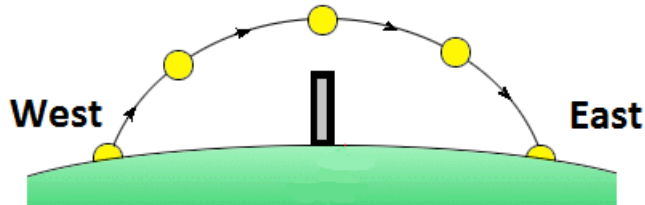


5th Grade Assessment

1.) Why is the sun so much easier for us to see than the other stars? _____

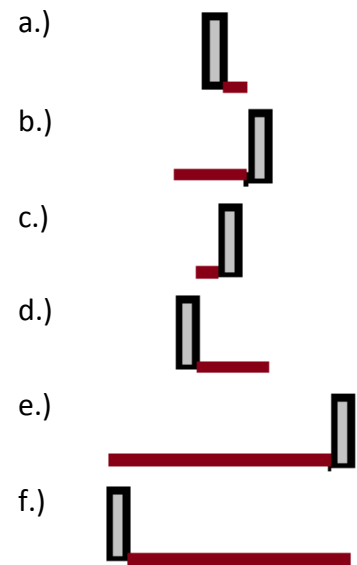
2.) Shadows



The sun rises in the east and sets in the west. Redraw the pictures of the shadows to the right in the order of morning to evening.

Morning → Afternoon → Evening

1 2 3 4 5 6



3.) Where Did the Sun Go?

Six friends were looking up at a dark, night sky filled with stars. They wondered where the Sun was. This is what they said:

Naomi: "I think dark clouds in the sky hide the Sun at night."

Travis: "I think the Sun is beneath the Earth during nighttime."

Cooper: "I think the Sun goes way up with the stars during the night."

Leila: "I think the Sun is on the other side of the Earth during the night."

Mayumi: "I think the Sun is on the other side of the Moon during the night."

Suzanne: "I think the Sun just stops shining at night."



Which friend do you agree with most? _____ Explain why you agree with that friend.

4.) Changing Constellations

Annie's class visited a planetarium, where they enjoyed a program called "Summer Constellations." During the program the instructor used her pointer to show the students how to find constellations in the summer sky. At the end of the program Annie asked if the instructor would point out Orion. The instructor said, "I can't do that because Orion isn't visible in the summer sky. Provide an explanation for why Orion is not visible in the summer sky."

NGSS Standards for 5th Grade Curriculum

<http://www.nextgenscience.org/5ss-space-systems-stars-solar-system>

Students who demonstrate understanding can:

- 5-ESS1-1.** Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth. [Assessment Boundary: Assessment is limited to relative distances, not sizes, of stars. Assessment does not include other factors that affect apparent brightness (such as stellar masses, age, stage).]
- 5-ESS1-2.** Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. [Clarification Statement: Examples of patterns could include the position and motion of Earth with respect to the sun and selected stars that are visible only in particular months.] [Assessment Boundary: Assessment does not include causes of seasons.]

Disciplinary Core Ideas

ESS1.A: The Universe and its Stars

- The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth. (5-ESS1-1)

ESS1.B: Earth and the Solar System

- The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year. (5-ESS1-2)

Science and Engineering Practices

Analyzing and Interpreting Data

Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used.

- Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. (5-ESS1-2)

Engaging in Argument from Evidence

Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).

- Support an argument with evidence, data, or a model. (5-PS2-1),(5-ESS1-1)

Crosscutting Concepts

Patterns

- Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena. (5-ESS1-2)

Cause and Effect

- Cause and effect relationships are routinely identified and used to explain change. (5-PS2-1)

Scale, Proportion, and Quantity

- Natural objects exist from the very small to the immensely large. (5-ESS1-1)