

Unit 2 - Patterns of the Sun, Moon, & Stars

Pacing Guide

*Informational writing standards are now being covered in science. Please use [these resources](#) to address the informational writing standards. These lessons can be incorporated at any point during the unit.

Unit & Lesson #	Focus	Standards Addressed	Day (20-30 minutes)	Overview	Writing Activities	Additional Activities
Day Patterns Anchor Phenomenon Sun, Shadows, & Daily Patterns	Shadow Surprises	1-ESS1-1	1	The anchor phenomenon for this unit is a set of strange shadows that are moving in a mysterious way. During the introduction, students generate observations and questions about the phenomenon and create a list of possible explanations for the phenomenon. Students will gather clues during and after each lesson in this unit to help them improve their understanding and explanations. It is important to encourage students to recognize that even if they don't know the perfect answer yet, they	See-Think-Wonder Chart	

				are going to learn a lot throughout the unit and will have an opportunity to revisit the phenomenon over time.			
Day Patterns Lesson 1: Could a statue's shadow move?	Sun, Shadows, & Daily Patterns	1-ESS1-1	2	In this session, students investigate what it takes to make a stationary object's shadow move.		<u>Patterns of Daylight</u> Shadows- Epic Book Playing with Light and Shadows- Epic Book	
			3	In the hands-on activity, Moving Shadows, students use flashlights and paper gnomes to explore how moving the position of a light makes shadows move. Students relate these observations to shadows changing throughout the day and the Sun's position moving across the sky Wrap-up slides & teacher-led discussion.		<u>Where's the Shadow?</u> <u>Shadow Partners</u>	
			4	Anchor Connection Students wonder:	<u>Science journal</u> entry to answer anchor question.		

			How does the Sun make shadows change? Students learn: Shadows can move when the object making the shadow moves, or when the light source moves. The Sun appears to continually move across the sky every day.			
				5	<u>Lesson 1</u> <u>Assessment</u> Extensions include: Readings and an activity.	
Day Patterns Lesson 2 What does your shadow do when you're not looking?	Sun, Shadows, & Daily Patterns	1-ESS1-1	6		In this Read-Along lesson, Jada explores why her shadow changes over the course of a day at the beach. The lesson includes a short exercise where students act out the movement of shadows with their bodies. You can extend the lesson with the optional activity, Trace Your Shadow, where students trace their	Follow it- Epic Book <u>Light and Shadows</u> <u>Video (youtube)</u>

			shadows using colored chalk and track the shadow's changes throughout the day. Teacher-led discussion.			
		7	Anchor Connection Students wonder: In which directions does the Sun move? Students learn: The height of the Sun in the sky affects the length of shadows. As the Sun rises throughout the morning, shadows get shorter. As the Sun lowers in the afternoon, shadows get longer.		Science journal entry to answer anchor question.	<u>Our Sky Unit</u>
		8	<u>Lesson 2 Assessment</u> Extensions include: Activities.			
Day Patterns Lesson 3 How can the Sun help you if you're lost?	Sun & Daily Patterns	1-ESS1-1	9		In this session, students develop a model of the sun's daily path across the sky, then use this model to help someone who's	The Sun- Epic Book <u>Our Super Star</u> <u>Brainpop Jr. Sun</u>

		lost.			
10	In the hands-on activity, Sun Finder, students create a mobile paper model of the sun and earth to illustrate the position of the sun throughout the day. Wrap-up slides & teacher-led discussion.				Following the Sun video (youtube)
11	Anchor Connection Students wonder: Does the Sun always move the same way every day? Students learn: The Sun moves higher when it is in the east, and lower when it is in the west. This means we can determine direction based on which way the Sun and shadows are moving.			Science journal entry to answer anchor question.	
12	Lesson 3 Assessment Extensions include: Readings and an activity.				

Day Patterns Lesson 4 Why do you have to go to bed early in the summer?	Daylight & Seasonal Patterns	1-ESS1-2	13	In this Read-Along lesson, Arushi wonders why she has to go to bed while the sun is still up, and learns that the sun stays up longer on some days than others. The lesson includes a short exercise where students get moving by acting out a bedtime routine. If you want to extend the lesson, we provide a printable Summer Sunshine Reader that your students can color and use to practice their reading skills. Teacher-led discussion.		Day and Night- Epic Book Earth's Rotation and Revolution video (youtube)
			14	Anchor Connection Students learn: Days get longer and shorter throughout the year, but the Sun is in consistent directions at different times of day. This means we can use the location of the Sun	<u>Science journal</u> entry to answer anchor question.	

