

LITCHFIELD PUBLIC SCHOOLS
Core Curriculum Scope and Sequence
Science/Grade 4

Essential Question: What make objects move the way they do?

Unit/Time Frame	CT Frameworks/ Standards	Content and Skill Objectives Students will be able to:	CMT Correlations	Assessments	Resources
<p style="text-align: center;">Forces and Motion</p> <p style="text-align: center;">4-6 weeks</p>	<p>4.1. a. The size of the change in an object's motion is related to the strength of the push or pull.</p> <p>4.1. b. The more massive an object is, the less effect a given force will have on its motion.</p>	<ul style="list-style-type: none"> • Demonstrate that a force is a push or pull that can cause an object to start moving, stop, or change speed or direction. • Use measurement tools and standard units to compare and contrast the motion of common objects such as toy cars, balls, model rockets or planes in terms of change in position, speed and direction. • Design and conduct experiments to determine how the motion of an object is affected by varying the mass of the object and the strength of the force applied. • Describe how friction forces caused by air resistance or interactions between surface Materials affect the motion of objects. • Predict the effect of an object's mass on its motion. 	<p>B8. Describe the effects of the strengths of pushes and pulls on the motion of objects.</p> <p>B9. Describe the effect of the mass of an object on its motion.</p>	<p>Draw diagrams showing the transfer of energy from the sun to plants and animals</p> <p>Analyze food webs to describe how energy is transferred.</p> <p>Design a simple experiment to collect data to show what effect drought, flooding, deforestation etc... might have on a community of living things.</p> <p>Science Notebooks</p> <p>Teacher observation of student performance</p> <p>Teacher-prepared assessments</p> <p>Science lab sheets, activities and experiments</p>	<p>Theme based non-fiction literature</p> <p>Library Media Specialist</p> <p>Charts/Diagrams</p> <p>Multimedia resources</p> <p>Computer sites</p> <p>Discovery Education</p> <p>Delta Science Modules: Force and Motion</p> <p>Teacher created materials</p>

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Essential Question: How do organisms depend on living and non-living features of the environment for survival?

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<p>Matter and Energy in Ecosystems 4-6 weeks</p>	<p>4.2. a. When the environment changes, some organisms survive and reproduce, and others die or move to new locations.</p>	<ul style="list-style-type: none"> • Give examples of ways that living and nonliving things are interdependent within an ecosystem. • Draw diagrams showing how the sun’s energy enters and is transferred from producers to consumers in a local or aquatic food chain. • Design and conduct simple investigations to record interactions among, producers, consumers, herbivores, carnivores, omnivores and decomposers in an ecosystem. • Analyze food webs to describe how energy is transferred from plants to various animals in an ecosystem. • Distinguish between naturally occurring changes in ecosystems and those caused by human activity. • Predict the effect an environmental change, such as drought or forest destruction, might have on the community of living things 	<p>B 10. Describe how animals, directly or indirectly, depend on plants to provide the food and energy they need in order to grow and survive.</p> <p>B 11. Describe how natural phenomena and some human activities may cause changes to habitats and their inhabitants.</p>	<p>Draw and label an example of a food chain</p> <p>Design a poster depicting an animal’s habitat.</p> <p>Owl pellet dissection.</p> <p>Create a terrarium</p> <p>Create a habitat using earthworms</p> <p>Back Yard Investigation (have students explore and draw habitats in their own backyards)</p> <p>Backyard Populations (have students count the populations in their own backyards – graph data)</p> <p>Science Notebook</p> <p>Teacher observation of student performance</p> <p>Teacher-prepared assessments</p> <p>Science lab sheets, activities and experiments</p>	<p>Theme based nonfiction literature</p> <p>Discovery Education</p> <p>Library Media Specialist</p> <p>Multimedia resources</p> <p>Teacher created materials</p> <p>Computer sites</p> <p>Education Coordinator White Memorial</p> <p>Field Trip White Memorial</p> <p>Charts/Diagrams</p>

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Essential Question: How do external and internal sources of energy affect the Earth's systems?

