

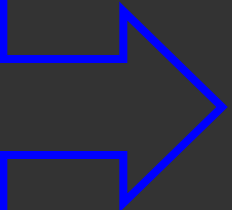
Agents of Erosion

Erosion: process by which earth's materials are moved by natural agents like moving water, wind , and ice.

Weathering: disintegration and decomposition of rock at or near earth's surface.

Earth's surface is constantly changing. Rock is disintegrated and decomposed, moved to lower elevations by gravity and is carried away by:

- 1) Water
- 2) Wind
- 3) Ice



The main
agents of
erosion !!

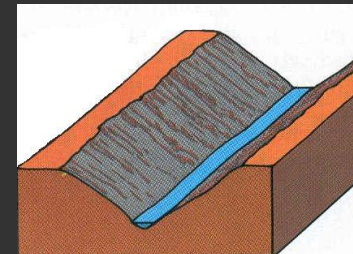
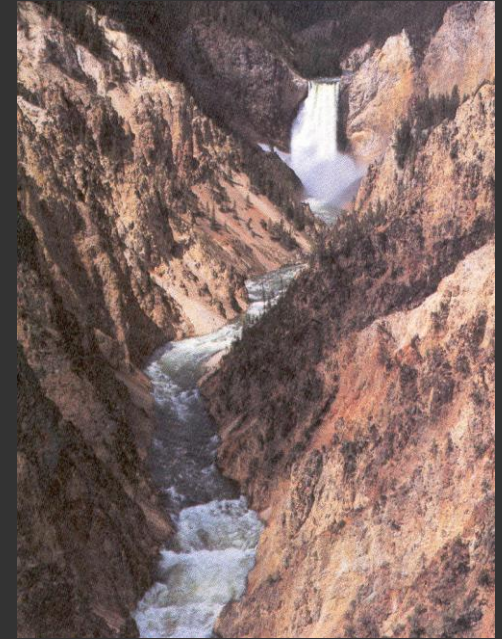
Reference:
Tarbuck and Lutgens
Pages 93, 126, & 144

Erosion - Water

- **In order for water to erode it must move!!**
Rivers, waves, and groundwater are examples of moving water which erode the surface of Earth.
- Moving water erodes the solid Earth by the process of **Abrasion**.
- **Abrasion** is action of sediment (sand and pebbles) grinding against the material it moves across.

Erosion - Rivers

- As rivers move across the bedrock, the velocity of the moving water can cause the rock beneath to breakdown producing sediment which in turn breaks down the bedrock beneath by abrasion.
- Running water is the most effective agent of erosion and is referred to as the **master leveler**.
- River erode the land and form V-shape Valleys.



Erosion - Waves

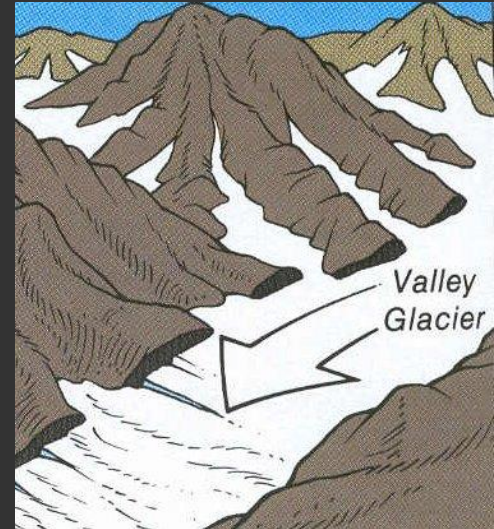
- The force of the water breaking against the shoreline causes the rocks to wear away. The rate of erosion is increased when sediment in the water is moving with the waves. This abrasive force shapes the coastlines of the world.



**Sea stacks
caused by
erosion over
thousands of
years.**

Erosion – Ice (Glaciers)

- A **glacier** is a huge mass of slowly moving ice either on flat land (Continental Glacier) or in valleys of mountains (Alpine Glacier).
- Both forms of glaciers move and as they do abrasive forces scrape and erode the rock in which the ice passes over. The resulting sediment can be found beneath the ice (till), embedded in the ice (jagged boulders), or pushed in front or to the sides of the ice (moraines).



Erosion – Ice (Glaciers)

- Erosion features caused by glaciers include;
- 1) U-shape valleys 2) Horns
3) Cirques 4) Striations



Striations

Scratches and grooves made by sediment embedded in the bottom of the ice sheet.

Erosion – Wind

- The higher the velocity of the wind, the greater the amount of particles that can be blown around by the wind.
- The particles that the wind transports is what causes other materials (rocks) to become eroded.

Wind blown sediment causes erosion as the particles deflect off of the larger material.

