

Schiller Park District 81 Curriculum Map

5th Grade Science

	Essentials Question	Content	Skills	Assessment	Resources
September	<p>What are the five characteristics that are used to identify minerals?</p> <p>How are the three types of rocks formed?</p>	<p>There are five characteristics that identify minerals.</p> <p>Rocks can form from other rocks.</p> <p>We get many resources from rocks and minerals.</p>	<p>”Rock and Mineral Properties</p> <ul style="list-style-type: none"> • Students observe and discuss the properties of rock and mineral samples • Specimens 1-10 are observed only <p>”The Luster of Minerals”</p> <ul style="list-style-type: none"> • Students conduct a luster test to classify minerals • Watch Brain Pop video and administer quiz • Luster Patrol <p>”The Hardness of Minerals”</p> <ul style="list-style-type: none"> • Students conduct the scratch test to classify minerals according to hardness <p>”The Streak Test”</p> <ul style="list-style-type: none"> • Student conduct the streak test to reveal the color of each mineral <p>”The Acid Test”</p> <ul style="list-style-type: none"> • Students conduct the acid test to identify the mineral specimen <p>”Types of Rocks”</p> <ul style="list-style-type: none"> • Students classify the types of rocks <p>”Making Rock” (optional)</p> <ul style="list-style-type: none"> • Students make a rock 	<p>Group: Using Mohs Scale arrange minerals in order of hardness. Using the scratch test to find hardness, use the acid test, and classify rocks by characteristics in learning center format. (Note: Evidences is Assessment Activity Sheet 1).</p> <p>Individual: Student self-reflection and self-assessment, Student Learning Logs</p> <p>Group: In learning center format, students will apply what they know about rock composition to choose materials appropriate for building. (Note: Evidence is Assessment Activity Sheet 2)</p> <p>Note: This assessment carries from Question #2 and #3</p> <p>Individual: Student self-reflection and self-assessment, Student Learning Logs</p>	<p>Delta Science Kit Rocks & Mineral Boxes 1-3</p> <p>Activity Sheets 1,3,4,5,6,11</p> <p>Crayon Rocks: Using crayons to show how igneous, metamorphic, and sedimentary are formed.</p> <p>Brain Pop Videos: The Rock Cycle Erosion Types of Rock Mineral Identification Weathering</p> <p>What is a Rock? Word Sort (Optional)</p> <p>Mineral Scavenger Hunt (Optional)</p> <p>Rocks Cause and Affect Organizer (Optional)</p> <p>Chocolate Chip Cookie Mining Activity (Optional)</p> <p>Rock Candy Making (Optional)</p>

<h1 style="writing-mode: vertical-rl; transform: rotate(180deg);">October</h1>	<p>How does Earth's crust change and why does it change?</p> <p>Why do volcanoes, earthquakes and mountain building occur?</p> <p>What are the five characteristics that are used to identify minerals?</p> <p>How are the three types of rocks formed?</p>	<p>There are five characteristics that identify minerals.</p> <p>Rocks can form from other rocks.</p> <p>We get many resources from rocks and minerals.</p> <p>Rocks can form from other rocks.</p>	<p>Applications- Past and Present</p> <ul style="list-style-type: none"> Students discuss how rocks and minerals were used in the past and how they are used today <p>“Continents Adrift”</p> <ul style="list-style-type: none"> Students explore how the Earth's crust floats on the mantle and model the movement of continents over time. <p>“The Earth's Crust”</p> <ul style="list-style-type: none"> Students explore the structure and composition of the Earth's crust <p>“Plates in Motion”</p> <ul style="list-style-type: none"> Students discover that the Earth's crust is broken into pieces called plates. <p>“Subduction”</p> <ul style="list-style-type: none"> Students model subduction and infer the effects of colliding plates on Earth's crust 	<p>Group: In learning center format, students will apply what they know about rock composition to choose materials appropriate for building. (Note: Evidence is Assessment Activity 2).</p> <p>Note: This assessment carries from Question #2 and #3</p> <p>Individual: Students self-reflection and self-assessment, Student Learning Logs</p> <p>Assessment:</p> <p>Group: Given a piece of foam, students will determine the effects of oceanic and continental plate movement. (Note: Evidence is Activity Sheet Assessment Sheet 1-part A)</p> <p>Individual: Student self-reflection and self-assessment, Student Learning Logs</p>	<p>Delta Science Kit Earth Movements Boxes 1 &2</p> <p>Activity Sheets 1, 2, 5, 6, 7, 8, 9, 10</p> <p>Gram Cracker Peanut Butter Demonstration of Plate Tectonics</p> <p>Student Create Movies on Plate Tectonics</p> <p>Ulead Photo Story</p> <p>Imovie</p> <p>Fireworks</p> <p>Brain Pop: Plate Tectonics Earthquakes Volcanoes</p> <p>Bill Nye the Science Guy Videos: Plate Tectonics</p> <p>Igneous Rock Recipe (Optional)</p>
--	---	---	--	---	---

