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Erosion

Erosion is the process by which natural forces move weathered rock and soil from one place to another. Gravity, running water, glaciers, waves and wind all cause erosion. Gravity is the force that pulls rock and soil down slopes. Examples of gravity's effects are landslide, mudslides, and creep.

Moving water is the major agent of erosion that has shaped the Earth's surface. Gravity causes water to flow downhill. Runoff from rainfall moves rocks and soil, causing small grooves called rills. Rills flow together to form larger grooves called gullies. Gullies join together to form streams. Streams continually have water flowing in them. Streams flow into larger channels of water that form rivers. All of this moving water is simultaneously moving rocks and soil.

A glacier is a large mass of moving ice and snow. A glacier is formed when more snow falls than melts. The pressure of the snow causes ice to form at the bottom. This pressure also causes the glacier to move downhill or forward. As the glacier moves along, it picks up many large rocks and boulders. These rocks and boulders cause gouges and scratches in the bedrock. The glacier also picks up huge amounts of rock and soil and moves them along. When the glacier melts it deposits the rocks and soil.

Waves shape coastlines by erosion and by depositing sediments. The energy for waves comes from the wind crossing the water's surface. A beach is formed by waves when sediments are picked up and carried by water to shore and deposited at the edge of the water.

Wind causes erosion by picking up pieces of sediment and soil, then moving them over a distance. Obstructions on the land's surface cause the wind to slow down, causing the sediment and soil to drop. These wind-borne sediments cause further erosion by wearing away at larger pieces of rock. Sand dunes are caused by wind erosion.

Questions

1. Create a graphic organizer for erosion, including agents of erosion, gravity's role in erosion, results of erosion, and other categories you might like to add. Use a separate paper if you need more space.

2. You visit a beach with sand dunes on Lake Michigan's shore. You notice signs everywhere that read, "Stay off the Dunes." Your friend wants to climb anyway, but you notice an area that has been disturbed by climbers. The dune grass is worn away. What might happen to the dune if you and your friends and others climb this disturbed area?

3. A mining operation on a mountain ridge finds large deposits of quartz. In a river valley 20 miles away, children swimming find small pieces of shiny quartz rock in the riverbed. How did the rock arrive there?

