRB, IG)

era a broad span of geological time based on the general type of life existing during that time (SRB, IG)

erosion the carrying away of weathered earth materials by water, wind, or ice (SRB, IG)

erratic a rock that is different from the type of rock found in its current location (SRB)

extinct in terms of volcanoes, a volcano that is not expected to erupt again (IG)

extrusive formed on the exterior of Earth (SRB, IG)

fault a crack in Earth's crust where movement can occur (SRB, IG)

fault block the rapid breaking of the Earth's crust either by compression or pulling apart (tension) (IG)

flood a large amount of water flowing over land that is usually dry (SRB)

folding the deformation of rock layers in Earth's crust as tectonic plates move (SRB, IG)

foliation to form into thin, leaflike layers (SRB, IG)

formation strata with distinguishable characteristics and sequences of sediments (SRB, IG)

fossil any remains, trace, or imprint of animal or plant life preserved in Earth's crust (SRB, IG)

fossil fuel fuel formed by natural processes over long periods of time (SRB)

fossil record all the fossils on Earth (SRB, IG)

frost wedging the process of water freezing in the cracks of rocks and breaking them apart (IG)

fumarole a hole or vent near a volcano from which steam rises (SRB)

geologic time the period of time ranging from the formation of Earth about 4.6 billion years ago to today (SRB, IG)

geologist a scientist who studies Earth (SRB, IG)

geosphere the solid rocky surface and the interior of Earth (SRB)

geyser a hot spring that traps steam in underground spaces and builds pressure, causing periodic eruptions (SRB)

glacial till sediment from glaciers that is unsorted (SRB)

glacier a giant body of ice that slowly flows (SRB)

gneiss a coarse-grained rock that has been subjected to extreme heat and pressure. The source rock is often granite, but it can also be from a sedimentary rock or another metamorphic rock. (IG)

greenhouse gas a gas that absorbs and radiates heat energy in the atmosphere, effectively trapping heat in the atmosphere (SRB)

groundwater water stored below Earth's surface (SRB, IG)

hoodoo a rock shaped like a mushroom or statue that forms when weak rocks erode away and leave stronger rocks behind (SRB)

horizon a layer in a soil profile (SRB)

horizontal level, not slanted or sloped (IG)

hotspot a volcanic area that forms as a tectonic plate moves over a place heated from deep within Earth (SRB)

hot spring a naturally occurring warm body of water heated from underground (SRB)

humus bits of dead plant and animal parts in soil (SRB, IG)

hydrosphere Earth's water, both in the seas and on land (SRB)

igneous rock a rock that forms when melted rock (magma or lava) hardens (SRB, IG)

index fossil a fossil that characterizes a particular period of time (SRB, IG)

infer to form a conclusion from evidence or known facts (SRB)

inner core the solid layer at the center of the Earth (IG)

interglacial the time between glaciation (SRB)

intrusive formed in the interior of Earth (SRB, IG)

karst topography dramatic landforms created by chemical weathering of rocks (SRB)

landform a natural feature of Earth's surface with a characteristic shape (SRB, IG)

latitude the distance measured on Earth's surface north or south of the equator (IG)

lava molten rock on the surface of Earth (SRB, IG)

law of fossil succession a principle that says the same kinds of fossils found in rocks from different places are the same age and that the kinds of plants and animals found as fossils change over geological time (SRB, IG)

layer a thickness or bed of weathered rock material (IG)

limestone a sedimentary rock made mostly of calcite (SRB, IG)

lithosphere the hard outer layer of Earth made of crust and hard, upper mantle; broken into tectonic plates (SRB, IG)

longitude the distance measured on Earth's surface east or west of the prime meridian (IG)

magma molten rock under the surface of Earth (SRB, IG)

mantle the layer of Earth below the crust; upper part is solid and lower part is semisolid (SRB, IG)

marble a rock that derives from limestone as a result of pressure, temperature, and time (IG)

Mesozoic an era when dinosaurs existed; means "middle animal life" (SRB, IG)

metamorphic rock a rock that has changed from another rock because of heat, pressure, or a chemical reaction (SRB, IG)

mineral naturally occurring chemical compound (SRB, IG)

model a representation of something else (SRB, IG)

molecule a particle made of two or more atoms that are held together with strong bonds (SRB)

mud pots fumaroles with little water, so mud forms and bubbles at the entrance (SRB)

oil a substance formed within Earth that can be burned to release stored energy (SRB)

ooze in geology, a deposit of soft mud in water (SRB, IG)

outer core the molten layer at the center of the Earth (IG)

paleontology the study of fossils (SRB, IG)

