

GRADE 3 SCIENCE ORDER OF INSTRUCTION			
1 st Nine Weeks	2 nd Nine Weeks	3 rd Nine Weeks	4 th Nine Weeks
<p><u>Body of Knowledge:</u> <u>Life Science</u> (4 benchmarks)</p> <p>Big Idea 14: Organization and Development of Living Organisms</p> <p>Big Idea 15: Diversity and Evolution of Living Organisms</p>	<p><u>Body of Knowledge:</u> <u>Life Science</u> (2 benchmarks)</p> <p>Big Idea 17: Interdependence</p> <p><u>Body of Knowledge:</u> <u>Earth and Space Science</u> (5 benchmarks)</p> <p>Big Idea 5: Earth in Space and Time</p>	<p><u>Body of Knowledge:</u> <u>Earth and Space Science</u> (1 benchmark)</p> <p>Big Idea 6: Earth Structures</p> <p><u>Body of Knowledge:</u> <u>Physical Science</u> (4 benchmarks)</p> <p>Big Idea 8: Properties of Matter</p> <p>Big Idea 9: Changes in Matter</p>	<p><u>Body of Knowledge:</u> <u>Physical Science</u> (6 benchmarks)</p> <p>Big Idea 10: Forms of Energy</p> <p>Big Idea 11: Energy Transfer and Transformations</p>
<p><u>Big Idea 1: The Practice of Science and Big Idea 3: The Role of Theories, Laws, Hypotheses, and Models</u> These Big Ideas 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. Third grade students ask and investigate questions individually and in teams, generate explanations, compare group observations, keep appropriate records, make inferences based on observations, and understand why and how scientists use models. Lab safety and the use of scientific tools should also be introduced at the beginning of the year and re-addressed throughout the year.</p>			

Rationale for Grade 3 Order of Instruction:

1st Nine Weeks

The 1st nine weeks continue to build upon the Life Science concepts students were taught at the end of second grade. They will be able to use their prior knowledge to delve more deeply into the study of the structures and characteristics of plants and animals.

2nd Nine Weeks

Life Science continues during the 2nd nine weeks as students investigate how animals and plants respond to changing seasons and how plants make their own food. Earth and Space Science is also taught during the 2nd nine weeks, and students will make observations of the night skies as seasons change.

3rd Nine Weeks

Earth and Space Science continues during the 3rd nine weeks. Physical Science is also taught during the 3rd nine weeks. Students will focus on challenging and abstract concepts about properties of matter and changes in matter.

4th Nine Weeks

Physical Science continues to be taught during the 4th nine weeks when students will focus on concepts about energy. These concepts require higher level thinking skills.



GRADE 3	
BODY OF KNOWLEDGE: LIFE SCIENCE	
BIG IDEA 14: ORGANIZATION AND DEVELOPMENT OF LIVING ORGANISMS	
<p>A. All plants and animals, including humans, are alike in some ways and different in others.</p> <p>B. All plants and animals, including humans, have internal parts and external structures that function to keep them alive and help them grow and reproduce.</p> <p>C. Humans can better understand the natural world through careful observation.</p>	
ESSENTIAL QUESTIONS	
<p>How does the structure of plant parts relate to their function?</p> <p>How are the plant structures important in their survival?</p>	
BENCHMARKS and TASK ANALYSES	
<p>SC.3.L.14.1 Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction.</p> <p>The student:</p> <ul style="list-style-type: none"> • describes leaves as the structure for food production. • describes stems or trunks and roots as the structures for support. • describes roots and stems or trunks as the structures for water and nutrient transport. • describes flowers, cones, or spores as the structures for reproduction. <p>SC.3.L.14.2 Investigate and describe how plants respond to stimuli (heat, light, gravity), such as the way plant stems grow toward light and their roots grow downward in response to gravity.</p> <p>The student:</p> <ul style="list-style-type: none"> • predicts, investigates, and describes how plants respond to heat. • predicts, investigates, and describes how plants respond to light. • predicts, investigates, and describes how plants respond to gravity. 	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
<p>Structure and Function of Plant Leaves</p> <p>Structure and Function of Plant Stems</p> <p>Structure and Function of Plant Roots</p> <p>How Do Environmental Factors Change the Way Plants Grow?</p>	
VOCABULARY	
plant structures, reproduction	
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.3.L.14.1 Vol. 2: Needs of Seeds, Is It Food for Plants?</p> <p>SC.3.L.14.2 Vol. 2: Plants in the Dark and Light</p>
Scott Foresman	<p>SC.3.E.14.1 7-19</p> <p>Directed Inquiry: How are plants alike and different? 4</p>
AIMS www.aimsedu.org	<p>SC.3.L.14.1 <i>Primarily Plants: Root Study</i></p> <p><i>Budding Botanist: Down Under; Photosynthesis</i></p> <p>SC.3.L.14.2 <i>Primarily Plants: What Temperature Is Best?</i></p>
Literature	<p><i>The Tiny Seed</i>, Eric Carle</p> <p><i>A Tree is a Plant</i>, Clyde Robert Bulk</p>



