

Interest Level: Grades 3–4

Reading Level: Grade 3

Titles in this series:

*Finding Out about Coal, Oil, and
Natural Gas*

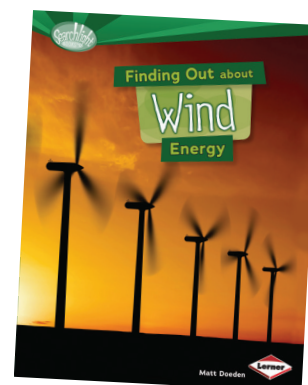
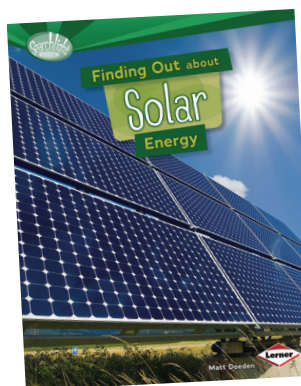
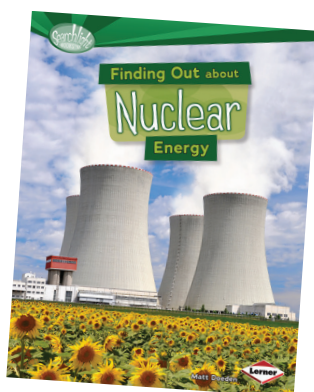
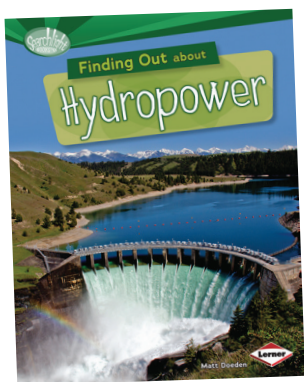
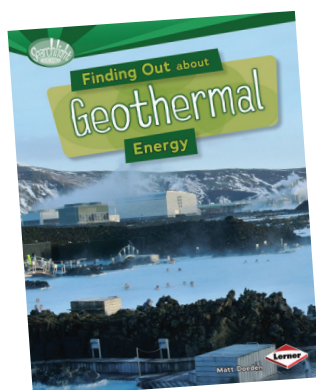
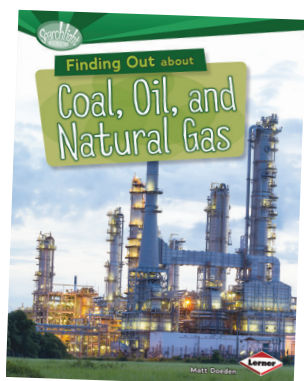
Finding Out about Geothermal Energy

Finding Out about Hydropower

Finding Out about Nuclear Energy

Finding Out about Solar Energy

Finding Out about Wind Energy



Standards

Common Core Reading (Informational Text)

- Key Ideas and Details
- Craft and Structure
- Integration of Knowledge and Ideas

Common Core Writing

- Text Types and Purposes
- Research to Build and Present Knowledge

Common Core Speaking and Listening

- Comprehension and Collaboration
- Presentation of Knowledge and Ideas

Multiple Intelligences Utilized

- Verbal-linguistic, bodily-kinesthetic, visual-spatial, musical, interpersonal, intrapersonal

Next Generation Science Standards

- Disciplinary Core Idea: Earth's Systems (Earth's Materials and Systems, Weather and Climate, Biogeology)
- Disciplinary Core Idea: Earth and Human Activity (Natural Resources, Human Impacts on Earth's Systems, Global Climate)

Lesson 1

Fact versus Opinion

Purpose

Students will identify and discuss different opinions about energy sources.

Materials

- What Are Energy Sources? series
- Fact and Opinion p. 6

Prepare

- Make copies of Fact and Opinion p. 6 for students.
- Choose a spread from a What Are Energy Sources? book to model. The text should include two or more different opinions (descriptions of some people's beliefs or predictions, not an author's opinion) as well as related facts.

Pretest

- What is the difference between a fact and an opinion? How can

you tell when a statement is an opinion? How can you confirm a fact? How do we use both to answer questions we have?

Read

- Read the What Are Energy Sources? series.

Model

- Explain that people can have different opinions about the same facts. Display your chosen spread on the board, and have the class identify the question the text is trying to answer as well as the facts and opinions in the text. Prompt the class to identify opinions based on clue phrases such as "Some people think" or "Many people believe."

Practice

- Each student will choose a topic in a What Are Energy Sources? book, identify a question that the text tries to answer, and fill out Fact and Opinion p. 6 with statements from the text, labeling whether they are facts or opinions.

