

CONNECT TO LITERACY

Discuss the Text

NGSS.5-ESS1-1, NGSS.5-ESS1-2, CCSS.ELA-Literacy.RI.3.1, CCSS.ELA-Literacy.RI.3.2

Have students focus on these questions about the text:

- **Hypothesize** *Why do you think you can't see the stars in the daytime? Are they still there, or not? Explain your ideas, then tell how you could use a model to demonstrate.* (Accept reasonable responses. Students should explain that the stars are still there, but they are not visible when the sun is out because the sun is so much brighter. A demonstration could include a small light, like a tiny flashlight, and a larger one, like the classroom lights. With the big light off, you can easily see the light from the flashlight, but turning the big light on drowns out the smaller light.)
- **Create** *Imagine that you are creating a model of how Earth moves to produce day and night. What objects might you use to represent Earth and the sun?* (Students might use objects such as a ball and a lamp.)
- **Design** *Design an investigation to compare the size of shadows at different times during the day. Use what you learned from the book to form a hypothesis, then test your hypothesis with an experiment.* (Students can design and perform an investigation that measures the length of shadows in the morning, at noon, and in the afternoon.)

Provide Prompts for Response

Offer prompts that allow students to explore the text:

- Find objects that you think will produce a shadow and some that you think will not produce a shadow. Test your objects to see if your predictions were right.
- Make a poster about ways people can stay safe in the sun.
- Tell which ideas were new to you. What questions do you still have about day and night?
- Review the book. Give it a rating between one and four stars and explain why it earned that rating.

Connect with Writing: Informational Text

CCSS.ELA-Literacy.W.3.2a, W.3.2b, W.3.2c, W.3.2d

Introduce the Text Type and Assignment *Say: An explanatory or informational text helps us learn more about real objects, people, and places. Many times, informational texts answer questions about real events in history or about natural processes. While I was reading this text, I had a lot of questions about day and night. I wanted to find out more about day and night to answer my questions. Today, you'll use a question you have about the ideas in the book to choose a topic to research further.*

Review Features Review the features of informational text and be sure to display these features for students' reference:

- an introduction that captures attention and focuses readers on the topic
- facts, definitions, and examples

- technical terms and vocabulary
- text features to help readers keep track of information
- a strong ending that provides closure

Model the Writing Model the writing process as you begin a text that answers a question about why the sun is lower in the sky in winter than in summer: *I chose to find out more about why the sun is lower in the sky in winter than it is in the summer. Watch as I begin my model by introducing my topic in an interesting way:*

.....
Brrrr—It's cold out, and the snow sparkles on the ground. The sun rises, but by noon, when it is at its highest point, it still looks low in the sky. This is just one of the many differences between winter and summer.
.....

Notice that I started with a description that of what winter looks like, a vision that readers can visualize. Model one more paragraph of the text, explaining that the movement of Earth in space causes some of the patterns we can observe in nature, such as day and night and the seasons.

Support Writers Display your model as students begin writing. Remind them that their writing should include facts, scientific explanations, concrete details, and content-specific vocabulary. Support them as they create text features to add to their writing, such as diagrams, illustrations, and so on.

Revise and Edit Show students how to revise and edit for specific points, such as:

- Precise content vocabulary
- Spelling, punctuation, and capitalization
- Sentence variety
- Vivid verbs and enticing adjectives
- Factual information

Share and Reflect Allow time for students to share their work with an authentic audience. Then ask questions to guide self-reflection:

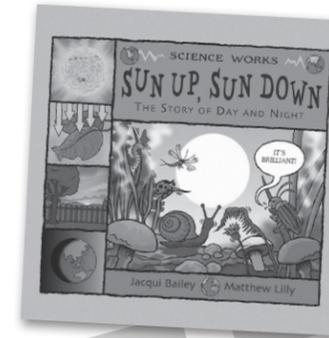
- What question did your text answer?
- What features did you include in your writing?
- What facts did you include? How did you verify those facts?
- What tips would you give a friend for explanatory writing?

Connecting Literacy and Content

Sun Up, Sun Down

Level Q
Earth Science

Content: The importance of the sun to life on Earth, the pattern of day and night, the cause of this day-and-night pattern, the movement of Earth in space, the moon's movement in space, the sun as a star



Objectives

Students will:

- describe what causes the repeating pattern of day and night.
- interpret a text feature: sequence diagram.
- determine causes of natural events.
- do a close reading to answer questions about content.
- define and use academic vocabulary related to day and night.
- use affixes to determine meanings of words.
- read grade-level prose with understanding.
- write to answer a question about an idea in the book.