Web Links	<p>www.school.eb.com/elementary/article?articleId=353639 An encyclopedia article about importance and types of plants with diagram of plant growing from seed.</p> <p>www.school.eb.com/art-68469 Learn why stems grow in the direction of a light source while roots grow downward.</p> <p>www.school.eb.com/elementary/article?articleId=353624 Green plants use the sun's energy to manufacture their food with a process called photosynthesis.</p> <p>www.school.eb.com/elementary/art-83774/ Photosynthesis is vital to both plants and animals.</p>
Field Experiences	<p>Mead Gardens – (407) 599-3358 Harry P. Leu Gardens – (407) 246-2620 Tibet-Butler Nature Preserve – (407) 876-6696 Mayor Carl T. Langford Park – (407) 246-2150</p>
Other	



GRADE 3	
BODY OF KNOWLEDGE: LIFE SCIENCE	
BIG IDEA 15: DIVERSITY AND EVOLUTION OF LIVING ORGANISMS	
<p>A. Earth is home to a great diversity of living things, but changes in the environment can affect their survival.</p> <p>B. Individuals of the same kind often differ in their characteristics and sometimes the differences give individuals an advantage in surviving and reproducing.</p>	
ESSENTIAL QUESTIONS	
<p>How are animals that belong to one group different from one another?</p> <p>How are plants that belong to one group different from one another?</p> <p>Why are organisms classified into one group if they have differences?</p>	
BENCHMARKS and TASK ANALYSES	
<p>SC.3.L.15.1 Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.</p> <p>The student:</p> <ul style="list-style-type: none"> • classifies animals as vertebrates or invertebrates. • classifies animals as mammals, birds, reptiles, amphibians, fish, or arthropods. • identifies physical characteristics of mammals, birds, reptiles, amphibians, fish, and arthropods, such as hair, wings, etc. • identifies behavioral characteristics of mammals, birds, reptiles, amphibians, fish, and arthropods, such as raising young, migrating, etc. <p>SC.3.L.15.2 Classify flowering and non-flowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics.</p> <p>The student:</p> <ul style="list-style-type: none"> • observes plants that produce seeds (e.g., grasses, orange trees, conifers) • observes plants that produce spores (e.g., ferns, mosses) • classifies plants as flowering (e.g., magnolia trees, azaleas) or non-flowering (e.g., mosses, conifers such as Bald Cypress or pine trees) according to their physical characteristics. 	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
<p>How Do Scientists Classify Plants?</p> <p>How Do Scientists Classify Animals?</p>	
VOCABULARY	
vertebrates, invertebrates, birds, reptiles, amphibians, arthropods, mammals, fish, ferns, mosses, spores, cones, conifers	
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SUPPORTING RESOURCES	
Formative Assessment Probes	<p><i>Uncovering Student Ideas in Science</i>, Page Keeley</p> <p>SC.3.L.15.1 Vol. 2: Is it a Plant?</p> <p>SC.3.L.15.2 Vol. 1: Is it an Animal?</p>
Scott Foresman	<p>SC.3.E.15.1 38-43</p> <p>SC.3.E.15.2 14-19</p> <p>Directed Inquiry: How can you make a model of a backbone? 36</p>



AIMS www.aimsedu.org	SC.3.P.15.1 <i>Critters: Animal Antics</i> SC.3.P.15.2 <i>Primarily Plants: Spores: A Special Seed</i>
Literature	<i>The Reason for a Flower</i> , Ruth Heller
Web Links	http://www.perspective.com/nature/ A website offering exploration of biodiversity and biological classification. www.school.eb.com/lm/games/GS_1_2/GS_1_2.htm Determine which animals are mammals. www.school.eb.com/lm/games/GS_2_4/GS_2_4.htm Match the animal with its usual social habits of living alone or in groups. www.school.eb.com/art-83541 Carl Linnaeus brought order to the study of biology when he created the classification system still in use today. http://www.backyardnature.net/fpdefine.htm Discussion about what makes a plant a flowering plant with links to photos and information on the most common types.
Field Experiences	Moss Park – (407) 254-6840
Other	



GRADE 3	
BODY OF KNOWLEDGE: LIFE SCIENCE	
BIG IDEA 17: INTERDEPENDENCE	
<p>A. Plants and animals, including humans, interact with and depend upon each other and their environment to satisfy their basic needs.</p> <p>B. Both human activities and natural events can have major impacts on the environment.</p> <p>C. Energy flows from the sun through producers to consumers.</p>	
ESSENTIAL QUESTIONS	
<p>How do the changing seasons affect plant and animal behavior?</p> <p>How do plants utilize the energy from the Sun?</p>	
BENCHMARKS and TASK ANALYSES	
<p>SC.3.L.17.1 Describe how animals and plants respond to changing seasons. The student:</p> <ul style="list-style-type: none"> observes, records, and describes how animals and plants change during different seasons. <p>SC.3.L.17.2 Recognize that plants use energy from the Sun, air, and water to make their own food.</p>	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
How Do Seasonal Changes Affect Plants and Animals?	
VOCABULARY	
energy	
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SUPPORTING RESOURCES	
Formative Assessment Probes	SC.3.L.17.1 Vol. 2: Habitat Change
Scott Foresman	SC.3.E.17.1 80-85 SC.3.E.17.2 8-9, 106
AIMS www.aimsedu.org	SC.3.L.17.2 <i>Primarily Plants</i> : Plants and Sunlight
Literature	<i>The Tiny Seed</i> , Eric Carle <i>Be A Friend to Trees</i> , Patricia Lauber <i>Our Tree Named Steve</i> , Alan Zweibel <i>Weird Friends</i> , Jose Aruego & Ariane Dewey
Web Links	www.school.eb.com/elementary/art-83788/ To survive, plants must be able to adapt to seasonal and environmental changes. www.school.eb.com/elementary/art-68242 Some animals prepare for winter by stocking up on food, while others plan to sleep through the cold months. www.school.eb.com/elementary/article?articleId=353245 Hibernation is the way some animals deal with the harshness of winter.
Field Experiences	Moss Park – (407) 254-6840
Other	



GRADE 3	
BODY OF KNOWLEDGE: EARTH AND SPACE SCIENCE	
BIG IDEA 5: EARTH IN SPACE AND TIME	
Humans continue to explore Earth's place in space. Gravity and energy influence the formation of galaxies, including our own Milky Way Galaxy, stars, the Solar System, and Earth. Humankind's need to explore continues to lead to the development of knowledge and understanding of our Solar System.	
ESSENTIAL QUESTIONS	
Why don't all stars look alike? How can we overcome the force of gravity?	
BENCHMARKS and TASK ANALYSES	
SC.3.E.5.1 Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light. The student: <ul style="list-style-type: none"> • understands that stars are different. • observes that there are stars in the sky that are different sizes. • identifies the Sun as a medium-sized star when compared to other stars. • recognizes that some stars appear brighter than others. • understands that stars are so far away that they look like points of light. SC.3.E.5.2 Identify the Sun as a star that emits energy; some of it in the form of light. SC.3.E.5.3 Recognize that the Sun appears large and bright because it is the closest star to Earth. SC.3.E.5.4 Explore the Law of Gravity by demonstrating that gravity is a force that can be overcome. SC.3.E.5.5 Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye.	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
Stars are Different Sizes Stars are Different Magnitudes Number of Stars Seen Through a Telescope Overcoming Gravity	
VOCABULARY	
star, telescope	
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SUPPORTING RESOURCES	
Formative Assessment Probes	<i>Uncovering Student Ideas in Science</i> , Page Keeley SC.3.P.5.1 Vol. 2: Emmy's Moon & Stars
Scott Foresman	SC.3.E.5.1 454-455 SC.3.E.5.2 454-455, 423 SC.3.E.5.3 455 SC.3.E.5.4 32, 350-351 SC.3.E.5.5 436-437, 448
AIMS www.aimsedu.org	



Literature	<i>How Many Stars in the Sky?</i> Lenny Hort
Web Links	www.school.eb.com/elementary/article?articleId=353824 An encyclopedia article about the sun, its place in space and how it supplies most of Earth's energy www.school.eb.com/art-82761 The sun is a star, but it looks bigger and brighter than the others because it is the closest to us. www.school.eb.com/elementary/article?articleId=353808 An encyclopedia article discussing stars, what they are, where they come from, and how they are classified http://ksnn.larc.nasa.gov/k2/s_whatGravity.html A video explaining gravity with accompanying activity to help students understand how gravity works
Field Experiences	Kennedy Space Center – (888) 838-8915 Orlando Science Center Planetarium – (407) 514-2000
Other	



GRADE 3	
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	
How does energy from the Sun heat objects?	
BENCHMARKS and TASK ANALYSES	
SC.3.E.6.1 Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present, heat may be lost. The student:	
<ul style="list-style-type: none"> • investigates and understands that objects absorb and release heat. • understands that the Sun emits heat. • investigates that objects heated by the Sun can lose heat when the Sun is not present. 	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
Measuring Heat Energy in Various Solids and Liquids	
VOCABULARY	
radiant energy	
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SUPPORTING RESOURCES	
Scott Foresman	Scott Foresman textbook does not correlate with the Next Generation Sunshine State Standards for Science. Please consider the variety of quality supporting resources to help you teach this standard.
AIMS www.aimsedu.org	<i>Primarily Physics: Heat and Color</i>
Literature	<i>Done in the Sun</i> , Anne Hillerman
Web Links	www.school.eb.com/elementary/article?articleId=433607 An encyclopedia article explaining that solar energy is light, heat and other forms of energy given off by the sun www.school.eb.com/elementary/article?articleId=353824 An encyclopedia article about the sun, it's place in space and how it supplies most of Earth's energy
Field Experiences	Kennedy Space Center – (888) 838 8915 Orlando Science Center Planetarium – (407) 514-2000
Other	



GRADE 3	
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 do we measure solids and liquids? How do the physical properties of objects vary?</p>	
BENCHMARKS and TASK ANALYSES	
<p>SC.3.P.8.1 Measure and compare temperatures of various samples of solids and liquids. The student:</p> <ul style="list-style-type: none"> • uses a thermometer to measure and graph the temperatures of various solids (e.g., soil, sand, rice, beans, clay, etc.). • compares and contrasts the temperatures of various solids. • uses a thermometer to measure and graph the temperatures of various liquids (e.g., water, soda, milk, orange juice, hand soap, vinegar). • compares and contrasts the temperatures of various liquids. <p>SC.3.P.8.2 Measure and compare the mass and volume of solids and liquids. The student:</p> <ul style="list-style-type: none"> • uses appropriate science tools to measure the mass and volume of various solids and liquids and records the data. • observes and compares the mass and volume of solids and liquids. <p>SC.3.P.8.3 Compare materials and objects according to properties such as size, shape, color, texture, and hardness.</p>	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
<p>What Are Some Properties of Rocks That Can Be Compared? Mass and Volume of Solids and Liquids Comparing Mass of Grapes and Carrots Comparing Volume of Grapes and Carrots</p>	
VOCABULARY	
mass	
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SUPPORTING RESOURCES	
Scott Foresman	<p>SC.3.E.8.2 Flip Chart Activity: What heats up faster, sand or water? 169E, 284-285, 292-293</p> <p>SC.3.E.8.3 284-289</p> <p>Guided Inquiry: How can you measure some physical properties of matter? 290-291</p>



	Directed Inquiry: How can matter change? 300 Guided Inquiry: Do freshwater ice and saltwater ice melt the same? 378-379
AIMS www.aimsedu.org	SC.3.P.8.1 <i>Primarily Physics: Melt an Ice Cube</i> <i>Weather Sense-Temperature, Air Pressure, and Wind: Tub Temps</i> SC.3.P.8.2 <i>Popping with Power: Polar Burrs</i>
Literature	<i>Cocoa Ice</i> , Diana Applebaum <i>Pancakes, Pancakes</i> , Eric Carle
Web Links	www.school.eb.com/lm/games/GS_4_7/GS_4_7.htm Match a substance with its most common form at room temperature: solid, liquid, or gas. www.school.eb.com/elementary/article?articleId=353112 An encyclopedia article explaining that evaporation and condensation are two processes through which matter changes from one state to another www.school.eb.com/elementary/article?articleId=353444 An encyclopedia article describing the states and properties of matter http://ksnn.larc.nasa.gov/k2/s_statesMatter.html Video and accompanying activity about the three states of matter
Field Experiences	
Other	



GRADE 3	
BODY OF KNOWLEDGE: PHYSICAL SCIENCE	
BIG IDEA 9: CHANGES IN MATTER	
<p>A. Matter can undergo a variety of changes.</p> <p>B. Matter can be changed physically or chemically.</p>	
ESSENTIAL QUESTIONS	
How does water change state?	
BENCHMARKS and TASK ANALYSES	
<p>SC.3.P.9.1 Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation.</p> <p>The student:</p> <ul style="list-style-type: none"> • observes and describes ice melting. • observes and describes water freezing. • observes and describes water boiling. • observes and describes water evaporating. • observes and describes water vapor condensing. • records these changes in a science notebook, using the words melting, freezing, boiling, evaporation, and condensation. 	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
How Does Heat Affect Water?	
VOCABULARY	
melting, freezing, boiling, evaporation, condensation	
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SUPPORTING RESOURCES	
Scott Foresman	<p>SC.3.E.9.1 156-157, 304-305, 368-369, 380-381</p> <p>Guided Inquiry: How can you make a model of the water cycle? 162-163</p> <p>Guided Inquiry: Do freshwater ice and saltwater ice melt the same way? 378-379</p>
AIMS www.aimsedu.org	<p><i>Primarily Physics:</i> Melt an Ice Cube</p> <p><i>Primarily Earth:</i> Water to Ice to Water</p>
Literature	<i>Where Do Puddles Go?</i> Fay Robinson
Web Links	<p>www.school.eb.com/elementary/article?articleId=353444 An encyclopedia article explaining that anything which takes up space is called matter</p> <p>www.school.eb.com/art-102975 The physical states of water are determined by the structure of its molecules, which in turn is affected by temperature.</p> <p>www.school.eb.com/art-107583 A diagram depicting the water cycle</p>
Field Experiences	
Other	<p>Science Net Links: Water 3: Melting and Freezing Lab</p> <p>www.sciencenetlinks.com/lessons.cfm?</p>



