

### Look Up!

Located at the center of our solar system, the sun is the source of tremendous energy, light, and warmth for Earth. This issue of CLICK magazine explores the glowing ball that provides our planet with life.

#### CONVERSATION QUESTION

What do we know about the sun?

#### **TEACHING OBJECTIVES**

- Students will learn basic information about the sun and the moon.
- Students will learn about features of the Cincinnati Observatory.
- Students will learn how solar and lunar eclipses occur.
- Students will classify information.
- Students will obtain information from a nonfiction text.
- Students will examine cause-and-effect relationships.
- Students will practice using the interview format to express information.
- Students will create models to represent the phases of the moon.
- Students will locate their state and determine how it will be impacted by the path of the upcoming eclipse.



In addition to supplemental materials focused on core STEM skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and crosscurricular activities.

#### SELECTIONS

- Hello, Sunshine! Realistic Fiction Dialogue
- A Visit to the Cincinnati Observatory Nonfiction Interview
- What's an Eclipse? Realistic Fiction

#### Hello, Sunshine!

#### pp. 7–9, Realistic Fiction Dialogue

A fictional conversation between a boy and the sun serves as an introduction to astronomy. This reader-friendly article includes information about the sun and the moon.



# RESOURCES

Classifying Information: Says the Sun

#### **OBJECTIVES**

- Students will learn basic information about the sun and the moon.
- Students will classify information.
- Students will practice using the interview format to express information.

## KEY VOCABULARY

- *brilliant* (p. 7) shining brightly; sparkling
- phase (p. 9) the portion of the moon that we can see from Earth on any given night

## ENGAGE

Conversation Question: What do we know about the sun?

Introduce the title of the article, "Hello, Sunshine!" and ask students how that phrase makes them feel. Include music and movement by having them sing and move along to "You Are My Sunshine" or the more contemporary "Walking on Sunshine" by Katrina and the Waves. Then have the students share comments and questions that they would ask the sun if they could. Inform them that the article they will be reading is about a little boy who got the opportunity to do just that. Distribute the article and have students underline new facts as they read.

# INTRODUCE VOCABULARY

Remind students that *homonyms* are words that sound the same but are different in spelling or meaning. (Examples: *bark* meaning the sound a dog makes or the covering on the trunk of a tree; *eight* referring to the number and *ate* as the past tense of *eat*). Post the vocabulary words (**brilliant, phase**) and their definitions. Tell the class that both of the words are homonyms. Discuss the given definitions as they pertain to the article, and then have students share other meanings/spellings.

# READ & DISCUSS

Reinforce comprehension of the details in the article by using the following prompts to direct discussion.

- 1. What would happen if there was no sun?
- 2. Why does the sun look so much brighter than the other stars?
- 3. How does the sun make the moon appear bright?
- 4. Why does the moon appear to change shape from night to night?
- 5. How long does it take for the moon to circle around Earth?

# SKILL FOCUS: Classifying Information

**INSTRUCT:** Ask students what kinds of information are included in the article. Review the dialogue with the class, emphasizing facts that were presented. Distribute the graphic organizer, *Says the Sun*, and tell students that they will be using information from the article to place each fact in the correct column of the chart.

**ASSESS:** Circulate as students are working. Have students place the facts in the correct columns, and then glue them down after you have given them a thumbs-up. Challenge them to add an additional fact.

## EXTEND

Language Arts: "Hello, Sunshine!" uses the first-person perspective to give readers information from the point of view of the sun. Practicing the interview format helps students acquire many skills—active listening, appropriate responses, focusing, and how to develop different kinds of questions. Have students work in pairs, with one student being the interviewer, and one being the moon, to create a brief informational interview about the moon. Have volunteers present their interviews to the class.

# Says the Sun

**Classifying Information** Cut out the describing sentences in the boxes at the bottom of the paper and place them correctly on the sorting mat below. Return to the article to help you decide.

SUN	MOON 🌜

Cut and place in the correct column.

Its fiery power gives the world light, heat, and energy.	It is always circling around Earth.	It looks like it has different shapes, called phases.
It is actually a dusty, ball- shaped rock.	It's the closest star to Earth.	Without it, Earth would be too cold and dark for people, plants, and animals to live.

# A Visit to the Cincinnati

#### Observatory

#### pp. 12–16, Nonfiction Interview

Take a journey to where the oldest telescope in the United States is housed—the Cincinnati Observatory in Ohio. Readers learn how scientists rely on devices constructed of metal, lenses, and mirrors to view the wonders of the universe.



### RESOURCES

Obtain Information: Looking Upward

#### OBJECTIVES

- Students will learn about features of the Cincinnati Observatory.
- Students will obtain information from a nonfiction text.
- Students will create models to represent the phases of the moon.

## **KEY VOCABULARY**

- telescope (p. 12) a tool that astronomers use to make faraway objects appear larger and brighter
- *lens* (p. 15) a thin, curved piece of glass or plastic used in certain devices that bend light to make objects look bigger or smaller than they are
- *dome* (p. 16) a large, rounded roof or ceiling shaped like half of a ball

# ENGAGE

Conversation Question: What do we know about the sun?

