Unit:	Earth and Space Sciences
Big Ideas:	Earth's Place in the Universe: The earth, which is part of a larger solar system, consists of structures, processes, and cycles which affect its inhabitants.
Unit Essential Questions:	What structures, processes, and cycles make up the earth? How do the various structures, processes, and cycles affect the earth's inhabitants? How do we know the earth is part of a larger solar system?

Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Essential Questions	Mini-Lessons/Activities	Instructional Materials	Assessments
2 weeks	3.3 2.A.7 Participate in simple investigations of earth structures, processes, and cycles to answer a question or to test a prediction 3.3 2.B.1 Observe and record: location of the sun and the moon in the sky over a day; changes in the appearance of the moon over a month and Observe, describe, and predict seasonal patterns of sunrise and sunset 3.3 2.B.3 Participate in simple investigations of the objects found in the day or night sky to answer a question or to test a prediction	Seasons, Summer, Winter, Spring, Fall, Phases of the Moon Phases (New, Waxing and Waning Crescent, Gibbous, Full)	Using several sources, what evidence can you provide to prove that Earth's events can occur quickly or slowly?	The rotation of the sun repeats every 24 hours. Through the period of a month, the moon changes its appearance. Summer has more hours of sunlight than winter.	FOSS Mystery Science Near Pod	Teacher observation (formative) Completion of Science Investigations by Students Moon Phase Quiz

Unit:	Earth and Space Sciences
Big Ideas:	Earth's Systems: The earth is made of different shapes and kinds of bodies of land and water and there are processes that shape these bodies of land and water..
Unit Essential Questions:	

Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Essential Questions	Mini-Lessons/Activities	Instructional Materials	Assessments
	3.2.2.B2. Explore and describe how different forms of energy cause changes. (e.g., sunlight, heat, wind) 3.2.1.A4. Observe and describe what happens when substances are heated or cooled. Distinguish between changes that are reversible (melting, freezing) and not reversible (e.g. baking a cake, burning fuel). 3.2.2.A3. Demonstrate how heating and cooling may cause changes in the properties of materials. 3.3.1.A4. Identify and describe types of fresh and salt-water bodies (ocean, rivers, lakes, ponds). 3.3.2.A4. Explore and describe that water exists in solid (ice) and liquid (water) form. Explain and illustrate evaporation and condensation. 3.2.2.B2. Explore and describe how different forms of energy cause changes. (e.g., sunlight, heat, wind) 7.1.71B. Describe regions in geographic reference using physical features. 7.2.2.A. Identify the physical characteristics of places. 7.2.2.B. Identify the basic physical processes that affect the physical characteristics regions.		What are the different landforms and bodies of water on the surface of the Earth and how do they change over time? What evidence can we find to prove that the Earth's land can change quickly or slowly and how can we prevent these changes?	Obtain information about and develop models of the kinds of land and water on Earth Plan and carry out an investigation into the properties of solid and liquid water Obtain information from models and informational text about the patterns of land, solid water, and liquid water on Earth Obtain information from historical maps to determine patterns of how maps represent land and water Develop symbols for land and water and create their own legend Develop and use a two-dimensional map of		

				their three-dimensional model of land and water		

Unit:	Life Science
Big Ideas:	Ecosystems: Interactions, Energy, and Dynamics:All organisms are made of cells and can be characterized by common aspects of their structure and functioning. Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment
Unit Essential Questions:	How do organisms live, grow, respond to their environment, and reproduce? How and why do organisms interact with their environment and what are the effects of these interactions?

Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Essential Questions	Mini-Lessons/Activities	Instructional Materials	Assessments
Animals can move around, but plants cannot, and they often depend on animals for pollination or seed dispersal.	3.3.4A	Pollination Seed dispersal	How and why do organisms interact with their environment and what are the effects of these interactions?	Develop a model to demonstrate different modes of seed dispersal. Plan and investigate effectiveness of different types of seed dispersal.	FOSS Mystery Science Near Pod	
Different plants survive better in different settings because they have varied needs for water, minerals, and sunlight.	3.3.4A	Soil Sunlight Minerals Water	How and why do organisms interact with their environment and what are the effects of these interactions?	Plan and carry out investigations to test whether plants from different settings have different needs for water, sunlight, and type of soil.	FOSS Mystery Science Near Pod	
Organisms obtain the materials they need to grow and survive from their environment.	4.6.4A	Environment Survive	How and why do organisms interact with their environment and what are the effects of these interactions?	Obtain, evaluate, and communicate information that in any particular environment, some kinds of organisms survive well and some do not.	FOSS Mystery Science Near Pod	
Plants depend on water and light to grow.	3.3.4A	Minerals Soil Sunlight Water	How and why do organisms interact with their environment and what are the effects of these interactions?	Plan and conduct an investigation to determine if plants need sunlight and water to grow.	FOSS Mystery Science Near Pod	

