Landforms

Here's what you need to know!

5.7 Recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water and ice

3.7B Investigate rapid changes in the Earth's surface such as volcanic eruptions, earthquakes, and landslides
Natural processes can change the features of Earth's surface!

Click to view a video on the processes that change Earth's surface.
**Landform:** any natural structure on Earth's surface

**Sediments:** tiny particles of earth that can be moved by natural forces

There are 2 kinds of forces that change the surface of the Earth:

- **Constructive Forces:** A natural process that builds up or creates landforms. Example: Deposition

- **Destructive Forces:** A natural process that destroys landforms. Examples: Weathering, Erosion

Some forces can be **both** constructive and destructive!

When sediment is removed from one location, it can be taken to a new location to create new landforms there. So the process is destructive to one landform, but constructive to another.
Examples of landforms made by constructive forces
Landform: Mountain

Agent: Plate tectonics, wind, water

Two plates come together and collide pushing up the Earth's crust forming a mountain.

Constructive Force
Landform: Sand dune
Agent: wind

Wind carries sand and sediment. As the wind slows down it drops sediment.

Constructive Force
Landform: Delta

Agent: Water

As rivers and/or streams enter a larger body of water such as lakes or seas, the speed of the water slows dramatically and the river drops its sediment creating triangular shaped deltas

Constructive Force
Landform: Lake

Agent: Water

Lakes form from melting glaciers, or when rivers and streams are dammed, stopping the flow of water.

Constructive Force
Examples of Landforms Created by Destructive Forces
Landform: Canyon
Agent: water
Streams and rivers cut through rock over millions of years
Destructive Force
Landform: U-Shaped Valley

Agent: Ice (glacier)

Glaciers move slowly through the mountains eroding away rocks, sediments, and soil, carving out u-shaped valleys

Destructive Force
Landform: Desert Stone Arch

Agent: Wind

Wind blows sediments against the rock sandblasting away the softer minerals creating the arch

Destructive Force
Landform: Cliff

Agent: Earthquake, Hurricanes, Tsunamis (landslides)

Earthquakes, hurricanes and tsunamis cause landslides that wear away the shore creating cliffs

Destructive Force
Landform: Cave

Agent: water

Water, over thousands of years, reacts with minerals in the rock and dissolves and washes away sediments creating a cave.

Destructive Force
Landform: V-Shaped Valley

Agent: Water

Rivers and streams erode sediments and create V-shaped valleys

Destructive Force
Landform: Plains

Plains are formed by the natural erosion of the land by the motion of moving water and the wind. (slowly) Another way the plains are formed is when a volcano erupts and burns everything in its way; all that is left are the plains (quickly). This makes bare land or barren plain.

Destructive force
Landforms made by both Destructive and Constructive Forces
Landform: Meander

Agent: Water

As the river turns the speeds are varied, dropping sediment in slower areas and eroding sediment in other areas.

Both destructive and constructive forces
**Volcanoes:** mountains with openings in Earth's crust through which magma, gases, and ash reach Earth's surface and change it.

**Destructive:**
- When magma erupts, the top of the mountain can build up or blow away.
- Lava and ash can destroy forests and bury fields.
- Volcanic eruptions can change weather patterns.

**Constructive:**
*When magma erupts underwater and island can be formed.*
- Seamount: a landform created by an underwater volcano
- Volcanic island: a seamount that comes above the surface of the water
Other forces that shape our Earth
Event: Earthquakes

Earthquakes are vibrations on Earth's surface caused by sudden movement in Earth (often along a fault: a break in Earth's surface)

Earthquakes cause damage to structures, and sometimes landslides. Underwater earthquakes cause huge waves called tsunamis that destroy land and cause great damage if they come ashore.

Destructive Force

A fault line shown in rock
Event: Flooding

Agent: Water

**Floods:** large amounts of water covering land that is usually dry, causing rapid erosion (by moving soil and sediments away) and deposition (left when the flood recedes)

Constrictive and Destructive

![Cars in a flood](image1)

![Shoveling silt deposited by a flood](image2)
Event: Landslides/Rockslides/Mudslides

Agent: gravity

Landslides - mass movements of land when land is pulled down a slope by gravity

Constructive and Destructive