

Unit of Study Earth materials	Standards, Benchmarks, GLCEs or HSCEs	Big Ideas / Key Concepts	Assessments		Learning Strategies <i>Skills</i>	Content Activities <i>Knowledge</i>	Vocab.	Instructional Resources
			FOR LEARNING <i>(Formative)</i>	OF LEARNING <i>(Summative)</i>				
<p>Investigation</p> <p>1</p> <p>Mock Rocks</p>	<p>S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.03.12 Generate questions based on observations.</p> <p>S.IP.03.13 Plan and conduct simple and fair investigations.</p> <p>S.IP.03.14 Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer).</p> <p>S.IP.03.15 Make accurate measurements with appropriate units (centimeters, meters, Celsius, grams, seconds, minutes) for the measurement tool.</p> <p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.03.14 Develop research strategies and skills for information gathering and problem solving.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.03.14 Use data/samples</p>	<p>Rocks exhibit a variety of properties including size, shape, color, and texture</p> <p>Water, settling, and evaporation, can separate rocks into their components</p> <p>Crystals form from evaporation of salt water mixture</p> <p>Rocks are composed of earth materials called minerals that cannot be physically broken apart any further.</p>	<p>Student Response sheet # 11</p>	<p>I-Check #1</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> Observe and describe the physical properties of mock rocks Use measuring tools to gather data about mock rocks Record and compare observations about mock rocks Observe that rocks can be broken down into different ingredients called minerals Observe that some ingredients dissolve in water Observe that dissolved ingredients reappear as crystals when water evaporates Identify some ingredients by their crystalline shapes and patterns Compare their studies to the work of a geologist Use the scientific thinking processes to conduct investigations and build explanations 	<ul style="list-style-type: none"> An earth material has properties that can be observed and described – such as color, shape, and texture A rock is an earth material composed of different ingredients called minerals A mineral is a rock ingredient that cannot be physically reduced to more elementary minerals Some materials, such as salt and alum, dissolve when mixed with water but reform when water evaporates. 	<p>Geology</p> <p>Geologist</p> <p>Property</p> <p>Circumference</p> <p>Diameter</p> <p>Depth</p> <p>Meter tape</p> <p>Balance</p> <p>Mass</p> <p>Rock</p> <p>Mineral</p> <p>Dissolve</p> <p>Crystal</p> <p>Evaporate</p>	<p>Science Stories:</p> <p><i>Written in Stone</i></p> <p><i>Postcards from the Ledge</i></p> <p>ELA Kit</p>

	<p>as evidence to separate fact from opinion.</p> <p>S.RS.03.15 Use evidence when communicating scientific ideas.</p> <p>E.SE.03.13 Recognize and describe different types of earth materials (mineral, rock, clay, boulder, gravel, sand, soil). Part 2 &3</p> <p>E.SE.03.14 Recognize that rocks are made up of minerals. Part 2 &3</p> <p>E.SE.03.22 Identify and describe natural causes of change in the Earth's surface (erosion, glaciers, volcanoes, landslides, and earthquakes). Landform Science Stories</p>							
<p>Investigation</p> <p>2</p> <p>Scratch test</p>	<p>S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.03.12 Generate questions based on observations.</p> <p>S.IP.03.13 Plan and conduct simple and fair investigations.</p> <p>S.IP.03.14 Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer).</p> <p>S.IP.03.16 Construct simple charts and graphs from data and observations. (Part 1 &2)</p> <p>S.IA.03.11 Summarize information from charts and graphs to answer scientific questions. (Part 1 &2)</p>	<p>Rocks are composed of earth materials called minerals that cannot be physically broken apart any further</p> <p>The property of hardness can be used to seriate minerals</p> <p>Quartz, fluorite, calcite, and gypsum are example of minerals</p>	<p>Student Response sheet # 15</p>	<p>I-Check #2</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> • explore the properties of a group of minerals • investigate the hardness of minerals • seriate minerals according to hardness • Use the scientific thinking processes to conduct investigations and build explanations 	<ul style="list-style-type: none"> • A mineral is a basic earth material that cannot be physically broken down any further • Hardness, a mineral property, is the resistance of a mineral to being scratched 	<p>Quartz</p> <p>Gypsum</p> <p>Calcite</p> <p>Fluorite</p>	<p>Science Stories:</p> <p><i>Treasure Under Foot</i></p> <p><i>X Marks the Spot</i></p> <p>Digging it Up: Mining for Minerals</p> <p>Birthstones, A Minerals for Each Month</p> <p>ELA Kit</p>

	<p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.03.15 Compare and contrast sets of data from multiple trials of a science investigation to explain reasons for differences.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.03.14 Use data/samples as evidence to separate fact from opinion. (Part 1&2 Science Stories: Birthstones)</p> <p>S.RS.03.15 Use evidence when communicating scientific ideas.</p> <p>S.RS.03.18 Describe the effect humans and other organisms have on the balance of the natural world. (Science Story: Mining for Minerals)</p> <p>E.ES.03.41 Identify natural resources (metals, fuels, fresh water, farmland, and forests). Science Stories: Mining for Minerals</p> <p>E.SE.03.13 Recognize and describe different types of earth materials (mineral, rock, clay, boulder, gravel, sand, soil). Part 1</p> <p>E.SE.03.14 Recognize that rocks are made up of minerals. Part 1</p>							
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<p>Investigation</p> <p>3</p> <p>Calcite Quest</p>	<p>S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.03.12 Generate questions based on observations.</p> <p>S.IP.03.13 Plan and conduct simple and fair investigations.</p> <p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.03.14 Develop research strategies and skills for information gathering and problem solving.</p> <p>S.IA.03.15 Compare and contrast sets of data from multiple trials of a science investigation to explain reasons for differences.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.03.15 Use evidence when communicating scientific ideas.</p> <p>E.SE.03.13 Recognize and describe different types of earth materials (mineral, rock, clay, boulder, gravel, sand, soil). Part 1 & 2</p>	<p>Calcite is a mineral that fizzes in acid</p> <p>Minerals have different properties</p> <p>Rocks can easily be tested for the presence of calcite using an acid such as vinegar</p> <p>Sandstone, limestone, marble, and granite are example of rocks</p>	<p>Student Response sheet # 17</p>	<p>I-Check #3</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> investigate four rocks if they contain calcite observe fizzing when the mineral calcite is put into vinegar observe and compare the results of evaporation use observations and data to develop evidence to support conclusions Use the scientific thinking processes to conduct investigations and build explanations 	<ul style="list-style-type: none"> Rocks are earth minerals composed of a mixture of one or more minerals Different minerals have different properties When a solid dissolves in a liquid it can be recovered by evaporating the liquid Crystal residue can provide evidence that calcite is an ingredient in a rock A unique property of calcite is its reaction with cold acid 	<p>Basalt</p> <p>Limestone</p> <p>Marble</p> <p>Sandstone</p> <p>Vinegar</p> <p>Acid</p> <p>Evidence</p>	<p>Science Stories:</p> <p><i>Rock Tales</i></p> <p><i>Old Man and the Rock: A Native American Tale</i></p> <p><i>The Two Boys: An Aborigine Story from Australia</i></p> <p>ELA Kit</p>
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<p>Investigation</p> <p>4</p> <p>Take it for Granite</p>	<p>S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.03.12 Generate questions based on observations.</p> <p>S.IP.03.13 Plan and conduct simple and fair investigations.</p> <p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.03.14 Develop research strategies and skills for information gathering and problem solving.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.03.15 Use evidence when communicating scientific ideas.</p> <p>S.RS.03.18 Describe the effect humans and other organisms have on the balance of the natural world. Science Stories: Rock of Ages)</p> <p>E.ES.03.51 Describe ways humans are dependent on the natural environment (forests, water, clean air, earth materials) and constructed environments (homes, neighborhoods, shopping malls, factories, and industry). Science Stories: Rock of Ages)</p> <p>E.SE.03.13 Recognize and</p>	<p>Rocks are made up of minerals</p> <p>Granite is made up of minerals mica, feldspar, quartz, hornblende</p> <p>Some mineral properties are color and hardness</p> <p>Properties of minerals are used to find out which minerals make up a rock.</p>		<p>I-Check #4</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> Observe and review properties of minerals Organize a set of samples by sorting rocks and minerals Organize a granite sample to determine which minerals are present Communicate evidence of the minerals in granite Plan and conduct investigations planned and chosen by the students Communicate results of student investigations to the class Use the scientific thinking processes to conduct investigations and build explanations 	<ul style="list-style-type: none"> a property of an earth material is something that can be observed and described rocks are earth materials composed of a mixture of one or more minerals hardness, mineral property, is the resistance of a material to being scratched a unique property of calcite is its reaction to cold acid 	<p>Granite</p> <p>Feldspar</p> <p>Hornblende</p> <p>mica</p>	<p>Science Stories:</p> <p>Rock of Ages</p> <p>To Prepare for and Afterlife: The Great Pyramid</p> <p>ELA Kit</p>
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	<p>describe different types of earth materials (mineral, rock, clay, boulder, gravel, sand, soil). Part 1</p> <p>E.SE.03.14 Recognize that rocks are made up of minerals. Part 1</p>							
<p>Other GLECS</p>	<p>S.IA.03.14 Develop research strategies and skills for information gathering and problem solving.</p> <p>E.ES.03.42 Classify renewable (fresh water, farmland, forests) and non-renewable (fuels, metals) resources.</p> <p>E.ES.03.43 Describe ways humans are protecting, extending, and restoring resources (recycle, reuse, reduce, renewal).</p> <p>E.ES.03.44 Recognize that paper, metal, glass, and some plastics can be recycled.</p> <p>E.SE.03.32 Describe how materials taken from the Earth can be used as fuels for heating and transportation.</p>							<p>NOT COVERED- SUPPLEMENTS NEEDED</p>

Units of Study Structures of Life	Standards, Benchmarks, GLCEs or HSCEs	Big Ideas / Key Concepts	Assessments		Learning Strategies <i>Skills</i>	Content Activities <i>Knowledge</i>	Vocab.	Instructional Resources
			FOR LEARNING <i>(Formative)</i>	OF LEARNING <i>(Summative)</i>				
<p>Investigation</p> <p>1</p> <p>Energy</p>	<p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.03.16 Identify technology used in everyday life. (Read Science Story: <i>Energy Conversion</i>)</p> <p>S.RS.03.17 Identify current problems that may be solved through the use of technology. (Science resource: <i>Extensions</i>)</p> <p>P.EN.03.11 Identify light and sound as forms of energy.</p> <p>P.EN.03.31 Relate sounds to their sources of vibrations (for example: a musical note produced by a vibrating guitar string, the sounds of a drum made by the vibrating drum head). (Part 1 & Science Story: <i>Energy on the Move</i>)</p> <p>P.EN.04.12 Identify heat and electricity as forms of energy.</p>	<p>Energy can produce heat, light, and motion</p> <p>Light for the sun is converted into chemical energy (food) by plants.</p> <p>Chemical energy is used by organisms to conduct life activities.</p> <p>Energy is carried from one place to another by waves, electric wires and moving objects.</p>	<p>Student Response sheet # 5</p>	<p>I-Check #1</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> Identify sources of stored energy Learn that light from the sun is the source of most of the energy on earth Observe energy sources doing work Learn how organisms use stored energy in food as fuel for life processes. Learn how energy can be converted from one form to another Observe that energy can be carried from one place to another by waves, electric current, and moving objects Learn that organisms and machines convert stored energy to motion and heat. 	<ul style="list-style-type: none"> Energy makes things happen Energy takes many forms Energy can be stored Most of the energy used by organisms, including humans, come from the sun in the form of light. Stored energy can be converted to other forms of energy Machines and living things can convert energy into motion and heat. Energy can be carried from one place to another by waves, electric current and moving objects. 	<p>Battery</p> <p>Chemical energy</p> <p>Convert</p> <p>Electric current</p> <p>Electricity</p> <p>Energy</p> <p>Energy source</p> <p>Energy transfer</p> <p>Food</p> <p>Forms of energy</p> <p>Fossil fuel</p> <p>Fuel</p> <p>Heat</p> <p>Light</p> <p>Moving object</p> <p>Stored energy</p> <p>Sun</p> <p>wave</p>	<p>Science Stories:</p> <p><i>Energy Sources</i></p> <p><i>Energy conservation</i></p> <p><i>Energy on the Move</i></p> <p><i>Summary: Energy</i></p>

<p>Investigation</p> <p>2</p> <p>Light</p>	<p>S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.03.12 Generate questions based on observations.</p> <p>S.IP.03.13 Plan and conduct simple and fair investigations.</p> <p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>P.EN.03.11 Identify light and sound as forms of energy.</p> <p>P.EN.03.21 Demonstrate that light travels in a straight line and that shadows are made by placing an object in a path of light.</p> <p>P.PM.03.52 Explain how we need light to see objects: light from a source reflects off objects and enters our eyes. (Part 1) Science Story: <i>Throw a Little Light on Sight</i></p>	<p>Light travels in a straight line in one direction</p> <p>Mirrors and other surfaces reflect light, sending it in a different direction.</p> <p>An object can be seen only when light from the object enters the eye.</p> <p>White light is a mixture of all colors of light</p> <p>An object can absorb or reflect light</p> <p>A red object reflects red light and absorbs all other colors of light</p>		<p>I-Check #2</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> Learn that light is a form of energy that travels in straight lines from a light source Find out how light can reflect (bounce off) from the surface of a mirror Learn that an object is seen only when light from that object enters an eye Learn that white light is a mixture of all colors of light. Learn that light can be absorbed and reflected by matter Learn that the apparent color of an object is the result of the light it reflects Observe that the apparent color of an object is affected by the color of light striking it. Predict outcomes of investigation and compare to results. 	<ul style="list-style-type: none"> Light is a form of energy that travels in straight lines from a light source Light can reflect (bounce off) surfaces that it strikes A mirror is a smooth reflective surface An object is seen only when light from that object enters an eye White light is a mixture of all colors of light Light can be absorbed by matter The apparent color of an object is the result of the light it reflects. The apparent color of an object is affected by the color of light striking it. A shadow is created when an opaque object blocks light. 	<p>Absorb</p> <p>Appearance</p> <p>Color</p> <p>Light source</p> <p>Mirror</p> <p>Ray</p> <p>Reflect</p> <p>Reflection</p> <p>Shadow</p> <p>White light</p>	<p>Science Stories:</p> <p><i>Reflection</i></p> <p><i>Throw a little Light on Sight</i></p> <p><i>Summary: Light</i></p>
<p>Investigation</p> <p>3</p> <p>Matter</p>	<p>S.IP.03.12 Generate questions based on observations.</p> <p>S.IP.03.13 Plan and conduct simple and fair investigations.</p> <p>S.IP.03.14 Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler,</p>	<p>Matter is the stuff from which everything is made</p> <p>Three states of matter are solid, liquid, and gas</p>		<p>I-Check #3</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> Explore properties of the three forms of matter; solid, liquid and gas Determine defining characteristics of solids, liquids, and gasses Learnt he standard metric unit for measuring mass and volume: gram and 	<ul style="list-style-type: none"> Common matter on earth has three forms or states, solid, liquid, and gas The behavior of a sample of matter in an open container indicates its state Measurement is 	<p>Balance</p> <p>Capacity</p> <p>Gas</p> <p>Graduated cylinder</p> <p>gram</p>	<p>Science Stories:</p> <p><i>States of Matter</i></p> <p><i>Opinion and Evidence</i></p> <p><i>The Metric System</i></p> <p><i>Summary: Matter</i></p>

	<p>meter stick, measuring cup, thermometer, spring scale, stop watch/timer).</p> <p>S.IP.03.15 Make accurate measurements with appropriate units(centimeters, meters, Celsius, grams, seconds, minutes) for the measurement tool.</p> <p>S.IP.03.16 Construct simple charts and graphs from data and observations.</p> <p>S.IA.03.11 Summarize information from charts and graphs to answer scientific questions.</p> <p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.03.15 Compare and contrast sets of data from multiple trials of a science investigation to explain reasons for differences. (Part 2)</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.03.14 Use data/samples as evidence to separate fact from opinion. (part 2)</p> <p>S.RS.03.15 Use evidence when communicating scientific ideas. (part 2)</p> <p>P.EN.03.11 Identify light and sound as forms of energy.</p> <p>P.PM.04.16 Measure the weight (spring scale) and mass</p>	<p>A balance is a tool used to compare unknown masses to known masses</p> <p>The gram is the standard unit of measure for mass in the metric system.</p> <p>Liquid volume is measured in liters and milliliters in the metric system</p> <p>graduated cylinders and syringes are used to measure volume in the metric system</p>			<p>liter</p> <ul style="list-style-type: none"> • Use a balance to determine and compare masses • Use graduated cylinders and syringes to measure and compare volumes of liquids • Make multiple observations to improve accuracy • Make predictions and compare them to data • Collect and use data to draw conclusions • Differentiate evidence form opinion 	<p>used to quantify observations</p> <ul style="list-style-type: none"> • A measurement standard is a unit agreed upon and used by a large number of people • The gram is the standard unit of measure used to quantify mass in the metric system. • Volume is a measure of the three dimensional space occupied by matter. • Opinion is based on belief; scientific evidence is based on observation. • The liter is the standard for measuring fluid volume in the metric system. 	<p>kilogram</p> <p>liquid</p> <p>liter</p> <p>mass</p> <p>matter</p> <p>metric system</p> <p>milliliter</p> <p>prediction</p> <p>solid</p> <p>state</p> <p>syringe</p> <p>volume</p>	
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	(balances in grams or kilograms) of objects. P.PM.04.17 Measure volumes of liquids and capacities of containers in milliliters and liters. P.PM.04.23 Compare and contrast the states (solids, liquids, gases) of matter.							
