

Unit 3 - The Secret Language of Light and Sound

Pacing Guide

Unit & Lesson #	Focus	Standards Addressed	Day (20-30 minutes)	Overview	Writing Activities	Additional Activities
Light, Sound, & Communication Anchor Phenomenon: Everglades Adventure	Light, Sound, & Communication	1-PS4-1 1-PS4-2 1-PS4-3 1-PS4-4	1	The anchor phenomenon for this unit is based around two animals that are found in the Everglades, and how each of them communicate. 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 are going to learn a lot throughout the	<u>See-Think-Wonder Chart</u>	

				unit and will have an opportunity to revisit the phenomenon over time.		
Light, Sound, & Communication Lesson 1 How do they make silly sounds in cartoons?	Sounds & Vibrations	1-PS4-1	2	In this session, students investigate vibrations as a source of sound effects for movies.		<u>Body Percussion</u> Read Aloud Books • The little old lady that wasn't afraid of anything • The Rain Stomper • In the Tall, Tall Grass
			3	In the hands-on activity, Be a Sound Effects Artist, students use their hands and feet to create a "rainstorm," and then use rulers to create a "boing" sound for a cartoon bouncy ball. Wrap-up slides & teacher-led discussion.		
			4	Anchor Connection Students wonder: Why do things only make sounds sometimes?	<u>Science Journal</u> Entry to answer anchor connection question	

				Students learn: All objects that make sound do so by vibrating. This is true for everything, from the sounds we hear in cartoons to the sounds of alligators in wetlands.			
			5	<u>Lesson 1 Assessment</u> Extensions include: Readings, videos, and activities.			
Lights, Sound, & Communication Lesson 2 Where do sounds come from?	Sounds & Vibrations	1-PS4-1	6	In this Read-Along lesson, Lin explores the sounds made by different kinds of instruments, and discovers what happens when vibrations start—and when they stop. The lesson includes a short exercise where students experiment with a piece of paper to make the connection between vibrations and sound. You can extend the lesson with the optional activity, Head Harp, where students			<u>BrainPop Jr. Sound</u> Sound- Epic Book Musical Max- Epic and Bookflix <u>Sight Waves and Light Waves Unit Resources</u>

			make simple musical instruments using only their heads and string. Teacher-led discussion.			
		7	Anchor Connection Students wonder: How do we see through things? Students learn: Some vibrations can only be heard, but some can be seen. By observing the entire alligator's body, we can see that it is completely vibrating.		<u>Science Journal</u> Entry to answer anchor connection question	<u>Multi Media Study</u> <u>Jams</u> <u>Guess the Sound</u>
		8	<u>Lesson 2</u> <u>Assessment</u> Extensions include: Activities.			
		9	In this session, students consider materials from the perspective of how much light they let through.	1-PS4-3		<u>BrainPop Jr. Light</u> Light Helps Me See- Epic Book <u>Sound waves and light waves unit</u> <u>Paper Stained Glass</u>
Lights, Sound, & Communication Lesson 3 What if there were no windows?	Light, Materials, Transparent & Opaque	10	In the hands-on			

					Lights Out- Epic Book
				activity, Paper Stained Glass, they use these materials to create a work of art. Wrap-up slides & teacher-led discussion.	
		11	Anchor Connection Students wonder: Can we still see transparent things when there is no light? Students learn: Some animals in the Everglades are silent, but they can somehow be seen when it is totally dark at night.	<u>Science Journal</u> Entry to answer anchor connection question	
		12	<u>Lesson 3 Assessment</u> Extensions include: Readings and activities.		
Lights, Sound, & Communication Lesson 4 Can you see in the	Light & Illumination	1-PS4-2	13	In this Read-Along lesson, Santiago visits a cave and discovers that when it's dark (really	<u>Light Sources video</u> (youtube)

dark?			dark!) he can't see anything. The lesson includes a short exercise where students find the sources of light around them. You can extend the lesson with the optional activity, Dark Box, where students experience what it's like to try to see in the dark. Teacher-led discussion.			
		14 Anchor Connection Students wonder: Can we use light that we see to send a message? Students learn: In order to see objects, they must be illuminated. For most living things, we need external light to see them. Fireflies make their own light!	<u>Science Journal</u> Entry to answer anchor connection question			
		15 <u>Lesson 4 Assessment</u> Extensions include: Activities.				

Lights, Sound, & Communication Lesson 5 How could you send a secret message to someone far away?	Light, Communication, & Engineering	1-PS4-4 K-2-ETS1-2	16	In this session, students practice using light to communicate information.		It's a Firefly Night- Epic Book Communication Over Distances Communication Past and Present- Epic Book
			17	In the hands-on activity, Secret Signals, students work in pairs to build a device that solves the problem of communicating over a distance. They send secret messages to one another using light and colored markers. Wrap-up slides & teacher-led discussion.	Color Codes	String Phone Fireflies Video Traffic Light Project
			18	Anchor Connection Students wonder: How can you send a message to someone when you can't see them? Students learn: Alligators use sound and fireflies use light to	Science Journal Entry to answer anchor connection question	

				communicate. This is just like humans: we use light and sound to communicate, too!			
			19	<u>Lesson 5 Assessment</u> Extensions include: Readings, videos, and activities.			
Lights, Sound, & Communication CER #1			20			<u>CER #1</u>	
Lights, Sound, & Communication Lesson 6 How do boats find their way in the fog?	Light, Sounds, & Communication	1-PS4-4	21	In this Read-Along lesson, Gabrielle sets sail with her aunt—the captain of a tugboat—and discovers how the sights and sounds on the bay can help boats find their way. The lesson includes a short exercise where students get moving by pretending to be boats. You can extend the lesson with the optional activity, Navigating by Sights and Sounds, where students play games to practice listening for sound cues.			

			Teacher-led discussion.			
			Anchor Connection Students wonder: How can you send a message to someone when you can't see them?	21		Science Journal Entry to answer anchor connection question
			<u>Lesson 6 Assessment</u> Extensions include: Activities.	22		
Light, Sound, & Communication Performance Task	Light & Sound	1-PS4-1 1-PS4-2	23 In this performance task, students will use observations to explain the cause and effect relationship behind the ways that fireflies and alligators appear and sound under the darkness of night. After a review of the unit, students will make a final nighttime observation of the alligators and fireflies. They will use what they have learned over the course of the unit to			<u>Everglades at Night</u>

Unit 3 Common Assessment				24	LPS Unit 3 Common Assessment				