				to tell the time of day.			
				Lesson 4 <u>Assessment</u> Extensions include: Activities.	15		
Day Patterns Performance Task Where will the Sun be tomorrow?	Sun, Shadows, & Daily Patterns	1-ESS1-1	16	In this performance task, students will observe and predict the apparent location of the Sun in the sky at different times of day. After a review of the unit, students will gather observations of the Sun from a single location. They will see that the Sun follows a repeating pattern in its apparent motion, and then use that pattern to predict the location of the Sun at various times of day in the future.			
Night Patterns Anchor Phenomenon Moon Mysteries	Night Patterns	1-ESS1-1	17	The anchor phenomenon for this unit is a set of surprising photos of the Moon. During the		See-Think-Wonder <u>Chart</u>	

				introduction, students generate observations and questions about the phenomenon and create a list of possible explanations for the phenomenon. Students will gather clues during and after each lesson in this unit to help them improve their understanding and explanations. It is important to encourage students to recognize that even if they don't know the perfect answer yet, they are going to learn a lot throughout the unit and will have an opportunity to revisit the phenomenon over time			The Night Sky- Epic Book The Moon- Epic Book Moon Journal <u>The Man in the Moon</u>
Night Patterns Lesson 1 When can you see the full moon?	Moon Phases & Patterns	1-ESS1-1	18	In this session, students explore all of the different shapes of the Moon that can appear on different nights.			

			19	In the hands-on activity, My Moon Book, students observe photos of the Moon taken over the course of four weeks and draw pictures of the Moon's phases in their book. They use these observations to discover patterns in how the Moon's shape changes and predict when the next full moon will appear. Wrap-up slides & teacher-led discussion.	In the hands-on activity, My Moon Book, students observe photos of the Moon taken over the course of four weeks and draw pictures of the Moon's phases in their book. They use these observations to discover patterns in how the Moon's shape changes and predict when the next full moon will appear. Wrap-up slides & teacher-led discussion.	<u>The Moon: Facts and Figures</u> <u>Moon Phase Activity</u> <u>Our Sky Unit</u> <u>BrainPop Jr.</u>	
			20	Anchor Connection Students wonder: Why do we only see stars at night? Students learn: Photos of the Moon can help us track how the shape of the moon changes over time. Those same photos can tell us if the photo was taken during the day or the night.	<u>Science journal</u> entry to answer anchor question.		

			21	<u>Lesson 1 Assessment</u> Extensions include: Readings and activities.			
Night Patterns Lesson 2 Why do the stars come out at night?	Stars & Daily Patterns	1-ESS1-1	22	In this session, students use a model to investigate why the stars are visible at night but disappear when the Sun comes out during the day.		<u>Where do the Stars Go?</u> To the Stars- Epic Book Stars! Stars! Stars!- Epic Book <u>Star Light, Star Bright</u>	
			23	In the hands-on activity, Star Projector, students use paper cups to project stars onto a sky picture, and observe what happens to these stars when a flashlight acts as a model of the Sun. Wrap-up slides & teacher-led discussion.		<u>What are Stars?</u>	
			24	Anchor Connection Students wonder: Can stars help us if we don't know where to go at night?	<u>Science journal entry to answer anchor question.</u>		

			Students learn: Stars are only visible at night because they aren't bright enough to be seen during the day. The Moon is bright enough to be seen during both the night and day.			
			<u>Lesson 2</u> <u>Assessment</u> Extensions include: Readings, videos, and activities.	25		
Night Patterns Lesson 3 How can stars help you if you get lost?	Stars & Seasonal Patterns	1-ESS1-1	26 In this Read-Along lesson, Ryan's camping trip with his dad includes a night of stargazing, and a mystery to solve. The lesson includes a short exercise where students imagine what they might see looking through a telescope. You can extend the lesson with the optional activity, Where Is North?, that helps students learn the cardinal directions. Teacher-led			<u>Constellations</u> <u>The Dynamic Trio</u>

			discussion.			
			Anchor Connection Students learn: The Sun changes what we can see in the sky. This happens in a predictable pattern.	27	Science journal entry to answer anchor question.	The North Star-Epic Book
			<u>Lesson 3 Assessment</u> Extensions include: Activities	28		
Night Patterns Performance Task When can we see the Sun, Moon, and stars?	Night Patterns	1-ESS1-1	In this performance task, students will apply what they learned over the course of this unit to predict when the Sun, Moon, and stars will be visible in the sky.	29		
Unit 2 Common Assessment			LPS Unit 2 Common Assessment	30		