

**Perry County Science Curriculum Map**  
**Kindergarten**  
**Unit 1: Life Science (Interdependent Relationships in Ecosystems: Animals, Plants, & their Environments)**

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p><b>Obtaining, Evaluating, and Communicating Information</b>            Obtaining, evaluating, and communicating information in K-2 builds on prior experiences and uses observations and texts to communicate new information.</p> <ul style="list-style-type: none"> <li>Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (K-ESS3-3)</li> </ul>	<p><b>Cause and Effect</b>            Events have causes that generate observable patterns. (K-ESS3-3)</p> <p><b>Systems and System Models</b>            Systems in the natural and designed world have parts that work together. (K-ESS2-2),(K-ESS3-1)</p>		

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
<p>Students who demonstrate understanding can:</p> <p><b>K-ESS3-1</b> Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]</p>	<p><b>ESS3.C: Human Impacts on Earth Systems</b>            Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3)</p>	<p>What impacts do people (humans) have on the world around them?            How can people (humans) help the world around them?</p>	<p><b>Before:</b>            Think-pair-share about the vocabulary.</p> <p><b>During:</b>            Students will make observations about the world around them and the impacts humans have on the world around them.</p> <p><b>After:</b>            Students will create posters to promote helping the world around them.</p>	<p>Affect            Air            Animals            Communicate solutions            Convey Events            Explanatory            Human designed            Impact            Informative            Land            Living things            Model            Natural Needs            Observable patterns</p>	<p>Science Journals.            KWL Chart.</p> <p><b>Books:</b>            Dr. Seuss. <i>The Lorax</i>. Random House Children's Books. ISBN 9780394823379. 1971.            Klienberg, Naomi. <i>Plant a Tree For Me</i>. Random House Children's Books. ISBN 9780375854859. 2010.            Child, Lauren. <i>Charlie and Lola: We Are Extremely Very Good Recyclers</i>. Dial Books for Young Readers. ISBN 9780803733350. 2009.</p>

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
<p>K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.* [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.]</p>	<p><b>Developing Possible Solutions</b>            Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.  <i>(secondary to K-ESS3-3)</i></p>			<p>People (humans)            Places to live            Plants            Reason            Reduce            Represent            Solutions            Systems            Water</p>	<p>Parr, Todd. <i>The Earth Book</i>. Little Brown &amp; Co. ISBN 9780316042659. 2010.            Asch, Frank. <i>The Earth and I</i>. Sandpiper. ISBN 9780152063955. 2008.            Inches, Allison. <i>I can save the Earth</i>. Little Simon. ISBN 9781416967897. 2008.</p>

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Perry County Science Curriculum Map  
 Kindergarten  
 Time Frame: August-November  
 Unit 1: Life Science (Interdependent Relationships in Ecosystems: Animals, Plants, & their Environments)

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<b>Engaging in Argument from Evidence</b> Engaging in argument from evidence in K-2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s). <ul style="list-style-type: none"> <li>Construct an argument with evidence to support a claim. (K-ESS2-2)</li> </ul>	<b>Systems and System Models</b> Systems in the natural and designed world have parts that work together. (K-ESS2-2),(K-ESS3-1)		

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
Students who demonstrate understanding can:  <b>K-ESS2-2</b> Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.]	<b>ESS2.E: Bio-geology</b> Plants and animals can change their environment. (K-ESS2-2)	What do humans and animals do to change their environment, and what do they effect when they do this?	<b>Before:</b> Teacher will show pictures of before and after of different construction sites, or environments. Students will comment on the differences.  <b>During:</b> Students will be observed through various activities that explore changes to the environment to meet needs.  <b>After:</b> Students will draw a	Analyze Change Common Compare Construct Describe Designed world Difference Effect Environment Evidence Key details Less of Measurable attributes More of Natural world Opinion Order Patterns	Science Journals. KWL Chart. T-Chart and Venn-diagrams to make comparisons. Virtual Field Trip <a href="http://bookbuilder.cast.org/view_print.php?book=26258">http://bookbuilder.cast.org/view_print.php?book=26258</a> Visit a Zoo and Farm <b>Books:</b> *Use as introductions, have students choose an animal, draw a picture and write a sentence about the effects of their animal in the house. Pinder, Eric. <i>If all the Animals Came Inside</i> . Little, Brown Books for Young Readers

