

Processes That Shape the Earth

Weathering & Erosion Study Guide

Weathering is the wearing away of rocks and soil due to sun, wind, ice, rain, or moving water.

Erosion is usually a slow cause of change on the surface of Earth. Erosion happens when wind and/or water carries weathered particles from one place to another.

**Limestone is more effected by erosion than granite because it is softer.*

Types of Weathering & Erosion:

Wind: The force of wind wears away rock and changes it shape over time.

Water: The force of moving water wears away soil and rock, changing the shape over a long period of time.

Ice: The force of ice melting and freezing wear away at rock, changing its shape over time.

***Ice wedging** is an example of this temperature erosion, in which water flows into the cracks of rock and expands as it freezes. This causes rock to split and break apart.

Glaciers: Forces from moving glaciers mixed with dirt and sand ware away at rocks and soil over a long period of time.

Living Organisms: The growing roots of plants push on rocks and soil breaking them apart.

Chemical: Chemicals “eating” away at the rock or changing the material that makes up the rock. We learned about 3 types of chemical erosion. **Oxidation:** This occurs when air combines with other elements in rocks such as iron to weaken them.

Hydrolysis: This occurs when water combines substances in rocks to weaken them.

Carbonation: This take place when carbon dioxide from air and water reacts with certain types of rocks.

**All matter is made up of chemicals. Light and heat are not examples of chemicals.*

Students need to recognize these examples of weather & erosion:



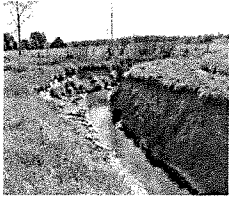
Wind



Glaciers



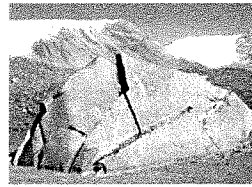
Chemical



Water



Living Organisms



Ice

Weathering and Erosion of Rock in Mountains:

Rocks at the tops of mountains are bigger and the edges are sharper. However, as rocks weather & erode from wind, water and ice, they start to break apart and fall down the mountains. These rocks fall into streams and are washed down the mountain. By the time, they reach the bottom of a mountain, they are much smaller and smoother. This is because of the constant erosion that takes place in a stream from water and rocks constantly hitting each other.

**Students should be able to explain the process above.*