

ADVISORY 2, UNITS 4-5, LESSON 3 FOSSILS AND GEOLOGY

Summary

- In this lesson, students will read "Wild Land" (pp. 18-23) and "Rock and Roll" (pp. 24-25) to learn how weathering and erosion can change the land's surface features and create underground formations.

Science Background

Weathering and erosion are constantly changing Earth's surface. Some changes are slight, such as a pebble rolling down a hill. Others, like landslides, can be immense. But in few places are the changes as dramatic as those found on the Hebrides [HEB-ruh-dees] Islands.

Located off of Scotland's western shore, the Hebrides Islands are home to a host of geologic wonders. One of the most peculiar is Fingal's Cave. Carved by crashing waves, this sea cave is lined with hexagonally shaped basalt pillars. The pillars are remnants of volcanic eruptions some 60 million years ago.

The Red Cuillin mountains, also born of volcanic eruptions, are granite mountains that have slowly been rounded by wind, water, and glaciers.

Jagged rock towers called The Old Man of Storr are the result of a landslide. Underlying sedimentary rock collapsed under the weight of dense layers of ancient lava flows. As the base collapsed, the basalt layers tilted. Over time, large chunks slid off, creating pinnacles like The Old Man of Storr.

Fairy Glen, considered to be the best example of "gully and Pillar" formations in the Scottish Highlands, is an area of lush, green grass that is dotted with smaller pinnacles. These pinnacles were scraped and smoothed when glaciers flowed across the land.

ENGAGE

Encourage students to flip through the articles and turn and talk with a partner to discuss what they see. Invite students to ask questions or share what they already know about weathering and erosion.

EXPLORE

Instruct students to examine the "Rock and Roll" feature on pages 24-25 of their Readers. Discuss how gravity, wind, water, and plants can change the land. Then have students examine the photo on pages 18-19 of their Readers. Invite students to share their ideas about how gravity, wind, water, and plants could have shaped this wild land.

EXPLAIN

Remind students that weathering and erosion are two processes that help shape the world around us. **Ask:** *How do weathering and erosion work together?* (Weathering breaks rock down into smaller pieces. Erosion carries the pieces away to a new location.) Have students turn and talk as they review information about the different geologic features found on the Hebrides Islands. Encourage them to take note of how different types of rock weather and erode in different ways. Then challenge students to explain how weathering and erosion worked together to shape each part of the land.

ELABORATE

Invite students to search National Geographic's site to find more examples of weathering and erosion. Instruct students to print photos of their favorite features. Challenge them to explain how each feature was shaped by weathering and erosion.

EVALUATE

Have students complete the **Content Assessment** for this lesson. Encourage them to share and compare their results in small groups.

CONTENT ASSESSMENT: Weathering and Erosion

Identify and describe four geologic features found on the Hebrides Islands. Explain how weathering and erosion worked together to form each one.

Identify	Describe	Explain