

## Project Learning Tree Standards-Based FCAT-Style Activities



# In the Driver's Seat

## Teacher Page

Students practice FCAT skills while learning about vehicle fuel economy.

**GRADE LEVEL:** 6<sup>th</sup> - 8<sup>th</sup> grades

### ACADEMIC OUTCOMES/LESSON OBJECTIVES:

- Students will study diagrams introducing them to the concepts of fossil fuel generation and modern usage.
- Students will respond to FCAT-Style questions and prompts in Reading, Writing, Math, and Science.

### SUNSHINE STATE STANDARDS ASSESSED:

- (LA.6.2.2.2) uses information from the text to answer questions related to the main idea or relevant details, maintaining chronological or logical order. (LA.7.2.2.2) Uses information from the text to state the main idea and/or provide relevant details. (LA.8.2.2.2) synthesizes and uses information from the text to state the main idea or provide relevant details.
- (LA.6.4.2.3) writes informational/expository essays (e.g., process, description, explanation, comparison/contrast, problem/solution) that include a thesis statement, supporting details, and introductory, body, and concluding paragraphs. (LA.7.4.2.3, LA.8.4.2.3) writes in a variety of informational/expository forms (e.g., summaries, procedures, instructions, in; specialized informational/expository essays (e.g., process, description, explanation, comparison/contrast, problem/solution) that include a thesis statement, supporting details, an organizational structure particular to its type, and introductory, body, and concluding paragraphs.
- (MA.A.3.3.3) adds, subtracts, multiplies, and divides whole numbers, decimals, and fractions, including mixed numbers, to solve real-world problems, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator.
- (SC.B.2.3.2) knows that most of the energy used today is derived from burning stored energy collected by organisms millions of years ago (i.e., nonrenewable fossil fuels).

### 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.6.4.2.3; LA.7.4.2.3; LA.8.4.2.3 Use the 6-point writing rubric.
2. d) MA.A.3.3.3
3. b) SC.B.2.3.2
4. b) LA.6.2.2.2; LA.7.2.2.2; LA.8.2.2.2



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## *Student Handout*

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### **WRITING**

1. Gasoline is an expensive, non-renewable resource that American families are consuming very quickly. Think about how much gasoline you and your family use while driving each week. Write to persuade your family that they should use less of this non-renewable resource.

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

### **MATH**

2. While a barrel of petroleum contains 42 gallons of actual liquid, it only produces 19 gallons of gasoline. During May 2007, the United States imported an average of 10,991 barrels of petroleum per day. How many gallons of gasoline could be produced from the petroleum imported during one week?
  - a. 4,050 gallons per week
  - b. 208,829 gallons per week
  - c. 461,622 gallons per week
  - d. 1,461,803 gallons per week