Unit:	Life Science
Big Ideas:	Biological Evolution: Unity and Diversity:Heredity refers to specific mechanisms by which characteristics or traits are passed from one generation to the next via genes, and explains why offspring resemble, but are not identical to, their parents. Biological evolution explains both the unity and diversity of species and provides a unifying principle for the history and diversity of life on Earth.
Unit Essential Questions:	How can there be so many similarities among organisms yet so many different kinds of plants, animals, and microorganisms?

Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Essential Questions	Mini-Lessons/Activities	Instructional Materials	Assessments
Living things can survive only where their needs are met.	4.1.4C 4.1.4D	Biodiversity Microorganisms Needs Organism Survive	How can there be so many similarities among organisms yet so many different kinds of plants, animals, and microorganisms?	Construct an explanation about why living things can only survive where their needs are met.	FOSS Mystery Science Near Pod	
There are many different kinds of living things in any area, and they exist in different places on land and in water.	4.1.4C 4.1.4D	Biodiversity Exist Habitats Land Living things Water	How can there be so many similarities among organisms yet so many different kinds of plants, animals, and microorganisms?	Observe and compare the different kinds of living things that are found in different habitats.	FOSS Mystery Science Near Pod	

Unit:	Life Science
Big Ideas:	Matter and Its Interactions: Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.
Unit Essential Questions:	How can one explain the structure, properties, and interactions of matter?

Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Essential Questions	Mini-Lessons/Activities	Instructional Materials	Assessments
Different kinds of matter exist in various states.	3.4.4A	Classify Describe Gas Liquid Matter Patterns Solid Weight	How can one explain the structure, properties, and interactions of matter?	Observe, describe, and classify matter by properties and uses (e.g., size, shape, weight, solid, liquid, gas).	FOSS Mystery Science Near Pod	
Matter can be described and classified by its observable properties.	3.4.4A	Color Flexibility Gas Liquid Matter Properties Solid Texture Weight	How can one explain the structure, properties, and interactions of matter?	Observe, describe, and classify matter by properties and uses (e.g., size, shape, weight, texture, flexibility, hardness, color, etc.).	FOSS Mystery Science Near Pod	
Different kinds of matter exist in various states, depending on temperature.	3.4.4A	Investigations Liquid Solid	How can one explain the structure, properties, and interactions of matter?	Plan and carry out investigations to test the idea that warming some materials causes them to change from solid to liquid and cooling causes them to change from liquid to solid.	FOSS Mystery Science Near Pod	
Matter can be described and classified by its observable properties.	3.4.4A	Liquid Solid	How can one explain the structure, properties, and interactions of matter?	Plan and carry out investigations to test the idea that warming some materials causes them to change from solid to liquid and cooling causes them to change from liquid to solid.	FOSS Mystery Science Near Pod	

Unit:	Life Science
Big Ideas:	Matter and Its Interactions:Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.
Unit Essential Questions:	How can one explain the structure, properties, and interactions of matter?

Concept & Pacing	New Emphasis (Pa Core Standard)	Key Vocabulary	Essential Questions	Mini-Lessons/Activities	Instructional Materials	Assessments
Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.	3.4.4A	Argument Boiling Cause and Effect Evidence Freezing Melting Reverse	How can one explain the structure, properties, and interactions of matter?	Construct an argument and provide evidence that some changes caused by heating or cooling can be reversed and some cannot.	FOSS Mystery Science Near Pod	
Different properties are suited for different purposes.	3.4.4A	Data Functions Test	How can one explain the structure, properties, and interactions of matter?	Analyze data from testing objects made from different materials to determine if a proposed object functions as intended.	FOSS Mystery Science Near Pod	
A great variety of objects can be built up from a small set of pieces.	3.1.4 3.2.4C	Construct Design Engineer Problem Solving Solutions	How can one explain the structure, properties, and interactions of matter?	Design an object built from a small set of pieces to solve a problem and compare solutions designed by peers given the same set of pieces.	FOSS Mystery Science Near Pod	
A great variety of objects can be built up from a small set of pieces	3.1.4 3.2.4C	Construct Design Disassemble Engineer Problem Solving Solutions	How can one explain the structure, properties, and interactions of matter?	Make observations of how an object made of small set of pieces can be disassembled and made into a new object.	FOSS Mystery Science Near Pod	