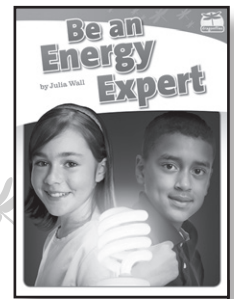


Be an Energy Expert

by Julia Wall



Overview

This book provides information about the natural resources we use to make energy. It suggests ways to use these resources carefully and better ways of making energy so Earth's resources will last longer. (Big idea: People need to use resources carefully.)

Suggested purposes

This book supports the following **comprehension strategies**:

- making connections between prior knowledge and the text **MC**
- identifying the main ideas **MI**
- summarising the main ideas. **SUM**

It supports the following **non-fiction strategies**:

- gaining information from photographs
- reading diagrams to understand how things work
- getting information from captions.
- using a glossary (boldface type)
- reading bulleted lists for facts

Key vocabulary

The vocabulary that is focused on includes:

- Anchor words – *carefully, natural resources, need, population*
- Content words – *coal, dam, electricity, energy, environment, gas, harm, heat, last, oil, pollution, save, solar, sun, turbine, water, wind*
- High-frequency words – *because, find, home, know, last, morning, school, take, their, think, through*

Features of the text

- Non-fiction features:
 - cover flap, which provides support for identifying the big ideas and anchor words
 - the topic (sustainability), which expands on pages 8 and 9 of the anchor book *Helping Planet Earth*
 - preview question on the back cover
 - headings that introduce new aspects of the topic and support students to read information in sections
 - contents page, glossary (boldface type), and index
 - captions
 - boxes that summarise each section
 - graph
 - turbine diagram
 - summary box of the positives and negatives about different energy resources
- Word study:
 - compound words – *everything, forever, meantime, outdoors, sometimes, windmills*
 - silent “k” – *knowledge*
 - digraphs – “sh”, “th”, “wh”
 - singular possessive noun (adding ‘s) – *Earth’s*
 - contractions – *can’t, don’t, doesn’t, let’s, won’t*
 - multisyllabic words – *carefully, computer, electricity, energy, environment, natural, pollution, population, resources*
- Questions that focus attention on the topic (page 3)
- Use of exclamation marks and question marks
- Quiz to test the students’ knowledge



Setting the scene

If you have already introduced the topic using the whole-class lesson plan and the anchor book (*Helping Planet Earth*), you can review the discussion and show the students pages 8 and 9 of the anchor book.

To determine the students' prior knowledge about energy, ask them to complete the "Find someone who can tell you ..." sheet.

Find someone who can tell you ...

How they use energy every day	How to save energy	What energy from the sun is called	How a windmill produces energy	What a power station is

Refer to this throughout the lesson to observe the students' new knowledge and learning.

Ask the students what they know about energy. List their ideas on the board. *What questions do you have about energy?* Write the students' questions on the board.

ELL support

Repeated reading of the same book will help ELL students to improve their oral fluency. Create an area in the classroom where students can reread texts independently or in pairs. Providing recordings of the students reading aloud is another way to build fluency.

Introducing the book

Front cover – Discuss the title and the photograph. *What do you know about energy? What do energy experts do? (Making connections) Look at the photo – have you seen this kind of light bulb before? What is different about it? Why would you use this kind of light bulb?*

Back cover – Read aloud the preview question. Lead a discussion to build the students' background knowledge.

Using the flap – Read aloud the text on the flap, and (if relevant) remind the students that they have read this in *Helping Planet Earth*. Read aloud the anchor words on the other side of the flap. Tell the students that they can point out the words when they find them in the book. Ask them to leave the flap open as they read.

Title page – Focus on the photograph. *What is this? What is it similar to? What do you think it is used for?*

The first reading

Page 2 – *What is a contents page? How does it help us? Are any of the headings similar to the questions we listed earlier?*

Page 3 – Which of these things did you do? Look up "energy" in the glossary. *What is needed for you to be able to do these activities?* (electricity, gas)

MC **Pages 4 and 5** – (**Making connections**) In pairs, have the students brainstorm ways that they used energy today (used a computer, turned on a light). *What is needed to make these things work?* (electricity)

Page 6 – *Why do you think the heading is a question?* (focuses attention) Point to the photograph. *What do you think this is?* Discuss the students' ideas and explain that it is a rig that drills for natural resources, such as oil and gas. Clarify that natural resources come from nature.

Page 7 – *How do we get energy from coal?* (by burning it) *What is coal used for?* (the heat energy is used to make electricity) Look up "energy" in the glossary. Read the caption. *What does a caption do?* (highlights an interesting fact, gives information about a photo)

Page 8 – *What is oil used for?* (You might like to mention that some homes use heaters that run on oil.) *How do you use gas at home?* (stove, oven, barbecue) Explain that when gas is lit, it produces energy, which cooks food. *What energy do coal, oil, and gas produce?*

Page 9 – (**Summarising**) Look at the graph on page 9. *What warning does this information give us? Which natural resource will run out first? Which natural resource will last the longest? What do you think will happen when they run out? Why do we need to be careful when we use these resources? What have we learned about energy so far? Do you have any more questions?* Remind the students that asking questions and searching for answers can help them to understand a text better.

MI **Pages 10 and 11 – (Identifying the main ideas)** In pairs, have the students brainstorm ways that people could be more careful when using Earth’s resources. Ask volunteers to share their ideas. *Why has the author made the “Energy Expert” heading flashy? What is the purpose of the boxed text? (reviews and summarises important information) Why are there dots at the beginning of each sentence?* Explain that they are bullet points to indicate a new fact.

