

Fossil Fuels

Objectives:

- 1) Classify the different forms of fossil fuels.
- 2) Determine how fossil fuels form.
- 3) Identify where fossil fuels are found in the United States.

In this lesson, students will learn how fossil fuels, such as petroleum, natural gas, and coal, form and where deposits of these fuels are found in the United States.

Have on display various samples of fossils. As the students enter the classroom, allow them to observe and handle the samples. As students are doing this have one of the students light the quad-burner at the teacher demonstration table. As students wonder about the fossil samples and observe the burning gas, ask them what is the connection between the rock fossil samples and the burning fuel.

Once the students have settled down in their seats, have ready on the overhead projector the following questions: What is a fuel? What is a fossil? What does the term *fossil fuels* imply about the source of these fuels? Have students write answers to these questions on a sheet of note paper. They may talk and use their textbook as a reference for this exercise.

Lead a discussion with the students about fossil fuels. What are examples of fossil fuels. Write their responses on the board and have students take note. Lead students in a discussion about why fossil fuels, such as coal, gasoline, diesel, and natural gas, are so widely used as energy resources. Challenge them to think about what qualities a good fuel should have

Show the students a cross-section of the earth's crust revealing where oil is found. Have the students color code the different layers of rock.

Quick lab: provide students with samples of sandstone, limestone, shale, and granite. Have them place 5 drops of machine oil on each sample. Record observations. Purpose: to show that porous rocks are reservoirs for fossil fuels.

Quick lab: provide students with a glass jar, rubbing alcohol, vegetable oil, and water. Color each with food coloring and have the students attempt to layer the 3 different fluids. (the alcohol represents natural gas, the vegetable oil represents oil, and the water represents water) Purpose: to simulate reservoirs.

Ask students where fossil fuels are mined? Have a world map, a United States map and a California map available. Accept all reasonable responses. Have students use encyclopedias, books, and internet resources to find the location of fossil fuels worldwide. Then have them create a map illustrating the location of petroleum, natural gas, and coal. Tell them to label their maps clearly and to provide a key. Display the maps for the class to enjoy.

Assessment: Have each student choose petroleum, natural gas or coal. Instruct students to write the name of the fuel vertically down the center of a piece of ruled paper. Beginning with each letter in the fuel's name, have them write an adjective or a phrase that describes the fuel, how it forms, where it is found, how we use it, how we obtain it, or where it forms.