Take the class on a virtual field trip by showing students a video tour of the Cincinnati Observatory, available online. Distribute the article, "A Visit to the Cincinnati Observatory," have students take a picture walk through the pages and point out the instruments that they saw in the video. Instruct students to discuss what they have learned so far about the instruments, and what they hope to learn from the article.

#### INTRODUCE VOCABULARY

Post and discuss the vocabulary terms with the class. Be sure that they understand what each object looks like by showing them the drawings throughout the article or online resources. Then, have them fold a piece of paper into quarters and label three of the boxes with the key words and make a visual representation of each. After reading the article, they will use the remaining box to illustrate an additional theme-related word from the text.

# READ & DISCUSS

As a post-reading activity, lead a discussion based on the following questions.

- 1. What is a solar eclipse?
- 2. Why do the sun and moon look about the same size in the sky, even though the sun is much larger than the moon?
- 3. What activities can you take part in at the Cincinnati Observatory?
- 4. How old are the two big telescopes at the observatory?
- 5. What can be viewed through the telescopes at the observatory?

#### SKILL FOCUS: Obtain Information

**INSTRUCT:** This article presents the reader with detailed information about the instruments, projects, and visitor activities at the Cincinnati Observatory. Present the graphic organizer, *Looking Upward*, and tell students that they will be reviewing the article and highlighting sentences that answer *what*, *why*, *how*, and *where* questions presented. Answers will be recorded on the worksheet.

**ASSESS:** Reconvene and discuss answers. Ask: What is the best part of Natalia's job? Why?

#### EXTEND

**Astronomy:** One of the things that Natalia Tooley teaches visitors about is the moon. Teach the class more about the moon phases using the following activity: Students will need eight Oreo cookies and a popsicle stick for scraping as they create Oreo cookie moon phases. Have students twist open an Oreo cookie...the side with the icing circle is the full moon, and the dark wafer cookie with no icing is the new moon. Display a visual of the moon phases and explain. Students will make all of the moon phases as discussed: gibbous, crescent, half-moon, full moon, and new moon. If there are no food allergies, when students have completed the activity, allow them to eat the moon phases!

# **Looking Upward**

**Obtain Information** Gather information from the text that answers **what**, **where**, **why**, and **how** questions below. (The "**who**" is Natalia Tooley, Observatory Specialist.)



## What's an Eclipse?

#### pp. 28–32, Realistic Fiction

An eclipse happens when one object in space blocks another from view. Simple illustrations and text help young students understand these awesome celestial events.



# RESOURCES

Cause and Effect: Spectacular Skies

### OBJECTIVES

- Students will learn how solar and lunar eclipses occur.
- Students will examine cause-andeffect relationships.
- Students will locate their state and determine how it will be impacted by the path of the upcoming eclipse.

# KEY VOCABULARY

- orbit (p. 23) the curved path that is followed by an object in space going around and around a planet, moon, or star
- surrounded (p. 24) enclosed on all sides; positioned everywhere around something

## ENGAGE

Conversation Question: What do we know about the sun?

Young students may have limited knowledge pertaining to eclipses. Create a K-W-L chart (Know-Want to Know-Learned) to record students' prior knowledge about eclipses, as well as what they would like to know about this topic. Return to the chart after completion of the reading/activities and have students add details about what they have learned.

## INTRODUCE VOCABULARY

Post and discuss the two vocabulary words and definitions. Have students stand up and "shake it out" using this kinesthetic activity. Allow students to form small groups, as necessary, to demonstrate meaning of the words. Give them the following directives, one at a time:

- As the sun is the center of our solar system, have one student in the group take the role of the sun. Other students can act as planets and asteroids **orbiting** the sun.
- Have students **surround** a willing classmate (no touching). When can it feel good to be surrounded and when can it feel bad?

# **READ & DISCUSS**

Post and discuss questions prior to reading the article aloud. Then reread the article, pausing when answers to the questions are revealed.

- 1. Why do eclipses occur?
- 2. When would you see a lunar eclipse?
- 3. How does a partial eclipse occur?
- 4. What happens to the sky during a total solar eclipse?
- 5. What is special about the path of the total solar eclipse occurring on April 8, 2024?

# SKILL FOCUS: Cause and Effect

**INSTRUCT:** Lead the students in a discussion that guides them to recognize the cause-and-effect relationships (relationships in which one event makes another event happen) that are presented in this article. Introduce the graphic organizer, *Spectacular Skies*, and advise students that they will be recording what causes solar and lunar eclipses. Young students may use words/pictures. Collect and review.

**ASSESS:** As a simple method for practicing cause and effect, have students join sentences using the word "because." **Example:** The plant died *because* it did not get any water.

# EXTEND

**Geography:** Study the map on page 26 and have students locate their state of residence. Determine what kind of view of the solar eclipse students can expect on April 8, 2024. Emphasize that it is NEVER safe to look directly at the sun, even for such spectacular events. If time allows, invite parent volunteers to class to help students make eclipse-viewing devices. There are many sites online with instructions on how to create a safe eclipse viewer using simple materials.

# **Spectacular Skies**

**Cause and Effect** Work with a partner to explain the events that cause solar and lunar eclipses. You may use pictures and words to express your answers. *Hint:* Page 23 and page 25 will be helpful in showing the positions of the sun, moon, and Earth during each eclipse.



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