

# Grade 1 Science

8/2008

Physical Science Key Idea 3 - Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.				
Topic/Theme: Properties				
Essential Questions: 1. How can we decide how objects are the same and different?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Observe and describe properties of materials, using appropriate tools.	<p>How do we use our senses to help us describe objects?</p> <p>What are some ways we can describe objects?</p> <p>What types of things can we use to measure objects?</p>	<ul style="list-style-type: none"> <li>• Matter has properties (color, hardness, odor, sound, taste, etc.) that can be observed through the senses</li> <li>• Objects have properties that can be observed, described and/or measured: length, width, volume, size, shape, mass or weight, temperature, texture, flexibility, reflectiveness of light</li> <li>• Measurement can be made with standard metric units and non-standard units</li> <li>• Objects and/or materials can be sorted or classified according to their properties</li> </ul>	<ul style="list-style-type: none"> <li>• Math Their Way (junk boxes)</li> <li>• Scott Foresman Your Science Handbook pp. 4-7, 10-13, 50-55, D22-25, Senses-Unit D, chap. 1</li> <li>• Investigations-Book 6</li> <li>• Wonders of Learning Your Five Senses</li> </ul>	<ul style="list-style-type: none"> <li>• teacher observation</li> <li>• Scott Foresman teacher assessment pp. 57-60</li> <li>• Investigations-Book 6</li> </ul>
Connections to text:				
Connections to Technology:				
Vocabulary: characteristic, property, attribute, sort, classify, texture				

## Grade 1 Science

Physical Science Key Idea 3 - Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity				
Topic/Theme: Matter				
Essential Questions: 1. What are the states of matter?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe chemical and physical changes, including changes in states of matter.	How can matter change?	<p>Major Understandings: Matter exists in three states: solid, liquid, gas</p> <ul style="list-style-type: none"> <li>• Solids have a definite shape and volume</li> <li>• Liquids do not have a definite shape but have a definite volume</li> <li>• Gases do not hold their shape or volume</li> </ul> <p>Temperature can affect the state of matter of a substance</p> <p>Changes in the properties or materials of objects can be observed and described</p>	<ul style="list-style-type: none"> <li>• Scott Foresman Unit B, chap. 1</li> </ul>	<ul style="list-style-type: none"> <li>• Scott Foresman teacher assessment pp. 21-24</li> <li>• Teacher observation</li> </ul>
Connections to text:				
Connections to Technology:				
Vocabulary: matter, solid, liquid, gas, volume				

## Grade 1 Science

Physical Science: Key Idea 4 - Energy exists in many forms and when these forms change energy is conserved.				
Topic/Theme: Energy				
Essential Questions: 1. What is energy?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe a variety of forms of energy (e.g., heat, chemical, light) and the changes that occur in objects when they interact with those forms of energy.	<p>What are some forms of energy?</p> <p>How is energy used?</p>	<p>Major Understandings:</p> <ul style="list-style-type: none"> <li>- Energy exists in various forms: heat, electric, sound, chemical, mechanical, light</li> <li>- Some materials transfer energy better than others (heat &amp; electricity)</li> <li>- Energy and matter interact: water is evaporated by the sun's heat; a bulb is lighted by means of electrical current; a musical instrument is played to produce sound</li> <li>- Interactions with forms of energy can be either helpful or harmful</li> </ul>	<ul style="list-style-type: none"> <li>• Scott Foresman Unit B, chap. 2</li> <li>• Foss kits</li> </ul>	<ul style="list-style-type: none"> <li>• Scott Foresman teacher assessment pp. 27-30</li> </ul>
Connections to text:				
Connections to Technology:				
Vocabulary: evaporation, atmosphere, electricity, energy, vibrate, shadow				

## Grade 1 Science

Physical Science Key Idea 5 - Energy and matter interact through forces that result in changes in motion.				
Topic/Theme: Moving and working				
Essential Questions: 1. How do forces interact to cause a change in motion?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe the effects of common forces (pushes and pulls) of objects, such as those caused by gravity, magnetism, and mechanical forces.	<p>What can a magnet do?</p> <p>How do people use machines?</p> <p>What ways do things move?</p>	<p>Major Understandings:</p> <ul style="list-style-type: none"> <li>- The position of an object can be described by locating it relative to another object or the background (e.g., on top of, next to, over, under, etc.)</li> <li>- The position or direction of motion of an object can be changed by pushing or pulling</li> <li>- The force of gravity pulls objects toward the center of Earth</li> <li>- The amount of change in the motion of an object is affected by friction</li> <li>- Magnetism is a force that may attract or repel certain materials</li> <li>- Mechanical energy may cause change in motion through the application of force and through the use of simple machine such as gears, pulleys, levers, and inclined planes</li> </ul>	<ul style="list-style-type: none"> <li>• Foss kits</li> <li>• Scott Foresman Unit B, chap. 3</li> </ul>	<ul style="list-style-type: none"> <li>• Scott Foresman teacher assessment pp. 33-36</li> </ul>
Connections to text:				
Connections to Technology:				
Vocabulary: work, lever, attract, repel, ramp, pulley, friction, wheel, simple machines				

