

**KINDERGARTEN  
SCIENCE ORDER OF INSTRUCTION**

<b>1<sup>st</sup> Nine Weeks</b>	<b>2<sup>nd</sup> Nine Weeks</b>	<b>3<sup>rd</sup> Nine Weeks</b>	<b>4<sup>th</sup> Nine Weeks</b>
<b><u>Body of Knowledge:</u></b> <b><u>Life Science</u></b> <i>(2 benchmarks)</i>	<b><u>Body of Knowledge:</u></b> <b><u>Earth and Space Science</u></b> <i>(6 benchmarks)</i>	<b><u>Body of Knowledge:</u></b> <b><u>Physical Science</u></b> <i>(5 benchmarks)</i>	<b><u>Body of Knowledge:</u></b> <b><u>Life Science</u></b> <i>(1 benchmark)</i>
Big Idea 14: Organization and Development of Living Organisms (SC.K.L.14.1, SC.K.L.14.2)	Big Idea 5: Earth in Space and Time	Big Idea 8: Properties of Matter  Big Idea 9: Changes in Matter  Big Idea 10: Forms of Energy  Big Idea 12: Motion of Objects  Big Idea 13: Forces and Changes in Motion	Big Idea 14: Organization and Development of Living Organisms (SC.K.L.14.3)

**Big Idea 1: The Practice of Science**

The Practice of Science benchmarks should be introduced during the first nine weeks and then embedded in all science lessons throughout the year as they blend easily with teaching inquiry and are the basis of an activity/lab-based science classroom. It is vital that kindergarten students be given multiple opportunities to collaborate with partners, make observations of the natural world using their five senses, keep records of investigations, observe and create visual representations, and recognize that learning comes from careful observation. Lab safety and the use of scientific tools should also be introduced at the beginning of the year and re-addressed throughout the year.

**Rationale for Kindergarten Order of Instruction:**

**1<sup>st</sup> Nine Weeks**

Life Science benchmarks 14.1 and 14.2 (Big Idea 14) are taught in the first grading period because brain-based research shows that kindergarteners are still developmentally “All about Me.” This leads to beginning the school year with the five senses.

**2<sup>nd</sup> Nine Weeks**

Earth and Space Science benchmarks are taught during the second grading period because the Sun sets earlier at this time of year which allows students the opportunity to make night time observations.

**3<sup>rd</sup> Nine Weeks**

Physical Science benchmarks are taught during the third grading period because force and motion concepts are abstract and students are better able to grasp these concepts later in the school year.

