

Teacher's Guide Grade 5: Changes on Earth's Surface



TEKS 5.7 Earth and Space: The student knows that Earth consists of useful resources and its surface is constantly changing. The student is expected to:

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



Background Information: This unit reinforces the idea that the Earth's surface is constantly changing due to the forces of wind, water and ice. The focus is on recognizing the landforms that result from these forces and the processes of weathering, erosion and deposition of sediments, such as deltas, canyons, and sand dunes.



Prerequisite Knowledge: Prior to this year, students have observed and described rocks by size, texture and color. They know that soil is formed over a long period of time by the weathering of rock and the decomposition of plant and animal remains. They have observed and identified slow changes that occur to Earth's surface caused by the processes of weathering, erosion and deposition of sediments due to the forces of wind, water and ice. They have also identified and compared different landforms, including mountains, hills valleys and plains



Common Misconceptions: Students have a difficult time understanding how something as hard and large as hills and mountains can be broken down by flowing water, blowing wind and ice. The effects of weathering, erosion and deposition happen so slowly they are difficult to see. The greatest misconception is that the surface of the Earth does not change over time.



Essential Questions:

1. How do ice, water, and wind change the shape of the Earth's surface?

Water, ice and wind cause changes to the Earth's surface through weathering, erosion, and deposition. All three can break rocks into smaller pieces and carry those pieces away and deposit them somewhere else.

2. What happens to the sediments that are carried away through the processes of weathering and erosion?

The sediments are dropped off or deposited in another place, where they pile up and form a new landmass. This process which is the gradual accumulation of pieces of rock and soil is called deposition. A delta, which is formed by the deposition of sediment at the mouth of a river is an example of this process.

3. How do constructive and destructive forces result in different land forms?

Constructive forces build up land surfaces. A constructive landform created by water is a river delta. Water deposits sediments that it carries from a river and deposits it at the mouth of a river. Destructive forces break or wear down land surfaces. Canyons, valleys, and sea arches are all examples of landforms created by water breaking apart rocks and carrying them away.

4. How are weathering and erosion connected to the formation of various landforms, such as deltas, canyons, and sand dunes.

Weathering is the process where rocks are broken down to form sediments. The forces of blowing wind, moving water, and the formation and movement of ice can break rock forming landforms, such as canyons. Sediments that form and are then carried by flowing water, blowing wind, or flowing ice in the process of erosion can be deposited on Earth's surface, creating landforms such as sand dunes and deltas.



Notes: