

The surface of the Earth is constantly changing. **Lava** flows and **sediment deposits** build up the land. **Weathering** tears down the mountains and breaks up rocks, forming sediments and soil. The movement of earth materials is called **erosion**. Wind, water, **gravity**, and animals are **forces** that move earth materials from one place to another.

Geologists are scientists who study Earth's system.

Water Can Cause Erosion

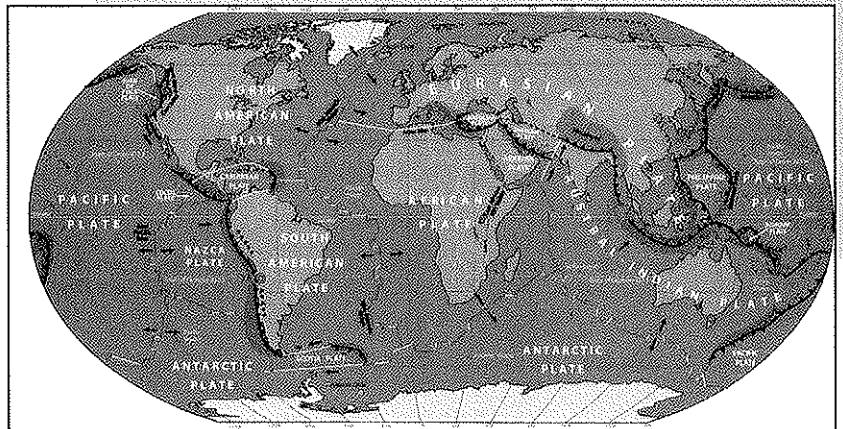
Erosion of soil and rocks can be caused by ocean waves crashing on a beach. Churning rivers can grind down canyon walls. These changes can happen slowly or very quickly. Heavy rains or a few hot days of melting mountain snow can cause **floods**. A flood can move silt, sand, clay, and **mineral nutrients** long distances from where they are normally found. Freezing water high on a mountain can form a **glacier**. Glaciers are large chunks of ice that take years to shift and slide. They can carve valleys through hard, rocky mountains. Glaciers move **topsoil**, boulders, and small rocks many miles.

Everything Moves On Earth

Earth's surface has an outer, thin **crust**, and an upper **mantle** layer. The crust is made of giant **plates** that fit together like a jigsaw puzzle. **Landforms** are created from Earth's **constructive** and **destructive forces**. **Earthquakes** can shake up rock **formations** and tear the land apart.

Other forces are at work on Earth. Gravity pulls rock and soil to the bottom of hillsides, valleys, or cliffs. An **earthquake** can cause a **volcano** to **erupt** with **molten** rock (lava), sending **pumice** and ash great distances through the air and across the land. Wind is a major erosion machine. Animals and people walking on trails move soil and cause erosion. Erosion is the movement of earth materials to different locations.