**4<sup>th</sup> Nine Weeks**



<b>KINDERGARTEN</b>	
<b>BODY OF KNOWLEDGE: PHYSICAL SCIENCE</b>	
<b>BIG IDEA 8: PROPERTIES OF MATTER</b>	
<p>A. All objects and substances in the world are made of matter. Matter has two fundamental properties: matter takes up space and matter has mass.</p> <p>B. Objects and substances can be classified by their physical and chemical properties. Mass is the amount of matter (or “stuff”) in an object. Weight, on the other hand, is the measure of force of attraction (gravitational force) between an object and Earth. The concepts of mass and weight are complicated and potentially confusing to elementary students. Hence, the more familiar term of “weight” is recommended for use to stand for both mass and weight in grades K-5. By grades 6-8, students are expected to understand the distinction between mass and weight, and use them appropriately.</p>	
<b>ESSENTIAL QUESTIONS</b>	
<p>In what ways can we describe objects? In what ways can we sort objects?</p>	
<b>BENCHMARKS AND TASK ANALYSES</b>	
<p><b>SC.K.P.8.1</b> Sort objects by observable properties, such as size, shape, color, temperature (hot or cold), weight (heavy or light), and texture. The student:</p> <ul style="list-style-type: none"> <li>• explores a variety of objects that are different sizes, shapes, colors, temperatures (hot or cold), weights (heavy or light), and textures.</li> <li>• sorts objects by one property at a time (e.g., size).</li> <li>• sorts objects by two or more properties at a time (e.g., size and color).</li> </ul>	
<b>OCPS ESSENTIAL LABS</b>	
<p><a href="http://www.science.ocps.net">www.science.ocps.net</a></p>	
<p>Sorting by Color Sorting by Shape Sorting by Color and Shape Sorting by Size Sorting by Temperature Sorting by Weight Sorting by Texture</p>	
<b>VOCABULARY</b>	
<p>sort, observe, hot, cold, heavy, light, texture</p>	
<p><b>The textbook is NOT the curriculum. The Next Generation Sunshine State Standards for Science are the mandated curriculum.</b></p>	
<b>SUPPORTING RESOURCES</b>	
<b>Scott Foresman</b>	<b>SC.K.P.8.1</b> 134E, 138-139, 140-141, 142-143, 144-145, 155c, 155d, 201, FCAT Test Prep: 43, 45, 46, 47, 48, 61, 62, 87
<b>AIMS</b> <a href="http://www.aimsedu.org">www.aimsedu.org</a>	<b>SC.K.P.8.1</b> <i>Under Construction</i> : All Sorts of Stuff, Made by <i>Fall Into Math and Science</i> : Apples A-Peel to Me <i>E activity</i> : Living or Nonliving, Cereal Numbers, Dirt Drawings <i>Sense-able Science</i> : Bag of Beads <i>Winter Wonders</i> : The Gingerbread Man
<b>Literature</b>	<i>What Shape Is It?</i> Bobbie Kalman <i>Which Weighs More?</i> Susan McCloskey <i>Is It Rough?</i> Tana Hoban <i>Is It Smooth?</i> Tana Hoban



	<i>Is It Shiny?</i> Tana Hoban <i>Beep Beep, Vroom Vroom!</i> , Stuart J. Murphy
<b>Web Links</b>	<a href="http://www.bbc.co.uk/schools/scienceclips/ages/5_6/sorting_using_mate.shtml">http://www.bbc.co.uk/schools/scienceclips/ages/5_6/sorting_using_mate.shtml</a> sorting
<b>Field Experiences</b>	
<b>Other</b>	<i>Science &amp; Children</i> , Mar. 2009, Vol. 46, No. 7, Classifying Classification <i>Science &amp; Children</i> , Dec. 2006, Vol. 44, No. 4, Geosciences for Preschoolers



<b>KINDERGARTEN</b>	
<b>BODY OF KNOWLEDGE: PHYSICAL SCIENCE</b>	
<b>BIG IDEA 9: CHANGES IN MATTER</b>	
<p>A. Matter can undergo a variety of changes.</p> <p>B. Matter can be changed physically or chemically.</p>	
<b>ESSENTIAL QUESTIONS</b>	
How can we change the shape of materials?	
<b>BENCHMARKS AND TASK ANALYSES</b>	
<p><b>SC.K.P.9.1</b> Recognize that the shape of materials such as paper and clay can be changed by cutting, tearing, crumpling, smashing, or rolling.</p> <p>The student:</p> <ul style="list-style-type: none"> <li>• changes the shape of paper by cutting, tearing, crumpling, smashing, or rolling.</li> <li>• changes the shape of clay by cutting, tearing, crumpling, smashing, or rolling.</li> </ul>	
<b>OCPS ESSENTIAL LABS</b>	
<a href="http://www.science.ocps.net">www.science.ocps.net</a>	
Physical Changes with Paper	
Physical Changes with Clay	
<b>VOCABULARY</b>	
change	
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<b>SUPPORTING RESOURCES</b>	
<b>Scott Foresman</b>	<b>SC.K.P.9.1</b> 52-15, FCAT Test Prep: 44, 45, 46, 61
<b>AIMS</b> <a href="http://www.aimsedu.org">www.aimsedu.org</a>	
<b>Literature</b>	<i>Fold, Cut, Mix</i> , Newbridge <i>Using Rocks</i> , Sharon Katz Cooper
<b>Web Links</b>	
<b>Field Experiences</b>	
<b>Other</b>	



