

SCIENCE CURRICULUM
KINDERGARTEN

1. LIFE SCIENCE

Kindergarten

	The student...	Science Standards	LA Standards
A. The Needs of Plants and Animals	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues to identify and/or distinguish between living and nonliving things. 2. knows how to apply knowledge about life processes to distinguish between living and nonliving things. 3. knows some of the basic needs of living things. 	1.1.1.1,2,3 1.1.2.1 2.1.3.2 2.2.1.1,2 2.2.2.1 2.2.3.1	1.1-C.1 2.2-A.2,3
B. Growing and Changing	<ol style="list-style-type: none"> 1. identifies words that name persons, places, or things and words that name actions. 2. describes how organisms change as they grow and mature. 3. knows ways living things change and grow over time. 4. knows selected characteristics of plants and animals. 	1.1.1.1,2,3 1.1.2.1 2.2.1.1,2 2.2.2.1,2	1.1.C.4 2.2.A.3 2.2.B.2
C. Plants and Animals All Around	<ol style="list-style-type: none"> 1. identifies words that name persons, places, or things and words that name actions. 2. knows that animals are found in different kinds of environments. 3. knows that life occurs on or near the surface of the Earth in land, water, and air. 4. knows that there are many different plants and animals living in many different kinds of environments (hot, cold, wet, dry, sunny, dark). 5. knows that plants and animals may live in different habitats. 	1.1.1.1,2,3 1.1.2.1 2.2.1.1 2.2.2.1 2.2.3.1 3.1.1.2	1.1.C.4 2.2.B.2,4

2. EARTH SCIENCE

	The student...	Science Standards	LA Standards
A. Our Land, Water, and Air	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. knows that the surface of the Earth is composed of different types of solid materials. 3. recognizes that the solid materials making up the Earth come in all sizes, from boulders to grains of sand. 4. knows that the activities of human beings affect plants and animals in many ways. 5. knows that life occurs on or near the surface of the Earth in land, water, and air. 6. knows some of the basic needs of living things. 7. knows ways to care for the Earth at home and in school. 	1.1.1.1,2 1.1.2.1 1.1.3.1 2.1.1.1,2 2.1.2.1 2.2.3.1 3.1.1.2	1.1.C.4,5 2.2.B.2
B. Weather and Seasons	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, and graphics. 2. uses charts to display daily weather changes. 3. understands that continuous patterns occur in nature. 	1.1.1.1,2,3 1.1.2.1 2.2.3.1 2.3.2.1	1.1.A.1 1.1.C.4,5

3. PHYSICAL SCIENCE**Kindergarten**

	The student...	Science Standards	LA Standards
A. Matter	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, and graphics. 2. knows that objects can be described, classified, and compared by their composition and their physical properties. 3. knows that objects have many different observable properties. 4. knows that matter exists in different states. 5. knows that materials can be changed by cutting, folding, bending, and mixing. 6. knows that people use scientific processes, including hypothesis, making inferences, recording data, and communicating data when exploring the natural world. 	1.1.1.1,3 1.1.3.1 2.1.1.1,2 2.2.3.1	1.1.D.5 2.2.A.2 2.2.B.4
B. Heat and Light	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, and graphics. 2. knows the effects of Sun and shade on the same object. 3. knows some processes where heat can be released. 4. recognizes systems of matter and energy. 5. knows that people use scientific processes including hypothesis, making inferences, and recording and communicating data when exploring the natural world. 	1.1.1.1,2 1.1.2.1 2.1.1.2 2.1.2.1 2.2.3.1 2.3.2.2	1.1.C.5 1.1.D.5 2.2.B.2
C. How Things Move	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, and graphics. 2. knows that different things move at different speeds. 3. knows that the motion of an object can be changed by a push or a pull. 4. knows the names of objects that roll, slide, or fly. 5. knows that vibrations caused by sound waves can be felt. 6. understands that objects can be described, classified, and compared by their composition. 	1.1.1.1,2,3 1.1.2.1 1.1.3.1 2.1.1.1,2 2.1.3.1,2 2.2.3.1 2.3.2.2 3.1.1.2	1.1.A.1,5 1.1.C.6

