UNIT AT A GLANCE

Activity	Time to Complete	Questions	Phenomena	Summary: Students Will . . .
1 Light and Sight	Preparation: 35 min. Activity 1: 5 days Lesson 1A: 45–50 min., 2 days Lesson 1B: 45–50 min. Lesson 1C: 45–50 min. Lesson 1D: 45–50 min.	How is light necessary to see objects?	Outside/Inside: ability to see when going from a very bright light to a dim light.	• Collaborate to develop models of what happens to our eyes when we go from very bright sunshine outside to a dimly lit room inside. • Collect data on the ability to see objects with no light, some light, and bright light. • Make and use models to demonstrate how light travels in a straight path and illuminates objects in its path. • Conduct an investigation to find out how light reflects off different materials.
2 Our Eyes in Bright Light and Darkness	Preparation: 35 min. Activity 2: 2 days Lesson 2A: 45–50 min. Lesson 2B: 45–50 min.	How does the eye react to bright light and darkness?	Outside/Inside: ability to see when going from a very bright light to a dim light.	• Conduct an investigation to find out how the human eye reacts to light and darkness. • Collect data based on observations. • Compile class data from their investigations to explain the phenomenon. • Develop a model of the reaction of the eye to light and dark, based on data from their investigation. • Evaluate and critique each other's models based on evidence from their investigations.
3 Animal Eyes	Preparation: 40 min. Activity 3: 4 days Lesson 3A: 45–50 min., 2 days Lesson 3B: 45–50 min., 2 days	How and why do some animals have eyes that shine in the dark? How do animals use their sense of sight to aid them in survival?	Eyeshine: animal eyes that shine or glow in the dark	• Role play as predator and prey to find out the importance of eyesight in animal survival. • Compare different animals to the role of the mountain lion (predator) and the role of the rabbit (prey). • Determine how the shape and position of the eyes in predators and prey differ to help each survive. • Read two different texts about different animals and their eyes.

UNIT AT A GLANCE

Students Figure Out How To:	Practices	Performance Expectations (PE) at Lesson Level and Assessment
• Develop and use a model to explain what happens to our eyes when we move into and out of different light conditions. • Raise questions based on observations. • Analyze and interpret data to make sense of how the eyes need light for sight. • Revise model based on new information. • Construct an explanation, based on evidence from investigations, to explain how light is necessary for sight.	**Asking Questions And Defining Problems** **Developing and Using Models** **Analyzing and Interpreting Data** **Constructing Explanations and Designing Solutions** **Planning and Carrying Out Investigations** **Cause and Effect**	**PE at Lesson Level:** Develop and use models to explain how light travels in a straight path, illuminates objects in its path, and is necessary for sight. **Formative Assessment** initial models, Science Talk, adjusted models, handout, Journal Entry **Summative Assessment** revised models, Science Talk, Journal Entry
• Plan and carry out an investigation into the reaction of the eye when going from very bright to very dim or dark. • Obtain evidence from investigations to find out how the eye reacts to bright light and dim light. • Revise models and thinking based on evidence from investigations. • Relate their findings from their investigations to the Outside/Inside phenomenon. • Share and evaluate each others' models.	**Developing and Using Models** **Constructing Explanations and Designing Solutions** **Engaging in Argument from Evidence** **Planning and Carrying Out Investigations** **Analyzing and Interpreting Data** **Cause and Effect**	**PE at Lesson Level:** Plan and carry out an investigation into the reaction of the eye when going from dark to light conditions. **Summative Assessment** revised models, revisions to probe in Student Journal, final model, Science Talk, Activity Page, Respond to Text
• Make comparisons of animal eyes to determine how the shape and position of the eyes help the animal to survive. • Obtain information from text to find out the different traits of eyes and how they help animals sense their surroundings. • Share and compare information from two different texts on animal eyes.	**Asking Questions And Defining Problems** **Constructing Explanations and Designing Solutions** **Systems and System Models**	**PE at Lesson Level:** Obtain, apply, and share information about animal eyes and how they help in survival. **Formative Assessment** Science Talk, Activity Page, group models **Summative Assessment** Journal Entry, final models

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4 On One Flower	Preparation: 25 min. Activity 4: 6–8days Lesson 4A: 45–50 min., 2 days Lesson 4B: 45–50 min., 2–3 days Lesson 4C: 45–50 min., 2–3 days	What plants and animals live in the schoolyard? How do the plants and animals in the schoolyard use their senses to survive?	*On One Flower*/ stinkbug	• Develop a model of a goldenrod blossom as a habitat for different animals. • Read about one flower plant as a habitat for a variety of animals. • Write about their own experiences in making observations of different plants and animals. • Plan and build a classroom habitat for plants and animals that live in the schoolyard. • Make observations and collect specimens of plants and animals that live in the schoolyard. • Explore the Project Noah website. • Share research and data entry to find patterns in structure and function of animal and plant traits.
5 Animal Defenses	Preparation: 15 min. Activity 5: 6 days Lesson 5A: 45–50 min., 2 days Lesson 5B: 45–50 min., 2 days Lesson 5C:45–50 min., 2 days	How do different structures function to help the animals defend themselves?	The tail of the blue-tailed skink and how it functions to help the skink defend itself.	• Observe a video of the blue-tailed skink. • Draw and label a model that explains how the structures of the skink help it to survive. • Research the structures and function of the blue-tailed skink. • Share research and findings. • Create a class chart that categorizes the different kinds of animal defenses and if memory is important in that defense.

UNIT AT A GLANCE

Students Figure Out How To:	Practices	Performance Expectations (PE) at Lesson Level and Assessment
• Develop a model of a goldenrod blossom as a habitat for different animals. • Obtain and apply information from text to their own schoolyard observations and specimens. • Determine the needs for survival of specimens collected in the schoolyard and placed in the classroom habitat. • Make careful observations of collected specimens to determine the internal and external structures they have that function in survival. • Record and upload information to the Project Noah website. • Look for patterns in observations and research to determine the structure and function in the traits of different plants and animals.	**Asking Questions and Defining Problems** **Obtaining, Evaluating, and Communicating Information** **Developing and Using Models** **Planning and Carrying Out Investigations** **Systems and System Models**	**PE at Lesson Level:** Make observations of the diversity of plants and animals in the schoolyard to find out how their internal and external structures help them to survive. **Summative Assessment** models, Respond to Text, Science Talk, Journal Entries, Activity Page
• Conduct research on the blue-tailed skink to find out the function of the blue tail. • Raise questions for research on the skink. • Determine the internal and external structures that function to help the skink recognize danger, detach its tail, and run away. • Discuss and determine how memory might help animals to survive. • Obtain information from text about animal defenses. • Relate information from text to learn about and categorize animal defenses. • Apply information from research and text to the animals in the classroom habitat.	**Asking Questions and Defining Problems** **Obtaining, Evaluating, and Communicating Information** **Developing and Using Models** **Cause and Effect** **Systems and System Models**	**PE at Lesson Level:** Make observations and obtain information about the different structures of animals that function as a defense. **Formative Assessment** group models, Science Talk, Activity Page, Journal Entry **Summative Assessment** final models, Journal Entries, Activity Pages