Read the short story and answer each question.

How Light Creates Shadows

Have you ever seen your shadow on a sunny day and wondered how it got there? Shadows are created when **light is blocked** by an object. Light travels in straight lines until it hits something solid. The light can't pass through, so it forms a dark shape behind the object. That dark shape is called a **shadow**.

The shape and size of a shadow depend on the **position of the light**. If the light is close, the shadow looks big. If the light is far away, the shadow looks smaller.

The **angle** of the light also matters. When the sun is low in the sky, shadows look long. When the sun is high overhead, shadows are short. This is why your shadow stretches far across the ground in the morning or evening but looks small at noon.

Light and shadows also help scientists learn about the size and shape of objects in space. For example, a **solar eclipse** happens when the Moon blocks the Sun's light and casts a shadow on Earth. This helps scientists study the movement of the Moon and Sun.

Light and shadows work together. Wherever there is light, there is a chance for a shadow.



# How Light Creates Shadows

- 1. What causes a shadow to form?
- A. Light is blocked by an object and creates a dark shape behind it.
- B. The object reflects too much sunlight.
- C. Shadows appear when the air temperature changes.
- D. The object glows in the dark and creates a copy of itself.

- 2. How does the position of the Sun affect the size of a shadow?
- A. When the Sun is low, shadows are longer; when it's high, shadows are shorter.
- B. The Sun's position has no effect on shadows.
- C. Shadows only happen when the Sun is directly overhead.
- D. Shadows become darker the closer the Sun is.

3. Fill in the blank:
A eclipse happens when the Moon blocks sunlight and casts a shadow on Earth.
4. Explain the relationship between light, an object, and the shadow it creates.
5. What does the passage say about how shadows help scientists learn about space?

### **Parent and Teacher Guide**

Guide Reading Level: S Lexile Level: 850L-1000L

Grade Level: 5th Grade, Beginning of the Year

**Genre**: Informational – Physical Science

### Introducing the Text

"This passage explains the cause-and-effect relationship between light, objects, and shadows. Students will examine how light behaves, how shadows are formed, and how these ideas help scientists study space. They'll learn how scientific concepts are connected and supported with evidence."

Vocabulary: shadow, block, light source, angle, solar eclipse

### **Before Reading Discussion Questions**

- 1. What do you think causes a shadow to appear?
- 2. Why might scientists study how light and shadows behave?
- 3. Have you ever noticed your shadow changing throughout the day?

### **During Reading Discussion Questions**

- 1. What does the text say about how the Sun's position affects shadows?
- 2. How does light travel, and what happens when it's blocked?
- 3. How is a solar eclipse an example of light and shadows in action?

### **After Reading Discussion Questions**

- 1. How are light and shadows related in this passage?
- What examples from the text show the connection between light and the natural world?
- 3. How can shadows teach us more about science and space?

## **Activity Idea**

Have students go outside at different times of the day to trace and measure their shadows. Then, write a short explanation (using the passage) about how the position of the Sun changed their shadow. They can compare results and discuss what they observed.