4. SPACE AND TECHNOLOGY

	The student...	Science Standards	LA Standards
A. Day and Night	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, and graphics. 2. knows that the sky looks different during the day than it does at night. 3. knows that the position of the Sun in the sky appears to change during the day. 	1.1.1.1,2,3 1.1.2.1 2.2.3.1 2.3.1.1,2	1.1.C.1 2.2.B.4
B. How Things Work	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, and graphics. 2. knows that one way to change how something is moving is to give it a push or a pull. 3. knows that there is a relationship between force and motion. 4. knows that some objects are made up of many different materials. 5. understands that different things move at different speeds. 	1.1.1.1,2,3 1.1.2.1 2.1.2.1 2.1.3.2 2.2.3.1 3.1.1.2	1.1.D.2,4 2.2.B.2

SCIENCE CURRICULUM
FIRST GRADE

1. LIFE SCIENCE

First Grade

	The student...	Science Standards	LA Standards
A. Living and Nonliving	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. knows how to classify things as living and nonliving. 3. knows that environments have living and nonliving parts. 4. understands that living things need food, water, space, and shelter to survive. 5. understands why living things need food, water, space, and shelter to survive. 6. uses simple graphs, pictures, written words, and numbers to observe, describe, record, and compare data. 7. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions. 	1.1.1.1 2.2.1.1,2,3,4 2.2.2.1,2 3.1.1.4	1.1.A.3,4 2.2.C.3
B. Habitats	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. knows that animals and plants can be associated with their environment by an examination of their structural characteristics. 3. knows plants and animals that live in a particular habitat (for example, black bears in the forest, whales in the ocean, camels in the desert, ducks in the wetlands). 4. knows that environments have living and nonliving parts. 5. knows some characteristics of different environments and some plants and animals found there. 6. knows the characteristics of the climate in different habitats (for example, sunlight, moisture, temperature). 7. uses information gathered to identify patterns in nature to make predictions (for example, shapes of leaves). 8. knows some kinds of organisms that live on or near the surface of the Earth in land, air, and water. 	1.1.1.1 2.2.1.1,2,3 2.3.2.2 3.1.1.4	1.1.A.5 2.2.B.7 2.2.C.2
C. How Plants and Animals Live	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. uses a variety of tools (for example, thermometers, magnifiers, rulers, scales, computers) to identify characteristics of objects. 3. knows that plants and animals have adaptations that help them survive in their environment (camouflage, teeth, spines). 4. knows some ways in which animals and plants are adapted to living in different environments. 5. compares and describes the structural characteristics of plants and animals. 6. knows that when tests are repeated under the same conditions, similar results are usually obtained. 7. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions. 	1.1.1.1 2.2.1.1,2,3 2.2.3.1,3 2.3.2.2 3.1.1.4	1.1.A.3 2.2.B.7 2.2.C.2

1. LIFE SCIENCE (continued)**First Grade**

	The student...	Science Standards	LA Standards
D. Life Cycles	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. knows ways organisms change as they grow and mature. 3. knows that living things grow and change in different ways and in different lengths of time. 4. knows that plants and animals are similar but not identical to their parents. 5. knows that in order to learn, it is important to observe the same things often and compare them. 6. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions. 	1.1.1.1 2.2.1.3,4 2.2.2.2 3.1.1.4	1.1.A.3 1.1.C.2 2.2.C.2
E. Food Chains	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. listens, records, and compares the ideas and observations of others. 3. uses prior knowledge, illustrations, and text to make predictions. 4. knows that plants produce oxygen and food for animals. 5. understands that animals can be grouped according to what they eat. 6. knows the basic needs of all living things. 7. knows that plants and animals are dependent upon each other for survival. 8. understands that living things are part of a food chain. 9. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions. 	1.1.1.1 2.2.1.1,2,3 2.3.2.2 3.1.1.4	1.1.A.3 1.1.C.2 2.2.B.7