Pages 12 and 13 – What is pollution? Look up “pollution” in the glossary. *Where does solar energy come from? Why isn’t it used all the time? Have you seen solar panels before? Where? Have you seen solar lights before? Where?* (Solar lights are often used to light backyards or pathways.)

Pages 14 and 15 – Refer to the earlier discussion about the wind turbine on the title page. What is the energy from turbines called? What is wind energy used for?

SUM **Pages 16 and 17 – (Summarising)** Refer the students back to the “Find someone who can tell you ...” sheet. *What have you learned about dams or water energy? How does the diagram help you understand how water makes energy?*

Page 18 – How could the environment be harmed by making energy?

Page 19 – How do your ideas compare with the information in the chart? In pairs, the students can discuss which energy resource (coal, wind, or water) they think is the best for Earth. They will need to have at least two reasons to explain their choice. *Discuss the good and bad things about using solar energy.*

Pages 20 and 21 – How do the suggestions on page 21 save energy? In small groups, the students can make a list of other ways to save energy.

Page 22 – Explain that a good way to remember information in a text is to write questions similar to those on this page. Read the questions to the students. They can write the answers in pairs, then swap answers and mark another pair’s work. Which questions were difficult to answer? Prompt the students to refer back to the contents page or index to find the answers to any questions that they are unsure about.

The students can choose a resource from the index. They can list the facts for the resource by rereading the pages listed. They need to write key words or phrases only.

Revisit the “Find someone who can tell you ...” sheet and ask the students to compare the knowledge they have learned with what they originally knew. Ask for volunteers to share their new learning.

Ensure that the students understand the importance of saving energy today so that scientists have time to find alternatives for the future. *Why is it important that we become “energy experts”?* Have them discuss this in pairs.

Vocabulary activity

Focus word: population (page 10)

1. Turn to page 10 and reread the text. *Every day, Earth’s population grows.*
2. Write “population” on the board and have the students say it with you.
3. Explain that “population” can mean the number of people living in an area. It can also refer to other living things, such as the population of ants in a nest or the population of elephants in Africa.
4. Give examples to show how “population” can be used in other contexts.
 - *In China, the population of pandas is small. People are trying to find ways to increase the population.*
 - *Every year, volunteers count birds in our area to see if their population is going up or down.*
 - *The population of mosquitoes increased this summer. I am getting eaten alive!*
5. Do the following activity outside the classroom.
 - Have the students work in pairs. Depending on the environment and time of year, have each pair choose a plant, insect, or other living thing.
 - Each pair then chooses a spot and counts the population.
 - Back in the classroom, compare the population counts. *Where are most of these living things found? Are there places where there are none?*

Draw the following chart on the board. Explain that the world’s population is growing.

Year	Population (billions)
1820	1
1930	2
1960	3
1974	4
1988	5
2000	6

What does this chart tell us? (The world’s population is increasing quickly. Once, it took one hundred years for the population to increase by one billion. Now it takes just twelve years.) What do you predict the population to be when you are a teenager?

Is the population of your city getting bigger or smaller? Why? Is there enough space in your city for the population to increase? How might this change your city?

6. *What is the word we have been learning that describes the number of living things in an area? Say the word with me.*

ELL activity

Language objective: understanding the meaning of content words

1. Write the content words on cards and give them to pairs of students. Ask them to read the words. Clarify any questions about the words.
2. Ask each pair to group their content words.
3. Ask each pair to explain to the group why they grouped the words the way they did. Encourage them to use complete sentences. "We grouped these words because ..." "We think these words belong together because ..." "These words are similar because ..."
4. Now ask the students to label their groups. *Which word or sentence best describes why words were grouped together?*
5. Develop a content dictionary.
 - Ask the students to draw a picture of each word on the other side of the card. They can also write a sentence that explains what the word means.
 - The cards can be placed on a ring and content words from other texts can be added.

Ideas for revisiting the text

1. Review and check

- Listen as the students reread the text.
- Monitor their ability to read fluently.
- Skim the book. Discuss the non-fiction features such as headings, boxed summaries, bullet points, captions, graphs, diagrams. *How do they help us understand the text better?*

2. Stop and learn

a. Decoding/word attack activities

BLM – Using compound words

Have the students finish the sentences by choosing a word to complete the compound word. They can also join words to make compound words.

- Multisyllabic words – have the students clap the beat of a word to count the number of syllables and see where they break. Begin by using their names, for example, Car/los or Pam/e/la. Write these on the board and explain how to place a line where they clap.
- Divide the following words by placing a line between each syllable: energy, computer, natural, resources, electricity, population, carefully, pollution, environment.

b. Comprehension activity

BLM – Using evidence to support the main idea

The students can reread pages 3 to 5. They can then explain one main idea from the "Now you know" box on page 5 by writing and drawing four things they did today to use energy.

c. Writing activities

Choose from the following ideas:

- Have the students make a "Being an Energy Expert" poster so that other people can learn how to save energy. They can use the information from the book.
- Have the students draw a T-chart and list the easy and hard things about being an energy expert. They can think of at least four reasons for each.

Being an Energy Expert

What's easy about it?

What's hard about it?

- Ask the students to imagine that there are no more energy resources. *The world has run out. What would life be like?*

3. Suggestions for further activities

- Make a classroom library of books about energy resources.
- Search for the answers to any unanswered questions using a library or the Internet.