Investigation 4 Changing Matter	S.IP.03.12 Generate questions based on observations. S.IP.03.13 Plan and conduct simple and fair investigations. S.IP.03.14 Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer). S.IP.03.15 Make accurate measurements with appropriate units (centimeters, meters, Celsius, grams, seconds, minutes) for the measurement tool. S.IP.03.16 Construct simple charts and graphs from data and observations. S.IA.03.11 Summarize information from charts and graphs to answer scientific questions. S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups. S.IA.03.13 Communicate and present findings of observations and investigations.	The thermometer is the tool used to measure temperature Temperature is reported in degrees Celsius in the metric system Melting is the change of state from solid to liquid resulting from heat. Evaporation is change of state from liquid to gas resulting from heat. Matter on earth is made of tiny particles called atoms During reactions starting substances change into new substances with new		I-Check #4 Posttest Assessment	<ul style="list-style-type: none"> • Measure temperature in standard metric units using a thermometer calibrated in degrees Celsius • Melt solid substances using heat • Learnt that heat affects the rate of evaporation of liquid water • Conduct a simple chemical reaction and compare the products to the original substances that reacted • Learn that all matter is made of tiny particles called atoms • Contrast the ancient notion of four elements with the modern periodic table of the elements • Make predictions in the context of conducting science investigations • Use numerical data collected in an investigation to compare results and develop conclusions 	<ul style="list-style-type: none"> • A measurement standard is a unit agreed upon and used by a large number of people. • Degree Celsius is the unit used when scientists measure temperature • Melting occurs when solids are heated • Different substances melt at different temperatures • Evaporation occurs when liquids are heated • All matter on earth is made of tiny particles called atoms • 90 different elements occur naturally on earth • 26 elements have been created in laboratories • When two substances are combined a reaction may occur producing a new substance with unique properties 	Atom Carbon dioxide Degree Celsius Evaporation Melting Reaction Substance Temperature Thermometer	

	<p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>P.EN.04.41 Demonstrate how temperature can be increased in a substance by adding energy. (Part 2)</p> <p>P.EN.04.42 Describe heat as the energy produced when substances burn, certain kinds of materials rub against each other, and when electricity flows through wire. (Part 2)</p> <p>P.EN.04.43 Describe how heat is produced through electricity, rubbing, and burning. (Part 2)</p> <p>P.CM.04.11 Explain how matter can change from one state (liquid, solid, gas) to another by heating and cooling.</p>	properties.						
