



About the Book

Text Type: Nonfiction/Informational Page Count: 24 Word Count: 1,631

Book Summary

Readers learn about Earth's most necessary star, the Sun. This informative book explains where the Sun gets its energy, how long it will last, what will happen to Earth when the Sun dies, and what scientists are doing to better understand this magnificent power source. Two science experiments are included for students to try on their own. Photos and diagrams support the text.

About the Lesson

Targeted Reading Strategy

- Visualize

Objectives

- Use the reading strategy of visualizing to understand informational text
- Identify cause-and-effect relationships in text
- Understand how to read symbols within numbers
- Recognize adjectives used in text

Materials

Green text indicates resources available on the website

- Book—*The Sun* (copy for each student)
- Chalkboard or dry erase board
- Cause and effect, symbols, adjectives worksheets
- Discussion cards



Indicates an opportunity for students to mark in the book. (All activities may be demonstrated by projecting book on interactive whiteboard or completed with paper and pencil if books are reused.)

Vocabulary

- Content words:

Story critical: *fusion (n.), hydrogen (n.), radiant energy (n.), radiation (n.), solar flare (n.), sunspot (n.)*

Enrichment: *matter (n.), orbits (n.), solar cells (n.), solar system (n.), thermonuclear reaction (n.), ultraviolet waves (n.)*

Before Reading

Build Background

- Ask students to tell what they know about the Sun. Ask if anyone knows how far the Sun is from Earth.
- Ask students to close their eyes and visualize, or picture, 1.3 million Earths fitting inside the Sun. Ask them to share what they see.

Preview the Book

Introduce the Book

- Give students a copy of the book and have them preview the front and back covers and read the title. Have students discuss what they see on the covers and offer ideas as to what kind of book this is and what it might be about.

Introduce the Reading Strategy: **Visualize**

- Tell students that one strategy readers use to understand what they are reading is to make pictures in their minds as they read. Visualizing, or making mental pictures, helps readers remember what they are reading.
- Model how to visualize.
Think-aloud: Whenever I read a book, I always pause after several pages to create a picture in my mind of what the author is describing. This helps me keep track of the important information, and it also helps me make sure I understand the ideas in the book. I know that good readers always do this when they read, so I am going to try to visualize as I read this book.
- Have students look at the glossary and index at the back of the book. Point out that in both resources, the words are listed in alphabetical order and include page numbers after them to tell readers where to go to find more information. Ask what pages tell about the galaxy (pages 4 and 6). Ask a volunteer to tell the difference between a glossary and an index (a glossary provides a definition for each word).
- Invite students to preview the rest of the book by looking at the photos and diagrams.

Introduce the Vocabulary

- Remind students of the strategies they can use to work out words they don't know. For example, they can use what they know about letter and sound correspondence to figure out a word. They can look for base words, prefixes, and suffixes. They can use the context to work out meanings of unfamiliar words.
- Model how to apply word-attack strategies. Direct students to page 8. Have them find the word *fusion*. Model how they can use context clues to figure out the meaning of the unfamiliar word. Explain that the sentences before the unfamiliar word describe a thermonuclear reaction of hydrogen and helium atoms. The sentence containing the unfamiliar word explains that the process is called *fusion*. The diagram on that page shows the atoms combining together to create an energy release. Tell students that these clues make you think that the word *fusion* means a *blending of atoms* that results in the release of energy. Have students follow along as you reread the sentence on the page to confirm the meaning of the word.
- Remind students that they should always check whether a word makes sense by rereading it in the sentence.

Set the Purpose

- Have students read the book to find out more about the Sun. Remind students to stop and visualize as they read to help them remember and understand what they're reading.

During Reading

Student Reading

- **Guide the reading:** Have students read to the end of page 9. Ask them if they stopped to visualize, or create a picture in their mind, of any of the images the author described in the book.
- **Think-aloud:** *When I read about how life on Earth couldn't survive without the Sun, I paused to picture in my mind how that would look. I envisioned what it would look like if Earth were completely dark, with no Sun to illuminate it or heat its surface and inhabitants. I envisioned Earth's lakes and oceans freezing.*
- Have students share pictures they visualized in their minds while reading.



Have students make a question mark in their book beside any word they do not understand or cannot pronounce. Encourage them to use the strategies they have learned to read each word and figure out its meaning.

After Reading

- Ask students what words, if any, they marked in their book. Use this opportunity to model how they can read these words using decoding strategies and context clues.