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**Name:**

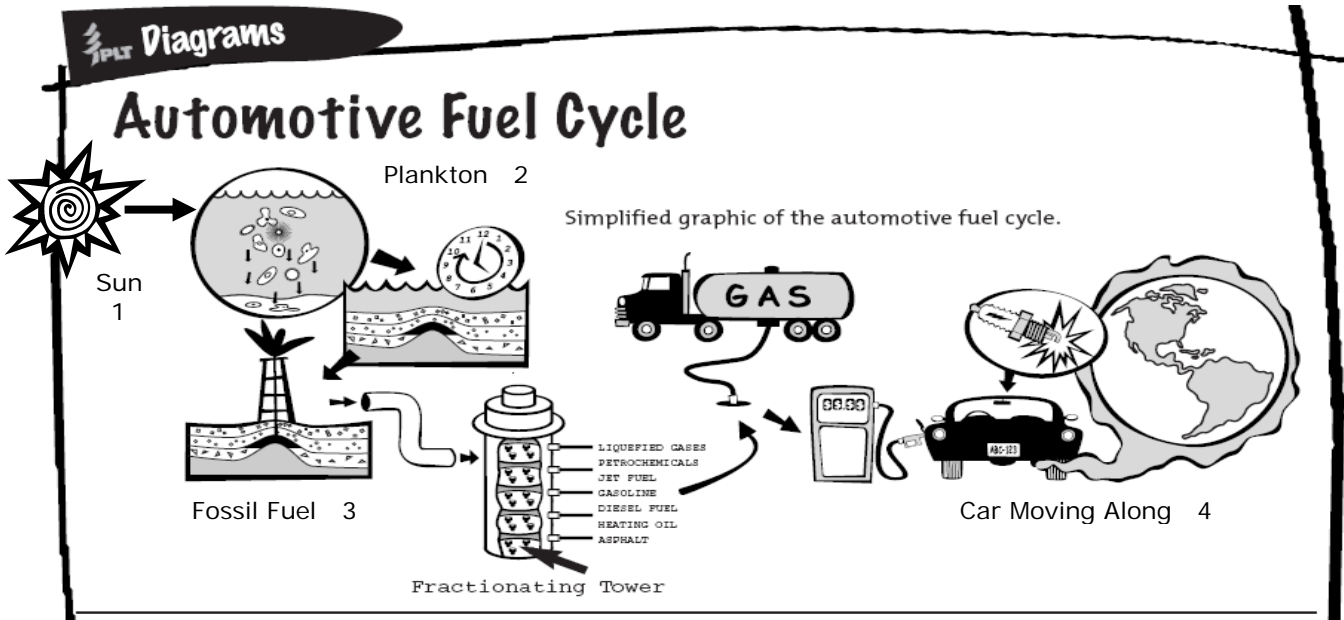
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### SCIENCE

3. Use the diagram titled, "Automotive Fuel Cycle," to determine form of energy involved at various steps along the automotive fuel cycle.
- a) 1 Heat, 2 Mechanical, 3 Chemical, 4 Mechanical
  - b) 1 Solar, 2 Chemical, 3 Chemical, 4 Mechanical & Heat
  - c) 1 Heat, 2 Chemical, 3 Mechanical, 4 Heat & Solar
  - d) 1 Solar, 2 Mechanical, 3 Heat, 4 Chemical

Name:

Date:

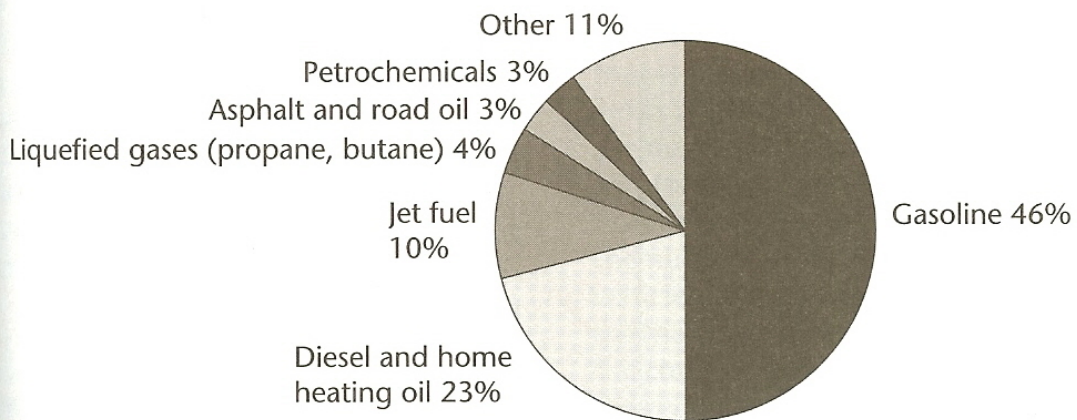


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**Diagram 1: Products Refined from Petroleum**



(American Petroleum Institute, 2000)

### **READING**

4. According to Diagram 1, "Products Refined from Petroleum," which of the following lifestyle changes would reduce your use of petroleum products most?
- Keep your house cooler in the winter.
  - Drive fewer miles in a fuel-efficient car.
  - Fly fewer miles in fuel-efficient planes.
  - Stop using your propane grill.

Name:

Date: