

Schiller Park District 81 Curriculum Map

4th Grade Science 2009-2010

	Essentials Question	Content	Skills	Assessment	Resources
September	<p>How is Earth a part of the universe?</p> <p>How are objects in space arranged?</p> <p>How do objects in space move and interact?</p>	<p>Earth's atmosphere contains layers with distinctive qualities.</p> <p>Objects in space have physical relationships with one another.</p>	<p>Label the layers of the atmosphere.</p> <p>Define traits of the types of clouds.</p> <p>Arrange the planets in order of the distance from the sun.</p> <p>Illustrate planetary orbits</p> <p>Distinguish the difference between rotate and revolve (days and seasons)</p> <p>Identify characteristics of asteroids, meteoroids, and comets</p> <p>Illustrate moon phases</p>	<p>Group: Draw and label moon phases</p> <p>Space Objects Jigsaw</p> <p>Individual Assessment: Using a model, show how Earth's rotation and revolution causes days, years and seasons</p> <p>Label the layers of the atmosphere, including name and characteristics</p>	<p>Necessary Resources: Delta Science Kit: (Activities 1, 2, 3, 9, 10)</p> <p>Promethean Flip Charts: Layers of the atmosphere Types of clouds Phases of the Moon Changing of the Seasons Rotate and Revolve</p> <p>Video Clips: Moon phases (teacher tube) United Streaming- types of clouds</p> <p>BrainPop Earth's Atmosphere</p> <p>Suggested Resources: BrainPop: Individual Planets Comets Asteroids Milky Way Solar System Clouds</p> <p>Google Earth</p>

October	<p>Universal Relationships</p> <p>How is Earth a part of the universe?</p> <p>How are objects in space arranged?</p> <p>How do objects in space move and interact?</p> <p>Animal Classification</p> <p>How can specific traits benefit living things?</p> <p>How do we classify things in our world?</p>	<p>Universal Relationships: Earth's atmosphere contains layers with distinctive qualities.</p> <p>Objects in space have physical relationships with one another.</p> <p>Animal Classification All living things have unique characteristics.</p> <p>Living things have specific needs in order for survival</p> <p>There are features of animals that help them adapt.</p>	<p>Universal Relationships: Explore concepts of galaxy and universe</p> <p>Identify major constellations (examples: Big Dipper, Little Dipper, Orion, Cassiopeia, Cepheus)</p> <p>Animal Classification:</p> <p>Sort and classify animals into animal groups</p> <p>Sort and classify between vertebrate and invertebrate</p> <p>Define basic needs of living things</p>	<p>Universal Relationships: Group: Constellation Jigsaw Individual: Constellation Viewer</p> <p>Animal Classification: Group: RAFT web activity Individual: Provide rationale for each basic need Animal Classification word sort</p>	<p>Necessary Resources: Universal Relationships: BrainPop Galaxies Milky Way</p> <p>Delta Science Kit: (Activities 11, 12)</p> <p>Google Earth</p> <p>Suggested Resources: N/A</p> <p>Living Relationships</p> <p>Necessary Resources Promethean Flip Charts: Basic Needs</p> <p>Animal Groups PowerPoint</p> <p>Suggested Resources BrainPop: Animal Groups: Birds, Amphibians, Reptiles, Mammals, Fish, Arthropods Invertebrates</p> <p>National Geographic Animal leveled reader kit</p>
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November	<p>Animal Classification</p> <p>How can specific traits benefit living things?</p> <p>How do we classify things in our world?</p>	<p>All living things have unique characteristics.</p> <p>Living things have specific needs in order for survival</p> <p>There are features of animals that help them adapt.</p>	<p>Match animals with the adaptation</p> <p>Define camouflage and mimicry</p>	<p>Group: Adaptation Jigsaw using think dots</p> <p>Individual Assessment: Animal choice board project</p> <p>Common Assessment</p>	<p>Necessary Resources Promethean Flip Charts: Animal Adaptations</p> <p>Video/Web Clips: United Streaming- Animal Adaptations</p> <p>Adaptation and Vertebrate Centers</p> <p>Suggested Resources Delta Science Kit: (Activities 11)</p> <p>Video/Web Clips: United Streaming- Animal Adaptations</p> <p>BrainPop: Camouflage</p> <p>Zoo Books</p>
December	<p>Animal Relationships</p> <p>How are living things affected by their relationships in a given ecosystem?</p> <p>How does energy move in an ecosystem?</p>	<p>Living organisms depend on one another and on their environment for survival.</p> <p>Producers and consumers play an important role in life cycles, food chains, and food webs.</p>	<p>Define producer, consumer, prey and predator</p> <p>Identify animals as producers, consumers and decomposers</p> <p>Explain causes of extinction and how it relates to endangered species</p> <p>Create a food chain</p>	<p>Group: Endangered Animal Jigsaw</p> <p>Individual Assessment: Sort pictures into food chains</p>	<p>Necessary Resources: Endangered Animal jigsaw resources</p> <p>Promethean Flip Charts: Ecosystems Food Chain</p> <p>BrainPop: Food Chain Ecosystems Extinction</p> <p>Suggested Resources: National Geographic Wildlife filmmaker www.animals.nationalgeographic.com</p> <p>Food chain vocabulary cards</p>

