

Project Learning Tree Standards-Based FCAT-Style Activities



Waste Watchers

Teacher Page

Students practice FCAT skills while learning about ways to avoid wasting water and electricity.

GRADE LEVEL: 4th and 5th grades

ACADEMIC OUTCOMES/LESSON OBJECTIVES:

- Students will read a selection introducing them to the concept of reducing water and electrical waste.
- Students will respond to FCAT-Style questions and prompts in Reading, Writing, Math, and Science.

SUNSHINE STATE STANDARDS ASSESSED:

- (LA.4.2.2.2, LA.5.2.2.2) Uses information from the text to answer questions related to explicitly stated main ideas or relevant details.
- (LA.4.4.2.3, LA.5.4.2.3) Writes informational/expository essays that contain introductory, body, and concluding paragraphs.
- (MA.A.3.2.3) Adds, subtracts, and multiplies whole numbers, decimals, and fractions, including mixed numbers, and divides whole numbers to solve real-world problems, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator.
- (SC.B.1.2.4) Knows the many ways in which energy can be transformed from one type to another.

RESOURCES:

Florida Project Learning Tree Web site - <http://www.sfrc.ufl.edu/plt/>

Florida Department of Education Web site - <http://www.firn.edu/doe/>

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ANSWER KEY:

1. LA.4.4.2.3, LA.5.4.2.3 Use the 6-point Writing Rubric.
2. a) MA.A.3.2.3
3. b) SC.B.1.2.4
4. b) LA.4.2.2.2, LA.5.2.2.2
5. Use the 2-point rubric for Short Response Reading Questions.
LA.4.2.2.2, LA.5.2.2.2

Example of a Top-Score Response:

A person can be an energy conserver by preventing energy waste. They could turn off lights when they leave the room, use light bulbs that save energy, and set the air conditioner at a higher temperature in the summer.



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WRITING

1. When people burn fossil fuels to generate electricity, they are also creating lots of air pollution. Think about the kinds of pollution you have observed in your daily life, on a television show, or in a book you've read. Write to explain how these kinds of air pollution might affect humans, plants, or animals.

NOTE: Write your response to question 1 on another sheet.

MATH

2. The abbreviation "kWh" stands for "kilowatt-hours," a unit of measurement that describes the amount of electricity used over a period of time. If you use a 60-watt light bulb for 2 hours, how many kilowatt-hours have you used?

$$\text{kWh} = \frac{\text{Watts of electricity used by a light bulb}}{\text{by a light bulb}} \times \frac{\text{Number of hours the light bulb is used}}{\text{the light bulb is used}} \div 1000$$

- a. 0.12 kWh
- b. 1.20 kWh
- c. 12.00 kWh
- d. 120.00 kWh

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Name:

Date:



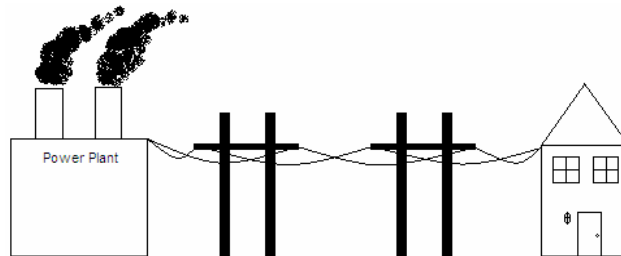
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SCIENCE

3. In the picture below, the energy used in this house is coming from a power plant that burns fossil fuels.



Which of the following describes how the energy is being transformed?

- a. from electrical energy to light energy
- b. from heat energy to electrical energy
- c. from light energy to heat energy
- d. from nuclear energy to electrical energy

READING

This article is adapted from the Background Information for the Project Learning Tree activity, "Waste Watchers":

We Can All Do Small Things

Most of Florida's electricity is made by power plants that burn fossil fuels (coal, oil, and natural gas). When power plants burn these fuels, they give off two main things: air pollution and the heat used to make electricity. Since the power plants are making electricity for our use, each of us is responsible for some of the air pollution out there. The good news is that each and every one of us can reduce air pollution just by conserving energy. When we use less energy, the power plants don't need to burn as much fuel, so less pollution is created. We can all do small things to conserve energy - starting with preventing energy waste. We can turn off lights when we leave a room, use energy-saving light bulbs, and set the air conditioner a bit warmer in the summer. Instead of being "energy wasters," we can all be "energy conservers."

Name:

Date:



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4. Based on the reading passage, "We Can All Do Small Things," which of the following is a result when people use less energy?
 - a. air pollution is increased
 - b. less pollution is created
 - c. homes generate their own fossil fuels
 - d. power plants need to burn more fuel

5. Based on the reading passage, "We Can All Do Small Things," describe three ways a person can be an "energy conserver." Use details and information from the text to support your answer.

READ
THINK
EXPLAIN

Name:	Date:
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