



Unit: Cooking with the Sun and Solar Ovens

Lesson #1: School Energy Hunt

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DESCRIPTION: The purpose of this lesson is to help students understand that everything that is powered by energy comes from a source from nature. This is meant to be an introductory lesson on identifying sources of energy.

GRADE LEVEL(S): 3-4

SUBJECT AREA(S): Energy

ACTIVITY LENGTH: 1 hour

LEARNING GOAL(S):

At the end of this lesson students will be able to list equipment in the school that is powered by energy. They will also be able to identify the various types of energy that power the equipment.

STANDARDS MET:

Common Core:

- W.3.2. Write informative and explanatory texts to examine a topic or convey an idea and information clearly.
- W.3.7. Conduct short research projects that build knowledge about a topic.
- W.3.8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
- SL.3.4. Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.
- W.4.7. Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- W.4.8. Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
- W.4.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.
- RI.4.1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

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- RI.4.7. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

Next Generation Science Standards:

- 4 ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.
 - 4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.
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Student Background:

A basic knowledge of sources of energy for the equipment used in our daily lives.

Educator Background:

Nonrenewable Energy Sources – coal, petroleum, nuclear power, natural gas.

Renewable Energy Sources – solar, biomass, hydrogen, wind, geothermal, wave, hydroelectric, biogas, pedal power.

Other Materials List:

Each student will need a piece of paper, a pencil and a clipboard.

Vocabulary:

Nonrenewable Energy Sources – coal, petroleum, nuclear power, natural gas.

Renewable Energy Sources – solar, biomass, hydrogen, wind, geothermal, wave, hydroelectric, biogas, pedal power.

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Lesson Details:

1. Announce to the students that they will be taking a walk around the classroom, school and school grounds. Their job is to find and write down equipment they see that they think requires an energy source to run.
2. Have students write their name and the date on a piece of lined paper.
3. Title the paper “School Energy Hunt.”
4. Draw a line down the middle of the paper.
5. Label the left column “equipment” and the right column “energy type.”

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6. First have students look through the classroom and write down equipment that they think runs on an energy type and then lead a walk through the school. Finally, walk around the outside of the school.
7. Return to the classroom. Conduct a full class discussion on what the students found. Write student equipment list on the board or document camera.
8. Discuss the students' ideas about where they think the energy to power the different pieces of equipment comes from. Where might we find out? Brainstorm ideas. Include wind, water, fire, wood, natural gas, fossil fuel, and biomass in the discussion. Have the students seen windmills or dams on rivers in their travels? How do they cook their food when they go camping?

Closure:

Spend a week or more researching renewable and nonrenewable energy types in books, magazines and on the Internet. Have students bring in news articles and advertisements. Use these resources to investigate what types of energy are being used to power your school, the students' homes and other business and structures around your community. It might take some investigating to find out every type of energy that is being used to power your community. It generally takes a call to the power company to get the complete information.

Evaluation:

Students will be assessed on their completed charts listing each equipment item and the power source that runs it. Note: This lesson could be used as a step toward Washington Green Schools or another state conservation program's certification in the Energy category.

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