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
			<p>picture and write a description on how the chosen environment was changed and why.</p>	<p>Systems Topic</p>	<p>ISBN 9780316098830. 2012.</p> <p>*Use to discuss how animals change their environment to meet their needs, create a picture chart of some animals and list items used and changes.</p> <p><i>What's inside animal homes?</i> Exodusbooks.com</p> <p>Bostrom, Kathleen Long. <i>The View at the Zoo</i> Ideals Publications. ISBN 9780824956295. 2011.</p> <p>Duskey Rinker, Shelly. <i>Good Night, Goodnight Construction Site</i>. Chronicle Books, LLC. ISBN 9780811877824. 2011.</p>

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Perry County Science Curriculum Map  
 Kindergarten  
 Unit 1: Life Science (Interdependent Relationships in Ecosystems: Animals, Plants, & their Environments)

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p><b>Analyzing and Interpreting Data</b>            Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> <li>Use observations ( firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1)</li> </ul> <p><b>Scientific Knowledge is Based on Empirical Evidence</b>            Scientists look for patterns and order when making observations about the world. (K-LS1-1)</p>	<p><b>Patterns</b>            Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. (K-LS1-1)</p>		

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
<p>Students who demonstrate understanding can:</p> <p><b>K-LS1-1</b> Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need</p>	<p><b>LS1.C: Organization for Matter and Energy Flow in Organisms</b>            All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light</p>	<p>What is the same and different on what is needed for plants and animals to survive?</p>	<p><b>Before:</b>            Students will create a picture on what they think they need to live.</p> <p><b>During:</b>            Students will compare and contrast the things plants and animals need to live.</p> <p><b>After:</b></p>	<p>Analyze Animals needs Common Compare Describe Difference Evidence Food Grow Human designed world Humans Key details</p>	<p>Science Journals.            KWL Chart            T-Charts of Essential Question            Lesson based on <i>Brown Bear, Brown Bear, What Do You See?</i> by Bill Martin Jr. <a href="http://www.pbs.org/parents/seekworld/lessonk_2.html">http://www.pbs.org/parents/seekworld/lessonk_2.html</a>            Lesson Based on Eric Carle's books <i>A House for Hermit Crab</i> and <i>The Very Hungry Caterpillar</i></p>

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
water.]	to live and grow. (K-LS1-1)		Students will create a final drawing and journal entry comparing and contrasting what humans and plants need to survive.	Less of Light Live Living things Measurable attributes More of Natural world Needs Obtain Order Patterns Plants needs Survive Water	<p><a href="http://www.pbs.org/parents/eeekoworld/lessonsk_2.html">http://www.pbs.org/parents/eeekoworld/lessonsk_2.html</a></p> <p>What do Plants need to grow Activities <a href="http://www.simplyscience.com/Kindergarten.html">http://www.simplyscience.com/Kindergarten.html</a></p> <p>Worksheets: Animal Homes <a href="http://www.greatschools.org/worksheets-activities/6060-animal-homes.gs">http://www.greatschools.org/worksheets-activities/6060-animal-homes.gs</a></p> <p>Feed Me: Living Things need food <a href="http://www.greatschools.org/worksheets-activities/6050-feed-me.gs">http://www.greatschools.org/worksheets-activities/6050-feed-me.gs</a></p> <p>Animal Homes that are just right <a href="http://www.greatschools.org/worksheets-activities/6120-animal-homes-that-are-just-right.gs">http://www.greatschools.org/worksheets-activities/6120-animal-homes-that-are-just-right.gs</a></p> <p><b>Books:</b> Martin Jr., Bill. <i>Brown bear, Brown Bear, What do you See?</i> Henry Holt and Co. ISBN 9780805017441. 1992.</p> <p>Carle, Eric. <i>A House for Hermit Crab</i>. Little Simon. ISBN 9781442472242. 2013</p> <p>Carle, Eric. <i>The Very Hungry Caterpillar</i>. Putnam Pub Group. ISBN 9780399213014. 1986.</p>

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Perry County Science Curriculum Map  
Kindergarten

Time Frame: August-April (Year Long Standards)  
Unit 2: (Yearlong): Earth's Systems – Weather