<p style="text-align: center; writing-mode: vertical-rl; transform: rotate(180deg);">November</p>	<p>Why do volcanoes, earthquakes, and mountain building occur?</p>	<p>The earth's crust is always moving due to plate tectonics.</p>	<p>“Our Earth”</p> <ul style="list-style-type: none"> • Students are introduced to the inner structure of the Earth <p>“Convection Currents”</p> <ul style="list-style-type: none"> • Students discover that heat makes gases and liquids rise <p>“Building Mountains”</p> <ul style="list-style-type: none"> • Students discover what happens to Earth's Crust when two plates collide. <p>“A Model Volcano”</p> <ul style="list-style-type: none"> • Students build a model volcano and explore the forces behind eruptions <p>“Vibrating Earth”</p> <ul style="list-style-type: none"> • Students learn what causes earthquakes. <p>“The Ring of Fire”</p> <p>Students create a map of the Ring of Fire and relate the location of volcanoes and earthquakes to boundaries between plates</p>	<p>Assessment:</p> <p>Group: Given a diagram of the Earth's layers, students will label the cross section of Earth. (Note: Evidence is Activity Sheet Assessment Sheet 2 Part A)</p> <p>Individual: Student self reflection and self assessment, student learning logs</p>	<p>Delta Science Kit Earth Movements Boxes 1 &2</p> <p>Activity Sheets 1, 2, 5, 6, 7, 8, 9, 10</p>
---	--	---	---	---	--

<p>December</p>	<p>How and why are living things interdependent within a pond ecosystem?</p> <p>How do unique characteristics of an organism contribute to an ecosystem?</p> <p>How does pollution affect living things?</p> <p>How can people reduce the negative effects of pollution in the environment?</p>	<p>In every environment, living things are interdependent.</p> <p>The structure and behavior of organisms is unique and complex.</p> <p>Scientists use the scientific method when exploring scientific concepts</p> <p>Human interaction with an ecosystem can have positive and negative effects.</p>	<p>“Ecosystems and habitats”</p> <ul style="list-style-type: none"> Identify the various habitats within natural and human ecosystems <p>“A lot of Litter”</p> <ul style="list-style-type: none"> Students classify the types of litter found on school grounds <p>Building a Pond Set up a pond aquarium containing pond organisms</p> <p>Record all living organisms in their chart</p> <p>Trash in Your Class Expand their study of litter to the problem of trash disposal and our overflowing landfills.</p> <p>Macroscopic/Microscopic Pond Identify the difference between micro and macroscopic organisms. Categorize the living organism in the classroom pond.</p>	<p>Assessment: Individual:</p> <p>Students label and identify the five habitats of a pond.</p> <p>Students classify the different types of litter</p> <p>Label microscopic organisms</p>	<p>Delta Science Kits</p> <p>Pond Life Boxes 1& 2 Pollution Boxes 1-3</p> <p>Activity Sheets 1, 4</p> <p>Bill Nye the Science Guy Videos: Ecosystems Pollution</p> <p>Brain Pop: Underwater World Mollusks Fish Amphibians Algae</p> <p>Bulletin Board Ecosystem</p> <p>Food Chain Ecosystem Simulator (Optional)</p> <p>Enchantedlearning.com Organism Research (Optional)</p> <p>Organism and Habitat Posters</p> <p>Organism and Habitat Student Created Movie</p>
-----------------	---	--	---	--	---