2. EARTH SCIENCE

First Grade

	The student...	Science Standards	LA Standards
A. Land, Water, and Air	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. uses models as representations of real things. 3. knows major features of the Earth’s surface. 4. extends and refines knowledge that the surface of the Earth is composed of different types of solid materials. 5. knows some kinds of organisms that live on or near the surface of the Earth in land, water, and air. 6. knows that erosion and weathering change land and that organisms cause changes in the environment where they live. 7. knows that people use scientific processes including hypotheses, making inferences, and recording and communicating data when exploring the natural world. 8. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions. 	<p>1.1.1.1 2.1.1.1,2 2.1.2.1 2.2.1.2,3,4 2.2.2.1 3.1.1.2,3,4</p>	<p>1.1.A.3,6 2.2.B.7</p>
B. Weather	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. works with others to complete an experiment or to solve a problem. 3. knows what makes up weather and how it changes from day to day. 4. knows how to use simple tools to measure weather conditions from day to day and across the seasons. 5. uses the senses, tools, and instruments to obtain information from his or her surroundings. 6. knows that weather can be described by form and amount of precipitation. 7. knows that the characteristics of some animals change as seasonal conditions change. 8. recognizes patterns in the weather. 9. understands that most natural events occur in comprehensible, consistent patterns. 10. understands the importance of accuracy and repetition in conducting scientific inquiries. 11. uses a variety of tools to identify characteristics of objects. 12. knows that scientists and technologists use a variety of tools (e.g., thermometers, magnifiers, ruler, and scales) to obtain information in more detail and to make work easier. 	<p>1.1.1.1 2.1.1.1,2 2.1.2.1 2.2.1.1 2.3.2.1,2 3.1.1.2,4</p>	<p>1.1.A.3 1.1.C.2 2.2.B.7</p>

3. PHYSICAL SCIENCE

First Grade

	The student...	Science Standards	LA Standards
A. Observing Matter	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. works with others to complete an experiment or to solve a problem. 3. knows that objects are composed of parts that are too small to be seen without magnification (for example, rocks, cookies, string, paper). 4. knows that objects can be grouped according to their physical characteristics (for example, shape, color, texture, form, size). 5. knows the effects of heating and cooling on solids, liquids, and gases. 6. knows the physical properties of ice, water, and steam. 7. recognizes systems of matter and energy. 8. uses nonstandard methods to compare and order objects according to their lengths or weights. 	1.1.1.1 2.1.1.1,2 2.1.2.1	1.1.A.3,6 2.2.C.2
B. Movement and Sound	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. listens, records, and compares the ideas and observations of others. 3. understands various ways gravity affects the motion of objects (for example, an object on a ramp, an object that is dropped). 4. knows that various things move at different speeds when different forces are applied. 5. investigates by observing and then describing how things move in many different ways, such as straight, zigzag, around and around, and back and forth. 6. observes the effects some objects have on others even when the two objects might not touch. 7. knows that magnetism is a force that may attract or repel certain materials. 8. knows that vibrations of objects (for example, strings, drumheads, rubber bands) cause sounds. 9. describes sounds from common sources. 10. uses mathematical language to read and interpret data on a simple concrete graph, pictorial graph, or chart. 11. knows that in doing science, it is often helpful to work with a team and share findings with others. 	1.1.1.1,2 1.1.3.1 2.1.1.2 2.1.2.1 2.1.3.1,2 3.1.1.2,3,4	1.1.A.3 1.1.C.2 2.2.B.7
C. Learning About Energy	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. uses simple graphs, pictures, written statements, and numbers to observe, describe, record, and compare data. 3. knows that the Sun supplies heat and light energy to Earth. 4. knows that heat can be produced in many ways (e.g., burning and rubbing). 5. knows that heat from the Sun has varying effects depending on the surface it strikes. 6. knows that light can pass through some objects and not others. 7. recognizes systems of matter and energy. 8. knows ways that human activities require and release energy. 9. understands that people need food for energy. 10. knows the nutritional value of various foods. 11. predicts which materials will allow light to pass through and which ones will not. 12. works with others to complete an experiment or to solve a problem. 13. uses mathematical language to read and interpret data on a simple concrete graph, pictorial graph, or chart. 	1.1.1.1 1.1.3.1 2.1.1.2 2.1.2.1 2.1.3.1 2.2.3.2 2.3.1.2 2.3.2.1 3.1.1.2,4	1.1.A.3 1.1.C.2 2.2.C.2

