

STUDY GUIDE: S5E1

Constructive & Destructive Forces

Destructive Forces	Constructive Forces	Both
This force breaks up the land	This force builds up the land	This force breaks up the land and builds up the land
<ul style="list-style-type: none">• A river through a plain over time carves out a canyon with steep walls.• Animals burrow into the side of a hill.• Flooding increases the speed of water and erodes sediment from the banks of a river.	<ul style="list-style-type: none">• Stalagmites form on the floor of a cave due to dripping water that has minerals in it.• Wind carries sand to create and move sand dunes.	<ul style="list-style-type: none">• Volcano wipes out the landscape, but as the lava flows, it cools and creates new land.• A landslide carves out the side of a mountain, but deposits sediment in the valley to create a hill.

Landforms can be changed or new ones formed by weathering, erosion and deposition.

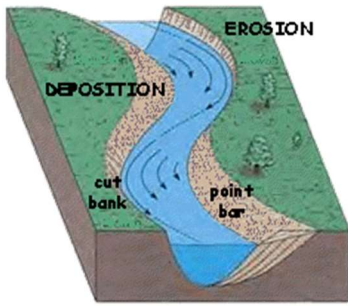
Weathering is the breakdown of rocks into smaller pieces called sediments. This can be caused by many **physical** things. Growing **tree roots** can cause cracks in rocks. **Ice (freezing water)** can widen cracks in rocks. **Chemical** weathering can cause reactions to soften rocks or cause rust to form.

Erosion is the process of moving rock and soil from one location to another. This is caused by **wind, moving ice, waves, and running water**. The greatest force of erosion is **running water**.

Waves can carry sand away from beaches. A **jetty** projects out into a body of water to protect the shoreline. Humans can restore the beach through the process of **beach reclamation** (adding **sand** back to the beaches). Lots of **rain** can cause soil erosion. **Levees** on a river can prevent flooding and erosion.

Deposition is the process of rocks and soil being dropped (deposited) in a new location. When sediments are deposited into a lake it can become more **shallow**. A broad flat area of rich soil found where rivers empty into oceans, lakes, or other bodies of water is called a **delta**. These are found at the **mouths of rivers** and are often used for **farming** because of the deposits of nutrient rich soil.

Waves can deposit sand onto beaches. Wind carries the sand and causes **sand dunes** to drift from their original positions.



Deposition occurs because of erosion:

As water flows quickly around a bend, it will erode the soil in that area and deposit it in another area where the river slows.

Volcanoes are caused by magma rising to the surface of the earth, which causes bubbles of gas to appear in it. This gas can cause pressure to build up in the mountain, and it eventually **explodes**. When the magma bursts out of the earth, it is called **lava**. **Mountains** can be produced by volcanic eruptions because the **lava** and ash collect.

Earthquakes are a sudden release of energy from the earth's crust that causes sudden movement. This is caused by **tectonic plates** sliding past each other. A **seismograph** is used to measure earthquakes.

Tsunamis are caused by **earthquakes** or underwater **volcanic eruptions**.