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p><b>Analyzing and Interpreting Data</b> Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> <li>Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-ESS2-1)</li> </ul>	<p><b>Patterns</b> Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (K-ESS2-1)</p>		

Next Generation Science Standards	Disciplinary Core Idens	Essential Questions	Assessments	Vocabulary	Resources
<p>Students who demonstrate understanding can:</p> <p><b>K-ESS2-1</b> Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different</p>	<p><b>ESS2.D: Weather and Climate</b> Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time.  People measure these conditions to describe and record the weather and to notice patterns over time. (K-ESS2-1)</p>	<p>What is the weather today and how is it different from yesterday?</p>	<p><b>Before:</b> KWL Chart about weather (teacher introduces pictures to represent daily weather).  <b>During:</b> Throughout the school year daily weather chart (students mark on a monthly calendar using cut out pictures to represent words).  Monthly the teacher leads them</p>	<p>Bar graph Cloudy Cold Collect Cooler Create Data Describe Model Observe Patterns Picture graph Rainy Recall Record Region Snowy Sunlight Sunny Temperature</p>	<p>Chart paper to create graphs and KWL Chart.  A weather chart for recording weather.  Visual aids (Bulletin Board Resources) for weather vocabulary (rainy, sunny, windy, snowy).  One inch Graph paper to create monthly graphs of weather patterns.  Monthly Calendars to keep weather records on: <a href="http://www.abcteach.com/search.php?category=0&amp;q=calendar&amp;search_type=1&amp;match_words=2&amp;limit_search=1&amp;form_action=&amp;search_form1_form_visted=1">http://www.abcteach.com/search.php?category=0&amp;q=calendar&amp;search_type=1&amp;match_words=2&amp;limit_search=1&amp;form_action=&amp;search_form1_form_visted=1</a></p>

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
months.]			<p>in making a graph of weather patterns using their monthly calendars.</p> <p><b>After:</b> The student will be evaluated using a rubric based on the essential questions on their collection of weather charts and graphs. Students should show improvement from their first to last chart.</p>	<p>Warm Warmer Weather Wind</p>	<p>Cutouts for students to cut out and glue to their monthly weather calendars for record keeping: <a href="http://www.abcteach.com/documents/chart-cards-weather-12381">http://www.abcteach.com/documents/chart-cards-weather-12381</a></p> <p>Kindergarten Weather Songs on You-tube will help kindergarteners with learning by putting weather put to music and rhyme.</p> <p>Incorporate Literacy Trade Books with seasons, and weather, include an art activity with the book.</p> <p><b>Books:</b> DePaola, Tomie. <i>The Cloud Book</i>. Holiday House. ISBN 9780823405312. 1984.9 Fowler, Allan. <i>Can You See The Wind?</i> Grolier Publishing Company. ISBN 9780516264790. 1999. Rockwell, Anne. <i>Four Seasons Make A Year</i>. Walker &amp; Co. ISBN 9780802788832. 2004. Gibbons, Gail. <i>Weather Forecasting</i>. Aladdin Paperbacks. ISBN 9780689716836. 1993. Gibbons, Gail. <i>Weather Words And What They Mean</i>. Holiday House. ISBN 9780823409525. 1992. Dewitt, Lynda. <i>What Will The Weather Be?</i> Trophy Press. ISBN 9780064451130. 1993.</p>

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
					<p>Branley, Franklyn M. <i>Snow Is Falling</i>. Harper Collins. ISBN 9780064451864. 2000.</p> <p>Sherman, Josepha. <i>Splish! Splash! Picture Window Books</i>. ISBN 9781404800953. 2003.</p> <p>Meachen Rau, Dana. <i>Hot and Bright: A Book about the Sun</i>. Picture Window Books. ISBN 9781404811355. 2005.</p> <p>Describes features of the sun, and why it is so important to life on Earth. Includes activity.</p>

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Perry County Science Curriculum Map  
Kindergarten

Time Frame: August-April (All Year)  
Unit 2: (continued): Earth and Space Science – Weather

