

Teacher Guide for APPLESEEDS, Energy

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Betty Lou Askin, a retired educator, who lives in Toronto, Ontario, prepared this guide.

Objectives:

- The students will extend their knowledge of energy.
- The students will gain an appreciation of the sources of energy.
- The students will learn how to conserve energy.

Introduction: Pre-reading Activity

- Prior Knowledge- On chart paper or on the chalkboard, record the knowledge that the students offer about energy. Or, have them complete the first two steps of a **KWL Chart**.
- Ask the students to look at the cover of the magazine. There are three titles indicating what can be found in the magazine- Bust Those Hogs, Poop Power and Fill Up With Sunshine Please. Ask the students to predict what these articles may be about.

Where Does Energy Come From? (pages 2-6)

- One suggestion for use with this article is to use a co-operative learning strategy, such as a **Jigsaw** or a **Literacy Circle**.
- There are 7 examples of non-renewable and renewable energy. Divide the class into 7 groups. Assign 1 of these sources to each group. Ask the students to develop a presentation for the rest of the class about their source of energy. Have them include the following:
 - What is the source of energy?
 - What is the positive effect of this type of energy?
 - What is the negative aspect of their source?
 - Include pictures as part of their presentation.

Blackout! (pages 7-9)

Questions to use with this content-

- What is the Eastern Interconnection?
- Describe what happened on August 14, 2003.
- Why did some people have electricity later in the day on August 14th, while it took up to 4 days in other areas?
- Explain what happened in Texas in September 2008.
- There are excellent questions to pose to the students in the **Think About It** box on page 9.

Be An Energy-Hog Buster (pages 10-11)

Ideas to use with this article-

- What is ASE?
- Describe the purpose of this organization.
- How many of the Ten Tips do you do to save energy?
- List some more energy saving tips.
- Write an essay using this topic- Can you justify your use (and that of others) of a video game when a whole city could use that energy to exist?

How Green Can You Be? (pages 12-14)

- Use a **Read Aloud** method with this article. Hold a discussion after completing the reading.
- This article has many excellent energy saving ideas. Ask the students to add ideas to the three types of energy use.

Solar Speed Racers (pages 15-17)

During or after the reading, use these prompts to focus on the content:

- What are the perils of using gasoline?
- What is the purpose of the World Solar Challenge?
- Why is it important to keep the cars in the race lightweight?
- How do you suggest that we get around the problem of using solar power when there is no sunshine?
- List the benefits of solar power.

The Power of Wind (pages 18-20)

Questions/activities to use:

- Describe how wind power is obtained.
- What is a wind farm?
- The students might research more information about wind power, such as complaints about noise. Create and complete a chart such as the following:

Use of Wind Power

Positive Aspects of Wind Power	Negative Aspects of Wind Power

Poop Power (pages 21-23)

Questions to consider:

- What is poop power?
- Describe how a cow's manure becomes a good source of energy.
- Why is there no smell when manure is put in a digester?
- Who has used manure as a source of energy?

Surprising Sources of Green Energy (pages 26-27)

- **Think-Pair-Share:** Ask the students to pair up with another classmate. They are to read and discuss this article. When they have completed this task, hold a class discussion about what they have read and their impressions of the information.
- Ask them to work again with a partner. This time they are to choose one of these sources of green energy. Have them explain to the class why they like that source and its possible future use. (If time allows, you might ask them to conduct further research about their source.)

The Veggie Bus (pages 28-29)

Questions to use with a discussion:

- What is the veggie bus?
- Describe how vegetable oil can be used to power the bus.

S'More Energy, Please (pages 30-32)

- Before the students see this article, read aloud to them the opening passage. "In rural east Africa...nuclear fusion reactor." Ask them what this might mean.
- They might enjoy creating their own sun-powered oven and cooking on it.

Possible Culminating Activities:

- Start an **Energy Awareness** campaign in your school.
- Develop posters-
 - To show sources of energy
 - To explain the non-renewable sources of energy
 - To inform about the new sources of green energy
 - To suggest ways of saving energy
- Research:
 - Choose a source of energy mentioned in this magazine. Complete further research about it. Prepare a report and a presentation that can be given to the rest of the class.
- Complete the third part of the **KWL Chart**.