<p>January</p>	<p>How and why are living things interdependent within a pond ecosystem?</p> <p>How do unique characteristics of an organism contribute to an ecosystem?</p> <p>How does pollution affect living things?</p> <p>How can people reduce the negative effects of pollution in the environment?</p>	<p>In every environment, living things are interdependent.</p> <p>The structure and behavior of organisms is unique and complex.</p> <p>Scientists use the scientific method when exploring scientific concepts</p> <p>Human interaction with an ecosystem can have positive and negative effects.</p>	<p>Pond Life Bulletin Board Display</p> <p>Jigsaw the 5 habitats of the pond beginning after Building a Pond Ecosystem.</p> <p>The class will produce a 3-D display of a working pond using an array of media and the information that they gather throughout the unit.</p> <p>The students will use multimedia software to photograph, narrate and link their bulletin board to the internet.</p> <p>Observe Pond Record all living organisms in their chart</p>	<p>Assessment:</p> <p>Students assessment is the completion of their multimedia pond life bulletin board</p> <p>Describe organism and record observations and data onto a table</p>	<p>Delta Science Kits</p> <p>Pond Life Boxes 1& 2 Pollution Boxes 1-3</p>
----------------	---	--	--	---	---

<p style="text-align: center; font-size: 24pt; font-weight: bold;">February</p>	<p>How does pollution affect living things?</p> <p>How can people reduce the negative effects of pollution in the environment?</p>	<p>Scientists use the scientific method when exploring scientific concepts</p> <p>Human interaction with an ecosystem can have positive and negative effects.</p>	<p>Don't Muddy the Water Introduced to the concept of water pollution. Examining a variety of water samples before and after filtration.</p> <p>Oil and Water Don't Mix Explore the environmental impact of oil spills. Discovering how difficult it is to remove oil from water and from feathers.</p> <p>Testing for Hard Water Discover that common minerals in water can contribute indirectly to pollution.</p> <p>Acid Test Explore how pH levels affect living organisms.</p> <p>Recycling Paper Investigate one method of recycling paper and then brainstorm additional uses for recycled-paper Products.</p> <p>Sound Survey Infer and identify the causes of noise and discuss ways to reduce noise levels in the environment</p> <p>Pollution Action Plan Identify a type of pollution and create an action plan for reducing pollution in their area. Create a multimedia presentation, pamphlet, commercial or other original idea.</p>	<p>Group Assessment: Students will be assessed on their completion of Pollution Action Plan</p> <p>Individual Common Assessment</p>	<p>Delta Science Kits Pollution Boxes 1 & 2</p> <p>Activity Sheets: 3, 5, 6, 7, 8, 12</p> <p>Litter Investigation Photo Lab</p> <p>Photo Story on Litter (Optional)</p> <p>Ipod Sound Survey</p> <p>Making Recycled Paper</p> <p>Pollution Detective: A Survey (Optional)</p>
---	--	---	---	---	--