4. SPACE AND TECHNOLOGY

First Grade

	The student...	Science Standards	LA Standards
A. Day and Night Sky	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. uses standard (for example, centimeters) and nonstandard units (for example, paper clips, hands, pencils) to measure organisms and objects and parts of organisms and objects. 3. knows and differentiates objects seen in the day and night sky (for example, clouds, Sun, stars, Moon, planets). 4. knows that the Sun supplies heat and light energy to Earth. 5. knows that night and day are caused by the rotation of the Earth. 6. knows that the amount of light reflected by the Moon is a little different every day, but the Moon appears the same again. 7. uses a variety of tools (for example, thermometers, magnifiers, rulers, scales, computers) to identify characteristics of objects. 8. knows appropriate tools (clocks and calendar) for measuring time (including days, weeks, months). 9. uses mathematical language to read and interpret data on a simple concrete graph, pictorial graph, or chart. 	<p>1.1.1.1 1.1.3.1 2.2.1.1 2.3.1.1,2,3 3.1.1.3,4</p>	<p>1.1.A.3,6 2.2.B.7</p>
B. Science in Our World	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. uses simple graphs, pictures, written statements, and numbers to observe, describe, record, and compare data. 3. knows that the activities of humans affect plants and animals in many ways. 4. investigates that tools are used to help make things and some things cannot be made without tools. 5. knows that humans depend on their constructed environment. 6. investigates that when parts are put together they can do things that they could not do by themselves. 7. recognizes the impact of information technology on their daily lives. 8. works with others to complete an experiment or to solve a problem. 	<p>1.1.1.1,2 1.1.2.1 1.1.3.1 2.1.3.1 2.2.3.2 3.1.1.2,3,4</p>	<p>1.1.A.3 1.1.C.2 2.2.C.3</p>

SCIENCE CURRICULUM
SECOND GRADE

1. LIFE SCIENCE

Second Grade

	The student...	Science Standards	LA Standards
A. All About Plants	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. knows that people use scientific processes including making inferences, when exploring the natural world. 3. knows the basic needs of all living things. 4. identifies ways that seeds travel. 5. knows that the structural characteristics of plants and animals are used to group them. 6. understands that structures of living things are adapted to their function in specific environments. 7. understands that living organisms need to be adapted to their environment to survive. 8. understands that the amount of food, water, space, and shelter needed is dependent on the size and kind of living things. 9. knows that plants and animals are adapted to different ranges of temperature and moisture. 10. knows that people use scientific processes including making inferences, when exploring the natural world. 11. recognizes, extends, generalizes, and creates a wide variety of patterns and relationships using symbols and objects. 	1.1.1.1,3,4 1.1.2.1,2 1.1.3.1 2.2.1.1,2,3 2.2.2.3 3.1.1.4	1.1.B.3 1.1.C.1,4
B. All About Animals	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. assembles models of a worm and a snake to understand the differences in the internal structure of each and to observe their similar outward appearance. 3. classifies animals with backbones into groups based on their structural characteristics. 4. describes characteristics of groups of animals with backbones. 5. describes how mammals, birds, fish, reptiles, amphibians, and animals without backbones are adapted to live in specific environments. 6. opens a closed jar with suction cups to understand how an octopus uses its body to manipulate objects. 	1.1.1.1,3,4 1.1.2.2 1.1.3.1 2.2.1.1,2,3 2.2.2.1,3 2.2.3.1,2 3.1.1.2	1.1.A.2 1.1.C.3