## Grade 1 Science

Living Environment Key Idea 3 - Individual organisms and species change over time				
Topic/Theme: Coming to your senses				
Essential Questions: 1. What characteristics of plants and animals help them to survive in their environment?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe how the structures of plants and animals complement the environment of the plant or animal.	How do animals use their senses to learn about the world around them?	Major Understandings <ul style="list-style-type: none"> <li>• Each animal has different structures that serve different functions in growth, survival, and reproduction.                         <ul style="list-style-type: none"> <li>• Eyes, nose, ears, tongue and skin of some animals enable the animals to sense their surroundings.</li> <li>• The mouth, including teeth, jaws, and tongue, enables some animals to eat and drink.</li> <li>• Some animals have parts that are used to produce sounds and smells to help the animal meet its needs.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Scott Foresman Unit A, chap 2 &amp; 3</li> <li>• National Geographic (monthly magazine)</li> <li>• Wonders of learning (various kits)</li> </ul>	<ul style="list-style-type: none"> <li>• teacher observation</li> <li>• Scott Foresman teacher assessment pp. 9-12, 15-18</li> </ul>

## Grade 1 Science

Living Environment Key Idea 5 - Organisms maintain a dynamic equilibrium that sustains life.				
Topic/Theme: Coming to your senses				
Essential Questions: 1. What characteristics of plants and animals help them to survive in their environment?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe basic life functions of common living specimens (e.g. guppies, mealworms, gerbils).  Describe some survival behaviors of common living specimens	How do animals use their senses to learn about the world around them?	<ul style="list-style-type: none"> <li>• An organism's external physical features can enable it to carry out life functions in particular environment.</li> <li>• Senses can provide essential information (regarding danger, food, mates, etc.) to animals about their environment.</li> </ul>		<ul style="list-style-type: none"> <li>• teacher observation</li> </ul>
Connections to text:				
Connections to Technology:				
Vocabulary: environment, adaptation, habitat				

## Grade 1 Science

Living Environment Key Idea 5 - Organisms maintain a dynamic equilibrium that sustains life.				
Topic/Theme: Health				
Essential Questions: 1. What do we need to be healthy and grow?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe the factors that help promote good health and growth in humans.	<ul style="list-style-type: none"> <li>• How have you grown?</li> <li>• What are daily health habits?</li> <li>• What foods help you grow?</li> </ul>	Major Understandings: <ul style="list-style-type: none"> <li>• Humans need a variety of healthy foods, exercise, and rest in order to grow and maintain good health.</li> <li>• Good health habits include hand washing and personal cleanliness; avoiding harmful substances (including alcohol, tobacco, illicit drugs); eating a balanced diet; engaging in regular exercise.</li> </ul>	<ul style="list-style-type: none"> <li>• Scott Foresman Unit D, chap 2 &amp; 3</li> <li>• Health Central Kits</li> <li>• Wonders of Learning Food for Your Body</li> </ul>	<ul style="list-style-type: none"> <li>• Scott Foresman Teacher Assessment pp. 63-66 pp. 69-72</li> </ul>
Connections to text: Health Central collection				
Connections to Technology:				
Vocabulary: habits, addiction, exercise, food pyramid, nutrition				