<b>KINDERGARTEN</b>	
<b>BODY OF KNOWLEDGE: PHYSICAL SCIENCE</b>	
<b>BIG IDEA 10: FORMS OF ENERGY</b>	
<p>A. Energy is involved in all physical processes and is a unifying concept in many areas of science.</p> <p>B. Energy exists in many forms and has the ability to do work or cause a change.</p>	
<b>ESSENTIAL QUESTIONS</b>	
How are sounds produced?	
<b>BENCHMARKS AND TASK ANALYSES</b>	
<p><b>SC.K.P.10.1</b> Observe that things that make sound vibrate. The student:</p> <ul style="list-style-type: none"> <li>produces sound by creating vibrations (rapid back and forth movements) using a variety of objects (e.g., plucking rubber bands on Geoboards).</li> </ul>	
<b>OCPS ESSENTIAL LABS</b>	
<a href="http://www.science.ocps.net">www.science.ocps.net</a>	
Vibrations Make Sound	
<b>VOCABULARY</b>	
sound, vibrate	
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<b>SUPPORTING RESOURCES</b>	
<b>Formative Assessment Probes</b>	<i>Uncovering Student Ideas in Science</i> , Page Keeley <b>SC.K.P.10.1</b> Vol.1: Making Sound (You must adapt this probe for kindergarten.)
<b>Scott Foresman</b>	<b>SC.K.P.10.1</b> 190-191, 205a, FCAT Test Prep: 56, 57, 58, 59, 66, 93
<b>AIMS</b> <a href="http://www.aimsedu.org">www.aimsedu.org</a>	<b>SC.K.P.10.1</b> <i>Primarily Physics</i> : Sound Is Vibration
<b>Literature</b>	<i>Sounds</i> , Newbridge <i>Quiet Sounds</i> , Julia Bellish <i>What Kind of Sound?</i> Vita Jimenez <i>Sounds All Around</i> , Wendy Pfeffer
<b>Web Links</b>	<a href="http://www.bbc.co.uk/schools/scienceclips/ages/5_6/sound_hearing.shtml">http://www.bbc.co.uk/schools/scienceclips/ages/5_6/sound_hearing.shtml</a> sound <a href="http://www.bbc.co.uk/schools/ks2bitesize/science/activities/changing_sounds.s">http://www.bbc.co.uk/schools/ks2bitesize/science/activities/changing_sounds.s</a>



	<a href="#">html</a> sound (shows vibrations) <a href="http://www.bbc.co.uk/cbeebies/razzledazzle/bishbashbosh/soundscape/index.shtml">http://www.bbc.co.uk/cbeebies/razzledazzle/bishbashbosh/soundscape/index.shtml</a> <a href="#">html</a> animal sounds
<b>Field Experiences</b>	Orlando Science Center ( <a href="http://www.osc.org">www.osc.org</a> , 407-514-2000)
<b>Other</b>	



