

**GRADE 2
SCIENCE ORDER OF INSTRUCTION**

1st Nine Weeks	2nd Nine Weeks	3rd Nine Weeks	4th Nine Weeks
<u>Body of Knowledge:</u> <u>Earth and Space</u> <u>Science</u> (8 benchmarks) Big Idea 7: Earth Systems and Patterns Big Idea 6: Earth Structures	<u>Body of Knowledge:</u> <u>Physical Science</u> (7 benchmarks) Big Idea 8: Properties of Matter Big Idea 9: Changes in Matter	<u>Body of Knowledge:</u> <u>Physical Science</u> (5 benchmarks) Big Idea 10: Forms of Energy Big Idea 13: Forces and Changes in Motion	<u>Body of Knowledge:</u> <u>Life Science</u> (4 benchmarks) Big Idea 14: Organization and Development of Living Organisms Big Idea 16: Heredity and Reproduction Big Idea 17: Interdependence

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. Second grade students ask and investigate questions in teams, generate explanations, compare group observations, learn to distinguish between observations and inferences, and explain that scientific investigations should yield similar conclusions when repeated. 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 Grade 2 Order of Instruction:

1st Nine Weeks

Earth and Space Science is taught during the first nine weeks because hurricane season gives teachers the opportunity to connect lessons and discussions to real-world experiences. These benchmarks involve investigations of temperature, precipitation, evaporation, severe weather preparedness, and wind. This Body of Knowledge also includes investigations of rocks and soil. Teaching this Body of Knowledge at the start of the year also gives teachers an opportunity to set up long-term investigations/observations.

2nd Nine Weeks

The Physical Science Body of Knowledge is a major focus for second grade with twelve benchmarks and requires two nine-week periods for completion. Students will explore matter during the 2nd nine weeks.

3rd Nine Weeks

The Physical Science Body of Knowledge will continue during the 3rd nine weeks as students explore forms of energy and the ways people use energy. Students will also explore forces and changes in motion during the 3rd nine weeks.

4th Nine Weeks

Life Science is taught in the spring to take advantage of the many opportunities to investigate the life cycles of plants and animals.



GRADE 2	
BODY OF KNOWLEDGE: PHYSICAL SCIENCE	
BIG IDEA 8: PROPERTIES OF MATTER	
<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>	
ESSENTIAL QUESTIONS	
<p>How can objects be identified, classified, and sorted? Why do scientists classify objects? Why do we measure properties of objects?</p>	
BENCHMARKS AND TASK ANALYSES	
<p>SC.2.P.8.1 Observe and measure objects in terms of their properties, including size, shape, color, temperature, weight, texture, sinking or floating in water, and attraction and repulsion of magnets.</p> <p>SC.2.P.8.2 Identify objects and materials as solid, liquid, or gas.</p> <p>SC.2.P.8.3 Recognize that solids have a definite shape and that liquids and gases take the shape of their container. The student:</p> <ul style="list-style-type: none"> uses various containers to investigate the shapes of solids, liquids, and gases. <p>SC.2.P.8.4 Observe and describe water in its solid, liquid, and gaseous states.</p> <p>SC.2.P.8.5 Measure and compare temperatures taken every day at the same time. The student:</p> <ul style="list-style-type: none"> measures temperature accurately using a thermometer. maintains a log of temperatures taken in the same outdoor location, at the same time each day to compare results over an extended period of time. <p>SC.2.P.8.6 Measure and compare the volume of liquids using containers of various shapes and sizes.</p>	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
<p>States of Matter Comparing Solids Looking at Liquids Exploring Air Changing States of Water Liquid Measurement</p>	
VOCABULARY	
solid, liquid, gas, volume, magnet, attract, repel	
The textbook is NOT the curriculum. The Next Generation Sunshine State Standards for Science are the mandated curriculum.	
SUPPORTING RESOURCES	
Formative Assessment Probes	<p><i>Uncovering Student Ideas in Science</i>, Page Keeley</p> <p>SC.2.P.8.1 Vol. 1: Is it Matter; Vol. 2: Comparing Cubes</p> <p>SC.2.P.8.4 Vol. 2: What's in the Bubbles</p>



Scott Foresman	SC.2.E.8.1 239-241, 258-259 SC.2.E.8.2 242-247 SC.2.E.8.3 242-247 SC.2.E.8.4 242-247, 252-257, 260-261, Guided Inquiry: 256-257 SC.2.E.8.5 194-195 SC.2.E.8.6 244-245
AIMS www.aimsedu.org	SC.2.P.8.1 Pouring over Matter, Vol. 11 #9, Mystery Matter, Vol. 17 #6 Property Flip, Vol. 23 #2 SC.2.P.8.2 Can it Matter? Vol. 10 #2 SC.2.P.8.5 <i>Primarily Weather: Air Temperature</i> SC.2.P.8.6 Gallons Galore, Vol. 20 #4
Literature	<i>What Is the World Made Of?</i> Kathleen Weidner Zoefeld <i>The World of Matter</i> , Newbridge: Ranger Rick Science Spectacular <i>Pop! A Book About Bubbles</i> , Kimberly Bradley (<i>Let's Read and Find Out Science Series</i>) <i>How Tall, How Short, How Faraway</i> , David Adler <i>A Drop of Water: A Book of Science and Wonder</i> , Walter Wick <i>Matter</i> , Christopher Couper
Links	http://school.eb.com/elementary/article?articleId=390607 Britannica Online: Air http://school.eb.com/elementary/article?articleId=353920 Britannica Online: Weights and Measures http://school.eb.com/lm/games/GE_1_11/GE_1_11.htm Britannica Online: Water Test. Decide if an object will sink or float when placed in water. http://school.eb.com/lm/games/GS_4_7/GS_4_7.htm Britannica Online: Solid, Liquid, or Gas? Match a substance with its most common form. http://school.eb.com/elementary/browse/art-55441/Life-as-we-know-it-is-dependent-upon-the-most Britannica Online: Water http://www.bbc.co.uk/schools/scienceclips/ages/6_7/grouping_materials.shtml Grouping and Changing Materials: Put the materials into the correct group. http://www.bbc.co.uk/schools/scienceclips/ages/7_8/characteristics_materials.shtml Characteristics of Materials: Find out the characteristics of different materials. http://www.bbc.co.uk/schools/scienceclips/ages/7_8/magnets_springs.shtml Magnets and Springs: Find out about which materials can be picked up by a magnet. http://teacher.scholastic.com/activities/studyjams/matter_states/ Study Jams! Solids, Liquids, and Gases: Watch a three-minute video and learn about the states of matter.
Field Experiences	
Other	



GRADE 2	
BODY OF KNOWLEDGE: PHYSICAL SCIENCE	
BIG IDEA 9: CHANGES IN MATTER	
<p>A. Matter can undergo a variety of changes. B. Matter can be changed physically or chemically.</p>	
ESSENTIAL QUESTION	
<p>Why do we change materials in our daily lives? How do materials respond to change?</p>	
BENCHMARKS AND TASK ANALYSES	
<p>SC.2.P.9.1 Investigate that materials can be altered to change some of their properties, but not all materials respond the same way to any one alteration. The student:</p> <ul style="list-style-type: none"> • explores the way different materials react to the same change (squeeze paper and squeeze a sponge; twist clay and twist paper). • compares and contrasts results. 	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
Property Changes	
VOCABULARY	
properties	
<p>The textbook is NOT the curriculum. The Next Generation Sunshine State Standards for Science are the mandated curriculum.</p>	
SUPPORTING RESOURCES	
Scott Foresman	SC.2.P.9.1 248-255, 264
AIMS www.aimsedu.org	SC.2.P.9.1 <i>Winter Wonders: Frosty Forms, A Matter of Change, Room for Change</i> <i>Apple Matters Heat Up, Vol. 22 #1</i> <i>Butter Up, Vol. 20 #2</i>
Literature	<i>What's the Matter in Mr. Whiskers' Room</i> , Michael Elsohn Ross <i>A World of Change</i> , Newbridge: Thinking Like a Scientist <i>From Sand to Glass</i> , Wendy Davis <i>Hot as an Ice Cube</i> , Thomas Crowell <i>Follow the River</i> , Lydia Dabovich
Links	http://school.eb.com/elementary/browse/art-55255/Testing-the-strength-of-wood-by-means-of-a-set Britannica Online: Materials Testing http://www.bbc.co.uk/schools/scienceclips/ages/8_9/solid_liquids.shtml Solids and Liquids: Experiment with different solids and liquids. http://www.bbc.co.uk/schools/scienceclips/ages/9_10/changing_state.shtml Changing State: Experiment with melting and boiling water. http://www.bbc.co.uk/schools/scienceclips/ages/5_6/sorting_using_mate.shtml Sorting and Using Materials: Experiment with the different materials and sort them out.
Field Experiences	
Other	

