

**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> <i>(8 benchmarks)</i> Big Idea 7: Earth Systems and Patterns Big Idea 6: Earth Structures	<u>Body of Knowledge:</u> <u>Physical Science</u> <i>(7 benchmarks)</i> Big Idea 8: Properties of Matter Big Idea 9: Changes in Matter	<u>Body of Knowledge:</u> <u>Physical Science</u> <i>(5 benchmarks)</i> Big Idea 10: Forms of Energy Big Idea 13: Forces and Changes in Motion	<u>Body of Knowledge:</u> <u>Life Science</u> <i>(4 benchmarks)</i> 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 10: FORMS OF ENERGY	
<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>	
ESSENTIAL QUESTIONS	
How do people use energy to make their lives easier?	
BENCHMARKS AND TASK ANALYSES	
<p>SC.2.P.10.1 Discuss that people use electricity or other forms of energy to cook their food, cool or warm their homes, and power their cars.</p> <p>The student:</p> <ul style="list-style-type: none"> • makes real world connections to how electricity and energy are used. 	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
Energized	
VOCABULARY	
energy, electricity	
The textbook is NOT the curriculum. The Next Generation Sunshine State Standards for Science are the mandated curriculum.	
SUPPORTING RESOURCES	
Scott Foresman	SC.2.P.10.1 272-273, 278-281, 286-289
AIMS www.aimsedu.org	SC.2.P.10.1 Powered Up, AIMS magazine May/June 2005
Literature	<i>Energy Makes Things Happen</i> , Kimberly Brubaker Bradley <i>The Powerful World of Energy with MaxAxion</i> , Agnieszka Biskup <i>Discovering Electricity</i> , Newbridge: Ranger Rick Science Spectacular
Links	http://school.eb.com/elementary/article?articleId=353091 Britannica Online: Electricity http://www.eia.doe.gov/kids/index.html EIA Kids Page: Follow "Energy Ant" as he takes you on a journey through various forms of energy. http://flint.apogee.net/kids/ What is Energy? Explore this site to discover how electricity works. http://www.miamisci.org/af/sln/frankenstein/index.html Frankenstein's Lightning Laboratory: Learn about different forms of electricity and electrical safety. http://www.eere.energy.gov/kids/ Kids Saving Energy: Games, tips, and facts just for kids who want to save energy.
Field Experiences	
Other	



GRADE 2	
BODY OF KNOWLEDGE: PHYSICAL SCIENCE	
BIG IDEA 13: FORCES AND CHANGE IN MOTION	
<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>	
ESSENTIAL QUESTIONS	
<p>How can we figure out how much force to use in different situations? How would our lives be different if there was no force pulling us toward the ground?</p>	
BENCHMARKS AND TASK ANALYSES	
<p>SC.2.P.13.1 Investigate the effect of applying various pushes and pulls on different objects. SC.2.P.13.2 Demonstrate that magnets can be used to make some things move without touching them SC.2.P.13.3 Recognize that objects are pulled toward the ground unless something holds them up. SC.2.P.13.4 Demonstrate that the greater the force (push or pull) applied to an object, the greater the change in motion of the object.</p>	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
<p>Give it a Push The Mysterious Floating Paper Clip Racing for Gravity</p>	
VOCABULARY	
force	
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 SC.2.P.13.2 Vol. 4: Magnets in Water SC.2.P.13.3 Vol. 3: Apple on A Desk, Dropping Balls</p>
Scott Foresman	<p>SC.2.P.13.1 304-312 SC.2.P.13.2 318-321, Guided Inquiry: 322-323 SC.2.P.13.3 306-307 SC.2.P.13.4 304-313</p>
AIMS www.aimsedu.org	<p>SC.2.P.13.1 <i>Sensational Springtime: Flying Lion, Gliding Lamb</i> SC.2.P.13.1 Pushed Around, Vol. 18 #7 SC.2.P.13.2 <i>Primary Magnets: Hungry Hounds</i> SC.2.P.13.3 <i>Mostly Magnets: Defying Gravity</i> SC.2.P.13.4 Pushed Around, Vol. 18 #7</p>
Literature	<p><i>Forces Make Things Move</i>, Kimberly Brubaker Bradley <i>Balance and Motion</i>, Foss Science Series <i>Force and Motion</i>, Newbridge: Ranger Rick Science Spectacular <i>I Fall Down</i>, Vicki Cobb <i>What Does a Wheel Do?</i>, Jim Pipe</p>
Links	<p>http://www.bbc.co.uk/schools/scienceclips/ages/6_7/science_6_7.shtml BBC Science Clips, force and motion virtual experiments http://school.eb.com/elementary/article?articleId=353411 Britannica Online: Magnet and Magnetism</p>



	<p>http://school.eb.com/elementary/browse/art-55621/Gravity-is-the-universal-force-of-attraction-that-acts-between Britannica Online: Gravity</p> <p>http://www.bbc.co.uk/schools/scienceclips/ages/5_6/pushes_pulls.shtml Pushes and Pulls: Push and pull the horse around the track.</p> <p>http://www.bbc.co.uk/schools/scienceclips/ages/6_7/forces_movement.shtml Forces and Movement: Why do some objects go faster than others?</p> <p>http://www.edheads.org/activities/odd_machine/frame_loader.htm Edheads Odd Machine: Learn how forces and simple machines can work together to create The Compound Machine!</p> <p>http://www.tryscience.org/experiments/experiments_newtonseggs_online.html Speed, Eggs & Slam: Design a way to keep an egg safe during a low speed crash.</p> <p>http://www.tryscience.org/experiments/experiments_usopen_online.html Hit the Spot! Find out how the laws of physics can make or break your tennis game.</p> <p>http://www.bigideafun.com/penguins/arcade/spaced_penguin/info.htm Spaced Penguin! Kevin took a wrong turn and ended up lost in space. Use the gravity of nearby planets to help send Kevin in the right direction.</p> <p>http://www.ology.amnh.org/astronomy/gravity/index.htm Our Place in Space: Gravity! Learn how it works, what it does, and what would happen if the force of gravity were turned off.</p> <p>http://ksnn.larc.nasa.gov/k2/s_magnetsWork.html Why do magnets work? Learn about magnets and their attraction to some materials.</p>
Field Experiences	
Other	