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p><b>Asking Questions and Defining Problems</b> Asking questions and defining problems in grades K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.</p> <ul style="list-style-type: none"> <li>Ask questions based on observations to find more information about the designed world. (K-ESS3-2)</li> </ul> <p><b>Scientific Investigations Use a Variety of Methods</b> Scientists use different ways to study the world. (K-PS3-1)</p> <p><b>Science Knowledge is Based on Empirical Evidence</b> Scientists look for patterns and order when making observations about the world. (K-ESS2-1)</p>	<p><b>Cause and Effect</b> Events have causes that generate observable patterns. (K-PS3-1),(K-PS3-2),(K-ESS3-2)</p>		

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
<p>Students who demonstrate understanding can:</p> <p><b>K-ESS3-2</b> Ask questions to obtain information about the purpose of, weather forecasting to prepare for, and respond to, severe weather. * [Clarification Statement: Emphasis is on local forms of severe weather.]</p>	<p><b>ESS3.B: Natural Hazards</b> Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the</p>	<p>What local severe weather do we have to prepare for and how do we prepare?</p>	<p><b>Before:</b> Create a class list of weather, define severe.</p> <p><b>During:</b> Students will create pictures after the teacher models</p>	<p>Bar graph Emergency Forms Gather information Key details Local Model Observation Pattern</p>	<p>Science Journals. KWL Chart. Kindergarten Weather Activities: <a href="http://www.ck12.org/elementary-science/lesson-plan-activities.html">http://www.ck12.org/elementary-science/lesson-plan-activities.html</a> Kindergarten Science Projects on Weather: <a href="http://www.ehow.com/list_5780120_kinder">http://www.ehow.com/list_5780120_kinder</a></p>

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
	<p>communities can prepare for and respond to these events. (K-ESS3-2)</p> <p><b>ETS1.A: Defining and Delimiting an Engineering Problem</b></p> <p>Asking questions, making observations, and gathering information are helpful in thinking about problems. (<i>secondary to K-ESS3-2</i>)</p>		<p>the weather.</p> <p><b>After:</b> Project- the class will create an emergency preparedness book with pictures and dictated sentences from students to teacher or teacher helpers, using a rubric which addresses the essential questions.</p>	<p>Picture graph Preparedness Region Severe weather Weather forecasting</p>	<p>garden-science-projects-weather.html</p> <p><b>Books:</b> Branley, Franklyn M. <i>Tornado Alert</i>. Trophy Press. ISBN 9780064450942. 1990. Fowler, Allan. <i>When A Storm Comes Up</i>. Children's Press. ISBN 9780516460352. 1995.</p> <p>Tornado in a Bottle Experiment: <a href="http://www.sciencekids.co.nz/experiments/makeatornado.html">http://www.sciencekids.co.nz/experiments/makeatornado.html</a></p>

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Time Frame: November-January  
 Unit 3: Energy from the Sun

Perry County Science Curriculum Map  
 Kindergarten

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p><b>Planning and Carrying Out Investigations</b>            Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.</p> <ul style="list-style-type: none"> <li>• Make observations (first hand or from media) to collect data that can be used to make comparisons (K-PS3-1)</li> </ul> <p><b>Scientific Investigations Use a Variety of Methods</b>            Scientists use different ways to study the world. (K-PS3-1)</p> <p><b>Science Knowledge is Based on Empirical Evidence</b>            Scientists look for patterns and order when making observations about the world. (K-ESS2-1)</p>	<p><b>Cause and Effect</b>            Events have causes that generate observable patterns. (K-PS3-1),(K-PS3-2),(K-ESS3-2)</p>		

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
<p>Students who demonstrate understanding can:  <b>K-PS3-1</b> Make observations to</p>	<p><b>PS3.B: Conservation of Energy and Energy Transfer</b></p>	<p>What effect does the sun have on different surfaces of the</p>	<p><b>Before:</b>            Create a class brainstorm chart on prior</p>	<p>Attribute            Build            Collect            Common</p>	<p>Science Journals.            KWL Chart.</p>

