



Teacher's Notes: Renewable Energy

Learning Objectives:

The students will be able to identify the sun, the earth, wind turbines. electrical outlets

The students will be able to explain what renewable energy makes.

The students will be able to list what electricity is used for.

The students will be able to identify and define the 4 types of renewable energy.

Activities

1. Students do image searches using the technology printable. Students can type a word or sentence under each picture.
2. Make a wind turbine from the video on teacher notes for page 5.
3. Make a water wheel from the video on teacher notes for page 7.

General Tips: The goal is to build background knowledge while leading an engaging discussion on any and all information that can be talked about on a given page. The items that you choose to bring up or focus on can be modified for the students you are working with. For example, if you have a student who can point to something in the picture, answer yes/no questions be sure to incorporate a lot more of that as you go through the book. On the same token, be sure to ask a lot of comprehension questions and critical thinking questions at the level appropriate for students. There is something for everyone.

Page 1: We use electricity for a lot of things. Everything we plug into an outlet uses electricity. Our TVs, video games, lights, refrigerators all use electricity. Renewable energy is one way that electricity is made.

Pointing Questions: plugs, outlets, electric lines, sky

Short Answer: What does renewable energy make?

Yes/No: Does renewable energy make electricity? Do we use electricity to turn on lights?

Sharing opinion/experiences: Things that need to be plugged in use electricity. What are some things in your house that used electricity.

Peer to Peer Interaction: After you read Page 1, ask students, "What does renewable energy make?" The answer is the main idea card "electricity." Students will find the main idea card and read it to their partner. Teacher will prompt them to talk about things that use electricity.

Page 2: We don't run out of renewable energy. That means that we can keep making electricity using renewable energy. It does not run out. We can run out of food. We can run out of gas for our car, but we cannot run out of renewable energy. The image on page two is a symbol for renewable energy.

Pointing Questions: renewable energy symbol, sun, clouds, water, trees

Short Answer: What kind of energy will we not run out of?

Yes/No: Can we run out of renewable energy?

Sharing opinion/experiences: Do you think it is good that we cannot run out of renewable energy?

Peer to Peer Interaction: After you read Page 2, ask students, “What kind of energy will we not run out of?” The answer is the main idea card “renewable energy.” Students will find the main idea card and read it to their partner. Teacher will prompt them to ask their partner some of the questions above.

Page 3: Talking Points: Renewable energy comes from the sun. We cannot run out of sun. Renewable energy comes from water. Renewable energy comes from the wind. Renewable energy comes from the earth.

Pointing Questions: sun, water, wind, earth

Short Answer: Where does renewable energy come from?

Yes/No: Does renewable energy come from the sun? Does renewable energy come from trees? Does renewable energy come from water? Does renewable energy come from the wind? Does renewable energy come from the earth?

Sharing opinion/experiences: Did you know that the sun, the earth, water, and wind could make electricity? Do you like when it is sunny? Do you like when it is windy?

Peer to Peer Interaction: After you read Page 3, ask students, “Where does renewable energy come from?” The answer is the main idea card “sun, water, wind, earth.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk about the sun, the earth, water, and the wind.

Page 4: Solar means sun. Solar energy is when the sun makes electricity. Look at the pictures in the book. This house has solar panels on the roof. The solar panels work with the sun to make electricity for the house.

Pointing Questions: house, roof, solar panels, sun

Short Answer: What does solar energy make? What it is called when the sun makes electricity?

Yes/No: Does solar energy make electricity?

Sharing opinion/experiences: Do you like sunny days? Have you ever seen solar panels on roofs?

Peer to Peer Interaction: After you read Page 4, ask students, “What is it called when the sun makes electricity?” The answer is the main idea card “solar energy.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk about the sun.

Page 5: Did you know that the wind can make electricity? Have students view a few minutes of a video at a wind farm. https://www.youtube.com/watch?v=Mr_9DvHkHuQ

Have students view the video about wind energy and wind turbines which also has directions on how to make your own simple one. <https://www.youtube.com/watch?v=TaSrVZNHQno>

Pointing Questions: sky, wind turbines

Short Answer: What can the wind make? What is it called when the wind makes electricity?

Yes/No: Can the wind make electricity?

Sharing opinion/experiences: Do you like windy days?

Peer to Peer Interaction: After you read Page 5, ask students, “What is it called when wind makes electricity?” The answer is the main idea card “wind energy.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk about the wind.

Page 6: Did you know that there is hot water inside the earth? The water is hot all of the time! That hot water can be used to make electricity. Have students view the following video about geothermal energy. <https://www.youtube.com/watch?v=ZFpCNmrGK30>

Pointing Questions: earth, sky, sun, water under the ground

Short Answer: What can geothermal energy make? Is there hot or cold water inside the earth? What is inside the earth?

Yes/No: Is there cold water inside the earth? Is there hot water inside the earth? Can the hot water inside the earth make electricity?

Peer to Peer Interaction: After you read Page 6, ask students, “What is it called when the hot water inside the earth makes electricity?” The answer is the main idea card “geothermal energy.” Students will find the main idea card and read it to their partner. Teacher will prompt students to talk about the inside of earth.

Page 7: Did you know that water can make electricity. It is called hydropower. Have students view the following video about hydropower. <https://www.youtube.com/watch?v=tpigNNTQix8>

Video on how to make a homemade water wheel. https://www.youtube.com/watch?v=4Bt3psl_ge8

Pointing Questions: water, waterfall, trees

Short Answer: What does hydropower use to make electricity? What is it called when water makes electricity

Yes/No: Can water make electricity? Does hydropower use wind to make electricity? Does hydropower use water to make electricity?

Sharing opinion/experiences:

Peer to Peer Interaction: After you read Page 7, ask students, “What is it called when water makes electricity?” The answer is the main idea card “hydropower.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk about water.

Page 8: Electricity that we get from the sun, wind, earth, and water is called renewable energy. It is a better way to get electricity.

Point: renewable energy symbol, lightbulb, solar panels, water, wind turbines

WH Questions: What is a better way to get electricity?

Yes/No: Is renewable energy a better way to get electricity?

Peer to Peer Interaction: After you read Page 8, ask students, “Is renewable energy a better or worse way to get electricity?” The answer is the main idea card “better.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk the four types of renewable energy.

Page 9: Renewable energy is also called green energy. Green means better for the earth. If someone says that they are going green, that means that they are going to do things that are better for the earth. Recycling is better for the earth. Renewable energy is better for the earth.

Pointing Questions: earth, hands, renewable energy symbol, wind turbines, solar panels, hydropower dams

Short Answer: What is renewable energy better for?

Yes/No: Is renewable energy better for the earth?

Peer to Peer Interaction: After you read Page 9, ask students, “What is renewable energy better for?” The answer is the main idea card “earth.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk about renewable energy.