

**Kindergarten
Science Pacing Guide**

**Time: Integrated and Ongoing All Year
Unit: Science Inquiry**

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
INQUIRY PROCESS FOR SCIENCE INVESTIGATIONS	<p><i>K-7 Standard S.IP: Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems</i></p> <p>S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.</p> <p>S.IP.00.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.00.12 Generate questions based on observations.</p> <p>S.IP.00.13 Plan and conduct simple investigations.</p> <p>S.IP.00.14 Manipulate simple tools (for example: hand lens, pencils, balances, non-standard objects for measurement) that aid observation and data collection.</p> <p>S.IP.00.15 Make accurate measurements with appropriate (non-standard) units for the measurement tool.</p> <p>S.IP.00.16 Construct simple charts from data and observations.</p> <p><i>K-7 Standard S.IA: Develop an understanding that scientific inquiry and investigations require analysis and communication of findings,</i></p>	<p>What is an investigation?</p> <p>How do you learn about the world around you?</p> <p>How do we measure an item?</p> <p>How do you organize data?</p>	<p>Use inquiry based science lessons to familiarize students with science investigations.</p>	<p>Achievement Series</p> <p>Verbal explanation/questioning.</p> <p>Match specific senses with pictured examples of the senses.</p> <p>Observe that students use tools appropriately.</p> <p>Centers. Each center uses a different non-standard measurement tool to measure specific lengths. Students must record answers for each item measured. (i.e., paperclips, pasta, cereal, buttons, cubes, etc.)</p> <p>Use results from an activity to create a graph.</p>	<p>scientist senses sight smell taste touch</p>	<p><i>What is a scientist?</i> Book</p> <p>Posters on the scientific inquiry</p> <p>Science Lab</p> <p>See the State Companion Document for ideas on inquiry/instructional strategies for each unit. http://tinyurl.com/cswnaj</p>	<p>To become a scientist to help us conduct experiments and learn how to problem solve.</p>

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
	<p><i>using appropriate technology.</i> S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.</p> <p>S.IA.00.12 Share ideas about science through purposeful conversation.</p> <p>S.IA.00.13 Communicate and present findings of observations.</p> <p>S.IA.00.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video).</p> <p><i>K-7 Standard S.RS: Develop an understanding that claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.</i></p> <p>S.RS.E.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision making and the application of science throughout history and within society.</p> <p>S.RS.00.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p>						

**Kindergarten
Science Pacing Guide**

**Month: September
Unit: Science Inquiry**

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
INQUIRY PROCESS USING THE 5 SENSES	<p><i>K-7 Standard S.IP: Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems</i></p> <p>S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.</p> <p>S.IP.00.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.00.12 Generate questions based on observations using the senses.</p> <p>S.IP.00.13 Plan and conduct simple investigations using the senses.</p> <p>S.IP.00.14 Manipulate simple tools (hand lens, balances) that aid observation and data collection.</p> <p>S.IP.00.16 Construct simple charts from data and observations.</p>	<p>What are the different ways you use your five senses?</p> <p>What are the differences in the five senses?</p>	<p>Use inquiry based science lessons to familiarize students with science investigations.</p>	<p>Achievement Series</p> <p>Create a book about the five senses, including things you can touch, see, taste, hear, and smell.</p> <p>Take a walk outside to make purposeful observations. If feasible and the area is safe, have students walk barefoot. Encourage students to share with a partner, while on the walk, some of the things they observe. Ask students questions during the walk to help them focus on their senses. What do you hear, smell, feel, or see?</p> <p>Set up centers with activities that explore the senses. Include objects that make different types of noise, different textures to feel, familiar scents to smell using the wafting method, objects of various shapes, colors, and sizes to sort. Children should not be allowed to taste unless closely supervised.</p>	<p>senses observation sight sound taste touch smell feel hazardous safety magnifying glass microscope binoculars telescope sweet salty bitter sour eyes ears nose skin hands feet mouth tongue color food freezing heat light shape size</p>	<p>Science journal</p> <p>What is a Scientist? Book</p> <p>Science Lab</p> <p>Science Companion Documents: http://www.michigan.gov/documents/mde/Kindergarten_Complete_1-27-09_264547_7.pdf</p> <p>Teacher information on five senses: Little Giraffes http://www.littlegiraffes.com/fivesenses.html</p> <p>Books: <i>The Five Senses</i>, Aliko, 1991. ISBN-13: 978-0060200503 <i>My Five Senses</i>, Margaret Miller, 1998. ISBN-13: 978-0689820090 After reading or listening to the reading of both texts that describe the five senses, students discuss how they use their senses. They discuss how the two books are the same and how they are different.</p> <p>Research physical impairments related to the senses and how people learn to cope.</p>	<p>To help us become better problem solvers in the world around us using our 5 senses.</p>

**Kindergarten
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**Month: October
Unit: Science Inquiry**

Theme/Big Ideas	Objectives	Essential/Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/Concepts	Resources	Board Objectives
INQUIRY PROCESSES THROUGH INVESTIGATIONS	<p><i>K-7 Standard S.IA: Develop an understanding that scientific inquiry and investigations require analysis and communication of findings, using appropriate technology.</i></p> <p>S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.</p> <p>S.IA.00.12 Share ideas about the senses through purposeful conversation.</p> <p>S.IA.00.13 Communicate and present findings of observations.</p> <p>S.IA.00.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video).</p> <p><i>K-7 Standard S.RS: Develop an understanding that claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.</i></p> <p>S.RS.E.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful</p>	<p>What is an investigation?</p> <p>How do you learn about the world around you?</p> <p>How do we measure an item?</p> <p>How do you organize data?</p>	<p>Use inquiry based lessons to teach life cycles of organisms.</p>	<p>Achievement Series</p> <p>Set up centers with activities that explore the senses. Include objects that make different types of noise, different textures to feel, familiar scents to smell using the wafting method, objects of various shapes, colors, and sizes to sort. Children should not be allowed to taste unless closely supervised.</p> <p>Show students how to use a graphic organizer such as a chart, or a Venn diagram to show how they would sort objects.</p> <p>Working in pairs or small groups, one student sorts a set of objects by an attribute of his/her choice. The partner must guess the attribute his/her partner used to sort the objects.</p>	<p>senses observation sight sound taste touch smell feel hazardous safety magnifying glass microscope binoculars telescope sweet salty bitter sour eyes ears nose skin hands feet mouth tongue color food freezing heat light shape size</p>	<p>Science Journal</p> <p>Science Lab</p> <p>See the State Companion Document for ideas on inquiry/instructional strategies for each unit. http://tinyurl.com/cswnaj</p> <p>Science Companion Documents: http://www.michigan.gov/documents/mde/Kindergarten_Complete_1-27-09_264547_7.pdf</p> <p>Teacher information on five senses: http://www.littlegiraffes.com/fivesenses.html</p> <p>Books: <i>The Five Senses</i>, Alike, 1991. ISBN-13: 978-0060200503 <i>My Five Senses</i>, Margaret Miller, 1998. ISBN-13: 978-0689820090 After reading or listening to the reading of both texts that describe the five senses, students discuss how they use their senses. They discuss how the two books are the same and how they are different.</p> <p>Research physical impairments related to the senses and how people learn to cope.</p>	<p>To help us become better problem solvers in the world around us using our 5 senses.</p>

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy <i>(our current performance indicator)</i>	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
	<p>analysis of evidence that guides decision making and the application of science throughout history and within society.</p> <p>S.RS.00.11 Demonstrate science concepts about the senses through illustrations, performances, models, exhibits, and activities.</p>						

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**Month: November
Unit: Science Inquiry**