<p>January</p>	<p>Animal Relationships</p> <p>How are living things affected by their relationships in a given ecosystem?</p> <p>How does energy move in an ecosystem?</p> <p>Sound and Magnetism</p> <p>What causes sound?</p> <p>How do sounds vary?</p> <p>How does sound travel?</p> <p>How do magnetic forces affect relationships between different materials in our world?</p>	<p>Animal Relationships</p> <p>Living organisms depend on one another and on their environment for survival.</p> <p>Producers and consumers play an important role in life cycles, food chains, and food webs.</p> <p>Sound and Magnetism</p> <p>Energy is a property of many substances.</p> <p>Energy exists in many forms and is transferred in many ways.</p> <p>Scientific instruments are designed to solve problems.</p>	<p>Animal Relationships</p> <p>Arrange animals into food web</p> <p>Match pictures and words to illustrate a life cycle</p> <p>Sound and Magnetism</p> <p>Manipulate materials to produce sound</p> <p>Infer that vibrations produce sound</p> <p>Use senses to identify sound</p> <p>Create sounds using 3 methods (pluck, strike, blow)</p> <p>Categorize sound methods to instrumental groups</p>	<p>Animal Relationships</p> <p>Group: Visual presentation of a food web</p> <p>Individual Assessment: Explain the affects of extinction of a specific animal in an food web</p> <p>Common Assessment</p> <p>Sound and Magnetism: Group: N/A</p> <p>Individual Assessment: Sort instruments into three methods of producing sound</p>	<p>Necessary Resources: Animal Relationships Food web centers</p> <p>Life cycle centers</p> <p>Promethean Flip Charts: Food Chains and Food Webs</p> <p>Suggested Resources Delta Science Kit: (Insect Unit/Kit- Activity 10)</p> <p>BrainPop Jr. Plant Life Cycle Food Chain</p> <p>Sound and Magnetism:</p> <p>Necessary Resources: Delta Science Kit: (Activities 2, 3, 6)</p> <p>Promethean Flip Charts: Introduction Sound Flip Good Vibrations</p> <p>Suggested Resources Delta Science Kit: (Activities 1,)</p> <p>Text Resources: Sound leveled readers</p> <p>BrainPop Sound: Good Vibrations</p>
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February	<p>Sound and Magnetism</p> <p>What causes sound?</p> <p>How do sounds vary?</p> <p>How does sound travel?</p> <p>How do magnetic forces affect relationships between different materials in our world?</p>	<p>Energy is a property of many substances.</p> <p>Energy exists in many forms and is transferred in many ways.</p> <p>Scientific instruments are designed to solve problems.</p>	<p>Sort instruments into musical groups (percussion, string, wind)</p> <p>Draw and identify sound waves for pitch and amplitude</p> <p>Infer how loud and soft sounds are produced -Infer how high and low sounds are produced</p> <p>Sort into magnetic and nonmagnetic</p> <p>Identify the strongest part of a magnet</p> <p>Define the law of magnetic attraction</p> <p>Draw a magnetic field</p> <p>Explain the relationship between the earth's poles and magnets</p>	<p>Group: Present a tune that uses all three methods of producing sound (Rhythm Band Project)</p> <p>Individual Assessment: Common Assessment</p> <p>Rhythm Band Project</p> <p>Given a diagram of a sound wave, describe the sound it will produce</p> <p>Provide rationale for magnetism of various objects</p>	<p>Necessary Resources:</p> <p>Delta Science Kit: (Sound 7, 8, 9, 12) (Magnets 1, 2, 4, 5,6,7)</p> <p>Promethean Flip Charts: Good Vibrations Made to Attract</p> <p>BrainPop: Magnets</p> <p>Suggested Resources</p> <p>Magnet Leveled Readers</p> <p>Audacity (sound waves)</p>
March	<p>Electricity and Energy</p> <p>How can energy be created differently?</p> <p>How does energy impact daily life?</p>	<p>Energy is a property of many substances.</p> <p>Energy exists in many forms and is transferred in many ways.</p> <p>Scientific instruments are designed to solve problems.</p> <p>Circuits can be constructed differently.</p>	<p>Construct simple circuits.</p> <p>Define the parts of a circuit.</p> <p>Construct series and parallel circuits.</p> <p>Create a circuit using a switch.</p> <p>Classify materials as conductors and nonconductors.</p>	<p>Group: Construct a parallel and series circuit</p> <p>Individual: Choose a circuit to construct and explain the qualities of that circuit using key terms</p> <p>Label the parts of a circuit</p>	<p>Necessary Resources:</p> <p>Delta Science Kit: (Activity 1, 3, 4, 5, 6, 7)</p> <p>Promethean Flip Charts: Turning on the lights flip chart</p> <p>Video/Web Clips: Brainpop- Electrical Circuits</p> <p>Suggested Resources: National Geographic Electricity Leveled text</p> <p>Switch On! Circuit Kits</p>

