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# TEACHER GUIDE

## CHANGING THE SHAPE OF LAND GRADES K-2

### COMMON MISCONCEPTIONS

- **Erosion happens quickly.**

In the vast majority of cases, erosion occurs over very long periods of time. Wind and water act over thousands and millions of years. Scientists have estimated that the Colorado River has been eroding the Grand Canyon for about 5-6 million years!

- **All types of erosions are the same.**

Erosion occurs from many different sources; rainfall, rivers & streams, coastal, chemical, glaciers, floods, wind, falling objects and human activity. Each type of erosion occurs at different rates and in different situations.

### WATER EROSION

Rainfall, surface runoff, rivers, and oceans all shape the land with water. Rainfall can cause splash erosion, in which the impact of the raindrops cause tiny craters, causing soil to be ejected away. Coastal erosion occurs along the coastline – where waves and tides meet the shore.

### WIND EROSION

Wind erosion occurs wherever moving air breaks down the land, which is more common in areas with less rain. Drier, lighter soil is more easily broken down and carried away by the wind. Human activities such as deforestation (cutting down trees) can increase the impact of wind erosion.

### MITIGATING EROSION

People can prevent erosion using several techniques, such as building retention walls or dams, improving drainage, planting additional shrubs and plants, adding mulch or rocks to soil and avoiding overwatering of soil.

## TIPS FOR TEACHERS

- Students will have a difficult time grasping the large geologic times needed for erosion to occur at observable rates. Keep conversation about geologic time to a minimum, simply stress that they take a very, very long time.
- Provide students with as many images as possible to demonstrate each type of erosion. Look for landforms close to your region to add extra connections!