Reflect on the Reading Strategy

- Have students share any other questions they had while they were reading. Ask how using the strategy of visualization helped them understand and remember what they read.
- Think-aloud:** *When I read about solar furnaces, I paused to picture in my mind a collection of curved mirrors designed to attract sunlight. I envisioned the concentrated area attracting and reflecting an almost blinding display of bright light, and heat waves dancing off the surface. This helped me to understand what I had read and to remember that part of the book.*

Teach the Comprehension Skill: Cause and effect

- Discussion:** Discuss cause-and-effect relationships. Explain that a *cause* is an event that makes something happen, and the *effect* is what happens because of, or as a result of, the event. For example, if the temperature drops below 32 degrees Fahrenheit, a puddle will freeze. The freezing temperature is the *cause*, and the frozen puddle is the *effect* (or the result) of the freezing temperature.
- Introduce and model:** To illustrate a cause-and-effect relationship from the text, have students turn to page 8. Ask them to tell the cause of the thermonuclear reaction (hydrogen and helium atoms combining). Ask them to tell the effect of the reaction (a release of energy).
- Check for understanding:** Have students review the text to find the cause of a solar flare (solar activity) and the effect of the activity (large loops of energy shooting high above the Sun's surface). Allow time for students to share their findings.
- Independent practice:** Have students practice identifying cause-and-effect relationships by completing the [cause-and-effect worksheet](#). When they have finished, have students discuss their work and explain their answers with references to the text.
- Extend the discussion:** Ask students what they thought of *The Sun*. Ask if they think that the world should invest in additional scientific studies to learn more about harnessing the Sun's energy. Invite them to share their ideas.

Build Skills

Grammar and Mechanics: Symbols within numbers

- Direct students to the first sentence on page 7. Ask them to find the numbers or words that give the measurement of time (*4.5 billion years*). Review or explain that when reading these numbers aloud, the decimal is read as *point*. Ask students why they think the author spelled out the word *billion* instead of writing the zeros. Practice saying the number with the class: *four point five billion*.
- Ask students to turn to page 8. Direct them to the diagram at the top of the page and ask them to find the numbers that give the amounts of helium and hydrogen (*30% and 70%*). Review or explain that when reading these numbers aloud, the symbol is read as *percent*. Practice reading the numbers and symbols: *thirty percent, seventy percent*.
- Direct students to the *Do You Know?* section at the bottom of page 8. Ask them to find the numbers that identify a temperature (*6,000 °C, 11,000 °F*). Review or explain that when reading these numbers aloud, the ° is read as *degrees*. Point out that the C stands for *Celsius* and the F stands for *Fahrenheit*. Practice reading the numbers and symbols: *six-thousand degrees Celsius, eleven-thousand degrees Fahrenheit*.

- **Check for understanding:** Write the following on the board and ask volunteers to read them aloud:

4.5
95%
500 °F
7.0
9,500 °C
20%

- **Independent practice:** Give students the [symbols worksheet](#). Discuss answers aloud when everyone has completed their work independently.

Word Work: **Adjectives**

- Review or explain that *adjectives* are words that describe nouns or pronouns. An adjective tells which one, how many, or what kind.
- Write the following sentences on the board. Ask students to count the number of adjectives in each sentence. After you read each sentence aloud, have students hold up the same number of fingers as there are adjectives in the sentence (2, 1).
The biggest stars are the red giants.
It is a huge collection of stars.
- Have individual students come to the board and circle the adjective(s) in each sentence (*biggest, red, huge*). Then have them underline the noun that each adjective describes (*stars, giants, collection*). Point out that the first sentence contains two different nouns that are being described.
- ✍ Have students use the inside back cover of their book to write *adjective* along with the definition of the term (a word describing a noun or pronoun that tells which one, how many, or what kind) to help them remember the terminology.
- ✍ **Check for understanding:** Have students work in pairs to go through the book and underline all of the adjectives they find. Discuss the results as a group, identifying the noun that each adjective describes.
- **Independent practice:** Have students complete the [adjectives worksheet](#). Discuss the adjectives as a group once everyone has finished.

Build Fluency

Independent Reading

- Allow students to read their book independently. Additionally, partners can take turns reading parts of the book to each other.

Home Connection

- Give students their book to take home to read with parents, caregivers, siblings, or friends.

Extend the Reading

Writing Connection

Provide print and Internet resources for students to research our solar system and the Milky Way galaxy. Have them find information about the size, age, and other interesting characteristics of our solar system and the Milky Way. Have students write a research paper that includes at least five facts not covered in *The Sun*.

Visit [Writing A-Z](#) for a lesson and leveled materials on expository writing.

Science Connection

Provide materials for students to complete the scientific experiments outlined in the text on pages 15 and 19.

Skill Review

Discussion cards covering comprehension skills and strategies not explicitly taught with the book are provided as an extension activity. The following is a list of some ways these cards can be used with students:

- Use as discussion starters for literature circles.
- Have students choose one or more cards and write a response, either as an essay or as a journal entry.
- Distribute before reading the book and have students use one of the questions as a purpose for reading.
- Cut apart and use the cards as game cards with a board game.
- Conduct a class discussion as a review before the book quiz.

Assessment

Monitor students to determine if they can:

- confidently use the reading strategy of visualizing to better comprehend and remember nonfiction text
- accurately recognize and explain cause-and-effect relationships
- understand and read symbols within numbers
- recognize adjectives used in the text

Comprehension Checks

- **Book Quiz**
- **Retelling Rubric**