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**Energy choices**

Which type of energy is best to power up a new business?

#### Adapted from CPALMS Resource ID#: 48413

**Social Studies Benchmarks:**

**Grade:**

**SS.3.E.1.1** Give examples of how scarcity results in trade.

**SS.3.E.1.3** Recognize that buyers and sellers interact to exchange goods and services through the use of trade or money.

**Science Benchmarks**

**SC.3.P.10.1** Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical.

**English/Language Arts Standards:**

**LAFS.3.RI.1.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

**LAFS.3.RI.3.7** Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

**LAFS.3.W.3.8** Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
**LAFS.3.SL.1.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade *3 topics and texts*, building on others’ ideas and expressing their own clearly.

1. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.
2. Follow agreed-upon rules for discussions and carry out assigned roles.
3. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.
4. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

For this decision-making lesson, students will discuss criteria for choosing the right type of energy as power for a new business center based on information provided from an entrepreneur, and data sets about energy. Using this information, students will rank their choices and explain how they reached those decisions.

**Problem**

What kind of energy should a new business use?

**Alternatives**

What are the different types of energy that could be used?

**Criteria**

What are the most important qualities related to energy use?

**Decision**

Which of the energy choices is the best for What’s New? How did you make that decision?

Renewable Resources Game Show

<https://www.youtube.com/watch?v=6_adfcO8clo>

Renewable/Nonrenewable Resources

<http://www.alliantenergykids.com/EnergyandTheEnvironment/RenewableEnergy/>

Energy Sources

<https://www.eia.gov/kids/energy.cfm?page=2>

<https://www.eia.gov/kids/energy.cfm?page=renewable_home-basics>

Nuclear energy facts: <http://www.sciencekids.co.nz/sciencefacts/energy/nuclearpower.html>

1. Read the letter from What’s New and discuss the decision that the company wants the students to make (the best type of energy for a new business center in their community).
2. Ask students, “What are the scarce resources associated with What’s New’s decision on the power source for their new business center? (money, energy sources). Who are the buyers and sellers in this situation (What’s New is the buyer; energy providers will be the sellers).
3. Review the term ‘entrepreneur.’ Remind students that an entrepreneur is someone who starts a business. Starting a business can be a risky venture. How is What’s New showing that they are being careful as they begin building the new business center?
4. Provide students with the decision-making matrix. Review the alternatives and criteria related to the energy choices.
5. Review different types of energy from Reading Wonders texts and the links above:
	1. You Tube video – Renewable Resources Game Show. Stop the video after each question to let students discuss. After the correct answers are revealed, allow time for students to take notes on their matrices (or on the provided note-taking tool for use with the matrix later).
	2. Use the information from [www.eia.gov/kids](http://www.eia.gov/kids) and [www.allientenergykids.com](http://www.allientenergykids.com) to find additional information about the energy sources on the matrix.
	3. Use the information from the nuclear energy links above to learn about nuclear energy and take notes related to the criteria.
6. Introduce the data table. Discuss how this table will help with some of the criteria on the matrix. Analyze each data set to determine each energy choice’s strengths and weaknesses.
7. After all information has been gathered, using the matrix start a discussion on solar energy. How does this energy source fit What’s New’s needs? What are some reasons that this might not be best choice? Refer back to the texts, notes and data table to review information on solar energy.
8. Repeat this process for the other energy sources.
9. In teams the students will work together to evaluate the completed matrix and make a decision regarding the best energy choice for What’s New. Students will then rank each energy choice from first to last.
10. The students will then present their findings to the class, giving the reasons why ranked the choices as they did and the procedure of how they got to that decision.
11. Students write a letter to What’s New explaining:
* how they ranked each energy choice
* the process they used for making their choices and
* why the energy source they chose meets the needs of What’s New.

A frame can also be used:

Date:

Dear Ms. Perez,

Our team has reviewed all of the data that you provided and are suggesting the following types of energy for What’s New to integrate into building the new business complex. We have ranked the types of energy in order beginning with our top choice.

Top Choice of Energy:

Alternate Choice #1:

Alternate Choice #2:

Alternate Choice #3:

Alternate Choice #4:

Our step-by-step procedure for ranking the choices in this way was:

Thank you for the opportunity to assist you with this project!

Sincerely,

Extension/ideas:

* Create a presentation to What’s New that outlines the right energy source for the new business center.
* Additional web resources:
	+ Primary Energy Info Book: Lesson plans, activities related to energy <http://www.need.org/files/curriculum/guides/Primary%20Energy%20Infobook.pdf>
	+ Energy Economics <http://encyclopedia.kids.net.au/page/en/Energy_economics>

Differentiation:

* Reduce alternatives and/or criteria.
	+ Create a new letter from What’s New asking students to reconsider their choices based on different alternatives/criteria
* Increase alternatives and/or criteria.
	+ Same as above
* Provide note-taking tools with some of the information already filled in.