

UNDERSTANDING ENERGY CONCERNS

Grade level: Grade 8-12

Subjects: Social Studies

Overview : In this lesson, students discuss the rising cost of gasoline and how it impacts people in their country. They learn about gasoline usage and alternate forms of energy used in several countries, and then consider the relationship between people in their country and energy.

Suggested Time Allowance: 1 hour

Objectives:

Students will:

1. Consider the roles that various forms of energy play in their daily life.
2. In groups, research gasoline usage, alternate forms of energy and conservation efforts in various countries around the world; create informative posters.
4. Explore through writing the relationship that people in their own country have with oil.

Materials:

1. Student journals
2. Paper
3. Pens / pencils
4. Classroom blackboard
5. Resources for researching energy usage in various countries (economics and global history textbooks, almanacs, encyclopedias, library resources
6. computers with Internet access)
7. Poster board (two large pieces per small group)
8. Markers

Lesson Plan:

In their journals, ask the students to divide a page into two columns. Label the left column 'Energy-Users' and the right column 'Energy Sources.' Then, ask them to think about items that they use everyday that require some form of energy to function. They should consider items that use oil, gas, electricity, solar power, batteries, etc. Ask them to list these items in the 'Energy-Users' column, and then for each, write down the energy source that it uses in the 'Energy Source' column.

Then, select two of the activities you listed, and write a few sentences to answer the following question about each: "If you were trying to conserve energy, what could you have done instead of using this item as you did?" After a few minutes, allow students time to share their lists. On the board, compile a list of ways energy can be conserved. Which conservation methods are the most realistic for

people to do on a regular basis? Which are more difficult, and why? What are renewable energy sources and what are non-renewable energy sources? Explain to the students that all countries do not produce/generate all the energy required by its citizens. If their consumption is more than production, they have to import energy from other countries. How does your country fare in this regard in comparison to other countries? Ask your students to do a little research. They can make a table similar to the one provided below. They can check the statistics and enter their country's rank in the corresponding cell.

Type of Energy	World Rank in Consumption	World Rank in Production	Is it imported?
Oil	<u>Oil Consumption</u>	<u>Oil Production</u>	Yes/No
Natural Gas	<u>Natural Gas Consumption</u>	<u>Natural Gas Production</u>	Yes/No
Electricity	<u>Electricity Consumption</u>	<u>Electricity Generation</u>	Yes/No
Coal	<u>Coal Consumption</u>	<u>Coal Production</u>	Yes/No
Nuclear Power	<u>Nuclear Energy Consumption</u>	<u>Nuclear Energy Generation</u>	Yes/No

How does your country fare in Traditional Fuel Consumption? In Geothermal Energy Consumption?

After completion of the above exercise ask them to think deeply about the results. Then you can start a class discussion along the following points.
 What happens when your country runs out of any energy?
 How will your transportation be affected by rising gasoline prices?

Explain to students that they will be researching gasoline usage and alternate forms of energy in various countries. Divide students into pairs or small groups to carry on the research and assign a country to each group. Using the statistics available in research materials, each group should find the answers to the following guiding questions (copied on the board or in a handout for easier access):

Gas Consumption

- How many cars are purchased in this country each year?
- What types of cars do most people in your assigned country drive? How popular are S.U.V.'s?
- What is the current price of gasoline per gallon (or standard measurement)?
- On average, how much does it cost to fill an S.U.V. in this country? A passenger car? (Consider how many gallons each category of car holds.)
- What other types of transportation are widely used in your assigned country?
- How many barrels of oil were imported into your assigned country last year? From where did the oil come?

ALTERNATIVE ENERGY

- What types of alternative energies are available for public use in your assigned

country, and for what purposes? (Wind energy, solar energy etc)

- What does energy production look like in your assigned country? Create a pie chart illustrating consumption of oil, natural gas, nuclear power, solid fuels, and renewable energy sources.

CONSERVATION EFFORTS

- What energy conservation efforts have been made in your assigned country in the past?

- How successful were they?

- What are some of the main energy concerns in your assigned country, and how are they being addressed?

As a homework assignment you may ask them to prepare an essay on the various types of energy sources, energy usage in their assigned country and that country's dependency on oil.

Assessment:

Students will be evaluated based on initial journal responses, participation in class discussions, thorough group research and individual essays examining their assigned country's dependency on oil.