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
<p>determine the effect of sunlight on Earth's surface. [Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water]</p> <p><b>K-PS3-2</b> Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth's surface. * [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]</p>	<p>Sunlight warms Earth's surface. (K-PS3-1),(K-PS3-2)</p>	<p>Earth?</p> <p>What materials are most effective in lessening the effect on the Earth are many surfaces?</p>	<p>knowledge of how the sun affects (changes) things.</p> <p><b>During:</b> Pose "what if" questions, note students comments before and after practiced experiments.</p> <p><b>After:</b> Students choose before and after pictures related to the sun's effects, using a rubric which addresses the essential questions.</p>	<p>Compare Data Earth's surface Effect Less of More of Observe Patterns Reduce Research Rocks Sand Soil Sunlight Warming Water</p>	<p>Worksheet: Being Shadowed <a href="http://www.greatschools.org/worksheets-activities/6133-being-shadowed.gs">http://www.greatschools.org/worksheets-activities/6133-being-shadowed.gs</a></p> <p>Hot Stuff <a href="http://www.greatschools.org/worksheets-activities/6068-hot-stuff.gs">http://www.greatschools.org/worksheets-activities/6068-hot-stuff.gs</a></p> <p><b>Books:</b> Simon, Seymour. <i>The Sun</i>. Mulberry Books. ISBN 9780688092368. 1989.</p> <p>Branley, Franklyn M. <i>Sun: Our Nearest Star</i>. Trophy Press. ISBN 9780064452021. 2002.</p> <p>Fowler, Allan. <i>Energy From The Sun</i>. Children's Press. ISBN 9780516262550. 1998.</p> <p>Kalman, Bobbie. <i>Earth and the Sun</i>. Crabtree Publishing Co. ISBN 9780778732129. 2008.</p> <p>Video: How the Sun Affects life on Earth: <a href="http://www.neok12.com/video/Sun/7X5a757b4455546940600145.htm">http://www.neok12.com/video/Sun/7X5a757b4455546940600145.htm</a></p> <p>Science activity to help students broaden their understanding of the sun, particularly its critical role in warming the land, air, and water around us. <a href="http://scienceinlinks.com/lessons/the-warmth-of-the-sun/">http://scienceinlinks.com/lessons/the-warmth-of-the-sun/</a></p> <p>Four Sun art Projects: <a href="http://www.brighthubeducation.com/preschool-crafts-activities/61211-four-sunshine-">http://www.brighthubeducation.com/preschool-crafts-activities/61211-four-sunshine-</a></p>

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Perry County Science Curriculum Map  
Kindergarten  
Unit 3: Physical Science (Forces and Interactions: Pushes & Pulls)

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p><b>Analyzing and Interpreting Data</b> Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations.</p> <ul style="list-style-type: none"> <li>Analyze data from tests of an object or tool to determine if it works as intended. (K-PS2-2)</li> </ul>	<p><b>Cause and Effect</b> Simple tests can be designed to gather evidence to support or refute student ideas about causes. (K-PS2-1),(K-PS2-2)</p>		

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
<p>Students who demonstrate understanding can:</p> <p><b>K-PS2-2</b> Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. * [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.]</p>	<p><b>PS2.A: Forces and Motion</b> Pushes and pulls can have different strengths and directions. (K-PS2-1),(K-PS2-2)</p> <p>Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (K-PS2-1),(K-PS2-2)</p>	<p>What happens when objects touch, collide, or push on one another?</p>	<p><b>Before:</b> Create a KWL chart after review the previous month's objective.</p> <p><b>During:</b> Observe the students in various activities that integrate hands on activities that provide a medium for students to increase and/or decrease speed of an object.</p> <p>Introduce variables that incorporate touch, push and colliding in their investigation.</p>	<p>Analyze Attribute Causes Change Collide Compare Create Data Describe Determine Directions Gather Key details Length Less of Measureable attributes More of Motion Pulling Pushes</p>	<p>Science Journals. KWL Chart. More Ideas on Motion <a href="http://www.teachjunkie.com/filing-cabinet/free-download/19-fun-ideas-resources-force-and-motion/">http://www.teachjunkie.com/filing-cabinet/free-download/19-fun-ideas-resources-force-and-motion/</a> <b>Worksheet: Bend it, Squish it, Stretch it</b> <a href="http://www.greatschools.org/worksheets-activities/6067-bend-it-stretch-it-squash-it.gs">http://www.greatschools.org/worksheets-activities/6067-bend-it-stretch-it-squash-it.gs</a> <b>Fast and Slow Motion</b> <a href="http://www.greatschools.org/worksheets-activities/6131-fast-and-slow-motion.gs">http://www.greatschools.org/worksheets-activities/6131-fast-and-slow-motion.gs</a> <b>Books:</b> Dahl, Michael. <i>Roll, Slope, and Slide: A Book About Ramps</i>. Picture Window</p>

