



Sand Waves

All about landforms! Channel your inner Geologists as you investigate how different types of sand dunes form and migrate.

TEKS:

SCI 4.10: Earth and space. The student knows that there are processes on Earth that create patterns of change.

SCI 4.10.B: The student is expected to model and describe slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice.

SCI 5.10: Earth and space. The student knows that there are recognizable patterns and processes on Earth.

SCI 5.10.C: The student is expected to model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes.

Materials:

- Aluminum tray
- Bendy straw
- Sand (enough to fill the tray halfway)

How To:

1. Fill the aluminum tray halfway with sand.
2. Blow gently through the straw to form the four different types of sand dunes listed below. Make sure to smooth the sand between each type of dune. Observe the similarities and differences between the different types of sand dunes!
 - a. Parabolic Dunes – Aim straw at one point and blow
 - b. Longitudinal Dunes – Blow over the sand in sweeping side-to-side motions
 - c. Star Dunes – Hold straw perpendicular to sand, blow in erratic, inconsistent motions

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STEM Explanation:

Sand dunes are hills of sand that form from different wind patterns. Have you ever seen a sand dune before? They are common landforms in places with lots of sand and wind, such as deserts and beaches. Depending on the landscape and the direction and force of the wind, sand dunes can vary in shape and size! For example, longitudinal dunes form when wind pressure on either side of the dune is equal, while star dunes form when winds blow from all different directions.

The force of the wind often causes sand dunes to migrate across deserts! Migration can be slow—one of the fastest known migrating dunes moves about 100 feet per year—but it's also difficult to stop. Since ancient times, desert civilizations have built walls and other obstacles to prevent migrating dunes from burying their towns.

Career:

Geologists are scientists who study the matter that makes up Earth. They study Earth's history and how Earth's materials, structures, processes, and organisms have changed over time.

Resources:

<https://science.howstuffworks.com/environmental/earth/geology/sand-dune.htm>

<https://home.nps.gov/grsa/learn/nature/dune-types.htm>

<https://education.nationalgeographic.org/resource/dune/>

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