

1st Grade Thematic Model

Narrative and Rationale: This first grade model is tied together with a thread relating to light, which can be connected through the four bundles. The first bundle focuses on seeing objects, and includes the foundational and challenging idea that light is necessary for us to see. The need for light is true whether viewing objects on Earth or in the sky. Bundle 2 extends the study of light to include its interaction with various materials, and applies ideas about light and sound to solve a problem. Bundle 3 is tied to organisms and sunlight, as part of a study of the structure and function of the external parts of plants and animals. In bundle 4, while students study plants and animals with a focus on the traits of parents and their offspring and behaviors of parents and offspring, the study of light is brought back in by looking back over student observations of the amount of daylight over the past year.

Each bundle in this course also has a focus CCC, building on student understanding of the CCCs that are introduced the previous year, in Kindergarten. Bundles 1 and 4 focus on Patterns, Bundle 2 focuses on Cause and Effect, and Bundle 3 focuses on Structure and Function. Note that the practices and crosscutting concepts described are intended as end-of-instructional unit expectations and not curricular designations – additional practices and crosscutting concepts should be used throughout instruction in each bundle.

Bundle 1: Can patterns of the sun, moon,	Bundle 2: How can light or sound be used	Bundle 3: How can we solve	Bundle 4: How do patterns
and stars be used to make predictions of	to send messages over a distance?	problems related to organisms	relate to sunlight throughout the
future observations?	~8 Weeks	and sunlight?	year as well as to relationships
~4 Weeks		~10 Weeks	between parents and offspring?
			~12 Weeks
1-PS4-2. Make observations to construct	1-PS4-1. Plan and conduct investigations	1-LS1-1. Use materials to design a	1-LS1-2. Read texts and use
an evidence-based account that objects	to provide evidence that vibrating	solution to a human problem by	media to determine patterns in
in darkness can be seen only when	materials can make sound and that sound	mimicking how plants and/or	behavior of parents and
illuminated.	can make materials vibrate.	animals use their external parts to	offspring that help offspring
1-ESS1-1. Use observations of the sun,	1-PS4-3. Plan and conduct investigations	help them survive, grow, and	survive.
moon, and stars to describe patterns that	to determine the effect of placing objects	meet their needs.*	1-LS3-1. Make observations to
can be predicted.	made with different materials in the path	1-ESS1-2. Make observations at	construct an evidence-based
1-ESS1-2. Make observations at different	of a beam of light.	different times of year to relate	account that young plants and
times of year to relate the amount of	1-PS4-4. Use tools and materials to	the amount of daylight to the	animals are like, but not exactly
daylight to the time of year. ¹	design and build a device that uses light	time of year. ¹	like, their parents.
	or sound to solve the problem of	K-2-ETS1-2. Develop a simple	1-ESS1-2. Make observations at
	communicating over a distance.*	sketch, drawing, or physical	different times of year to relate
	1-ESS1-2. Make observations at different	model to illustrate how the shape	the amount of daylight to the
	times of year to relate the amount of	of an object helps it function as	time of year
	daylight to the time of year. ¹	needed to solve a given problem. ¹	

K-2-ETS1-1. Ask questions, make	K-2-ETS1-3. Analyze data from	
observations, and gather information	tests of two objects designed to	
about a situation people want to change	solve the same problem to	
to define a simple problem that can be	compare the strengths and	
solved through the development of a	weaknesses of how each	
new or improved object or tool. ¹	performs. ¹	

¹ The bundle only includes part of this PE; the PE is not fully assessable in a unit of instruction leading to this bundle.

1st Grade Thematic Model Flowchart

Bundle 1 PS4.B as found in 1-PS4-2 • Objects can be seen if light is available to illuminate them or if they give off their own light. ESS1.A as found in 1-ESS1-1 • Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. ESS1.B as found in 1-ESS1-2

- Seasonal patterns of sunrise and sunset can be observed, described, and predicted.

Bundle 2

PS4.A as found in 1-PS4-1

• Sound can make matter vibrate, and vibrating matter can make sound.

PS4.B as found in 1-PS4-3

• Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. (Boundary: The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to discuss the speed of light.)

PS4.C as found in 1-PS4-4

• People also use a variety of devices to communicate (send and receive information) over long distances.

ESS1.B as found in 1-ESS1-2

• Seasonal patterns of sunrise and sunset can be observed, described, and predicted.

ETS1.A as found in K-2-ETS1-1

- A situation that people want to change or create can be approached as a problem to be solved through engineering.
- Asking questions, making observations, and gathering information are helpful in thinking about problems.
- Before beginning to design a solution, it is important to clearly understand the problem.

Bundle 3

LS1.A as found in 1-LS1-1

• All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.

LS1.D as found in 1-LS1-1

• Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.

ESS1.B as found in 1-ESS1-2

• Seasonal patterns of sunrise and sunset can be observed, described, and predicted.

ETS1.B as found in K-2-ETS1-2

• Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.

ETS1.C as found in K-2-ETS1-3

• Because there is always more than one possible solution to a problem, it is useful to compare and test designs.

Bundle 4

LS1.B as found in 1-LS1-2

• Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive.

LS3.A as found in 1-LS3-1

• Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents.

LS3.B as found in 1-LS3-1

• Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.

ESS1.B as found in 1-ESS1-2

• Seasonal patterns of sunrise and sunset can be observed, described, and predicted.