<b>KINDERGARTEN</b>	
<b>BODY OF KNOWLEDGE: PHYSICAL SCIENCE</b>	
<b>BIG IDEA 12: MOTION OF OBJECTS</b>	
A. Motion is a key characteristic of all matter that can be observed, described, and measured.	
B. The motion of objects can be changed by forces.	
<b>ESSENTIAL QUESTIONS</b>	
In what ways do objects move?	
<b>BENCHMARKS AND TASK ANALYSES</b>	
<b>SC.K.P.12.1</b> Investigate that things move in different ways, such as fast, slow, etc.	
The student:	
<ul style="list-style-type: none"> <li>• explores the movement of various objects.</li> <li>• discusses different types of movements that were observed during explorations (e.g., fast, slow).</li> <li>• demonstrates fast and slow movements of various objects.</li> </ul>	
<b>OCPS ESSENTIAL LABS</b>	
<a href="http://www.science.ocps.net">www.science.ocps.net</a>	
Investigating Fast and Slow Motions	
Fast and Slow Motions Using Different Sized Objects	
Fast and Slow Motions Using Ramps	
<b>VOCABULARY</b>	
move	
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<b>SUPPORTING RESOURCES</b>	
<b>Scott Foresman</b>	<b>SC.K.P.12.1</b> 174E, 178-179, 184-185, 186-187, 188-189, 195c, 244-245, 252-253, FCAT Test Prep: 55, 57, 58, 60, 65, 66
<b>AIMS</b> <a href="http://www.aimsedu.org">www.aimsedu.org</a>	<b>SC.K.P.12.1</b> <i>E-activity: Lid Skid</i> <i>Sensational Springtime: Blow and Go</i>
<b>Literature</b>	<i>The Book of Movement Exploration</i> , John M. Feierabend
<b>Web Links</b>	
<b>Field Experiences</b>	Orlando Science Center ( <a href="http://www.osc.org">www.osc.org</a> , 407-514-2000)
<b>Other</b>	



<b>KINDERGARTEN</b>	
<b>BODY OF KNOWLEDGE: PHYSICAL SCIENCE</b>	
<b>BIG IDEA 13: FORCES AND CHANGES IN MOTION</b>	
<p>A. It takes energy to change the motion of objects.            B. Energy change is understood in terms of forces - pushes or pulls.            C. Some forces act through physical contact, while others act at a distance.</p>	
<b>ESSENTIAL QUESTIONS</b>	
How does a push or a pull change the way an object moves?	
<b>BENCHMARKS AND TASK ANALYSES</b>	
<p><b>SC.K.P.13.1</b> Observe that a push or a pull can change the way an object is moving.            The student:</p> <ul style="list-style-type: none"> <li>• identifies a push.</li> <li>• identifies a pull.</li> <li>• uses pushes and pulls to move various objects.</li> </ul>	
<b>OCPS ESSENTIAL LABS</b>	
<a href="http://www.science.ocps.net">www.science.ocps.net</a>	
Push, Pull, and the Motion of Objects Pushing and Pulling Different Sizes of Objects Pushing and Pulling with Dominoes	
<b>VOCABULARY</b>	
push, pull	
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<b>SUPPORTING RESOURCES</b>	
<b>Scott Foresman</b>	<b>SC.K.P.13.1</b> 174-175, 182-183, 192-193, 201a, 225D, 227, 230-231, 244-245, FCAT Test Prep: 55, 57, 58, 59, 60, 64, 65, 66, 73, 82, 92, 93, 93
<b>AIMS</b> <a href="http://www.aimsedu.org">www.aimsedu.org</a>	<b>SC.K.P.13.1</b> <i>E-activity:</i> Pushed Around <i>Sensational Springtime</i> or <i>Primarily Weather:</i> Wind Detectives <i>E-activity:</i> Push 'n' Pull Antics, Big Dog Charades <i>Sensational Springtime:</i> Flying Lion, Gliding Lamb
<b>Literature</b>	<i>Push or Pull</i> , Newbridge <i>Pull It, Push It</i> , Newbridge <i>Move It!</i> Adrienne Mason <i>Push and Pull</i> , Patricia Murphy <i>Forces Make Things Move</i> , Kimberly Brubaker Bradley
<b>Web Links</b>	<a href="http://www.bbc.co.uk/schools/digger/5_7entry/7.shtml">http://www.bbc.co.uk/schools/digger/5_7entry/7.shtml</a> push and pull
<b>Field Experiences</b>	Orlando Science Center ( <a href="http://www.osc.org">www.osc.org</a> , 407-514-2000)
<b>Other</b>	