April	<p>Electricity and Energy</p> <p>How can energy be created differently?</p> <p>How does energy impact daily life?</p>	<p>Energy is a property of many substances.</p> <p>Energy is generated and transferred in many ways.</p> <p>Scientific instruments are designed to solve problems.</p> <p>Circuits can be constructed differently.</p>	<p>Identify alternate forms of energy.</p> <p>Build a solar car.</p> <p>Debate necessity of alternate forms of energy</p>	<p>Group: Solar Power Cars</p> <p>Individual: Solar Power Cars</p> <p>Sensibly Solar Choice Board Project</p>	<p>Necessary Resources: Solar Power Car Materials</p> <p>Switch On! Circuit Kits</p> <p>Renewable Energy Leveled Text</p> <p>Promethean Flip Charts: Alternate forms of energy Solar Power Center</p> <p>Video/Web Clips: BrainPop- wind energy and solar energy</p> <p>Suggested Resources: Fossil Fuel leveled text Nuclear Energy text Energy Transfers</p>
May	<p>Experiment Exposition</p> <p>How can science help improve our lives?</p> <p>What steps are involved in creating a science experiment?</p>	<p>The steps of scientific inquiry include: discovering a problem, researching the problem, creating a hypothesis, recording results, coming to a conclusion.</p> <p>Scientific innovations are designed to improve our lives.</p>	<p>Identify a problem</p> <p>Create a hypothesis</p> <p>Develop an experiment</p> <p>Test the hypothesis</p> <p>Record and collect data</p> <p>Develop conclusions based on data</p>	<p>Group: Given a set of materials, students simulate and document the scientific method</p> <p>Individual: Research projects</p> <p>Data collection</p> <p>Create and test a hypothesis with given materials</p>	<p>Necessary Resources: Research Project Choice Board Teacher supplied experiment materials</p> <p>Promethean Flip Charts:</p> <p>Video/Web Clips: BrainPop- Scientific Method and Science Projects</p> <p>Suggested Resources: Scientific method word sort</p>