<p style="text-align: center; writing-mode: vertical-rl; transform: rotate(180deg);">March</p>	<p>How do aircrafts overcome gravity in order to fly?</p> <p>How do various forces affect the flight of different objects?</p>	<p>Forces cause change.</p> <p>Flight is a result of a combination of forces.</p>	<p>The Wright Brothers Students are introduced to flight by watching a short cartoon on the Wright Brothers. Located: Media Center</p> <p>Amelia Earhart Students will watch a Brain Pop video on Amelia Earhart.</p> <p>Airplane Design Introduced to the basic elements of airplane design</p> <p>Bernoulli's Principle and Airfoils Discover how airfoil shape of wings help an airplane achieve lift.</p> <p>Rockets Identify how thrust is produced in rockets.</p>	<p>Individual Assessment Given possible shapes for the wing of an new airplane, choose the most appropriate wing</p> <p>Use sample shapes to determine the best shape of a blade for an airplane's propeller</p>	<p>Delta Science Kits Flight and Rocketry Boxes 1 & 2</p> <p>Activity Sheets : 5, 6, 7</p> <p>Orville and Wilbur Wright Movie (Optional)</p> <p>Magic School Bus Flight and Rocketry Movie (Optional)</p> <p>Photo Story Flying Machines</p> <p>Video of Rocket Launch</p> <p>Google Earth Simulator (Optional)</p> <p>Brain Pop Video: Amelia Earhart (Optional)</p> <p>Paper Airplane Making (Optional)</p>
--	--	---	---	---	--

<p style="text-align: center;">April</p>	<p>How do aircrafts overcome gravity in order to fly?</p> <p>How do various forces affect the flight of different objects?</p>	<p>Forces cause change.</p> <p>Flight is a result of a combination of forces.</p>	<p>Parachutes Construct parachutes and demonstrate how air resistance can counteract the force of gravity</p> <p>Hot Air Balloons Observe hot air balloons and discover the principles of lighter than air flight</p> <p>Kites Design kites and discover how lift is achieved and sustained in kites</p> <p>Controlling an Airplane Discover how the flight path of an airplane is controlled</p> <p>Helicopters Identify the principles for helicopter flight</p>	<p>Individual Assessment Given illustrations of gliders, students will draw control surfaces in wings to show flight control</p> <p>Common Assessment</p>	<p>Delta Science Kits Flight and Rocketry Boxes 1 & 2</p> <p>Activity Sheets: 2, 3, 4, 10, 11, 12</p> <p>Bernoulli's Principle Graph</p>
--	--	---	---	---	--

<p>May</p>	<p>How do simple machines make work easier for people?</p> <p>How have the different simple machines evolved over time?</p> <p>How do simple machines work together make work easier</p>	<p>Simple machines make work easier.</p>	<p>Doing Work Describe the relationship between force and work</p> <p>Levers Identify levers and describe how they are used.</p> <p>Friction Examine friction an how it affects the amount of force needed to do work</p> <p>Inventing the Wheel Examine how the wheel reduces the amount of force needed to move objects</p> <p>Wheel and Axel Investigate the wheel and axel</p> <p>Pulleys Investigate pulleys</p> <p>Inclined Planes Identify inclined planes and discover how they are used to make work easier</p> <p>Wedges Discuss and identify the properties of a wedge</p> <p>Screws Identify and discuss the properties of a screw</p> <p>Domestic Simple Machines Students will photograph simple machines around and in Washington School. Students will then create a “podcast” presenting the simple machines they observed.</p>	<p>Group Assessment In a learning center format, calculate the work done in two different pulley setups.</p> <p>Individual Assessment Given two choices of situations that needs assistance of a simple machine, the students will choose or draw the best simple machine for the job required.</p> <p>The podcast will articulate the students understand of ways simple machines operate and their use in society.</p>	<p>Delta Science Kits Simple Machines Boxes: 1-3</p> <p>Activity Sheets: 1, 2, 3, 4, 5, 8, 9, 10, 11, 12,</p> <p>Brain Pop Videos: Levers Wheels and Axle Gears Pulleys Incline Plane</p> <p>Photo Story on Simple Machines Around School</p>
------------	--	--	--	--	---