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
INQUIRY PROCESSES THROUGH REFLECTION	<p><i>K-7 Standard S.RS: Develop an understanding that claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.</i></p> <p>S.RS.E.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision making and the application of science throughout history and within society.</p> <p>S.RS.00.11 Demonstrate science concepts about the senses through illustrations, performances, models, exhibits, and activities.</p>	<p>What is an investigation?</p> <p>How do you learn about the world around you?</p> <p>How do we measure an item?</p> <p>How do you organize data?</p>	<p>Use inquiry based lessons to teach life cycles of organisms.</p>	<p>Achievement Series</p> <p>Set up centers with activities that explore the senses. Include objects that make different types of noise, different textures to feel, familiar scents to smell using the wafting method, objects of various shapes, colors, and sizes to sort. Children should not be allowed to taste unless closely supervised.</p> <p>Show students how to use a graphic organizer such as a chart, or a Venn diagram to show how they would sort objects.</p> <p>Working in pairs or small groups, one student sorts a set of objects by an attribute of his/her choice. The partner must guess the attribute his/her partner used to sort the objects.</p>	<p>senses observation sight sound taste touch smell feel hazardous safety magnifying glass microscope binoculars telescope sweet salty bitter sour eyes ears nose skin hands feet mouth tongue color food freezing heat light shape size</p>	<p>Science Journal</p> <p>Science Lab</p> <p>See the State Companion Document for ideas on inquiry/instructional strategies for each unit. http://tinyurl.com/cswnaj</p> <p>Science Companion Documents: http://www.michigan.gov/documents/mde/Kindergarten_Complete_1-27-09_264547_7.pdf</p> <p>Teacher information on five senses: <u>Little Giraffes</u> http://www.littlegiraffes.com/fivesenses.html</p> <p>Books: <u>The Five Senses</u>, Alike, 1991. ISBN-13: 978-0060200503 <u>My Five Senses</u>, Margaret Miller, 1998. ISBN-13: 978-0689820090 After reading or listening to the reading of both texts that describe the five senses, students discuss how they use their senses. They discuss how the two books are the same and how they are different.</p> <p>Research physical impairments related to the senses and how people learn to cope.</p>	<p>To help us become better problem solvers in the world around us using our 5 senses.</p>

**Kindergarten
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Month: December
Unit: Position of Objects

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
<p>SCIENTIFIC INQUIRY PROCESSES THROUGH MOTION OF OBJECTS</p>	<p><i>K-7 Standard P.FM: Develop an understanding that the position and/or motion of an object is relative to a point of reference. Understand forces affect the motion and speed of an object and that the net force on an object is the total of all of the forces acting on it. Understand the Earth pulls down on objects with a force called gravity. Develop an understanding that some forces are in direct contact with objects, while other forces are not in direct contact with objects.</i></p> <p>P.FM.E.1 Position – A position of an object can be described by locating the object relative to other objects or a background.</p> <p>P.FM.00.11 Describe the position of an object (above, below, in front of, behind, on) in relation to other objects around it.</p> <p>P.FM.00.12 Describe the direction of a moving object (for example: away from or closer to) from different observers' view.</p>	<p>Can you describe the position of one object compared to another?</p> <p>Which way is the object moving? (Is it moving towards you? Away from you? etc...)</p>	<p>Observe and classify objects according to physical attributes (color, shape, size, sound, and smell).</p> <p>Recognize directions (right, left, up, down).</p>	<p>Achievement Series</p> <p>Roll, Slide, or Both: In this activity, the students will use geometric solids and classify them by movement. Students will determine which solids roll, slide, or both, down a slight incline.</p> <p>Ask students to stand in different positions around the room and roll a ball or object across the room. Ask individuals to describe the motion from his/her position.</p>	<p>push pull direction shape size above below in front of behind on under between on top away from closer to toward north south east west right left shapes: circle square triangle cone cylinder sphere weight distance observation</p>	<p>Any objects that move</p> <p>Posters for wall</p> <p>Science Journal</p> <p>Science Lab</p>	<p>To help us become better problem solvers in the world around us by seeing how things move and where they are in the world.</p>

**Kindergarten
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**Month: January
Unit: Gravity (Motion of Objects)**

Theme/Big Ideas	Objectives	Essential/Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/Concepts	Resources	Board Objectives
SCIENTIFIC INQUIRY PROCESSES THROUGH GRAVITY	<p><i>K-7 Standard P.FM: Develop an understanding that the position and/or motion of an object is relative to a point of reference. Understand forces affect the motion and speed of an object and that the net force on an object is the total of all of the forces acting on it. Understand the Earth pulls down on objects with a force called gravity. Develop an understanding that some forces are in direct contact with objects, while other forces are not in direct contact with objects.</i></p> <p>P.FM.E.2 Gravity – Earth pulls down on all objects with a force called gravity. With very few exceptions, objects fall to the ground no matter where the object is on the Earth.</p> <p>P.FM.00.21 Observe how objects fall toward the earth.</p>	<p>How does an object move?</p> <p>Why do objects fall toward the earth?</p> <p>How can you show objects falling toward the earth?</p>	<p>Identify and describe the motion of an object in terms of speed (fast, slow).</p> <p>Recognize and describe changes in motion (speeding up, slowing down).</p>	<p>Achievement Series</p> <p>Have students stand on a step stool and drop various objects to observe and explain what happens. (Example: paper clips, feathers, paper, pencils, erasers, etc.) Create a graph/chart to record their discoveries.</p> <p>Make observations of falling objects of different shapes and sizes that are dropped from the same distance.</p>	<p>push pull direction speed mass at rest away from closer to toward fast, faster slow, slower</p>	<p>Demonstrate using the children’s positions to one another. Student A is in front of Student B. Student B is behind Student A. Student C is on the chair. Student D is under the table. The table is above Student D.</p> <p>Books: <u>Why Can’t I Jump Very High? A Book About Gravity</u> By Kamal Prasad and Aurore Simonnet, 2004. ISBN-13: 978-0974086156</p> <p><u>Gravity Is a Mystery (Let’s-Read-and-Find-Out Science 2)</u> By: Franklyn M. Branley, 2007. ISBN-13: 978-0064452014</p> <p><u>I Fall Down</u> By: Vicki Cobb, 2004. ISBN-13: 978-0688178420</p>	<p>To observe how various objects in the world around us fall towards the Earth.</p>

