

Grade 5 Ohio Science Curriculum Map

Unit: Life Science			
Content Statement	Pacing and Resources		Do Not Assess
<p>LS 5.1 Organisms perform a variety of roles in an ecosystem.</p>	<p>August-October</p> <p>Textbook, Bill Nye, Discovery Education, Gumbo Limbo Novel, Owl Pellets, Picture Perfect Science, Invasive Species OWP Activity, Ecosystem Food Web Posters</p>	<p><u>Essential Question</u></p> <ul style="list-style-type: none"> • What are the roles of living organisms and how do they acquire energy? (e.g., producers, consumers and decomposers) • How are producers the foundation of the food web? • What are the roles and relationships (e.g., symbiotic) of organisms within an ecosystem? • What is the impact on the ecosystem as species are introduced or removed? (e.g., endangered or threatened species, invasive species) <p><u>Assessment Items</u></p> <p>See Common Assessment Folder For Life Science Test</p>	<ul style="list-style-type: none"> • Specific information about the process of photosynthesis (do not assess the steps, chemical reactions, reactants, or products other than the concept that energy from the sun is converted to food); • Energy pyramids (i.e., relative amounts of biomass at different trophic levels or the concept that useable energy is lost during energy transfers); • Definition of species or population; • Definitions of consumers (e.g., primary, tertiary).

Life Science			
Content Statement	Pacing and Resources		Do Not Assess
<p>LS 5.2 All of the processes that take place within organisms require energy.</p>	<p style="text-align: center;">August-October</p> <p>Textbook, Bill Nye, Discovery Education, Gumbo Limbo Novel, Owl Pellets, Picture Perfect Science, Invasive Species OWP Activity, Ecosystem Food Web Posters, Food chain simulation</p>	<p style="text-align: center;"><u>Essential Question</u></p> <ul style="list-style-type: none"> • How does energy flow through an ecosystem (in one direction through a cycle)? • What is the primary source of energy for most ecosystems? • What is the process in which sunlight is transformed by producers into energy? • How is energy transferred and transformed in an ecosystems? <p style="text-align: center;"><u>Assessment Items</u></p> <p>See Common Assessment Folder For Life Science Test</p>	<ul style="list-style-type: none"> • Specific information about the process of photosynthesis (do not assess the steps, chemical reactions, reactants or products other than the concept that energy from the sun is converted to food); • Conversion between different types of energy; • Differences between energy transfer and energy transformation; • Energy pyramids (i.e., relative amounts of biomass at different trophic levels or the concept that useable energy is lost during energy transfers); • Definition of species or population.

Physical Science			
Content Statement	Pacing and Resources		Do Not Assess
<p>PS 5.1 The amount of change in movement of an object is based on the mass* of the object and the amount of force exerted.</p>	<p>November-January</p> <p>Textbook, Bill Nye, Disney Imagineering Videos, Discovery Education, Force and Motion Kits, Road Racers Lab, Marble Lab, Roller Coaster Lab, Paper Airplane Lab, Newton's 3 Laws Labs Light Lab, Laser Light Reflection Lab, Toy Company Enrichment</p>	<p><u>Essential Question</u></p> <ul style="list-style-type: none"> • What are effects of relative mass/weight and force (amount and direction) on an object's change in motion? • How is speed measured? • What is required to move an object at rest? • Explain how an object moving at constant speed has no change in speed or direction if no force is acting on it. <p><u>Assessment Items</u></p> <p>See Common Assessment Folder For Physical Science Test</p>	<ul style="list-style-type: none"> • Identification or definition of forces such as gravity, friction, magnetic force, push and pull; • Momentum; • Term inertia or references to Newton's Laws by name or number; • Difference between mass and weight; • Definition of mass; • Mass and weight independently; • The term velocity; • The term acceleration or how to calculate it (the concept of speeding up and slowing down can be assessed); • Explanations of why objects with different masses fall at the same rate in the absence of air resistance; • Graphs of motion; • Balanced or unbalanced forces.