Other GLECS	<p>S.IA.03.14 Develop research strategies and skills for information gathering and problem solving.</p> <p>P.EN.03.22 Demonstrate what happens to light when it travels from water to air. (straw half in water looks bent).</p> <p>P.EN.03.32 Distinguish the effect of fast or slow vibrations as pitch.</p> <p>P.PM.03.51 Demonstrate how some materials are heated more than others by light that shines on them.</p>							NOT COVERED- SUPPLEMENTS NEEDED

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			FOR LEARNING <i>(Formative)</i>	OF LEARNING <i>(Summative)</i>				
<p>Investigation</p> <p>1</p> <p>Origin of Seeds</p>	<p>S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.03.12 Generate questions based on observations.</p> <p>S.IP.03.14 Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer).</p> <p>S.IP.03.15 Make accurate measurements with appropriate units</p> <p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.03.15 Compare and contrast sets of data from multiple trials of a science investigation to explain reasons for differences.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.03.19 Describe how people have contributed to science</p>	<p>Identify properties of plants</p> <p>Sort and group germinated seeds on the basis of observable properties</p> <p>Investigate the structures of seeds and learn how the structures function in growth and survival</p>	<p>Student Response sheet # 5</p>	<p>I-Check #1</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> • Explore common fruits to find seeds • Compare properties of seeds and fruits • Organize and communicate information about seeds • Monitor and record changes in seeds • Investigate the effect of water on seeds 	<ul style="list-style-type: none"> • Seeds are found in the plant part called the fruit • Different fruits have different kinds and number of seeds • Seeds have a variety of properties • Seeds undergo changes in the presence of water • A seed is an organism, a living thing • Seeds store food and provide protection for the young plant. 	<p>Estimate</p> <p>Fruit</p> <p>Property</p> <p>Seed</p> <p>Dormant</p> <p>Mold</p> <p>Embryo</p> <p>Seed coat</p> <p>Cotyledon</p>	<p>Science Stories:</p> <p><i>Seeds Are Everywhere!</i></p> <p><i>The Most Important Seed</i></p> <p><i>Barbara McClintock</i></p>

	<p>throughout history and across cultures. (Science Stories: "Barbara McClintock")</p> <p>L.OL.03.41 Classify plants on the basis of observable physical characteristics (roots, leaves, stems, and flowers). Part 1</p> <p>L.EV.03.11 Relate characteristics and functions of observable parts in a variety of plants that allow them to live in their environment (for example: leaf shape, thorns, odor, color). Science Stories: "The Most Important Seed"</p> <p>P.PM.04.16 Measure the weight (spring scale) and mass (balances in grams or kilograms) of objects. Part 3</p>							
<p>Investigation</p> <p>2</p> <p>Growing Further</p>	<p>S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.03.12 Generate questions based on observations.</p> <p>S.IP.03.14 Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer).</p> <p>S.IP.03.15 Make accurate measurements with appropriate units</p> <p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p>		<p>Student response sheet # 8</p>	<p>I-Check #2</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> Describe properties of seeds Compare different kinds of germinated seeds Observe seedlings and plant structures throughout life cycle 	<ul style="list-style-type: none"> Germination is the onset of a seed's growth Plants need water, light, and nutrients to grow Hydroponics is growing plants in water A life cycle is the process of a seed growing into a mature plant, which in turn produces seeds. 	<p>Germination</p> <p>Organism</p> <p>Growth</p> <p>Seedling</p> <p>Root</p> <p>Stem</p> <p>Leaf</p> <p>Nutrient</p> <p>Hydroponics</p> <p>Flower</p> <p>Life cycle</p>	<p>Science Stories:</p> <p><i>Hydro-growing</i></p> <p><i>Seeding Space</i></p>

	<p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.03.15 Compare and contrast sets of data from multiple trials of a science investigation to explain reasons for differences.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>S.RS.03.17 Identify current problems that may be solved through the use of technology.</p> <p>L.OL.03.31 Describe the function of the following plant parts: flower, stem, root and leaf. (Part 3)</p> <p>L.OL.04.15 Determine that plants require air, water, light, and a source of energy and building material for growth and repair. Part 2 Science Stories "Hydrogrowing"</p> <p>L.EV.04.21 Identify individual differences (for example: color, leg length, size, wing size) in organisms of the same kind. Part 3</p>							