GRADE 3	
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	
<p>What is energy? How can energy cause motion or create a change? How does light energy travel?</p>	
BENCHMARKS and TASK ANALYSES	
<p>SC.3.P.10.1 Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical. The student:</p> <ul style="list-style-type: none"> • recognizes that energy comes in many different forms. • identifies forms of energy, such as light, heat, sound, electrical, and mechanical. <p>SC.3.P.10.2 Recognize that energy has the ability to cause motion or create change. SC.3.P.10.3 Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another. SC.3.P.10.4 Demonstrate that light can be reflected, refracted, and absorbed.</p>	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
<p>Sound Energy How Can our Senses Help Us Observe Energy in Action How Does Light Interact with Objects? How Does Light Travel? Reflection Reflection and Refraction</p>	
VOCABULARY	
<p>reflect, refract, absorb</p>	
<p>The textbook is NOT the curriculum. The Next Generation Sunshine State Standards for Science are the mandated curriculum.</p>	
SUPPORTING RESOURCES	
Scott Foresman	<p>SC.3.E.10.1 358-363, 366-377, 396-397 SC.3.E.10.2 360-365, 490-495 Full Inquiry: How does energy affect the distance a toy car travels? 412-413 SC.3.E.10.3 Flip Chart Activity: How does light travel? 353E, 371-373 SC.3.E.10.4 370-373</p>
AIMS www.aimsedu.org	<p>SC.3.P.10.3 <i>Ray's Reflections</i>: Ray's Around the Corner; Pool Cues & Clues SC.3.P.10.4 <i>Ray's Reflections</i>: Catch a Ray; The Pharaoh's Chambers <i>Primarily Physics</i>: Mirrors Reflect</p>
Literature	
Web Links	<p>www.school.eb.com/elementary/article?articleId=353100 An encyclopedia article discusses energy and its various forms including electricity http://www.eia.doe.gov/kids/energyfacts/science/formsofenergy.html A website with information on energy including, forms of energy, sources of</p>



	energy and energy conservation www.school.eb.com/elementary/article?articleId=353386 An encyclopedia article explaining light as a form of energy
Field Experiences	
Other	



GRADE 3	
BODY OF KNOWLEDGE: PHYSICAL SCIENCE	
BIG IDEA 11: ENERGY TRANSFER AND TRANSFORMATIONS	
<p>A. Waves involve a transfer of energy without a transfer of matter.</p> <p>B. Water and sound waves transfer energy through a material.</p> <p>C. Light waves can travel through a vacuum and through matter.</p>	
ESSENTIAL QUESTIONS	
Do all things that give off light also give off heat?	
BENCHMARKS and TASK ANALYSES	
<p>SC.3.P.11.1 Investigate, observe, and explain that things that give off light often also give off heat.</p> <p>SC.3.P.11.2 Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together.</p> <p>The student:</p> <ul style="list-style-type: none"> investigates, observes, and explains that heat is produced when one object rubs against another (e.g., rubbing one's hands together, sanding wood). 	
OCPS ESSENTIAL LABS	
www.science.ocps.net	
<p>Can an Object Produce More Than One Type of Energy?</p> <p>How is Heat Produced?</p> <p>Can We Change Heat Production?</p>	
VOCABULARY	
light energy	
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SUPPORTING RESOURCES	
Scott Foresman	<p>SC.3.E.11.1 71, 356, 359</p> <p>Directed Inquiry: Can electricity produce light and heat? 356</p>
AIMS www.aimsedu.org	SC.3.P.11.2 <i>Primarily Physics</i> : Heat from Friction
Literature	
Web Links	<p>www.school.eb.com/elementary/article?articleId=353386 Ann encyclopedia article explaining light as a form of energy.</p> <p>www.school.eb.com/elementary/article?articleId=390761 An encyclopedia article about heat being a form of energy that moves from one object to another as a result of a difference in temperature.</p> <p>www.school.eb.com/lm/animations/oheat00001d4/product.html A presentation of heat as energy that is transferred from one object to another as a result of differences in temperature.</p>
Field Experiences	
Other	