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Science Pacing Guide**

**Month: February
Unit: Force (Motion of Objects)**

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
SCIENTIFIC INQUIRY PROCESSES THROUGH FORCE	<p><i>K-7 Standard P.FM: Develop an understanding that the position and/or motion of an object is relative to a point of reference. Understand forces affect the motion and speed of an object and that the net force on an object is the total of all of the forces acting on it. Understand the Earth pulls down on objects with a force called gravity. Develop an understanding that some forces are in direct contact with objects, while other forces are not in direct contact with objects.</i></p> <p>P.FM.E.3 Force – A force is either a push or a pull. The motion of objects can be changed by forces. The size of the change is related to the size of the force. The change is also related to the mass of the object on which the force is being exerted. When an object does not move in response to a force, it is because another force is being applied by the environment.</p> <p>P.FM.00.31 Demonstrate pushes and pulls on objects that can move.</p> <p>P.FM.00.32 Observe that objects initially at rest will move in the direction of the push or pull.</p> <p>P.FM.00.33 Observe how pushes and pulls can change the speed or direction of moving objects.</p>	<p>How do shape, size, and weight affect an object?</p> <p>What directions do objects move when they are pushed or pulled?</p> <p>How do pushes and pulls change the motion of objects?</p>	<p>Use toy cars to demonstrate the key vocabulary</p> <p>Demonstrate pushes and pulls on an object.</p> <p>Observe what happens to an object at rest when pushed or pulled in a certain direction.</p> <p>Observe how an object changes speed or direction when pushed or pulled.</p>	<p>Achievement Series</p> <p>Experiment comparing shape, size and weight Materials Needed:</p> <ul style="list-style-type: none"> Large car, medium sized car, small car, (all objects need to have rolling wheels) two different types of surfaces (carpet, table) masking tape <p>Students will line up cars on masking tape and will push each car with one finger. They will then discuss how far the various cars went on the two different surfaces and why. Students may graph results.</p> <p>Demonstrate pulls with the class by playing a game of tug-of-war and have students explain the difference between pushing and pulling.</p>	<p>push pull direction speed shape size mass at rest above below in front of behind on under between on top away from closer to toward fast, faster slow, slower north south east west right left shapes: circle square triangle cone cylinder sphere weight distance observation</p>	<p>Books: <u>And Everyone Shouted Pull</u> By: Claire Llewellyn, 2001. ISBN-13: 978-1404806566</p> <p><u>Move It!: Motion, Forces and You,</u> Adrienne Mason, 2005. ISBN-13: 978-1553377597</p> <p>State Companion Document for ideas on inquiry/ instructional strategies for each unit. http://tinyurl.com/cswnaj</p>	<p>To be able to demonstrate how an object can be pushed or pulled to move and change speeds.</p>