Discuss

- Which opinions do you think matched up better with the facts?
- Did you find more facts or more opinions about the question you chose?

Evaluate

- Assess student responses to Fact and Opinion p. 6 for participation and accurate identification of facts and opinions.

Lesson 2 Comparing Energy Sources

Purpose

Students will compare and contrast different types of energy sources.

Materials

- What Are Energy Sources? series
- Comparing Energy Sources p. 7

Prepare

- Make copies of Comparing Energy Sources p. 7 for students.

Pretest

- What do we use energy for? Where does it come from?

Read

- Read the What Are Energy Sources? series.

Model

- Explain that students will choose two energy resources to compare and contrast.

Practice

- Students will fill out Comparing Energy Sources p. 7 using information from the What Are Energy Sources? books.

Discuss

- Did you find more similarities or more differences between your two energy sources?
- Which energy source do you think is better to use? Why?

Evaluate

- Assess student responses to Comparing Energy Sources p. 7 for completion, accuracy, and effort.

Lesson 3 Energy Log

Purpose

Students will keep track of energy use in their daily lives.

Materials

- What Are Energy Sources? series
- Energy Log p. 8

Prepare

- Make four copies of Energy Log p. 8 for each student.
- Research the main energy sources your community uses and any alternate energy sources being developed nearby, and prepare a short summary of this information to share with your students.

Pretest

- What do you need energy for on an ordinary day? What are some signs of energy use in this room?

Read

- Read the What Are Energy Sources? series.

Model

- On the board, make a list of ways your school uses energy (such as electric lights, electricity to power computers or a projector, lawnmowers to cut the grass, etc.), encouraging students to contribute based on what they've learned from the What Are Energy Sources? books.
- Discuss the main energy sources your community uses and any alternate energy sources being developed nearby.

Practice

- Students will fill out their copies of Energy Log p. 8 over the course of several days or a week. Students should aim to fill up all four pages (twelve entries in total) that they are given.
- Students will staple their four pages into a "lab notebook" and turn it in.

Discuss

- What are the main ways you used energy during the last few days? What activities do you think probably used the most energy?

Evaluate

- Assess logs for completion.

Lesson 4 Letters from the Future

Purpose

Students will use their knowledge of cause and effect to predict the future of energy resource use.

Materials

- What Are Energy Sources? series

Prepare

- Based on the text in one of the What Are Energy Sources? books, choose an example of a possible future event related to energy resource use, such as "The world runs out of oil" or "Nuclear power becomes more common."

Pretest

- What is the difference between short-term outcomes and long-term outcomes?
- What energy sources do you think humans will be using a hundred years from now?

Read

- Read the What Are Energy Sources? series.

Model

- On the board, write your chosen possible future event. Have the class supply possible effects of this event. Explain that students will do this independently with a different possible event.

Practice

- Individually or in group discussions, students will decide on a plausible future event based on information in the What Are Energy Sources? books and predict the effects of that event.
- Each student will write a letter from the future, telling people

in the present (their families, readers of their local newspaper, or politicians) about the energy-related event and explaining the results.

Discuss

- Do you think energy sources are more likely to cause problems or solve problems in the future? What are some examples?

Evaluate

- Assess letters for completion and effort.

Lesson 5 Energy Debate

Purpose

Students will debate the pros and cons of different energy resources.

Materials

- What Are Energy Sources? series

Prepare

- Divide students into groups and assign each group an energy resource.

Pretest

- What are some good things that energy resources do for us? What are some possible ways they can be harmful?

Read

- Read the What Are Energy Sources? series.

Model

- Ask students to imagine that they have just been given a large amount of money to put toward developing energy resources to power their town or city. They must decide as a class which kind of resource to put the money toward. They will have a debate to decide.

Practice

- Students in each group will research their assigned energy resource using the What Are Energy Sources? books as well as other books and Internet sources.
- Each group will write a short summary of why the group's resource should be developed, with two to three facts supporting each argument.

- Each group will present an argument to the class, and other students may ask questions or challenge the presenting group's argument. Then students will vote on which energy source to develop.

Discuss

- Did you agree with the side you argued for in the debate? Why or why not?
- What are some reasons the winning resource was chosen? What facts or opinions were most persuasive?

Evaluate

- Assess for participation and effort.

Name _____

Date _____

Fact and Opinion

Question: _____ ?

Statement	Fact or opinion?	How do you know?

Name _____

Date _____

Comparing Energy Sources

	Energy source A:	Energy source B:
Comes from . . .		
Renewable or nonrenewable?		
Advantages		
Problems		

Name _____

Date _____

Energy Log

Activity	Energy is needed for . . .