

Energy Source Posters

Sixth Grade
Activity: 9
Time: 4-5 Class Periods

General Description

Students will research primary energy sources to discover and gather a variety of information to use in creating a poster to present to the class

Students will work in groups and determine the pros and cons of each energy source: coal, petroleum, gas, nuclear, falling water (hydroelectric), sunlight, wind, geothermal and biomass. The group will select one to promote and encourage people to use.

Objectives

Students will research an energy source, create a poster of the information they learned, and then share it with the class.

Arizona State Standards

SC06 S5C3 PO1 Identify various ways in which electrical energy is generated using renewable and nonrenewable resources (e.g., wind, dams, fossil fuels, nuclear reactions)

W06 S1C1 PO1 Generate ideas through a variety of activities (e.g., prior knowledge, discussion with others, printed material or other sources)

W06 S3C2 PO1 Record information (e.g., observations, notes, lists, charts, map labels and legends) related to the topic

W06 S3C3 PO1 Write a variety of functional texts (e.g., directions, recipes, procedures, labels, posters, graphs/tables)

Teacher Information

Electricity is usually considered to be a secondary source of energy. To generate electricity, a primary source of energy is needed. There are a variety of primary sources that can be used to generate electricity. Each has advantages and disadvantages associated with it. Scientists are continually trying to find ways to improve using existing renewable and nonrenewable sources to alleviate the disadvantages.

Materials

Books, encyclopedias, Internet, and pamphlets for each energy source to be researched

Poster paper

Butcher paper

Markers

Colored pencils

Activity Card 6-9a

Procedures/Exploration

1. Tell students that electricity is usually considered to be a secondary source of energy. To generate electricity consistently requires a primary energy source. These sources are coal, petroleum, gas, nuclear, falling water (hydroelectric), sunlight, wind, geothermal and biomass. Discuss renewable and nonrenewable primary sources. Discuss some advantages and disadvantages of some of the sources based on the students' prior knowledge. Have the students share what these sources are.
2. Tell students they will become experts on a particular source. They will work in small groups to create a poster of information to share with the class.
3. Hand out the Poster Research Notes sheet (Activity Card 6-9a). Discuss the poster requirements with the students.
4. Assign groups based on the kind of information available for student use. Possible topics for groups include the following:

coal	sunlight
petroleum	wind
gas	geothermal
nuclear	biomass
hydroelectric	
5. Discuss research techniques and group work expectations. If desired, have the class create a list of rules and expectations on butcher paper to be displayed throughout the researching period.
6. Allow students time to work on their posters. It may be helpful to go over positive research techniques that were demonstrated by particular groups at the end of each class period.
7. Students should present their poster to the class to share their information. Discuss with the students some of the advantages and disadvantages that were presented on each of the energy sources.
8. Have the students write a reflection paper that explains which energy source they would choose for generating electricity and why.

**Teacher Note: Use Rubric (Activity Card 6-9b) to grade posters and reflection papers.

Poster Research Notes

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Create a poster which describes a particular energy source. Use this sheet to help you keep your research notes organized for your poster. The poster should answer the following questions:

What is the energy source? (definition)

How is the energy source used to generate electricity?

Where is the energy source found in the United States?

How is the energy source transported?

What are the advantages of using the energy source?

What are the disadvantages of using the energy source?

Poster and Reflection Rubrics

**Sixth Grade
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Activity Card: 6-9b**

Student's Name:

Date:

Making a Poster: Energy Sources

CATEGORY	4	3	2	1
Graphics - Originality	Several of the graphics used on the poster reflect a exceptional degree of student creativity in their creation and/or display.	One or two of the graphics used on the poster reflect student creativity in their creation and/or display.	The graphics are made by the student, but are based on the designs or ideas of others.	No graphics made by the student are included.
Graphics - Relevance	All graphics are related to the topic and make it easier to understand. All borrowed graphics have a source citation.	All graphics are related to the topic and most make it easier to understand. All borrowed graphics have a source citation.	All graphics relate to the topic. Most borrowed graphics have a source citation.	Graphics do not relate to the topic OR several borrowed graphics do not have a source citation.
Use of Class Time	Used time well during each class period. Focused on getting the project done. Never distracted others.	Used time well during each class period. Usually focused on getting the project done and never distracted others.	Used some of the time well during each class period. There was some focus on getting the project done but occasionally distracted others.	Did not use class time to focus on the project OR often distracted others.
Required Elements	The poster includes all required elements as well as additional information.	All required elements are included on the poster.	All but 1 of the required elements are included on the poster.	Several required elements were missing.
Knowledge Gained	Student can accurately answer all questions related to facts in the poster and processes used to create the poster.	Student can accurately answer most questions related to facts in the poster and processes used to create the poster.	Student can accurately answer about 75% of questions related to facts in the poster and processes used to create the poster.	Student appears to have insufficient knowledge about the facts or processes used in the poster.
Content - Accuracy	At least 7 accurate facts are displayed on the poster.	5-6 accurate facts are displayed on the poster.	3-4 accurate facts are displayed on the poster.	Less than 3 accurate facts are displayed on the poster.

Attractiveness	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed. It is not attractive.
Mechanics	Capitalization and punctuation are correct throughout the poster.	There is 1 error in capitalization or punctuation.	There are 2 errors in capitalization or punctuation.	There are more than 2 errors in capitalization or punctuation.
Grammar	There are no grammatical mistakes on the poster.	There is 1 grammatical mistake on the poster.	There are 2 grammatical mistakes on the poster.	There are more than 2 grammatical mistakes on the poster.

Reflections Rubric

CATEGORY	4	3	2	1
Introduction (Organization)	The introduction is inviting, states the main topic and previews the structure of the paper.	The introduction clearly states the main topic and previews the structure of the paper, but is not particularly inviting to the reader.	The introduction states the main topic, but does not adequately preview the structure of the paper nor is it particularly inviting to the reader.	There is no clear introduction of the main topic or structure of the paper.
Grammar & Spelling (Conventions)	Writer makes no errors in grammar or spelling that distract the reader from the content.	Writer makes 1-2 errors in grammar or spelling that distract the reader from the content.	Writer makes 3-4 errors in grammar or spelling that distract the reader from the content.	Writer makes more than 4 errors in grammar or spelling that distract the reader from the content.
Accuracy of Facts (Content)	All supportive facts are reported accurately.	Almost all supportive facts are reported accurately.	Most supportive facts are reported accurately.	NO facts are reported OR most are inaccurately reported.
Support for Topic (Content)	Relevant, telling, quality details give the reader important information that goes beyond the obvious or predictable.	Supporting details and information are relevant, but one key issue or portion of the storyline is unsupported.	Supporting details and information are relevant, but several key issues or portions of the storyline are unsupported.	Supporting details and information are typically unclear or not related to the topic.