Physical Science			
Content Statement	Pacing and Resources		Do Not Assess
<p>PS 5.2 Light and sound are forms of energy that behave in predictable ways.</p>	<p>November-January</p> <p>Textbook, Bill Nye, Disney Imagineering Videos, Discovery Education, Force and Motion Kits, Road Racers Lab, Marble Lab, Roller Coaster Lab, Paper Airplane Lab, Newton's 3 Laws Labs, Light Lab, Laser Light Reflection Lab, Toy Company Enrichment, Thermal Energy Lab (Shoe Boxes)</p>	<p><u>Essential Question</u></p> <ul style="list-style-type: none"> • How does light move and interact with other matter? (e.g., absorption, reflection, refraction, pass or travel through) • What is the difference between objects that emit light (such as the sun) and objects that reflect light (such as an apple or the moon)? • Why does absorbed light cause objects to warm? • How do colors of objects relate to reflection and absorption? • How does material affect the speed of sound? • What is the relationship between the pitch of a sound and the vibration rate of an object? • How does sound behave when meeting different materials (e.g., absorption, reflection, pass or travel through)? • Explain why you see light before you hear sound. <p><u>Assessment Items</u></p> <p>See Common Assessment Folder For Physical Science Test</p>	<ul style="list-style-type: none"> • The additive rules for color mixing of light; • The wave nature of sound and light; • Values of the speed of light and sound in different media; • The electromagnetic spectrum other than visible light; • How sound travels through the medium at the molecular/atomic level (atoms and molecules are not introduced until Grade 6); • Wave diagrams; • Definitions of amplitude and wavelength; • Ray diagrams involving concave/convex lenses or mirrors; • Prediction of the direction of refraction at a medium boundary; • The order of colors in the visible spectrum.

Earth/Space Science			
Content Statement	Pacing and Resources		Do Not Assess
<p>ES 5.1 The solar system includes the sun and all celestial bodies that orbit the sun. Each planet in the solar system has unique characteristics</p>	<p>February-April</p> <p>Textbook, Bill Nye, Disney Imagineering Videos, Discovery Education, Solar System Model, Planetarium Visit, Planet Projects, Asteroid Lab</p>	<p><u>Essential Question</u></p> <ul style="list-style-type: none"> • What causes the orbital path of planets, moons, and celestial bodies? • Describe Earth’s orbit around the sun. (nearly-circular path) • What are the general characteristics of planets? (such as distance from the sun, size, movement, composition, and temperature) • Describe asteroids, meteoroids, comets, and dwarf planets such as composition, relative size, and orbits. • What are the tools and technology needed to study the solar system including Earth? (e.g., telescopes, satellites, probes); • What are differences between planets (inner and outer), dwarf planets, and other celestial bodies? <p><u>Assessment Items</u></p> <p>See Common Assessment Folder For Earth/Space Science Test</p>	<ul style="list-style-type: none"> • Labeling or naming specific planets; • Values of size, temperature, atmospheric composition, distance from the sun of planets; • Descriptions/drawings of the phases of the moon; • Mass-distance relationship of gravitational force; • History of the solar system; • The term “elliptical” (shape of orbit will be assessed visually).

Earth/Space Science			
Content Statement	Pacing and Resources		Do Not Assess
ES 5.2 The sun is one of many stars that exist in the universe.	February-April Textbook, Bill Nye, Disney Imagineering Videos, Discovery Education, Solar System Model, Planetarium Visit, Planet Projects	<u>Essential Question</u> <ul style="list-style-type: none"> • Why do the stars appear small? • How are stars classified? (e.g., The size and composition (made of gas) of stars, including the sun) • Demonstrate the size of the sun relative to sizes and distances in the solar system (e.g., Earth is much smaller than the sun). • What is the nearest star to Earth? <u>Assessment Items</u> See Common Assessment Folder For Earth/Space Science Test	<ul style="list-style-type: none"> • Star classification; • Life stages of stars; • Age, specific composition, or temperature values of sun/stars; • Light waves; • Names and movement of constellations.

Earth/Space Science			
Content Statement	Pacing and Resources		Do Not Assess
<p>ES 5.3 Most of the cycles and patterns of motion between the Earth and sun are predictable.</p>	<p>February-April</p> <p>Textbook, Bill Nye, Disney Imagineering Videos, Discovery Education, Solar System Model, Planetarium Visit, Planet Projects, Pasta Parallel Activity</p>	<p><u>Essential Question</u></p> <ul style="list-style-type: none"> • What causes night, day and the seasons? • What does the sun appear to move across the sky? • Why is climate predictable? (including hurricane, monsoon, and rainy or dry seasons, and due to the yearly solar cycle) • How are Earth's tilt and revolution related to direct sunlight and seasons? • What is the relationships between direct sunlight and temperature, and the angle/altitude of the sun and amount of direct sunlight? (e.g., Why does the Northern Hemisphere have summer when the Southern Hemisphere has winter?) <p><u>Assessment Items</u></p> <p>See Common Assessment Folder For Earth/Space Science Test</p>	<ul style="list-style-type: none"> • Phases of the moon; • Specific atmospheric causes of seasonal weather patterns; • Causes of eclipses or tides.