

WEEK 2 Lesson 1

Science and Engineering: Patterns in the Sky: What Makes Day and Night?

S & E Big Ideas	We can use observations to describe patterns that can be predicted. Day and night is a pattern that is created by the Sun on Earth. A pattern is something that follows a rule while repeating itself.
S & E Guiding Question	What makes day and night?
Content Objective	I can use observations to describe how the Sun and Earth follow a pattern. (1-ESS1-1)
Language Objective	I can discuss what I know about the Earth, Sun, Moon, and stars with my peers. (SL1.1)
Vocabulary	Sun: the star closest to Earth and at the center of our solar system Earth: the planet we live on Moon: a natural object that travels on a path around the Earth star: a big ball of burning gas pattern: something that follows a rule while repeating itself prior knowledge: what you already know about a topic or idea
Materials and Preparation	<ul style="list-style-type: none">● chart paper, 2 pages, and markers On one chart, create a KWL chart.● Day and Night Spinner, 1 copy for each child Create a model of the spinner.● scissors● brass fasteners, 1 per child● single hole punch● 1 globe or a ball● 1 flashlight● 1 large sticker or sticky note, to show where we live on the globe● Week 2 journal prompt 1, copied, cut apart, 1 for each child Prior to the lesson, glue the prompts to the children’s journals● Teacher Science Journal

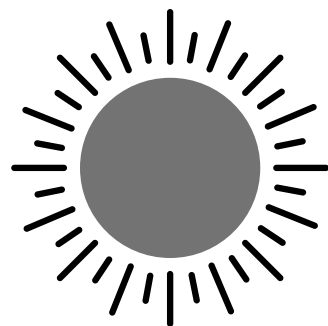
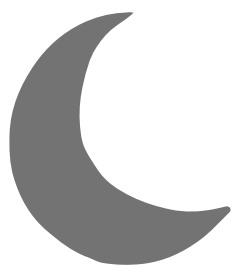
<p>Opening 7 minutes</p>	<p><i>Today, we will begin learning about patterns in the sky! Before we begin, let's think about what we already know about objects in the sky.</i></p> <p>Think-Pair-Share.</p> <p><i>What do you know about the Earth, Sun, Moon, and stars?</i></p> <p><i>Let's share out as a whole group. So, what do we know about the Earth, Sun, Moon, and stars?</i></p> <p>Record children's thoughts in the "Know" or "K" column of the KWL chart, even if inaccurate. Misconceptions are a natural part of learning and we are providing experiences that allow them to update their thinking. If children have questions, record them under the "wonderings", "W" column.</p> <p><i>This will help us as we start learning about patterns in the sky! If you have other thinking that we didn't record, don't worry. You'll be able to add your thinking to your science journals!</i></p>
<p>Demonstration 10 minutes</p>	<p><i>Now that we've recorded our thinking, we will learn why we have day and night. Let's start with a demonstration. Here, I have a globe, which shows the Earth.</i></p> <p>Use the sticker or sticky note to show the children's location on the globe. <i>This is where we live.</i></p> <p><i>I also have a flashlight, which we will use to show the Sun. When it is nighttime, do we see the Sun? [If children say yes, prompt them to think about how bright it is during the day, and that at night, we cannot see the Sun.]</i></p> <p><i>Now I need a volunteer to come up and be the Sun!</i></p> <p>Choose a child to come to the center of the circle.</p> <p><i>The Sun, which is a big star, does not move, so my volunteer needs to stay in one spot when shining its light. The Earth travels on a path around the Sun, so I will walk the globe slowly around my volunteer sun.</i></p> <p>Begin walking around the volunteer Sun.</p> <p><i>At the same time the Earth is traveling around the Sun, it is also spinning.</i></p> <p>Begin spinning the globe very slowly.</p> <p><i>Now, watch where we put the sticker. Remember, that's where we live.</i></p> <p>Spin and stop when the sticker is facing the flashlight.</p> <p><i>When we are facing the Sun, is the Sun shining on us? [Yes.] Do you think it's daytime or nighttime? That's right, it's daytime when the Sun is shining on us!</i></p>