**Kindergarten
Science Pacing Guide**

**Month: March
Unit: Life Requirements**

Theme/Big Ideas	Objectives	Essential/Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/Concepts	Resources	Board Objectives
SCIENTIFIC INQUIRY PROCESSES THROUGH ORGANIZATION OF LIVING THINGS	<p><i>K-7 Standard L.OL: Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life which include the need for air, water and a source of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a global food chain where food/energy is supplied by plants which need light to produce food/energy. Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.</i></p> <p>L.OL.E.1 Life Requirements – Organisms have basic needs. Animals and plants need air, water, food, and space. Plants also require light. Plants and animals use food as a source of energy and as a source of building material for growth and repair.</p> <p>L.OL.00.11 Recognize that living things have basic needs.</p> <p>L.OL.00.12 Identify and compare living and nonliving things.</p>	<p>What is a living thing?</p> <p>What is a non-living thing?</p> <p>What are the basic needs of living things?</p> <p>What is the difference between living and nonliving things?</p>	<p>Identify animals as living things.</p> <p>Recognize that plants are living things that have characteristics that make them different from each other and from other living things.</p> <p>Explain how different body parts of animals help them to survive in their environment. (fur, feathers, skin, claws, beaks)</p> <p>Recognize that different animals have similar body coverings.</p> <p>Recognize similarities in common objects/pictures.</p>	<p>Achievement Series</p> <p>Living and nonliving – Students will cut pictures from magazines to represent living and nonliving things. Students will be able to explain why they chose certain pictures to represent the different terms.</p> <p>In a terrarium, set up a habitat to include living and nonliving organisms, soil, seeds, worms, rocks, and bark, etc.</p> <p>Animal Habitat – After discussing what living things need, students will create their own habitat for a cricket in small, clear jars with vented lids. (Crickets can be purchased at pet stores. Encourage students to release cricket after 24 to 48 hours.)</p> <p>Make a T-chart to organize living and non-living characteristics</p>	<p>living things basic needs nonliving things air water food plant animals survive space sunlight once living dead organisms Earth’s materials plant growth soil energy habitat light shelter</p>	<p>Books: <u>Under One Rock: Bugs, Slugs, and Other Ughs</u>, Anthony D. Fredericks, 2001. ISBN-13: 978-1584690276</p> <p><u>Wonderful Worms</u>, Linda Glaser, 1992. ISBN-13: 978-1562940621</p> <p>Various Animal and habitats books</p> <p>Habitat sorting mats</p> <p>This site entices 3 - 6 year olds to explore animals and their homes. As well as other games that can be used to educationally explore other units. http://www.peepandthebigwideworld.com/</p>	To understand what a living thing is and what they need to survive in our world.

**Kindergarten
Science Pacing Guide**

Month: April

Unit: Basic Needs of Living Things

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
<p>SCIENTIFIC INQUIRY PROCESSES THROUGH BASIC NEEDS OF LIVING THINGS</p>	<p><i>K-7 Standard E.SE: Develop an understanding of the properties of earth materials and how those properties make materials useful. Understand gradual and rapid changes in earth materials and features of the surface of Earth. Understand magnetic properties of Earth.</i></p> <p>E.SE.E.1 Earth Materials – Earth materials that occur in nature include rocks, minerals, soils, water, and the gases of the atmosphere. Some Earth materials have properties which sustain plant and animal life.</p> <p>E.SE.00.12 Describe how earth materials contribute to plant and animal life.</p>	<p>What is needed for plants to grow?</p> <p>How do plants and animals interact?</p>	<p>Purchase butterfly larva and grow them in a habitat for students to observe their growth and needs.</p> <p>Describe how materials from earth contribute to plant and animal life.</p>	<p>Achievement Series</p> <p>Each student can grow their own plants. Each individual seed can be put into its own Dixie cup with soil and placed in the windowsill for light. The students will use water and sunlight to grow the plants and will observe the plants through all of the stages. The students will journal everyday by drawing and writing what is happening to their plant. This will help them understand gradual changes.</p> <p>Explore many outside habitats and compare them to a habitat created in the classroom. How do the living and non-living organisms interact in each habitat? Create a chart, or Venn Diagram.</p>	<p>Rocks Minerals Soil Water Gas Atmosphere Properties Interact</p>	<p>Book: <u>The Tiny Seed</u>, Eric Carle, 1987. ISBN-13: 978-1416979173</p> <p>State Companion Document for ideas on inquiry/ instructional strategies for each unit. http://tinyurl.com/cswnaj</p>	<p>To understand what a plant needs to grow and how plants and animals need each other.</p>

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Month: May
Unit: Basic Needs of Living Things