## Grade 1 Science

Physical Science				
Key Idea 1 - The Earth and celestial phenomena can be described by principles of relative motion and perspective.				
Topic/Theme: Astronomy				
Essential Questions: 1. What makes day and night?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe patterns of daily, monthly, and seasonal changes in their environment.	<p>How does the earth's movement affect us?</p> <p>How is daylight affected by the change in seasons?</p> <p>How is weather affected by the change in seasons?</p> <p>Are the sun and the stars actually moving in the sky?</p>	<ul style="list-style-type: none"> <li>• Natural cycles and patterns include:               <ul style="list-style-type: none"> <li>-Earth spinning around once every 24 hours (rotation), resulting in day and night</li> <li>-Earth moving in a path around the sun (revolution), resulting in one Earth year</li> <li>-The length of daylight and darkness varying with the seasons</li> <li>-Weather changing from day to day and through the seasons</li> <li>-The appearance of the Moon changing as it moves in a path around Earth to complete a single cycle.</li> </ul> </li> <li>• The sun and other stars appear to move in a recognizable pattern both daily and seasonally</li> </ul>	<ul style="list-style-type: none"> <li>• Planetarium visit</li> <li>• Calendar activities</li> <li>• Scott Foresman               <ul style="list-style-type: none"> <li>- Unit C chap. 2 &amp; 3</li> <li>- Your Science Handbook pp. 42-45</li> </ul> </li> <li>• Wonders of Learning               <ul style="list-style-type: none"> <li>✓ Planet Earth</li> <li>✓ What Happens in Autumn</li> <li>✓ What Happens in Winter</li> <li>✓ What Happens in Spring</li> <li>✓ What Happens in Summer</li> <li>✓ The Sun, the Moon</li> <li>✓ The Solar system</li> <li>✓ Let's Explore Space</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• teacher observation</li> <li>• Scott Foresman teacher assessment pp. 45-54</li> </ul>
Connections to text:				
Connections to Technology:				
Vocabulary: pattern, rotation, revolution, season, constellation				

## Grade 1 Science

Living Environment Key Idea - Living things are both similar and different from each other and from nonliving things.				
Topic/Theme: Organisms				
Essential Questions: 1. What do living things need? 2. What makes something living or non-living?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe the characteristics of and variations between living and non-living things.  Describe the life processes common to all living things	What do all living things have in common?  What are some living things?  What are some non-living things?	Major Understandings: <ul style="list-style-type: none"> <li>• Animals need air, water and food in order to live and thrive.</li> <li>• Plants require air, water, nutrients, and light in order to live and thrive.</li> <li>• Non-living things do not live and thrive.</li> <li>• Non-living things can be human - created or naturally occurring.</li> <li>• Living things grow, take in nutrients, breathe, reproduce, eliminate waste, and die</li> </ul>	<ul style="list-style-type: none"> <li>• Scott Foresman Unit A, chap 1,2,3</li> </ul>	<ul style="list-style-type: none"> <li>• Living/Non-living t-chart</li> <li>• teacher observation</li> <li>• Scott Foresman teacher assessment pp. 3-18</li> </ul>
Connections to text:				
Connections to Technology:				
Vocabulary: reproduce, living/non-living				

## Grade 1 Science

Living Environment Key Idea 3 - Individual organisms and species change over time.				
Topic/Theme: Organisms				
Essential Questions: 1. What characteristics of plants and animals help them to survive in their environment?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe how the structures of plants and animals compliment the environment of the plant or animal.	How do the parts of a plant function to help the plant grow and survive?	Major Understandings: <ul style="list-style-type: none"> <li>• Each plant has different structures that serve different functions in growth, survival, and reproduction:                         <ul style="list-style-type: none"> <li>- Roots help support the plant and take in water and nutrients</li> <li>- Leaves help plants utilize sunlight to make food for the plant</li> <li>- Stems, stalks, trunks, and other similar structures provide support for the plant</li> <li>- Some plants have flowers</li> <li>- Flowers are reproductive structures of plants that produce fruit which contains seeds</li> <li>- Seeds contain stored food that aids in germination and the growth of young plants</li> </ul> </li> <li>• Each kind of plant goes through its own stages of growth and development that may include seed, young plant &amp; mature plant</li> </ul>	<ul style="list-style-type: none"> <li>• Scott Foresman Unit A, chap. 1</li> </ul>	Scott Foresman teacher assessment pp. 3-6

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Living Environment Key Idea 3 - Individual organisms and species change over time.				
Topic/Theme: Organisms				
Essential Questions: 1. What characteristics of plants and animals help them to survive in their environment?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe how the structures of plants and animals compliment the environment of the plant or animal.	How are animals bodies built to help them?	Major Understandings: <ul style="list-style-type: none"> <li>• Each animal has different structures that serve different functions in growth, survival, and reproduction:                         <ul style="list-style-type: none"> <li>- Wings, legs, or fins enable some animals to seek shelter and escape predators</li> <li>- The mouth, including teeth, jaws and tongue, enables some animals to eat and drink</li> <li>- Eyes, nose, ears, tongue and skin of some animals enable the animals to sense their surroundings</li> <li>- Claws, shells, spines, feathers, fur, scales, and color ob body covering enable some animals to protect themselves from predators and other environmental conditions or enable them to obtain food.</li> <li>- Some animals have parts that are used to produce sounds and smells to help the animal meet its needs</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• National Geographic (monthly magazines)</li> <li>• Wonders of Learning (various kits)</li> <li>• Scott Foresman Unit A, chap. 2</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher observation</li> <li>• Scott Foresman pp. 9-12</li> </ul>