1. LIFE SCIENCE (continued)

Second Grade

	The student...	Science Standards	LA Standards
C. How Plants and Animals Live Together	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. adds sugar and water to yeast to observe how living things need food and water. 3. makes connections and inferences based on text and prior knowledge (for example, order of events, possible outcomes). 4. knows the basic needs of all living things. 5. knows that if living things do not get food, water, shelter, and space, they will die. 6. knows that plants and animals are dependent upon each other for survival. 7. explains how animals in a grassland habitat depend on plants and other animals for food. 8. explains how animals in an ocean depend on plants and other animals for food. 9. knows that human beings cause changes in their environment, and these changes can be positive (for example, creating refuges, replanting deforested regions, creating laws to restrict burning) or negative (for example, introducing toxic organisms, deforestation, littering, contaminating water and air). 10. makes a model of a food web to understand how organisms depend on one another. 	<p>1.1.1.1,3,4 1.1.2.2 2.1.1.2 2.1.2.3 2.2.1.1 2.2.2.3</p>	<p>1.1.A.2 1.1.C.1,4</p>
D. How Living Things Grow and Change	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. collects data on right-handedness versus left-handedness to understand one way in which people are different; infers that people are all alike in that they use one hand to write. 3. knows how to apply knowledge about life processes to distinguish between living and nonliving things. 4. understands that living things can reproduce, and nonliving things cannot reproduce. 5. knows that some organisms have adaptations that enable them to move from one medium to another (for example, dragonflies begin life in water, move to land, and then fly in the air). 6. knows that living things have offspring that resemble their parents. 7. understands that plants and animals produce offspring with similar characteristics, but individual differences (for example, kittens in a litter may be colored differently). 8. will sequence the stages in the life cycle of a bean plant. 9. describes how organisms change as they grow and mature. 10. records data while observing the stages of development of a Painted Lady butterfly. 	<p>1.1.1.1,3,4 1.1.2.2 1.1.3.1 2.2.1.1,2,3 2.2.2.1,2,3 3.1.1.4</p>	<p>1.1.A.2 1.1.C.1,4</p>

2. EARTH SCIENCE

Second Grade

	The student...	Science Standards	LA Standards
A. Earth's Land, Air, and Water	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. identifies and compares the odor, appearance, grain size, texture, and absorptive quality of two types of soil. 3. knows some of Earth's natural resources, including land, air, and water; and identifies renewable and nonrenewable resources. 4. extends and refines knowledge that the surface of the Earth is composed of different types of solid materials that come in all sizes. 5. knows some ways people use natural resources. 6. describes ways that Earth changes. 7. knows that human beings cause changes in their environment, and these changes can be positive or negative. 8. observes how the presence of worms in soil assists in the composting process. 9. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions. 	1.1.1.1,2,4 1.1.2.1,2 1.1.3.1 2.2.2.1,2,3 2.3.2.1,2,3 3.1.1.5	1.1.B.1 1.1.C.4
B. Earth's Weather and Seasons	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. makes a rain gauge and infers how it could be used to measure rainfall. 3. knows that weather conditions occur in patterns over time. 4. understands that most natural events occur in comprehensible, consistent patterns. 5. recognizes patterns in the weather. 6. lists some impacts of bad weather. 7. uses a rain gauge and outdoor thermometer to measure the precipitation and temperature for one week and records the findings in a chart. 8. uses mathematical language to read and interpret data on a simple concrete graph, pictorial graph, or chart. 9. knows that men and women of all ethnic and social backgrounds make contributions to science and technology. 	1.1.1.1,2,4 1.1.2.1,2 1.1.3.1,2 2.1.1.2 2.3.2.4 3.1.1.5	1.1.B.1 1.1.C.4

2. EARTH SCIENCE (continued)**Second Grade**

	The student...	Science Standards	LA Standards
C. Fossils and Dinosaurs	<ol style="list-style-type: none">1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues.2. associates fossil remains with once-living organisms.3. describes how fossils are formed.4. explains how fossils give information about plants and animals that lived on Earth long ago.5. describes different dinosaurs that lived on Earth long ago.6. explains how new discoveries are made by paleontologists.7. knows that people use scientific processes including hypothesis, making inferences, and recording and communicating data when exploring the natural world.8. keeps science records.9. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions.	<p>1.1.1.1,2,3,4 1.1.2.1 1.1.3.1,2 2.1.1.1 3.1.1.5</p>	<p>1.1.A.2 2.2.A.3</p>

3. PHYSICAL SCIENCE

Second Grade

	The student...	Science Standards	LA Standards
A. Properties of Matter	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. combines oil and water to show that they do not mix and that oil floats on water. 3. describes, compares, and classifies matter by its properties. 4. identifies and describes the different states of matter: solids, liquids, and gases. 5. identifies and describes ways that matter can be changed. 6. describes how matter changes when it is heated or cooled. 7. observes how the properties of water change as it freezes and thaws. 8. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions. 	1.1.1.1,2,3,4 1.1.2.1,2 1.1.3.1,2 2.1.1.1,2 2.1.2.3	1.1.B.1 1.1.C.4
B. Energy	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. knows that a thermometer measures the amount of heat absorbed by an object. 3. participates in groups to conduct experiments and solve problems. 4. uses a variety of tools to observe, measure, analyze and predict changes in size, mass, temperature, color, position, quantity, sound, and movement. 5. is able to identify and describe uses of solar energy. 6. understands that models (for example, terrarium or aquarium) can be used to illustrate how energy flows through a system. 7. knows different heat sources (for example, friction, solar, nuclear, electric). 8. understands ways energy and matter interact (for example, sunlight to affect plant growth, heat to boil water). 9. understands that some materials will allow light to pass through and others will not. 10. understands ways energy and matter interact (for example, sunlight to affect plant growth, heat to boil water). 11. analyzes information to make predictions, makes sketches and diagrams to explain ideas, draws conclusions using information and prior knowledge. 12. keeps science records. 13. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions. 	1.1.1.1,2,3,4 1.1.2.2 2.1.2.1,2,3,5 2.2.3.2	1.1.C.1,4

3. PHYSICAL SCIENCE (continued)

Second Grade

	The student...	Science Standards	LA Standards
C. Forces and Motion	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. compares the amount of pushing and pulling required to move objects of various sizes across the floor. 3. knows that objects exhibit different kinds of motion (for example, straight, circular, back and forth). 4. knows that work is done when a force moves an object. 5. knows that the amount and direction of the force exerted on an object (for example, push, pull, friction, gravity) determines how much the object will move. 6. knows different heat sources (for example, friction, solar, nuclear, electric). 7. knows examples of simple machines and understands how they change effort. 8. is able to explain ways that simple machines make work easier. 9. knows that objects may be moved by being pushed and pulled with magnets. 10. demonstrates an understanding of customary and metric measurement of length and distances, selecting appropriate units of measurement (for example, inches, feet, yards, centimeters, meters). 11. knows that men and women of all ethnic and social backgrounds make contributions to science and technology. 	<p>1.1.1.1,2,4 1.1.2.1,2 2.1.3.1,2 3.1.1.4</p>	<p>1.1.A.2 1.1.B.3 1.1.C.4</p>
D. Sound	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. demonstrates that some vibrations may be heard. 3. knows that sound is caused by vibrations (pushing and pulling) to cause waves. 4. knows that properties of sound such as pitch and loudness can be altered by changing the properties of the sound source. 5. understands that sound travels differently through different media (for example, wood, water, air). 6. knows that animals produce sounds in a variety of ways. 7. identifies and describes different sounds in the environment. 8. analyzes information to make predictions, makes sketches and diagrams to explain ideas, draws conclusions using information and prior knowledge. 9. uses mathematical language to read and interpret data on a simple, concrete graph, pictorial graph, or chart. 10. knows that men and women of all ethnic and social backgrounds make contributions to science and technology, practice science and technology, investigate the world around them, and can answer scientific questions. 	<p>1.1.1.1,3,4 1.1.2.1,2 1.1.3.1 2.1.2.3,4 2.2.2.3 3.1.1.4,5</p>	<p>1.1.A.2 1.1.B.1 1.1.C.4</p>

