



Second Grade Curriculum Pacing Guide

Cross-cutting Concepts: Patterns, Cause and Effect, Scale, Proportion, and Quantity

Topics: Stars, Sun, Moon

Estimated Time Instructional Segment: 12 Weeks

Anchoring Phenomenon	GSE	Instructional Segment	Disciplinary Core Ideas	Science and Engineering Practices	Instructional Notes
<p>Pictures of various shadows; examples are in: Shadow Pictures Presentation or Shadow Pictures Handout</p>	<p>S2E1. a, b S2E2. a, b, c, d</p>	<p>Patterns in Day and Night</p>	<p>Frameworks of K-12 Science Education: <i>By the end of grade 2</i> PS3B: Conservation of Energy and Energy Transfer</p> <ul style="list-style-type: none"> ● Sunlight warms Earth’s surface. <p>ESS1A: The Universe and its Stars</p> <ul style="list-style-type: none"> ● Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. <p>ESS1B: Earth and the Solar System</p> <ul style="list-style-type: none"> ● Seasonal patterns of sunrise and sunset can be observed, described, and predicted. <p>ESS1C: The History of Planet Earth</p> <ul style="list-style-type: none"> ● Some events on Earth occur in cycles, like day and night. 	<ul style="list-style-type: none"> ● Planning and carrying out investigations ● Constructing explanations and designing solutions ● Obtaining, evaluating, and communicating information ● Asking questions and defining problems ● Developing and using models 	<p>Background The Sun is our nearest star, yet it is not the largest star. The sun is actually medium in size and brightness. Stars can be described by their physical attributes of size and brightness. The color of a star depends on its surface temperature. The sun appears to move in the daytime sky, yet the sun is not in motion. As the Earth rotates, it also revolves around the Sun. This is what causes the apparent movement of the sun in the sky. As the Earth orbits the sun, the moon orbits the Earth. The moon does not make its own light. It appears lit because the moon reflects light from the sun. The moon appears to change shape, but it doesn’t. The shapes we see are called moon phases. Shadows change in size and shape throughout the day. Shadows are longest in the early morning and late afternoon. Shadows are shortest at noon. The days are longer in the summer and shorter in the winter.</p>

					<p>As students explore the sun, students should be cautioned against looking directly at the sun.</p> <p>By the end of this unit, students are using the following language in their speaking and writing during EXPLAIN or ELABORATE.</p> <ul style="list-style-type: none"> ● size ● brightness ● star ● sun ● moon ● phases ● seasons ● day ● night ● daytime ● nighttime ● Spring ● Summer ● Fall ● Winter
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This instructional segment will connect to Causes and Effect of Matter. Students will connect changes in sun and moon cycles with changes in matter.