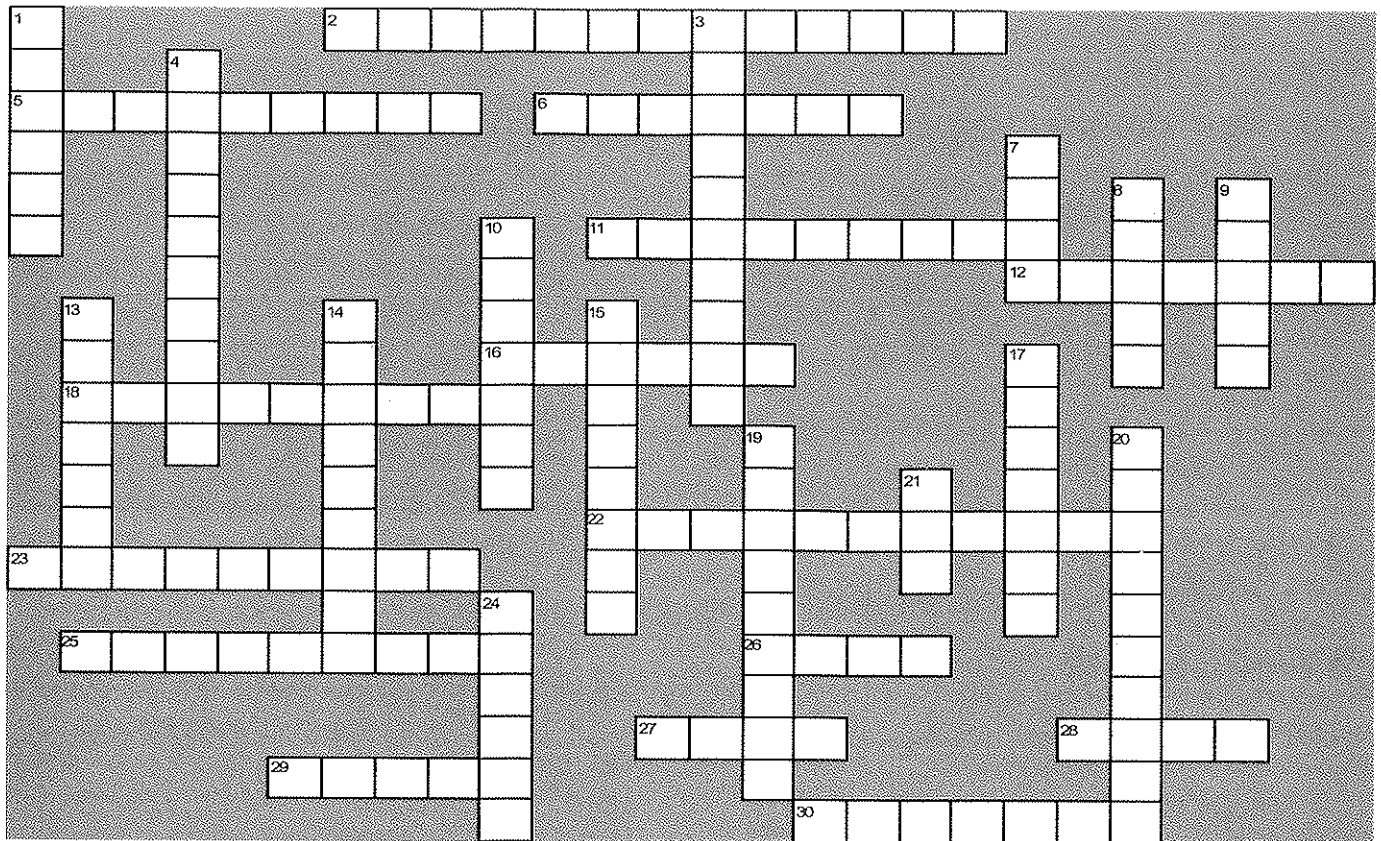
The face of the Earth is always changing!



Be wise! Reading non-fiction is a smart idea. Suggested readings: P. 30, P. 32.

Lesson 9

/30



ACROSS

- 2 Water pulled from the atmosphere to Earth by gravity. P. 25.
- 5 A person that studies systems. P. 77.
- 6 The pivot point of a lever system. P. 108.
- 11 The interaction of organisms with their environment. P. 22.
- 12 Scientists work to solve this. P. 99.
- 16 The food chain shows food ____ moving through the ecosystem. P. 22.
- 18 Land made from Earth's constructive and destructive forces.
- 22 The process of liquid heating and changing into vapor. P. 25.
- 23 The ability to do work is ____ energy. P. 15.
- 25 Possible value. P. 99.

- 26 Collected information, often shown on graphs, charts, or diagrams. P. 30.
- 27 True information. ★
- 28 A major cause of erosion.
- 29 A simple machine with a pointed edge. P. 15.
- 30 The movement of earth materials.

DOWN

- 1 Used to solve a problem. ★
- 3 New objects or systems created to improve our lives. P. 99.
- 4 The process that breaks down mountains and rocks, forming sediments and soil.
- 7 Another name for inclined plane. P. 15.
- 8 When water overflows the banks of a river or stream.

- 9 Ice and wood are examples of this state of matter. P. 32.
- 10 An important quality, for scientists and everyone. P. 77.
- 13 An earthquake sometimes causes this type of mountain to erupt.
- 14 A scientist that studies the Earth's system.
- 15 Deposits that build up the land.
- 17 A huge chunk of ice that can carve valleys.
- 19 The action of increasing the number of a species. P. 77.
- 20 Learned information from an investigation based on scientific evidence. P. 30.
- 21 Matter without a fixed shape or volume. P. 32.
- 24 Giant masses of land that form the Earth's crust.

Parent/Guardian Signature:

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Date:



1. What is erosion?

- ☐ A. Erosion is the movement of rocks and soil.
- ☐ B. Erosion is the break down of rocks and soil.
- ☐ C. Erosion causes earthquakes.

2. What is a natural cause of erosion?

- ☐ A. Wind blowing
- ☐ B. Volcano erupting
- ☐ C. People digging

3. Describe two ways erosion occurs.

Use words, labeled pictures, and/or labeled diagrams in your answer.

One way erosion occurs:

Another way erosion occurs: