

**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: EARTH AND SPACE SCIENCE

BIG IDEA 7: EARTH SYSTEMS AND PATTERNS

Humans continue to explore the interactions among water, air, and land. Air and water are in constant motion that results in changing conditions that can be observed over time.

ESSENTIAL QUESTIONS

How do weather patterns change from day to day and season to season?
How does the constant motion of air and water affect our weather?
How would your life change if you lived in a place that had a completely different kind of weather?
Why is it important for Floridians to prepare for severe weather?

BENCHMARKS AND TASK ANALYSES

SC.2.E.7.1 Compare and describe changing patterns in nature that repeat themselves, such as weather conditions including temperature and precipitation, day to day and season to season.

The student:

- records long term observations of the seasons.
- records long term observations of weather, including precipitation and temperature.
- discusses patterns in nature (seasons/day and night).

SC.2.E.7.2 Investigate by observing and measuring, that the Sun's energy directly and indirectly warms the water, land, and air.

The student:

- records temperatures of sunny and shady areas outside (include water, land, and air temperatures in both sunny and shady spots).
- compares the temperatures collected.

SC.2.E.7.3 Investigate, observe and describe how water left in an open container disappears (evaporates), but water in a closed container does not disappear (evaporate).

The student:

- investigates and describes how water left in an open container evaporates, but water in a closed container does not evaporate.

SC.2.E.7.4 Investigate that air is all around us and that moving air is wind.

SC.2.E.7.5 State the importance of preparing for severe weather, lightning, and other weather related events.

The student:

- identifies types of severe weather (e.g., thunderstorms, lightening, hurricanes, tornadoes).
- explains the danger of severe weather.
- understands how to prepare for severe weather situations.
- practices safety measures for severe weather.

OCPS ESSENTIAL LABS

www.science.ocps.net

Be a Meteorologist
Weather Measure
Where Does Water Go?
Which Way Does the Air Blow?
Preparing for Severe Weather

VOCABULARY

weather, thermometer, temperature, precipitation, evaporation, severe weather, air, Sun's energy

The textbook is NOT the curriculum. The Next Generation Sunshine State Standards for Science are the mandated curriculum.



SUPPORTING RESOURCES	
Formative Assessment Probes	<i>Uncovering Student Ideas in Science</i> , Page Keeley SC.2.E.7.2 Vol. 4: Warming Water SC.2.E.7.3 Vol. 1: Wet Jeans
Scott Foresman	SC.2.E.7.1 175-177, 180-187, Guided Inquiry: 194-195, Directed Inquiry: 268 SC.2.E.7.4 144-145, 174-175, 230-231 SC.2.E.7.5 188-193
AIMS www.aimsedu.org	SC.2.E.7.3 <i>Primarily Earth: A Disappearing Act</i> SC.2.E.7.4 <i>Primarily Earth: A Closer Look at Air</i>
Literature	<i>Weather Watching</i> , Denise Ryan (Top Readers Series) <i>What Will the Weather Be?</i> , Lynda Dewitt <i>Weather</i> , Caroline and John Astrop <i>Lightning</i> , Seymour Simon <i>The Rain Came Down</i> , David Shannon <i>Rising Waters a Book About Floods</i> , Rick Thomas <i>Tornadoes</i> , Seymour Simon <i>Hurricane</i> , David Wiesner <i>The Magic School Bus: Inside a Hurricane</i> , Joanna Cole and Bruce Degen <i>Close To The Wind</i> , by Peter Malone <i>The Puddle</i> , David McPhail
Links	http://www.fema.gov/kids/ FEMA information for kids, interactive games, free resource books, severe weather preparedness information www.weather.com/homepage.html National and local weather forecasts http://school.eb.com/elementary/article?articleId=353919 Britannica Online: Weather http://school.eb.com/lm/games/GS_3_2/GS_3_2.htm Britannica Online: What's That Tool Do? Match weather tools and their functions. http://www.miamisci.org/hurricane/ Visit the Storm Center to understand hurricanes from the inside out. Read survivors' stories, make a weather station, and contribute your own natural disaster stories to the Healing Quilt. http://www.edheads.org/activities/weather/frame_loader.htm Edheads Weather Activities: Learn how to report and predict the weather at the underground W.H.E.D. weather caves! http://eo.ucar.edu/webweather/ Web Weather for Kids: Learn what makes weather wet and wild, do cool activities, and become hot at forecasting the weather. http://www.skydiary.com/kids/ Kids Diary - Storm Center: Information, pictures, graphics, and links to tornadoes, lightning, hurricanes, and storm chasing. http://www.weatherwizkids.com/ Weather Wiz: Contains a wide variety of fun weather facts, weather folklore, weather games, weather jokes, and many other weather related experiments and activities. http://www.scholastic.com/magicschoolbus/games/weather/index.htm The Magic School Bus: The Adventures of Weather Lizard Game



GRADE 2	
BODY OF KNOWLEDGE: EARTH AND SPACE SCIENCE	
BIG IDEA 6: EARTH STRUCTURES	
Humans continue to explore the composition and structure of the surface of Earth. External sources of energy have continuously altered the features of Earth by means of both constructive and destructive forces. All life, including human civilization, is dependent on Earth's water and natural resources.	
ESSENTIAL QUESTIONS	
Why is soil essential to life?	
BENCHMARKS AND TASK ANALYSES	
<p>SC.2.E.6.1 Recognize that Earth is made up of rocks. Rocks come in many sizes and shapes. The student:</p> <ul style="list-style-type: none"> • recognizes that Earth is made up of rocks. • investigates the various sizes and shapes of rocks through observation and hands on exploration. <p>SC.2.E.6.2 Describe how small pieces of rock and dead plant and animal parts can be the basis of soil and explain the process by which soil is formed. The student:</p> <ul style="list-style-type: none"> • collects and observes different types of soil. • uses science tools to observe different soils. • discusses where the materials found in the soils came from (decayed plants and animals) and how soil is formed. <p>SC.2.E.6.3 Classify soil types based on color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants. The student:</p> <ul style="list-style-type: none"> • classifies soil types based on color and texture. • classifies soil by its ability to retain water. • classifies soil by its ability to support the growth of plants. 	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
Rock Detectives Rock Shakers Soil Sleuths How Do Various Soils Change When Water Is Added?	
VOCABULARY	
rocks, soil	
The textbook is NOT the curriculum. The Next Generation Sunshine State Standards for Science are the mandated curriculum.	
SUPPORTING RESOURCES	
Formative Assessment Probes	<i>Uncovering Student Ideas in Science</i> , Page Keeley SC.2.E.6.1 Vol. 1: Beach Sand Vol. 2: Is It a Rock? Is It a Rock Two?
Scott Foresman	SC.2.E.6.1 146-147 SC.2.E.6.2 146-149, Guided Inquiry: 160-161, Directed Inquiry: 140. SC.2.E.6.3 148-149
AIMS www.aimsedu.org	SC.2.E.6.1 <i>Primarily Earth</i> : Rock Groups, My Rock SC.2.E.6.2 <i>Primarily Earth</i> : Soil Study
Literature	<i>Let's Go Rock Collecting</i> , Roam Gans <i>Sand</i> , Ellen Prage



	<p><i>Stone Soup</i>, Marsha Brown <i>A Handful of Dirt</i>, Raymond Bial <i>Rocks in His Head</i>, Carol Otis Hurst <i>Everybody Needs a Rock</i>, Byrd Baylor <i>Magic School Bus Inside the Earth</i>, Joanna Cole</p>
Links	<p>http://www.fi.edu/fellows/fellow1/oct98/index2.html Rock Hounds: Contains lesson plans, an online quiz, and interactive puzzles, plus information on the types of rocks as well as examples from each type. http://www.bbc.co.uk/schools/scienceclips/ages/7_8/rocks_soils.shtml Rocks and Soils: Sort different types of rocks. http://www.fieldmuseum.org/undergroundadventure/ An Underground Adventure: Take a virtual tour of an underground exhibit and see what life would be like if you were a half-inch tall. http://urbanext.illinois.edu/gpe/case2/index.html Soiled Again: Find out about types of soil, what makes up soil, and how to compost. http://nationalzoo.si.edu/Education/ConservationCentral/walk/walk1_broadband.html Dirt Detective: Trees & Soils Walk: As a dirt detective, you'll investigate soil to determine its type and its pH. In the process, you'll learn that different trees prefer specific types of soil. http://www.butlerswcd.org/Education/Kid/home.htm Soil or Dirt? What is the difference between soil and dirt? Are all soils the same? This page discusses the different soil layers. http://school.discoveryeducation.com/schooladventures/soil/index.html The Dirt on Soil: Get the dirt on soil at this interactive underground site and learn about soil and some of its tiny but helpful residents.</p>
Field Experiences	
Other	

