

SCIENCE 21 CURRICULUM MAP

Grade Level: One

Essential Question for Grade Level: 1

Where do we find organization in our world?

Unit/Timeframe	Unit Essential Questions	Unit Objectives	Concepts/Major Understandings	NYS Performance Indicators
<p>Unit 1: Organizing Ourselves to do Science Investigations Sept. – Nov.</p>	<ul style="list-style-type: none"> • How do we have to organize our work to behave like a scientist? • Why are safety rules important when doing science? 	<p>Students will be able to learn how to organize themselves to do science investigations. (Unit 1)</p> <ol style="list-style-type: none"> 1. Be able to organize materials observe, describe and discriminate the attributes of common objects. 2. Be able to order serially and classify objects by shape, size, length, weight, color and texture. 3. Be able to describe three activities that scientist do to help them organize and investigate. 4. Be able to contribute to and understand the importance of classroom rules and science safety rules. 5. Be able to work cooperatively and collaboratively to answer questions. 6. Be able to observe, classify, collect and process data about an object. 7. Be able to observe, classify, collect and process data about themselves. 8. Be able to report to their peers orally, by drawing and with graphs, what they have investigated. 	<ul style="list-style-type: none"> • By identifying the properties of objects, the objects can be sorted in useful ways. • Objects can be sorted by shape, size, length, weight, color, texture and function. • Objects can be placed in serial order on the basis of a given property. • Describing objects and classifying them are types of investigations that scientists use in their work. • To do their work effectively, scientists must be organized, they must be able to work collaboratively, they must be good at observing and recording their observations as they answer questions, and they must be good at reporting to others what they have investigated. 	<p>SI 1.3a SI 1.1b SI 1.1a SI 1.1a SI 1.1b SI 1.1b MA 1.1c MA 2.1a</p>

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<p>Unit Two:</p> <p>Investigating Attributes and Properties of Objects</p> <p>Nov. – Jan.</p>	<ul style="list-style-type: none"> • How does studying the attributes/properties of objects help us to understand them, organize them, and answer questions about them? • How can we communicate the results of our science experiments to other people? 	<p>Students will be able to investigate attributes and properties of objects. (Unit 2)</p> <ol style="list-style-type: none"> 1. Be able to observe and describe the properties of objects. 2. Be able to determine similarities and differences among objects by identifying attributes. 3. Be able to sort and re-sort objects or people according to particular attributes. 4. Be able to construct bar graphs and Venn diagrams to display data. 5. Be able to develop and implement plans for collecting and analyzing data in order to answer questions. 6. Be able to create, read and interpret concrete graphs, picture graphs and tally charts. <p>Students will be able to investigate sinking and floating. (Unit 2)</p> <ol style="list-style-type: none"> 1. Be able to identify the difference between sinking and floating. 2. Be able to predict and observe objects that sink or float. 3. Be able to classify and sort objects as “sinkers” or “floaters.” 4. Be able to design an experiment to determine which kinds of plastics sink or float. 	<ul style="list-style-type: none"> • Objects have many observable properties, including size, weight, shape, color, temperature, texture and sink/float. • Some properties can be observed by using the sense of sight; other properties can be observed using the sense of touch, smell, taste, and hearing. • Objects can be sorted into groups according to their properties; each group contains objects that are similar with respect to the chosen property. • Objects are made of one or more materials, such as plastic, wood, and metal. Objects can be described by the properties of the materials from which they are made. • Tests can be performed to investigate properties that cannot be observed simply through the senses; putting an object into water is a test for floating or sinking. 	<p>PS 3.1b, e,f</p> <p>PS 3.1c</p> <p>PS 3.1c</p> <p>PS 3.1b</p> <p>PS 3.1f</p> <p>PS 3.1e</p> <p>PS 3.1e</p> <p>PS 3.1f</p>

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<p>Unit 3:</p> <p>Identifying the States of Matter</p> <p>Jan.-Mar.</p>	<ul style="list-style-type: none"> • How do we know that objects or materials can exist as solids, liquids, or gasses by observing their properties/ attributes? • How is energy related to the change of state of materials? • Why is it important for us that objects can be solids, liquids, or gasses? 	<p>Students will be able to identify the states of matter. (Unit 3)</p> <ol style="list-style-type: none"> 1. Be able to identify the properties of a liquid. 2. Be able to identify the properties of a solid. 3. Be able to identify the properties of a common gas (air). 4. Be able to identify three states of matter as solids, liquids and gases. 5. Be able to recognize that temperature affect changes in states of matter. 6. Be able to observe and describe the three states of water. 7. Be able to give an example of an experiment that they have done which demonstrates how matter can change its state. 8. Be able to observe, classify and describe the properties of various foods by preparing and relating the concept of states of matter to familiar foods. 9. Be able to observe and describe the different states of matter during the growth of borax crystals. 	<ul style="list-style-type: none"> • Liquids have a definite volume but not a definite shape; they go to the bottom of their container. • Liquids have a tendency to flow and can be poured from one container to another. They change shape as they flow into a container. • Solids have a definite shape and a definite volume.\ • Gases fill a container and take the shape and volume of the entire container. Gases can't be seen but they take up space and can be 'felt' in a closed container like a balloon. • Some common materials, such as water, can be changed from one state to another by heating and cooling; heating can change solid water (ice) into liquid water and then into water vapor (a gas). 	<p>PS 3.1a, PS 3.2a</p> <p>PS 3.2a</p> <p>PS 3.2a PS 3.2b</p> <p>PS 3.2a PS 3.2c</p> <p>PS 3.2c PS 3.2c</p>

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<p>Unit 4: Investigating Living Things Apr. - June</p>	<ul style="list-style-type: none"> • What does it mean to be a living thing? • What do living things need to live and grow? • How do living things use their body parts to get the things they need to live and grow? • How do we take good care of living things in our science lessons? • How can we find out how living things react to different stimuli and conditions? 	<p>Students will be able to identify properties of living things. (Unit 4)</p> <ol style="list-style-type: none"> 1. Be able to identify the needs of living things (breathe, eat, move, grow, excrete, reproduce, respond to their environment). 2. Be able to identify and describe properties of all living things. 3. Be able to create a snail habitat based on the properties of all living things. 4. Be able to identify and describe properties of a pillbug or hermit crab from their main body parts. 5. Be able to locate the main body parts of a pillbug or hermit crab. 6. Be able to investigate how pillbugs or hermit crabs react to different stimuli. 7. Be able to classify all living and non-living things according to their properties. 	<ul style="list-style-type: none"> • All living things have basic needs, such as the need for food, water, air, space and shelter. Non-living things do not have needs. • The life functions performed by living things include eating, drinking, breathing, growing and moving. • Each type of animal has specific needs, such as type of food, amount of water and range of temperature. • A habitat is the place where an animal finds the food, water, shelter and space necessary for it to survive. • Animals sense and respond to changes in their environment. 	<p>LE 1.1a, 1.2a</p> <p>LE 2.2a, 2.2b</p> <p>LE 1.2a, 5.2f</p> <p>LE 2.2b, 3.1a</p> <p>LE 3.1a</p> <p>LE 5.1b, 5.2b</p> <p>LE 1.1c</p>