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Energy in the Earth's System 4-6 weeks	4.3.a. Water circulates through the Earth's crust, oceans and atmosphere.	<ul style="list-style-type: none"> • Describe the role of the sun's energy (i.e., heating and cooling) in the continuous cycling of water between the earth and the atmosphere through evaporation, condensation and precipitation. • Use models to demonstrate that topography causes precipitation landing on earth to move in streams and rivers from higher to lower elevations. • Design and conduct simple investigations to determine how moving water (flowing downhill or in ocean waves) causes changes to the land, the coastline or the course of a stream or river. • Pose testable questions and employ simple equipment and measuring tools to collect data about factors that affect erosion (e.g., type of earth material in an area, volume of moving water, slope of land, vegetation coverage). • Present evidence to support a scientific claim about the relationship between the amount and speed of moving water and the size of earth materials moved (e.g., silt, pebble, boulders). 	<p>B 12. Describe how the sun's energy impacts the water cycle.</p> <p>B 13. Describe the role of water in erosion and river formation.</p>	<p>Science Notebooks</p> <p>Construct models of the water cycle</p> <p>Draw and label diagrams of the water cycle</p> <p>Use simple equipment and measuring tools to conduct an experiment and collect data about factors that affect erosion</p> <p>Teacher observation of student performance</p> <p>Teacher-prepared assessments</p> <p>Science lab sheets, activities and experiments</p>	<p>Theme based non-fiction literature</p> <p>Library Media Specialist</p> <p>Charts/Diagrams</p> <p>Multimedia resources</p> <p>Computer sites</p> <p>Discovery Education</p> <p>Delta science Modules: Erosion Kit</p>

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Essential Question: How does science and technology affect the quality of our lives?

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<p style="text-align: center;">Science and Technology in Society 4-6 weeks</p>	<p>4.4. a. Electricity in circuits can be transformed into light, heat, sound and magnetic effects.</p> <p>4.4. b. Magnets can make objects move without direct contact between the object and the magnet.</p>	<ul style="list-style-type: none"> • Construct complete (closed) and incomplete (open) series circuits, draw labeled diagrams of each, and compare and contrast their properties. • Draw and label diagrams of complete and incomplete circuits and explain necessary components and how components must be arranged to make a complete circuit. • Predict whether diagrammed circuit configurations will light a bulb. • Develop a method for testing conductivity and analyze data to generalize about what type of materials are good electrical conductors and which are good insulators. • Observe magnetic effects associated with electricity and investigate factors that affect the strength of an electromagnet. • Describe materials that are attracted by magnets. • Design procedures to separate mixtures of solids by using a magnet. • Investigate how magnets react with other magnets and analyze findings to develop rules about the interaction of north and south poles of magnets. • Give examples of uses of magnets (e.g., motors, generators, household devices). <p>Embedded Performance Task: Go With the Flow</p>	<p>B14. Describe how batteries and wires can transfer energy to light a light bulb.</p> <p>B15. Explain how simple electrical circuits can be used to determine which materials conduct electricity.</p> <p>B16. Describe the properties of magnets, and how they can be used to identify and separate mixtures of solid materials.</p>	<p>Construct simple circuits</p> <p>Draw and label diagrams of complete and incomplete circuits</p> <p>Test electrical conductors and insulators</p> <p>Science Notebooks</p> <p>Teacher observation of student performance</p> <p>Teacher-prepared assessments</p> <p>Science lab sheets, activities and experiments</p>	<p>Electricity and Magnets Texts</p> <p>Discovery Education</p> <p>Library Media Specialist</p> <p>Theme based nonfiction literature</p> <p>Charts/Diagrams</p> <p>Multimedia resources</p> <p>CL& P Presenter</p> <p>Teacher created materials</p>