CONNECT TO SCIENCE

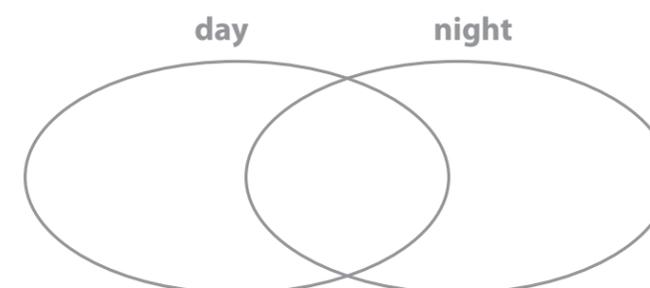
Build Content Background

Engage Students

Ask a volunteer to draw a picture of daytime on the board or chart paper. Have another volunteer draw a picture of nighttime. Say: *What parts of each picture show that it is daytime or nighttime?* (Students may name activities in the pictures, such as sleeping, or objects in the sky, such as sun and moon.) As students suggest these things, label them with words such as *sun, moon, stars, sleep, play*, and so on.

Use a Graphic Organizer

Draw a Venn diagram on the board and write the words *day* and *night* over the two circles. Explain: *We use Venn diagrams to compare and contrast, or tell how things are alike and different. In our pictures, we showed some ways that day and night look different and ways that our activities are different in daytime and nighttime. I'll write some of these things in the Venn diagram.* Model writing differences in the diagram. Have students pair up. Give each pair a sticky note on which to write something about daytime, nighttime, or both. They can place their sticky notes on the chart. After reading, return to the graphic organizer so that students can add ways day and night are the same and different.



Introduce the Content

Preview Day and Night

Give each student a copy of the text and explain: *This book is about the pattern of day and night. Patterns in nature are cycles of repeated events, like high tide and low tide or the seasons. Take a look at the cover. How do you think these pictures relate to the topic of day and night?* (During the day, the sun is in the sky. The leaves show that the sun and daytime are important to plants. The Earth is shown partly in day and partly in night) Have students thumb through the book. *What else do you think you will learn?* Allow a few moments for students to turn and talk to share their predictions.

Preview Academic Vocabulary

CCSS.ELA-Literacy.RI.3.4

Give each student 5 index cards. Turn to p. 8. Read aloud the main text through ...lines called rays. Say: *As I was reading, I noticed that the text defines an important term for me. It says that a ray is a beam of light that is like a line. I'm going to write the word ray on an index card, and its definition, a line or beam of light, on the other side.* Have partners continue to read the text, pausing to write down important terms (such as *atmosphere, X-rays, ultraviolet light, and orbit*) on their cards, with a definition, either from the text or from a dictionary, written on the opposite side. Students may need additional cards.

CONNECT TO SCIENCE

Discuss Text Features

CCSS.ELA-Literacy.RI.3.5

Say: *Text features add to our understanding of the words on the page. The author of this text uses sequence diagrams to help us understand main ideas in the book. Examine the diagram on p. 15. Point out that this diagram shows how the sun seems to move in the sky and how that affects shadows. Note that the steps in the sequence are numbered to show the order. The text in each box explains what is happening in the illustration. Have students work in pairs to examine the diagram on p. 20. What features does the diagram have? What does it tell readers about day and night?*

Focus on the Content

NGSS.5-ESS1-1, NGSS.5-ESS1-2,

As you focus on the text, ask questions that require students to use varying depths of knowledge. Model how to determine the answer to a question before you pose additional questions. (A model is shown for the first question.)

- **Identify** (pp. 8–9) *Identify at least three things that happen when the sun rises.* (Possible responses: It gets light out; it gets warmer; damp grass dries; plants lift up their leaves and soak up the sun’s rays; insects come out into the sunlight and eat; people and animals wake up; people and animals eat breakfast.)

Model *This question is asking me to identify, or name, different things that typically happen when the sun rises. As I look at page 8, I can see right away that the sun is shining, so I know it gets light outside. The text tells me that it warms up, too. The text near the picture of grass explains that the grass dries.*

Collaborate *I see another picture on page 8—it looks like the leaves of a plant. Partners, read together. Read to find out what plants do at sunrise.*

Provide independent practice *I also see insects, animals, and people on page 9. What happens to them when the sun rises? Direct students to the text on p. 9 to identify more events that occur at sunrise.*

Summarize *We’ve listed so many things that happen when the sun comes up each day! Life certainly does get busier when the day begins!*

- **Infer** (p. 10) *Use the text on page 10 to infer why people depend on the sun for food.* (People need both plants and animals to provide food to eat. Since plants need sunlight to grow, people depend on the sun for the plants they eat. Since animals that provide food for people also eat plants

(or other animals), people depend on the sun for their animal-based foods as well.)

