Energy Research Project

4th grade PSI

Teacher’s Notes:

- Students will be researching one type of energy in depth. You can choose to have them do this individually or in a small group. If students research independently, more than one student will likely be researching the same energy type; if students work in small groups, the different types of energy can be divided up so they are each researched by one group.

- Energy types students can research:
  - biomass
  - coal
  - geothermal
  - hydroelectric
  - natural gas
  - nuclear
  - petroleum
  - solar
  - wind

- This research project was designed to align with the Common Core Literacy Standards for fourth grade including:
  - CCSS.ELA-LITERACY.W.4.6
    With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.
  - CCSS.ELA-LITERACY.W.4.7
    Conduct short research projects that build knowledge through investigation of different aspects of a topic.
  - CCSS.ELA-LITERACY.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.
  - CCSS.ELA-LITERACY.W.4.9
    Draw evidence from literary or informational texts to support analysis, reflection, and research.
Energy Research Project

Name: __________________________

4th grade PSI

Lab Questions
Where are energy and fuels derived from?
How do the use of energy and fuels affect the environment?

Before You Begin
What type of energy will you be researching?

____________________________________________________

What do you already know about this type of energy?

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________

____________________________________________________
Purpose
During this research project, you will learn about one type of energy in great depth. You will obtain information from a variety of sources (including online and print) and combine that information to describe your energy type and how it affects the environment.

As you learn new information, your job is to take good notes about what you are learning. There is a note sheet included that you can use to help you categorize the things you are learning and the notes you are taking. You must also keep a list of sources that you have used. There is space provided for this purpose. Make sure to remember to write down your sources as you use them (going back later and trying to create a list is hard!).

Once you have a sufficient amount of information, you will produce and publish writing (using the computer) on your findings to share with your classmates. This can be in the form of a poster, book or digital presentation. It should be something that is easy to share with the rest of the class.

As you work on researching your energy type, be sure to look at the rubric to remind yourself of what is expected. The rubric outlines the five main areas on which your research project will be assessed.
NOTES

Is this energy renewable or non-renewable?

______________________________________________
______________________________________________

Source(s):

______________________________________________
______________________________________________

Where is this energy found? Where is it derived from?

______________________________________________
______________________________________________
______________________________________________
______________________________________________
______________________________________________
______________________________________________

Source(s):

______________________________________________
How is this energy collected?

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

Source(s):

__________________________________________________________

__________________________________________________________

__________________________________________________________

What is this energy used for?

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________

__________________________________________________________
What environmental impacts does this energy have?

Source(s):
Conclusion Questions (Analysis)

1. After learning all about _____________ energy, how do you feel about the way that it is used in the United States now? (For example, do you think it is used too much, should be used more, etc.) Why?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

2. What was the most surprising thing you learned about the energy you researched?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
3. Do you think that any of your own lifestyle habits will change because of your findings? If yes, what habits and why? If not, why not?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

4. Based on all your research, how do you feel about the energy type you researched? Explain.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
## Rubric for Research Project

<table>
<thead>
<tr>
<th>Description of Subject</th>
<th>Organization of Information</th>
<th>Quality of Sources</th>
<th>Analysis</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4</strong> Thorough and accurate description of energy type researched in all areas. Use of multiple sources is evident.</td>
<td>Research includes organized notes that correctly categorize information. This organization is evident in presentation of ideas.</td>
<td>List of sources includes at least 2 different print sources and 5 different digital sources. Chosen sources are reliable and provide accurate scientific information.</td>
<td>Thorough reflection on and understanding of the information learned is evident in conclusion questions and presentation.</td>
<td>Presentation reflects accurate scientific content and successfully combines pictures and typed information to communicate the information that was researched.</td>
</tr>
<tr>
<td><strong>3</strong> Thorough and accurate description of energy type researched in some areas; others areas lacking information. Use of multiple sources is evident.</td>
<td>Research includes some organized notes that correctly categorize information. This organization is evident in presentation of ideas.</td>
<td>List of sources includes 1 print source and 4 different digital sources. Chosen sources are reliable and provide accurate scientific information.</td>
<td>Good reflection on and understanding of the information learned is evident in conclusion questions and presentation.</td>
<td>Presentation reflects accurate scientific content and combines pictures and typed information to communicate the information that was researched.</td>
</tr>
<tr>
<td><strong>2</strong> Limited description of energy type researched. Use of multiple sources is not evident.</td>
<td>Research notes have little organization. Disorganization is evident in presentation of ideas.</td>
<td>List of sources includes less than 4 sources. Chosen sources are questionable and do not provide accurate scientific information.</td>
<td>Limited reflection on and understanding of the information learned is evident in conclusion questions and presentation.</td>
<td>Presentation reflects limited scientific content and communicates some of the information that was researched.</td>
</tr>
<tr>
<td><strong>1</strong> Poor description of energy type researched. Use of multiple sources is not evident.</td>
<td>Research notes are unorganized. Disorganization is evident in presentation of ideas.</td>
<td>3 or fewer sources used. Chosen sources are unreliable and do not provide accurate scientific information.</td>
<td>Poor reflection on and understanding of the information learned is evident in conclusion questions and presentation.</td>
<td>Presentation reflects inaccurate scientific content and communicates a small amount of information on the subject researched.</td>
</tr>
</tbody>
</table>