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
	<p><b>Engineering Problems</b>            A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. <i>(secondary to K-PS2-2)</i></p>		<p><u>After:</u>            Students will be able to describe the effects of touch, push, pull and colliding using a familiar object through writing or drawing in their science journals using a rubric which addresses the essential questions.</p>	<p>Pushing            Reason            Situation            Solutions            Speed            Strengths            Support ideas            Touch            Weight</p>	<p>Books.            ISBN 9781404819092. 2002.            Stille, Darlene R. <i>Motion: Push and Pull, Fast and Slow</i>. Picture Window Books.            ISBN 9781404802506. 2004.</p>

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
					art-projects/

Time Frame: February-April

Perry County Science Curriculum Map  
Kindergarten

Unit 4: Physical Science (Forces and Interactions: Pushes & Pulls)

Science & Engineering Practices	Crosscutting Concepts	Literacy Standards	Mathematics Standards
<p><b>Planning and Carrying Out Investigations</b>            Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.</p> <ul style="list-style-type: none"> <li>With guidance, plan and conduct an investigation in collaboration with peers. (K-PS2-1)</li> </ul> <p><b>Connections to the Nature of Science</b></p> <p><b>Scientific Investigations Use a Variety of Methods</b>            Scientists use different ways to study the world. (K-PS2-1)</p>	<p><b>Cause and Effect</b>            Simple tests can be designed to gather evidence to support or refute student ideas about causes. (K-PS2-1),(K-PS2-2)</p>		

Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
Students who demonstrate understanding can:	PS2.A: Forces and Motion Pushes and pulls	What happens if you push or pull an object	<b>Before:</b> Have students act out with a partner	Attribute Change motion Clarify	Science Journals. KWL Chart.

\*Denotes a traditional science content integrated with engineering through a Practice or Disciplinary Core Idea.



Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
<p><b>K-PS2-1</b> Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment Boundary: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.]</p>	<p>can have different strengths and directions. (K-PS2-1),(K-PS2-2)</p>	<p>harder?  What happens if two moving objects run into each other?</p>	<p>pushing hands together and describe what happens when the applied more pressure.  <b>During:</b> Give students opportunities with toy cars, swings, balls, etc to demonstrate and explain the effects of push and pull.  <b>After:</b> Students will draw a picture representing a push and pull; they will dictate to an adult what is happening in each picture bases on a rubric which addresses the essential questions.</p>	<p>Collide Common Describe Difference Express ideas Investigate Key details Length Less of Measurable attributes More of More quickly Motion of an object Plan Pressure Provide data Pulls Pushes Reason Slow down Speed Touch Weight</p>	<p><b>Worksheet: Push or Pull</b> <a href="http://www.greatschools.org/worksheets-activities/6072-push-or-pull.gs">http://www.greatschools.org/worksheets-activities/6072-push-or-pull.gs</a>  <b>Be Forceful</b> <a href="http://www.greatschools.org/worksheets-activities/6102-be-forceful.gs">http://www.greatschools.org/worksheets-activities/6102-be-forceful.gs</a>  Rope(play tug of war to represent effect of pull)  Swing Set, Toy cars, and various size and weighted balls (to represent push and pull)  Marbles (Experiment with interactions of two objects)  More Ideas on Motion <a href="http://www.teachjunkie.com/filing-cabinet/free-download/19-fun-ideas-resources-force-and-motion/">http://www.teachjunkie.com/filing-cabinet/free-download/19-fun-ideas-resources-force-and-motion/</a>  <b>Books:</b> Shaw, Nancy M. <i>Sheep in a Jeep</i>. Houghton Mifflin. ISBN 9780395470305. 1988.  Brubaker Bradley, Kimberly. <i>Forces Make Things Move</i>. Harper Collins. ISBN 9780064452144. 2005.  Murphy, Patricia J. <i>Push And Pull</i>. Scholastic Library Publishing. ISBN 9780516225517. 2002.</p>

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Next Generation Science Standards	Disciplinary Core Ideas	Essential Questions	Assessments	Vocabulary	Resources
					Mason, Adrienne. <i>Move it! Forces, Motion, and you!</i> Kids Can Press. ISBN 9781553377597. 2005.

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