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
<p>SCIENTIFIC INQUIRY PROCESSES THROUGH BASIC NEEDS OF LIVING THINGS</p>	<p><i>K-7 Standard E.SE: Develop an understanding of the properties of earth materials and how those properties make materials useful. Understand gradual and rapid changes in earth materials and features of the surface of Earth. Understand magnetic properties of Earth.</i></p> <p>E.SE.E.1 Earth Materials – Earth materials that occur in nature include rocks, minerals, soils, water, and the gases of the atmosphere. Some Earth materials have properties which sustain plant and animal life.</p> <p>E.SE.00.11 Identify Earth materials that occur in nature (rock, sand, soil, and water).</p>	<p>What is the earth made up of?</p> <p>What are the differences between rock, sand, soil, and water?</p> <p>What is soil made from?</p>	<p>Identify Earth materials that occur in nature.</p>	<p>Achievement Series</p> <p>Use an inflatable globe and toss the globe to each student. Have students tell if their thumbs landed on land or water. Collect class data using tally marks.</p> <p>Students describe and compare the results when water is mixed with different earth materials. Create a chart or graph.</p>	<p>Soil Water Rock Sand Materials Air Gravel Clay Particle sieve</p>	<p>Books: <u>Everybody Needs a Rock</u>, Byrd Baylor and Peter Parnall, 1985. ISBN-13: 978-1416953975</p> <p><u>Let’s Look at Rocks</u> Jeri Cipriano and Ellen Metzger, 2004. ISBN-13: 978-0736828970</p> <p><u>Dirt: The Scoop on Soil</u>, Natalie M. Rosinsky, 2002. ISBN-13: 978-1404803312</p> <p><u>If You Find a Rock</u>, Peggy Christian and Barbara Hirsch Lembe, 2000. ISBN-13: 978-0152063542</p> <p>Go on a class rock hunt and ask student to collect samples of rocks for a class collection.</p> <p>Students identify once living materials in soil samples and describe ways that they are different from living things.</p> <p>State Companion Document for ideas on inquiry/ instructional strategies for each unit. http://tinyurl.com/cswnaj</p>	<p>To understand that the Earth is made up of many things and be able to identify what they are.</p>

**Kindergarten
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Month: June
Unit: Review of Inquiry Processes

Theme/Big Ideas	Objectives	Essential/ Focus Questions	Teaching Strategy (our current performance indicator)	Assessment	Vocabulary/ Concepts	Resources	Board Objectives
INQUIRY PROCESS FOR SCIENCE INVESTIGATIONS	<p><i>K-7 Standard S.IP:</i> Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems</p> <p>S.IP.E.1 Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.</p> <p>S.IP.00.11 Make purposeful observation of the natural world using the appropriate senses.</p> <p>S.IP.00.12 Generate questions based on observations.</p> <p>S.IP.00.13 Plan and conduct simple investigations.</p> <p>S.IP.00.14 Manipulate simple tools (for example: hand lens, pencils, balances, non-standard objects for measurement) that aid observation and data collection.</p> <p>S.IP.00.15 Make accurate measurements with appropriate (non-standard) units for the measurement tool.</p> <p>S.IP.00.16 Construct simple charts from data and observations.</p> <p><i>K-7 Standard S.IA:</i> Develop an understanding that scientific inquiry and investigations require analysis and communication of findings, using appropriate technology.</p>	<p>What is an investigation?</p> <p>How do you learn about the world around you?</p> <p>How do we measure an item?</p> <p>How do you organize data?</p>	<p>Use inquiry based science lessons to familiarize students with science investigations.</p>	<p>Achievement Series</p> <p>Verbal explanation/questioning.</p> <p>Match specific senses with pictured examples of the senses.</p> <p>Observe that students use tools appropriately.</p> <p>Centers. Each center uses a different non-standard measurement tool to measure specific lengths. Students must record answers for each item measured. (i.e., paperclips, pasta, cereal, buttons, cubes, etc.)</p> <p>Use results from an activity to create a graph.</p>	<p>scientist senses sight smell taste touch</p>	<p><i>What is a scientist?</i> Book</p> <p>Posters on the scientific inquiry</p> <p>Science Lab</p> <p>See the State Companion Document for ideas on inquiry/instructional strategies for each unit. http://tinyurl.com/cswnaj</p>	<p>To become a scientist to help us conduct experiments and learn how to problem solve.</p>

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	<p>S.IA.E.1 Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.</p> <p>S.IA.00.12 Share ideas about science through purposeful conversation.</p> <p>S.IA.00.13 Communicate and present findings of observations.</p> <p>S.IA.00.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video).</p> <p><i>K-7 Standard S.RS: Develop an understanding that claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.</i></p> <p>S.RS.E.1 Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision making and the application of science throughout history and within society.</p> <p>S.RS.00.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.</p>						