Paleozoic an era when trilobites, corals, brachiopods, early fish, and early amphibians existed; means "ancient animal life" (SRB, IG)

peat plant material that has partially decomposed (SRB)

pedologist a scientist who studies soil (SRB)

period a span of time within an era (SRB, IG)

physical weathering the process by which rocks are broken down by breaking and banging (SRB, IG)

plate a section of Earth's lithosphere (SRB, IG)

plate boundary the area along an edge of Earth's plates (SRB, IG)

plate tectonics a theory that says Earth's outer layers are made of moving plates (SRB)

plateau a large area of flat-lying sedimentary rock that has been lifted high above its original elevation (SRB, IG)

Precambrian a geological era; all of Earth's history that occurred before the Paleozoic Era (IG)

precipitate to form a solid, insoluble product during a chemical reaction (SRB, IG)

principle of original horizontality a theory that says sedimentary layers of rock are flat and horizontal (SRB, IG)

principle of superposition a theory that says sedimentary rocks on the bottom are older than rocks on the top (SRB, IG)

quartzite a metamorphic rock derived from sandstone that is primarily composed of quartz (IG)

relative time scale sequence of events based on data that shows the order in which they occur (SRB, IG)

renewable something that can be replenished (SRB)

Ring of Fire the volcano and earthquake epicenters that seemingly circle the Pacific Ocean (IG)

rock a solid earth material that is made of minerals (IG)

rock cycle transformation that changes one type of rock into another (SRB, IG)

rock fall a mass of rocks falling to the ground, similar to an avalanche (SRB, IG)

root wedging when the roots of plants grow and search for minerals and water in rock fractures, exerting pressure on the rocks and driving them apart (IG)

sand rocks that are smaller than gravel but bigger than silt (IG)

sandstone a sedimentary rock made of sand particles stuck together (SRB, IG)

satellite an object that orbits a planet or other object (SRB)

schist a highly metamorphosed rock that can come from different source rocks, including slate (IG)

sediment material that is deposited by water, wind, or ice (SRB, IG)

sedimentary rock a rock that forms when layers of sediments get stuck together (SRB, IG)

seismologist a scientist who studies earthquakes (SRB)

seismology the study of earthquakes (IG)

shale a sedimentary rock made of clay or silt (SRB, IG)

silt rocks that are smaller than sand but bigger than clay (IG)

slab pull when solid, dense lithosphere sinks into the softer, less dense asthenosphere, causing the entire tectonic plate to move (SRB)

slate a metamorphic rock that forms when heat and pressure are applied to shale. Slate looks very similar to shale, but slate is much harder because of the compression. (IG)

soil a mix of humus, sand, silt, clay, gravel, and/or pebbles (SRB, IG)

soil profile a vertical cross section of soil that shows its many layers or horizons (SRB, IG)

sorting a process by which particles are separated out from water, wind, or ice by size, shape, or density (IG)

source rock a rock at the start of a process (SRB)

spreading ridge a mountain range that forms on the ocean floor along a divergent boundary (IG)

stalactite a calcium carbonate deposit shaped like an icicle, hanging from the roof of a cave (SRB)

stalagmite a calcium carbonate deposit shaped like an upside-down icicle, formed on the floor of a cave (SRB)

strain a force or pressure that tends to change the shape of a rock (SRB)

stratigraphy the study of the order and correlation of Earth's rocks (SRB, IG)

subduction when one tectonic plate slides under another (SRB, IG)

subduction zone an area where two plates meet and one moves under the other (SRB, IG)

supereruption the massive eruption of a supervolcano (SRB)

talus jagged rocks found at the base of cliffs (SRB)

tectonic the movement of Earth's crust (SRB, IG)

tectonic plate sections of the lithosphere that move on top of the fluid asthenosphere; composed of Earth's crust and the hard top layer of the mantle (SRB)

terminal moraine an area of glacial sediment that forms at the farthest reaching point of a glacier (SRB)

terrain the physical features of land (SRB)

theory of plate tectonics the idea that the Earth's lithospheric plates have moved and changed over geological time based on the pattern that volcanoes and earthquakes make at Earth's surface (IG)

transform a fault where two plates slide past each other (SRB)

transform boundary a boundary where plates move past one another (IG)

trench deep areas of the crust where oceanic plates are converging and sinking (SRB, IG)

unconformity a gap in the geological record during which either no rocks were deposited or existing rocks eroded (SRB, IG)

uniformitarianism a theory that says geological processes observed in the past are the same as those observed today (SRB, IG)

uplift when sections of Earth's crust rise as tectonic plates move (SRB, IG)

volcano an opening in Earth's crust where lava, cinders, ash, and gases come to the surface (SRB, IG)

volcanologist a scientist that studies volcanoes (SRB)

volcanology the study of volcanoes (IG)

weathering the process by which larger rocks crack and break apart over time to form smaller rocks (SRB, IG)