DCPS: 6th Grade Science

Advisory 2, Units 4-5, Lesson 1
Fossils and Geology

Summary

- In this lesson, students will read "Turned to Stone" (pp. 4-9) to learn about the best preserved dinosaur fossil ever found and what scientists have and still hope to learn by studying it.

Science Background

When paleontologists want to learn about the past, they study fossils. Fossils are the remains, or traces of remains, of ancient organisms that have been preserved in rock.

There are many different types of fossils. Bones, shells, feathers, and leaves can become fossils. So can footprints and animal poo. Sometimes, an entire organism is preserved because the animal got stuck in amber or was frozen in ice. Most often, just the bones and teeth are preserved.

That's why the fossil of a dinosaur that was discovered in western Canada in 2011 is so amazing. The fossil is the preserved remains of a nodosaur, a dinosaur that lived 110 million years ago. It is so well preserved that it looks like a rocky statue of the dinosaur. Each sandy brown scale on its back is outlined with a gray circle. Fossilized remnants of skin cover the bumpy armor plates on its skull.

According to paleontologists, this extreme level of fossilization was possible for one reason. When the dinosaur died, it was quickly buried under the sea. Minerals replaced its soft tissues before they could rot away. And unlike many fossils, this dinosaur's body wasn't squashed flat as layers of sediment built up over time. Instead it retained its life-like form, resulting in the best preserved fossil of a dinosaur that has ever been discovered.

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 dinosaurs.

EXPLORE

Instruct students to examine the photo on pages 4-5 of their Readers. **Ask:** *How is this fossil different from other dinosaur fossils you've seen?* (It looks like a complete dinosaur. It's not just a skeleton.) Brainstorm ideas about why this is so unusual.

EXPLAIN

Remind students that most dinosaur fossils are only bones. **Ask:** *Why was this fossil preserved in such a unique way?* (This dinosaur's body was covered by sediment so quickly as it sank to the ocean floor that it didn't decompose and other animals didn't have a chance to eat it. Then minerals seeped into the body and preserved its shape.) Have students turn and talk as they review the article to find out what scientists have learned about nodosaurs so far after studying this fossil. (It had armor plating, long shoulder spikes, five-toed feet with textured foot pads, and might have had reddish skin.) Encourage students to discuss reasons why it has been difficult for scientists to learn more. (Most of the skeleton is covered by fossilized skin and encased in body armor.) Challenge students to create a list of things scientists could potentially learn with further study.

ELABORATE

Invite students to complete the National Geographic activity "Unpack the Evidence" (*https://www.nationalgeographic.org/activity/unpack-the-evidence/*). Students will practice scientific thinking to identify evidence, make inferences and understand how these skills relate to the work of paleontologists.

EVALUATE

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

Name _____ Date _____

CONTENT ASSESSMENT: Fossils

Put these events in the correct order to show how the nodosaur became a fossil.

_____ The nodosaur's body sank to the ocean floor.

_____ Layers of sediment built up and hardened over the nodosaur.

_____ The nodosaur ended up dead in a river.

_____ Minerals took the place of the nodosaur's armor and skin.

_____ Soupy mud quickly covered the nodosaur's body.

_____ A flood swept the nodosaur's body out to sea.

Use information from the article to answer each question.

1. Why does it matter that the nodosaur's body was buried quickly?

_____

_____

_____

2. What happened because minerals soaked into the nodosaur's armor and skin?

_____

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3. Why was only half of the nodosaur's preserved body recovered?

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