## Grade 1 Science

Living Environment Key Idea 3 - Individual organisms and species change over time.				
Topic/Theme: Organisms				
Essential Questions: 1. What characteristics of plants and animals help them to survive in their environment?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
	How are plants affected by the environment?  How are animals affected by the environment?	<ul style="list-style-type: none"> <li>• In order to survive in their environment, plants and animals must be adapted to that environment</li> <li>• Seeds disperse by a plant's own mechanism and/or in a variety of ways that can include wind, water, and animals</li> <li>• Leaf, flower, stem, and root adaptations may include variations in size, shape, thickness, color, smell and texture</li> <li>• Animal adaptations include coloration for warning or attraction, camouflage, defense mechanisms, movement, hibernation, and migration</li> </ul>		<ul style="list-style-type: none"> <li>• Teacher observation</li> <li>• Plant journal</li> </ul>
Vocabulary: adapt, environment, hibernate, migrate, camouflage, germination, survival				

## Grade 1 Science

Living Environment Key Idea 4 - The continuity of life is sustained through reproduction and development				
Topic/Theme: Organisms				
Essential Questions: 1. What is a life cycle?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe the major stages in the life cycles of selected plants and animals.	How do plants and animals change over time?	Major Understandings: <ul style="list-style-type: none"> <li>• Plants and animals have life cycles. These may include beginning of a life, development into an adult, reproduction as an adult, and eventually death.</li> <li>• Each kind of plant goes through its own stages of growth and development that may include seed, young plant, and mature plant.</li> <li>• The length of time from beginning of development to death of a plant is called its life span.</li> <li>• Life cycles of some plants include changes from seed to mature plant.</li> <li>• Each generation of animals goes through changes in form from young to adult. This completed sequence of changes in form is called a life cycle.</li> <li>• Each kind of animal goes through its own stages of growth and development during its life span.</li> <li>• The length of time from an animal's birth to its death is called its life span. Life spans of different animals vary.</li> </ul>	<ul style="list-style-type: none"> <li>• planting seeds &amp; trees</li> <li>• Chicks/ducks incubation</li> <li>• Hatching tadpoles</li> <li>• Pond field study</li> <li>• Pumpkin farm field study trip</li> <li>• Scott Foresman Unit A, chap. 1 &amp; 2</li> <li>• Butterflies</li> <li>• Wonders of Learning (various kits)</li> </ul>	<ul style="list-style-type: none"> <li>• teacher observation</li> <li>• plant journal</li> <li>• Scott Foresman teacher assessment pp. 3-12</li> </ul>
Connections to text:				
Connections to Technology:				
Vocabulary: life cycle, life span, development				

## Grade 1 Science

Living Environment Key Idea 5 - Organisms maintain a dynamic equilibrium that sustains life.				
Topic/Theme: Organisms				
Essential Questions: 1. What are the basic life functions of living organisms?				
Performance Indicators	Guided Questions	Essential Knowledge & Skills	Classroom Ideas	Assessment Ideas
Describe some survival behaviors of common living specimens  Describe basic life functions of common living specimens (e.g. guppies, mealworms)	How do changes in the life cycle of plants and animals help them to survive?	Major understandings: <ul style="list-style-type: none"> <li>• Plants respond to changes in their environment. For example, the leaves of some green plants change position as the direction of light changes: the parts of some plants undergo seasonal changes that enable the plant to grow: seeds germinate, and leaves form and grow</li> <li>• Particular animal characteristics are influenced by changing environmental conditions including: fat storage in winter, coat thickness in winter, camouflage, shedding of fur, conditions such as the availability of food, air, water, space, shelter, heat and sunlight</li> <li>• Some animal behaviors are influenced by environmental conditions. These behaviors may include: nest building, hibernating, hunting, migrating, and communicating.</li> <li>• The health, growth, and development of organisms are affected by environment</li> <li>• All living things grow, take in nutrients, breathe, reproduce, and eliminate waste.</li> <li>• An organism's external physical features can enable it to carry out life's functions in particular environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Wonders of learning (various kits)</li> <li>- Birds</li> <li>- Plants &amp; seeds</li> <li>• Natural Geographic (monthly magazines)</li> <li>• Scott Foresman Unit A, chap. 1,2,3</li> </ul>	<ul style="list-style-type: none"> <li>• teacher observation</li> <li>• observation journals</li> <li>• Plant journals</li> <li>• Scott Foresman teacher assessment pp. 3-18</li> </ul>
Connections to text:				
Connections to Technology:				
Vocabulary: environment, habitat, adaptation, survival, reproduction, hibernation, migration, camouflage				