

## CLASSROOM ACTIVITY

# Dinosaurs & Fossil Fuels

## GRADE RANGE

6–8

## OBJECTIVES

Students will be able to:

- **Discuss** how fossil fuels formed.
- **Explain** why fossil fuels are called *fossil* fuels.
- **Create** a story that helps others understand that fossil fuels did not come from dinosaurs.

## OVERVIEW

This activity will spread the word that fossil fuels *don't* come from dinosaurs! After collaborating to unscramble a flow chart that helps students understand how fossil fuels formed, students will be tasked with sharing this knowledge with others. In order to tell their creation story and debunk the dinosaur myth, students will write a short story from the perspective of a dinosaur that explains how, when, and why fossil fuels began.

## MATERIALS

- Sticky notes, one per student
- **Fossil Fuel Strips** (cut out in advance and scrambled), enough for half the class
- **Tell Me a Story** handout, one per student

## NATIONAL STANDARDS

### Next Generation Science Standards

- Disciplinary Core Idea:
  - **ESS3.A:** Natural Resources: Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources. Minerals, fresh water, and biosphere resources are limited, and many are not renewable or replaceable over human lifetimes. These resources are distributed unevenly around the planet as a result of past geologic processes. (MS-ESS3-1).

### English Language Arts Common Core Standards

- **CCSS.ELA-LITERACY.CCRA.SL.1:** Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
- **CCSS.ELA-LITERACY.CCRA.W.4:** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

## PROCEDURE

### Engage

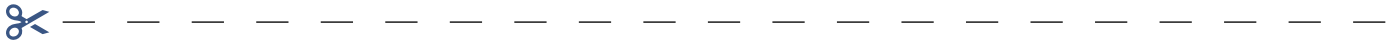
- Distribute a sticky note to each student and ask them to sketch a picture or write one word that comes to mind when they hear the word *fossil*.
- Have students place their notes on the board and take a moment to share/summarize their responses.
- Then write *fossil fuel* on the board above their sticky notes. Explain that because the term *fossil fuel* has the word *fossil*, many people associate fossil fuel with all the words they just brainstormed—including dinosaurs!

### Explore

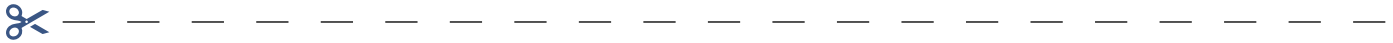
- Pass out the **Fossil Fuel Strips** to pairs of students. Explain that these strips, when placed in the correct order, will explain what fossil fuels are and how they formed. Once students have placed their strips in the correct order, they will be able to tell whether fossil fuels actually have anything to do with dinosaurs!
- Give students a few minutes to review the strips and think through the order of the flowchart. If needed, tell pairs that the first event begins with “More than 400 million years ago...”
- Once their flow charts are complete, call on students to help you read through their strips one at a time as they share how fossil fuels formed.
- Bring students’ attention back to the word *fossil*. Write the definition on the board as you explain that a fossil is a remainder, impression, or trace of an ancient organism that is preserved in Earth’s crust.
- Then wrap up this portion of the activity by encouraging students to use this definition, along with their flow chart, to discuss an answer to the question: *Are fossil fuels actually made of dinosaurs?* Before concluding the discussion, be sure students understand that:
  - Dinosaurs first roamed Earth about 252 million years ago—about 150 million *after* fossil fuels began forming.
  - While fossil fuels don’t contain dinosaur fossils, they do contain plant fossils!

### Apply

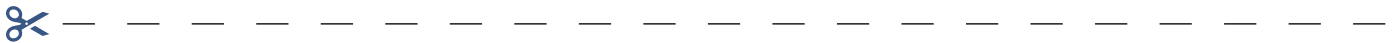
- Pass out one **Tell Me a Story** handout to each student and review the instructions provided. Emphasize that the goal of their story will be to help younger students understand where fossil fuels come from and to dispel the myth that fossil fuels come from dinosaurs! Allow students to write their stories individually or in pairs.
- Once their stories are complete, invite several students to read theirs aloud. Then encourage the class to share their stories with younger students in the weeks to come!



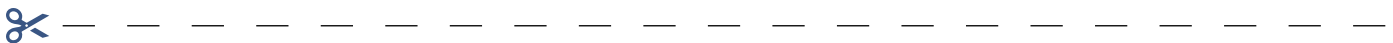
More than 400 million years ago, dead plants and small microscopic organisms like plankton (let's call all these things *organic matter*) wound up sinking into the ocean when they died.



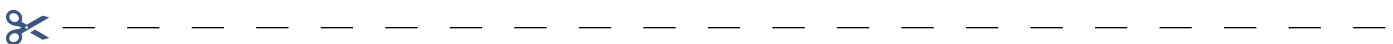
The organic matter eventually reached the ocean floor. It then began to decompose slowly. Because there is no oxygen in water, things decompose more slowly than they do on land.



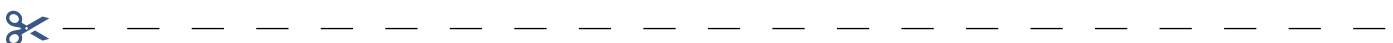
The organic matter was quickly covered by sand and mud on the ocean floor, which protected it from being eaten.



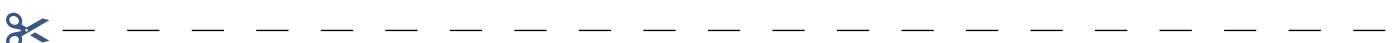
As time went on, more and more sediment covered the organic matter. This sediment got deeper and deeper.



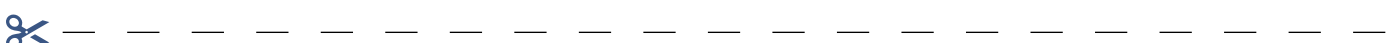
As the sediment increased, the organic matter felt more and more pressure and heat. At this point, it really began to break down and decompose.



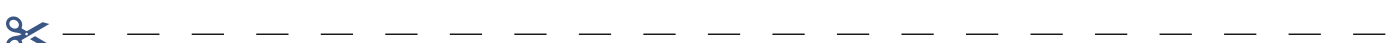
After 60 million years or more underground, this heat and pressure eventually turned the organic matter into fossil fuels. Plankton became natural gas and oil, and plants decomposed into coal.



Meanwhile—outside of the ocean—dinosaurs began to roam. They lived on Earth for about 165 million years before going extinct about 65 million years ago. About 60 million years later, the first human ancestors appeared!



Today, humans have discovered these fossil fuels. They extract oil and natural gas from Earth and refine it so it can be used to power vehicles, heat buildings, and produce electricity—not to mention help create all kinds of everyday products!



Help debunk the myth that fossil fuels come from dinosaurs! In the space below, write a short story **from the perspective of a dinosaur** that explains how, when, and why fossil fuels began. Be creative and tell it in a way that an elementary school student would enjoy.

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