GENERATIONGENIUS
STREAM. EDUCATE. ENTERTAIN.

TEACHER INFO

WEATHERING & EROSION
GRADES 3-5

COMMON MISCONCEPTIONS

- Many students think that Earth is the same today as it always has been and that any changes to the Earth were sudden.
  There are many processes that cause Earth and Earth's surface to change. Some of these changes are abrupt such as a change in landscape due to a natural disaster. Other changes occur over a longer period of time. This is the case with weathering and erosion. Also, these changes are not solely due to things within the environment such as weather related events. Human activities like digging soil or driving cars on the road can all change Earth's surface over time.

- Rock is so hard that nothing can break it
  There are different types of rocks, which are related to its inherent properties. For example, limestone and calcite are classified as soft rock, which means it can easily be broken down over time due to weathering.

- Weathering is the same thing as Erosion
  Weathering is a process of breaking down of rock into smaller pieces. Erosion is the process of moving these pieces (called sediment) by wind and water.

SHAPING EARTH'S SURFACE

Weathering, erosion and deposition are three processes that occurring in a sequential order and work together to change landforms on Earth's surfaces. From mountains and valleys to plains and plateaus all of these are landforms. These present on Earth's surface they are constantly changing. This is because the surface is constantly being worn down, reshaped, and even built up by new sediments. In order to change Earth's surface or the shape of land, all three processes must work together.

WEATHERING

This involves the breaking down or dissolving of large rocks and minerals into smaller and smaller pieces. Eventually these pieces are so small that they are particles called sediment. There are many different agents of weathering. These are simply substances that cause weathering. Examples include water, ice, acids, salt, plants, animals, and even human activities. There are different types of weathering:

- Mechanical or physical weathering – this causes rocks to crumble. For example, water can sometimes seep into the cracks of a rock. If the water freezes due a drop in temperature the water will expand. When this happens it is now ice and the ice works as a wedge in the crack of the rocks. It will slowly widen the crack causing the rock to split and crumble.
- Chemical weathering – this happens when something changes the composition or makeup of rocks. For example, a weak acid called carbonic acid is formed when carbon dioxide from the air combines with water. This acid can dissolve rock, which is a type of chemical weathering.

EROSION

This is a process that takes the weathered material formed during weathering and moves those sediments from one place to another. Erosion wears Earth's surface away. It does so by the following agents, water and wind. All of those agents can carry sediment from where they were originally weathered to a new location. Over time this will cause dramatic changes in the shape of Earth's surface. That is, it can change the composition of soil, and even reshape rocks or other landforms.

DEPOSITION

This process occurs when the agents of erosion (wind and water only), lay down sediment. Just like weathering and erosion, deposition will also change the shape of the land. Often deposition is referred to as the process of building up Earth's surface. This is because as sediment is carried by wind or water they are dropped to a new place or deposited. This deposition allows sediment to be added to existing land in an area. For example, the formation of an island over time occurs because of deposition. This is the case with barrier islands. They are formed when waves (i.e. water) sweeps sand sediments into a new location and build it up over time to create the island.