- **Compare** (p. 13) *How are the atmosphere and sunscreen alike? How are they different?* (Both block some of the Sun’s harmful rays. However, the atmosphere is a layer of gases that blocks the Sun’s rays from all of Earth, while sunscreen is a lotion or spray that people put on to just block the Sun’s rays from their skin.)
- **Cause and Effect** (pp. 14–16) *What causes shadows? What causes shadows to change size?* (Shadows are caused by objects that block light rays. Since the light can’t go through the object, a shadow appears on the opposite of the object from the light source. Changes to shadows occur because the light source moves, or appears to move, as when the sun appears to move across the sky.)
- **Describe** (pp. 18–22) *Describe two ways that Earth moves.* (Earth spins around like a giant top. It also goes around, or orbits, the Sun.)
- **Synthesize** (pp. 24–25) *The text says that stars are “gigantic, glowing, scorchingly hot” suns like our sun. If that is true, explain why the sun looks so big in the sky compared to the stars.* (The sun is far away—millions of miles—but not nearly as far away as the stars, which are billions and billions of miles away. Things that are nearer look bigger, even if they are really the same size.)

Discuss Concepts

Ask:

- *Does the sun really move across the sky? If not, what causes it to look like it moves?* (No, it is Earth that moves, not the sun. As Earth rotates, different sides turn toward the sun. To a person on Earth, this makes it look like the sun is shining.)
- *Why is the distance between the sun and Earth important?* (Students should explain that the distance allows Earth to be just the right temperature for life. If the sun were closer, Earth would be far too hot for life to exist. If it were farther away, it would be way too cold for life to exist.)
- *What causes the pattern of day and night?* (The way that Earth moves in space—spinning like a top—means that the part facing the sun changes. When a side faces the sun, it is daytime there. When a side faces away from the sun, it is nighttime there.)

Apply Concepts Have students work together in pairs or small groups to complete the activity on pp. 28–29 of the book. Find a sunny place to test the sundials, and have students make a plan to compare the time on their sundials to the time on the clock. Have students share their thoughts on how the two methods of telling time compare, and discuss why sundials can’t be used to tell time on overcast days, at night, or in the shade.

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Determining Cause and Effect

CCSS.ELA-Literacy.RI.3.3

Introduce the Strategy Say: *Writers often explain causes and their effects. A cause is why something happens. An effect is what happens as a result of the cause. This book tells us what causes day and night.*

Model Create a cause and effect graphic organizer by drawing two boxes with an arrow between them. Focus on p. 18: *I want to show what causes nighttime. I read that when a part of earth is turned away from the sun, it is nighttime. I’ll write turning away from the sun in the cause box. I’ll write nighttime in the effect box. Model how to write these words in the graphic organizer.*



Guide Practice Have students work in pairs to find three more causes and effects. Help them complete cause and effect graphic organizers on the board or in their notebooks.

Close Reading

CCSS.ELA-Literacy.RI.3.1

Introduce the Strategy Say: *When we need to answer a question about the text, we need to base our answer on what we read, not just on our own ideas. We have to look at the text and do a close reading. That means that we go back to the text to find our answers.*

Model Model with the **Cause and Effect** question: *The question asks me to explain what causes shadows and what causes shadows to change size. Watch as I take a close look at the text to answer the question. Page 14 explains that shadows appear when light rays can’t go through some materials, like stone or wood. I am marking this with a highlighter to remember it. Now notice as I go to the next page that the author uses specific details to help me answer this question. I am highlighting low in the sky, sun climbs higher, and at its highest. These words tell me that the shadows change when the sun is at different positions in the sky.*

Guide Practice Provide copies of p. 13 along with highlighters. Have students highlight textual evidence to answer the **Compare** question.

Focus on Fluency

CCSS.ELA-Literacy.RF.3.4a

Model Fluent Reading Say: *Sometimes when we are reading, we are concentrating so hard on identifying the words that we forget to think about what they mean. But it is important to understand what we read, too. Choose a volunteer to model reading with a partner. Demonstrate pausing periodically to discuss ideas with a partner. Read p. 16 aloud while your partner reads with you. Then share your ideas. I think this part of the book is talking about how the sun moves in the sky as it gets closer to sunset. What do you think, partner? Model listening respectfully while your partner shares his or her ideas.*

Guide Practice Choose another passage from the book for students to practice fluent reading. Have students pair up and take turns reading the passage to each other, then discuss ideas. Circulate and offer assistance as needed.

Study Words

CCSS.ELA-Literacy.L.3.4b

Introduce the Strategy Say: *Affixes are small word parts that we can add to words to change their meanings. Prefixes are added to the beginning of words. Suffixes are added to the ends of words. For example, the suffix -est can be added to the word fast to form fastest, which means something that is faster than any other.*

Practice the Strategy Focus on the word *lifeless* from p. 21 in the text. Write the word on the board or chart paper, pointing out that *life* is the base word. Have students identify the suffix (-less). *How does the suffix change the meaning of the word life?* (The suffix makes the root word have the opposite meaning.) What other words can students name with the affix -less? (painless, effortless, fruitless, tasteless, sleepless)