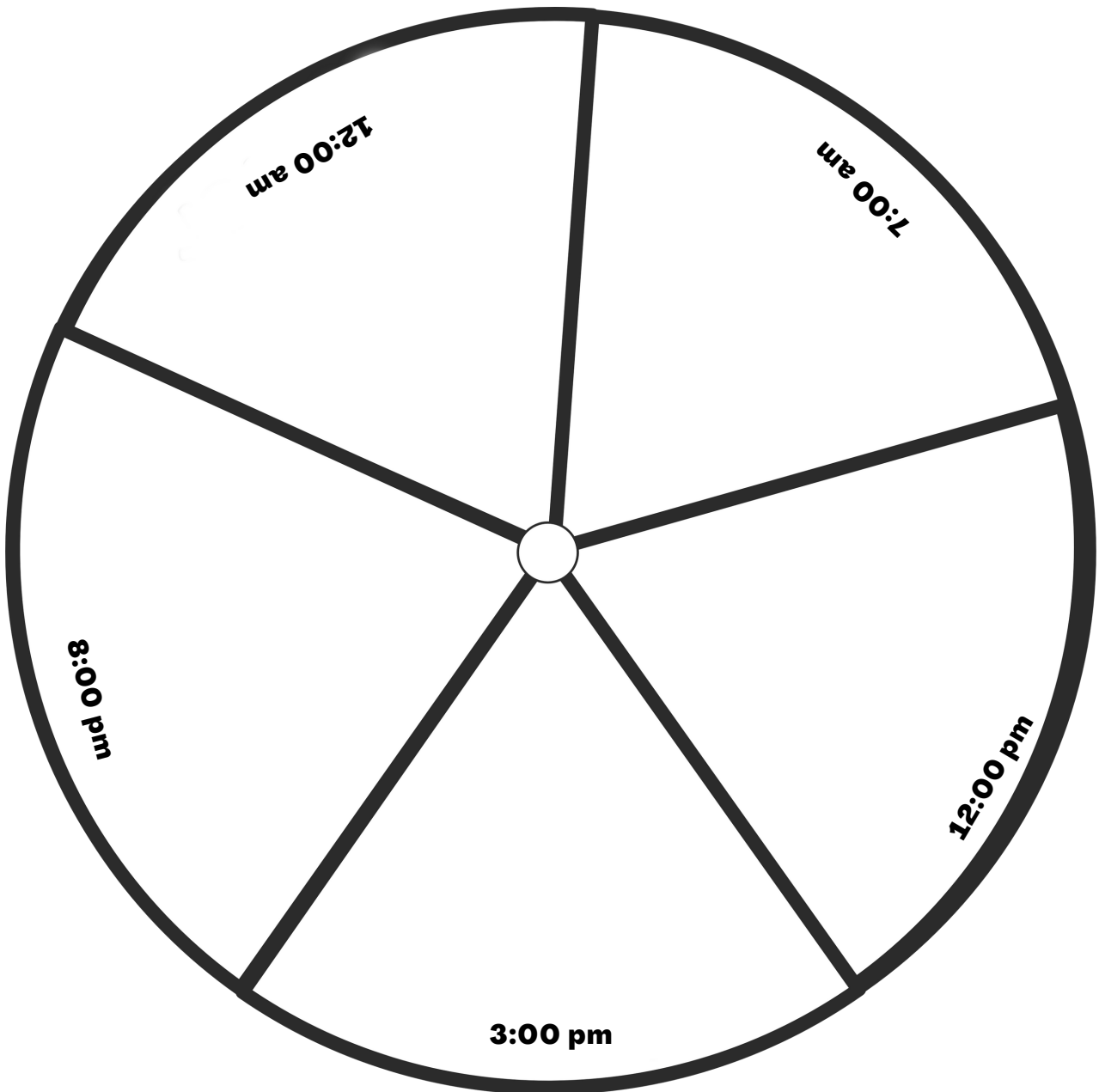
	<p>Spin and stop when the sticker is facing away from the flashlight. <i>When the Earth continues to spin and we are facing away from the Sun, is the Sun shining on us? [No.] So, do you think it's daytime or nighttime? That's right! It's nighttime when the Sun is not shining on us.</i></p> <p><i>I'm going to spin the globe around. I want you to watch the sticker. When the flashlight, or Sun, shines on the sticker, I want you to say "day!" and when the sticker is facing away from the Sun, I want you to say "night!" Let's give that a try.</i></p> <p>Begin spinning the globe around slowly, making sure every child can see. Spin the globe around 3-4 times so they can begin seeing (and hearing) the pattern.</p>
<p>Discussion 10 minutes</p>	<p>Have children return to sitting in a circle around the outside of a meeting area.</p> <p><i>Now that we know that Earth has day and night because when Earth spins, the Sun shines on different parts. When it's shining on our part of the Earth, it is daytime. When it is not shining on our part of the Earth, we have nighttime. It takes 24 hours for this process to happen. That is why 1 day is 24 hours.</i></p> <p><i>Scientists always use evidence when they talk about their learning. How did we find out what causes day and night?</i></p> <p>If children are unsure, prompt them to recognize that the demonstration illustrated that day and night is caused by the Earth spinning.</p> <p>Show children the day and night cards.</p> <p><i>Part of being a scientist is noticing patterns. A pattern is something that follows a rule while repeating itself. Did anyone notice a pattern when we were shining the light on the globe to make day and night?</i></p> <p>If children do not have this prior knowledge of patterns, review what patterns are. Sow some examples on the whiteboard or use manipulatives.</p> <p>Show children the day/night spinner. Explain that they follow a day and night pattern each day. Show them the model. Children will draw what they do each day at the provided times. Distribute the materials.</p>
<p>Closing 3 minutes</p>	<p><i>Today, we thought about, "What makes day and night?" We learned that as the Earth spins, the sun shines its light on different parts of the Earth. When the sun is shining, it is daytime. When the sun is not shining on us, it is nighttime. This is a pattern and it's caused by the Earth spinning as the sun shines on Earth.</i></p> <p><i>During the Science Literacy Station, you will continue your</i></p>

	<i>observations and record your ideas to answer the question, "What makes day and night?"</i>
Standards	<p>1-ESS1-1: Use observations of the sun, moon, and stars to describe patterns that can be predicted.</p> <p>S.L.1.1: Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.</p>
Ongoing assessment	<p>During the demonstration, take note of which students are able to identify the day/night pattern as you spin the globe around. Do they understand that when the sun is shining on the part of the Earth we live in, it is daytime?</p> <p>Use children's responses in science journals to gauge whether or not they understand what causes day and night.</p>

Notes

Day and Night Earth's Rotation





Supplies:

- Day and Night spinner
- White cardstock paper
- Scissors
- Hole punch
- Paper fastener
- colored pencils
- Scissors
- Pencil

Instructions:

1. Print the wheel and cover on white cardstock paper and cut them out.
2. Students color the cover and draw their daily activities above the times.
3. Use a hole punch to make a hole in the middle of the cover and the wheel (where marked).
4. Attach the wheel and cover together with a paper fastener.