

# Earth Processes

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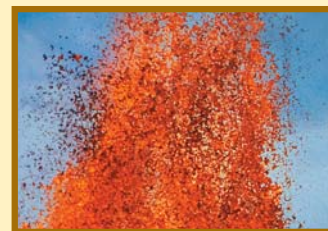
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# Glossary

A page number in boldface type indicates the page on which the word is defined in the text.

**abrasion** gradual wearing off of small fragments of rock by windblown sand, moving water, or glacial ice (**14**)

**absolute age** actual age of a rock or fossil (**22**)

**asthenosphere** hot layer of Earth's upper mantle that flows very slowly (**5**)

**cementation** process that forms sedimentary rock when large sediments are "glued" together by minerals deposited between them (**17, 18**)

**chemical rock** type of sedimentary rock that forms when water evaporates and leaves behind layers of minerals (**18**)

**chemical weathering** breaking down of rocks by changing their chemical composition (**19**)

**clastic rock** most common type of sedimentary rock, made of smaller pieces of other rocks (**17**)

**climate** weather pattern in a particular area over a long period of time (**19, 22**)

**compaction** process that forms sedimentary rock when layers of small sediment are compressed by the weight of the layers above them (**17, 18**)

**conduction** transfer of heat energy through solid matter as one particle strikes another (**3**)

**continent** large land mass (**2, 4, 5, 7**)

**continental drift** idea that continents move from one part of Earth to another (**4–6, 21**)

**continental glacier** thick sheet of ice that covers a large land area (**14**)

**contour plowing** plowing crop rows across a hill to prevent erosion (**20**)

**convection** transfer of heat energy from one place to another by flowing matter (**3**)

**convection current** cycling of flowing matter as it is heated and then cooled, due to density differences (**3, 5**)

**convergent boundary** place where two plates collide (**7**)

**core** center part of Earth (**2, 3**)

**creep** mass movement in which sediments move slowly down a hill (**15**)

**crust** Earth's outermost layer (**2, 3, 5–11, 18, 21**)

**deflation** wind erosion that removes small, loose sediment but leaves behind large materials (**14**)

**deformation** bending and stretching of rocks (**8**)

**deposition** dropping of eroded sediment in a new place (**11–13, 15**)

**divergent boundary** place where two plates are moving apart (**7**)

**dome mountain** mountain that forms when a pocket of magma pushes up against the layers of crust above it, forming a dome shape (**10**)

**drainage basin** area that is drained by a river and its tributaries (**11**)

**dune** mound of loose sand deposited by wind (**15**)

**Dust Bowl** area in the central United States that suffered severe drought during the 1930s, causing huge dust storms (**20**)

**earthquake** vibration of the ground caused by sudden movements along faults that occur when rocks break under stress and release energy (**2, 7, 9, 15, 21**)

**epicenter** point on Earth's surface directly above an earthquake's focus (**9**)

**erosion** movement of sediments from one place to another (**11, 12–15, 17–18, 20**)

**extrusive** formed when lava cools above Earth's surface (**16**)

**fault** crack in Earth's crust along which rocks move (**8, 9**)

**fault-block mountain** mountain that forms along a normal fault where stress causes huge blocks of rock to tilt up (**8**)

**focus** point in Earth's interior where earthquake energy is released (**9**)

**folded mountain** mountain formed when rock layers are squeezed from opposite sides, causing them to buckle and fold (**8**)

**fossil** preserved remains, imprints, or traces of an organism (**4, 22**)

**geologic time scale** record of geologic events and living things in Earth's history (**22**)

**geologist** scientist who studies Earth (**2, 6, 22**)

**geyser** hot spring that periodically shoots groundwater and steam up into the air (**10, 13**)

**glacier** huge mass of moving ice (**14, 15**)

**gravity** force that causes materials to move downward (**13–15, 18**)

**groundwater** fresh water that is stored in the ground (**10, 12, 13, 15**)

**hot spot** area in Earth's mantle that is hotter than surrounding areas, forming melted rock that rises toward the crust (**10**)

**hot spring** natural spring where heated groundwater flows from the ground (**10, 13**)

**humus** once-living, decayed material found in soil (**19, 20**)

**ice wedging** breaking of rocks when water in cracks freezes and expands (**14, 19**)

**igneous rock** rock formed from cooled magma (**16–18**)

**index fossil** fossil of a living thing that was abundant and widespread for a short period of geologic time, used to date rock layers in which it is found (**22**)

