

Unit 4 - Organism Structure and Function

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	Overview	Writing Activities	Additional Activities
Human Body, Vision, & The Brain Anchor Phenomenon Owl Ambush	System Models	4-PS4-2 4-LS1-1 4-LS1-2	1	The anchor phenomenon for this unit is an owl catching its prey. Students generate observations and questions about the phenomenon and create an initial model to explain how the owl's body systems work together to catch prey.	See-Think-Wonder Chart	
			2	In this session, students discover the mechanism by which their muscles control their bones to move their bodies.		
			3	In the hands-on activity, Robot Finger, students construct a model of a human finger and observe how		
Human Body, Vision, & The Brain Lesson 1 Why do your biceps bulge?	Muscles & Skeleton	4-LS1-1				

			pulling on a string (a model for tendons) causes it to bend at the joints. Teacher-led discussion.			
		4	Anchor Connection Students wonder: How do eyes work? How do they help people see? Students learn: Owls also have muscles that pull on their bones in their wings, talons, and jaw to create movement when they are hunting		Science Journal entry to answer anchor connection question.	
		5	<u>Lesson 1 Assessment</u> Extensions include: Readings, activities, and videos.			
Human Body, Vision, & The Brain Lesson 2	Light, Eyes, & Vision	4-LS1-1 4-PS4-2	6		In this session, students discover the basics of how their eyes work,	

What do people who are blind see?				and figure out some of the causes of vision problems.		
			7	In the hands-on activity, Eye Model, students develop a working model of a human eye. They use a magnifying lens as a model of the cornea to explore how the structure of this lens is related to the function of our eyes. Wrap-up slides & teacher-led discussion.		
			8	Anchor Connection Students wonder: How do some animals see in the dark? Students learn: In the same way, light reflects off the mouse and into the owl's eye. This allows the owl to sense information from	<u>Science Journal</u> entry to answer anchor connection question.	

				its environment.			
				Lesson 2 <u>Assessment</u> Extensions include: Readings, activities, and videos.			
				9			
				10	4-LS1-1 4-PS4-2	Structure & Function of Eyes	Human Body, Vision, & The Brain Lesson 3 How can some animals see in the dark?
				11			
				12			

			with two very quick experiments and one more involved activity. They learn about how we process information in our brains and then respond to that information in different ways. Wrap-up slides & teacher-led discussion.			
		16	Anchor Connection Students learn: This suggests that the owl's brain is the part of its body system that processes information received from the environment in order to control its muscles.	Science Journal entry to answer anchor connection question.		
		17	Lesson 4 Assessment Extensions include: Readings, activities, and videos.			
Human Body,		18	Human Body.			

Vision, & The Brain Unit Assessment				<u>Vision, & The Brain Unit Assessment</u>		
Human Body, Vision, & The Brain Performance Task How are animals and plants like machines?	System Modeling & Explanation	4-PS4-2 4-LS1-1 4-LS1-2	19	In the Performance Task, students research another animal or plant. They create a system model to explain how the animal's or plant's parts work together as a system to receive information, process it, and respond to its environment.	<u>Final Project- System Model</u>	
Animal & Plant Adaptations Anchor Phenomenon Up in the Trees	System Models	4-LS1-1	20	The anchor phenomenon for this unit is an animal that seems to defy the idea of survival of the fittest: the sloth! How can such a slow-moving animal be so good at survival?	<u>See-Think-Wonder Chart</u>	
Animal & Plant Adaptations Lesson 1 Why do some sea creatures look so strange?	Animal Adaptations	4-LS1-1	21	In this session, students make observations of an underwater animal, a frogfish, in order to collect evidence that its		

			external structures serve specific functions.			
22	In the hands-on activity, Frogfish Finder, students use their observations to construct an argument that the frogfish's external and internal structures work together as part of a system to support their growth and survival. Wrap-up slides & teacher-led discussion.	<u>Frogfish Field Journal</u>				
23	Anchor Connection Students wonder: How do sloths know that they should stay up in the trees? Students learn: All animals use their body parts along with specific behaviors in order to support their survival. This is	<u>Science Journal</u> entry to answer anchor connection question.				

			Wrap-up slides & teacher-led discussion.			
			Anchor Connection Students wonder: Where do sloths live? Students learn: All animals learn things over the course of their lives. For many animals, this can include learning complex behaviors, such as how to find and eat the right kinds of food, and how to stay safe.	27		Science Journal entry to answer anchor connection question.
			<u>Lesson 2 Assessment</u> Extensions include: Mini-lessons	28		
Animal & Plant Adaptations Lesson 3 Why don't the same trees grow everywhere?	Plant Adaptations	4-LS1-1		29	In this session, students make observations of external and internal parts of trees in order to collect evidence that these	

			structures work together as a system to help plants survive in a particular environment.			
				30	In the hands-on activity, Tree Detective, students use models of roots and branches to explore their functions and then construct an argument about how these structures must work together in order to support the survival of trees in the unique environment of the frozen taiga. Wrap-up slides & teacher-led discussion.	<u>Solve the Puzzle</u>
				31	Anchor Connection Students wonder: How do all of the body parts and behaviors of a sloth work together?	<u>Science Journal</u> entry to answer anchor connection question.

				Students learn: The environment makes a huge difference in which sorts of adaptations plants and animals need to survive. If a plant or animal lives in a place with very cold weather, they need adaptations to help them survive in those conditions.			
			32	<u>Lesson 3 Assessment</u> Extensions include: Mini-lessons			
Animal & Plant Adaptations Unit Assessment			33	<u>Animal & Plant Adaptations Unit Assessment</u>			
Animal & Plant Adaptations Performance Task How do sloths survive?	System Modeling & Explanation	4-LS1-1	34	In the Performance Task, students engage in evidence-based argumentation to explain how it is possible for sloths to survive. The performance task begins with a brief unit review, and	<u>Survival in the Slow Lane</u>		

					moves into a step-by-step walkthrough of the student worksheet. At the end of the performance task, you can choose what you would like for your students to do next. You can have them create a five-paragraph essay as a writing task, or create a presentation, or create a poster. In addition to the information contained within the lessons in this unit, you can provide your students with books, websites, or other resources that they can use to gather information about sloths. While not necessary, it is a great opportunity for students to extend the depth and breadth of their knowledge		
Unit 2 Benchmark				35	LPS Unit 2 Benchmark (Given)		

					via LinkIt!)		
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