<p>Investigation</p> <p>3</p> <p>Meet the</p>	<p>S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.03.12 Generate questions based on observations.</p>		<p>Student response sheet # 15</p>	<p>I-Check #3</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> Care for and feed crayfish Observe structures and behaviors of crayfish Monitor and record observations of crayfish over several days Investigate territorial 	<ul style="list-style-type: none"> Crayfish have observable structures Crayfish require clean, cool water, food, and space Behavior is what an animal does Habitat is where 	<p>Structures</p> <p>Crustaceans</p> <p>Antennae</p> <p>Bristles</p> <p>Carapace</p>	<p>Science Stories:</p> <p><i>Answering Kids' Questions</i></p> <p><i>Lifecycle of a Crayfish</i></p>

<p>Crayfish</p>	<p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.03.15 Compare and contrast sets of data from multiple trials of a science investigation to explain reasons for differences.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>L.OL.03.32 Identify and compare structures in animals used for controlling body temperature, support, movement, food-getting, and protection (for example: fur, wings, teeth, claws). Part 1</p> <p>L.OL.03.42 Classify animals on the basis of observable physical characteristics (backbone, skin, shell, limbs, scales).</p> <p>L.EV.03.12 Relate characteristics and functions of observable body parts to the ability of animals to live in their environment (for example: sharp teeth, claws, color, body covers). Part 1</p> <p>L.OL.04.16 Determine that animals require air, water, and a source of energy and building material for growth and repair. Part 2</p> <p>L.EV.04.21 Identify individual differences (for example:</p>				<p>behavior of crayfish</p>	<p>an animal lives</p> <ul style="list-style-type: none"> Some animals claim a territory that they protect from other animals. 	<p>Swimmeretes</p> <p>Pincers</p> <p>Elodea</p> <p>Habitat</p> <p>Behavior</p> <p>territory</p>	
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	<p>color, leg length, size, wing size) in organisms of the same kind. Part 1</p>							
<p>Investigation</p> <p>5</p> <p>Bess Beetles (Hissing Cochroach)</p> <p><i>*note: skip investigation 4</i></p>	<p>S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.03.12 Generate questions based on observations.</p> <p>S.IA.03.12 Share ideas about science through purposeful conversation in collaborative groups.</p> <p>S.IA.03.13 Communicate and present findings of observations and investigations.</p> <p>S.IA.03.15 Compare and contrast sets of data from multiple trials of a science investigation to explain reasons for differences.</p> <p>S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p> <p>L.OL.03.32 Identify and compare structures in animals used for controlling body temperature, support, movement, food-getting, and protection (for example: fur, wings, teeth, claws). Parts 1 & 2</p> <p>L.OL.03.42 Classify animals on the basis of observable physical characteristics (backbone, skin, shell, limbs, scales). Part</p>		<p>Student sheet # 33</p>	<p>I-Check #5</p> <p>Posttest Assessment</p>	<ul style="list-style-type: none"> Observe and describe the structures of Bess beetles Observe and describe the behaviors of Bess beetles Investigate the pulling strength of Bess beetles Monitor and record observations of Bess beetles over time Evaluate whether an investigation might harm an animal 	<ul style="list-style-type: none"> Bess beetles are insects with 6 legs, 3 body parts, antennae, and a variety of other structures Bess beetles need water, air, food, and space The structures found on different kinds of organisms shows some similarities and some differences An organisms structures have functions that help it survive in it's habitat We must take care not to harm animals as we learn about them 	<p>Bess beetle</p> <p>Insect</p> <p>Thorax</p> <p>Abdomen</p> <p>Head</p> <p>Mite</p> <p>Terrarium</p> <p>Venn diagram</p> <p>Function</p> <p>Balance</p>	<p>Supplemental material needed</p>

	<p>2</p> <p>L.EV.03.12 Relate characteristics and functions of observable body parts to the ability of animals to live in their environment (for example: sharp teeth, claws, color, body covers). Part 1 Science Stories <i>"Answering Kids' Questions"</i></p> <p>L.OL.04.16 Determine that animals require air, water, and a source of energy and building material for growth and repair. Science Stories: <i>"Answering Kids' Questions"</i></p> <p>L.EV.04.21 Identify individual differences (for example: color, leg length, size, wing size) in organisms of the same kind. Part 1</p> <p>L.EC.04.11 Identify organisms as part of a food chain or food web. Science Stories <i>"The Food Web"</i></p>							
<p>Other GLECS</p>	<p>S.IA.03.14 Develop research strategies and skills for information gathering and problem solving.</p> <p>P.FM.03.43 Calculate the speed of an object based on the distance it travels divided by the amount of time it took to travel that distance.</p>							<p>NOT COVERED- SUPPLEMENTS NEEDED</p>