**inner core** solid iron center of Earth's core (**3**)

**intrusive** formed when magma cools and hardens beneath Earth's surface (**16**)

**lava** magma that reaches Earth's surface (**2, 10, 16**)

**lithosphere** brittle outer layer of Earth that includes the crust and top part of the upper mantle (**5, 8**)

**loam** soil that has a good mix of sand, silt, clay, and humus (**19**)

**loess** thick layer of fine sediment deposited by wind (14)

**magma** melted rock formed inside Earth (6, 7, 10, 16, 18)

**magnitude** measure of the energy released by an earthquake (9)

**mantle** layer of Earth between the crust and outer core (2, 3, 5, 6, 9, 10, 18, 21)

**mass movement** erosion in which gravity causes loose materials to move downhill (15)

**mechanical weathering** process that breaks down rocks without changing what they are made of (19)

**metamorphic rock** rock formed from other rock by heat and pressure (17, 18)

**mid-ocean ridge** long, narrow chain of underwater mountains (6, 7, 10, 21)

**mineral** nonliving, solid material found on or in Earth; building block of rock (13, 16–19)

**moraine** ridge of materials left behind when a glacier stops moving forward (14)

**normal fault** tension fracture in rocks where rock on one side drops down relative to the other side (8)

**organic rock** type of sedimentary rock made from the remains of once-living things (18)

**outer core** liquid metal layer of Earth between the inner core and mantle (3)

**Pangaea** name of the huge continent that broke up into today's land masses (4, 22)

**permeable** allowing water to pass through (12)

**plate** one of the blocks of crust and upper mantle that make up the lithosphere (5–8, 10, 18)

**plate tectonics** theory that Earth's solid plates move on top of the asthenosphere (5, 18, 21)

**plateau** flat, broad, raised area of land (8)

**relative age** age of one rock layer compared to another (22)

**reverse fault** break in the crust where rock on one side is pushed up relative to the other side (8)

**rift** deep valley that runs along the crest of the mid-ocean ridge (6)

**rock** natural solid that is usually a mixture of minerals (2–4, 6, 8–16, 17–22)

**rock cycle** slow but constant formation and destruction of rocks and rock materials (18, 19)

**runoff** rainwater or melting snow that drains off land into streams (11, 12)

**sea-floor spreading** process by which new oceanic crust forms at the mid-ocean ridge, spreads away from the ridge, and is subducted into the mantle at trenches (6, 21)

**sediment** loose material composed of bits of weathered rock (11–15, 17, 18)

**sedimentary rock** rock formed when layers of sediment are compacted or cemented together (17, 18)

**seismic waves** energy waves that move outward from an earthquake's focus and make the ground shake (9)

**seismograph** instrument used to record earthquake waves (9)

**slump** mass movement in which one large mass of loose material or rock layers moves downhill (15)

**soil** mixture of weathered rock, decayed organic materials, mineral bits, water, and air (2, 12–15, 19, 20)

**soil conservation** protection and wise use of soil (20)

**soil horizon** layer of soil (20)

**soil profile** cutaway view showing different soil horizons (20)

**sonar** instrument used to determine the depth of water by the reflection of sound waves off the sea floor (6, 21)

**stress** force that acts on tectonic plates (8, 9)

**strike-slip fault** break in the crust where two blocks of rock scrape along each other in opposite directions (8)

**strip cropping** planting different kinds of crops side by side in strips to help prevent soil erosion (20)

**subduction** process in which the edge of one plate sinks below the edge of another plate (6, 7, 10)

**till** mixture of boulders, stones, and sediment deposited by a melting glacier (14)

**transform boundary** place where plates meet and slide past each other (8)

**trench** deep, narrow ocean canyon that forms where one plate is subducted under another (6, 7, 21)

**tsunami** seismic sea wave caused by an underwater earthquake; grows in height as it approaches land (9)

**valley glacier** river of ice that moves downhill slowly (14)

**vent** opening in Earth's surface through which lava can flow (10)

**volcanic neck** landform created when magma cools and hardens inside a volcano's vent and is later exposed when the volcano's cone wears away (10)

**volcano** mountain that forms around a vent where magma escapes to Earth's surface (2, 10, 15, 16)

**water table** upper surface of the zone of saturation (12, 13)

**weathering** breaking of rocks into smaller pieces by water, temperature changes, wind, or living things (11, 12, 14, 15, 17–19)

**zone of saturation** zone of rock and soil in which all available space is filled with groundwater (12, 13)