4. SPACE AND TECHNOLOGY

Second Grade

	The student...	Science Standards	LA Standards
A. Earth and Space	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. knows that people use scientific processes including hypothesis, making inferences, and recording and communicating data when exploring the natural world. 3. describes characteristics of the Sun and its importance to the Earth. 4. knows that each time the Earth completes one rotation, one day has passed and that this takes 24 hours. 5. knows that the appearance of sunrise and sunset is due to the rotation of Earth every 24 hours. 6. knows that the Moon moves around the Earth, the Earth moves around the Sun, and the Moon is visible when it reflects the light from the Sun. 7. describes objects that are visible in the night sky. 8. knows that stars and planets are always in the sky. 9. analyzes, constructs, and operates models in order to discover attributes of the real thing. 10. uses mathematical language to read and interpret data on a simple concrete graph, pictorial graph, or chart. 11. knows ways in which tools are used by scientists. 12. knows that there are many objects in the sky that are visible only at night. 	<p>1.1.1.1,4 1.1.2.2 2.1.2.3 2.1.3.1,2 2.3.1.1,2,3 2.3.2.4 3.1.1.4</p>	1.1.C.3,4
B. Technology in Our World	<ol style="list-style-type: none"> 1. identifies words and constructs meaning from text, illustrations, graphics, and charts using the strategies of phonics, word structure, and context clues. 2. participates in groups to conduct experiments and solve problems. 3. understands that people influence the quality of life of those around them. 4. will identify ways that changes in technology have helped to improve various means of transportation. 5. identifies ways that technology affects people's everyday lives. 6. identifies and describes examples of natural and human-made materials. 7. knows that in doing science, it is often helpful to work with a team and to share findings with others. 8. decides what information is appropriate and how data can be collected, displayed, and interpreted to answer relevant questions. 9. will develop an understanding of how people of various cultures have contributed to the advancement of science and technology, and how major discoveries and events have advanced science and technology. 	<p>1.1.1.1,2,4 1.1.2.1,2 1.1.3.2 2.1.3.2 3.1.1.2,3,4,5</p>	<p>1.1.A.2 1.1.B.1</p>

SCIENCE CURRICULUM
THIRD GRADE

1. LIFE SCIENCE

Third Grade

	The student...	Science Standards	LA Standards
A. Plants and How They Grow	<ol style="list-style-type: none"> 1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. knows that to compare and contrast observations is an essential skill in science. 3. understands the use of comparison and contrast within a selection. 4. understands that although plants and animals are different, they also share common characteristics (for example, they both have structures for reproduction, respiration, and growth). 5. knows behavioral and structural adaptations that allow plants and animals to survive in an environment. 6. understands similarities and differences among plants. 7. describes the life cycle of plants. 8. recognizes that fossils provide evidence about the plants that lived long ago. 9. knows that some kinds of organisms that once lived on Earth have completely disappeared and that some of those resembled others that are alive today. 10. knows about measurement of time including using A.M. and P.M., clocks, and calendars. 11. explores the connections between science technology, society, and career opportunities. 	1.1.1.3,4,5 1.1.2.1,2 1.1.3.1,2 2.2.1.2,4 2.2.2.2 2.3.2.2	1.1.A.1 1.1.C.1
B. How Animals Live	<ol style="list-style-type: none"> 1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. uses sketches, diagrams, and models to understand scientific ideas. 3. understands explicit ideas and information in third grade or higher texts (for example, main idea, implied message, relevant supporting details and facts, chronological order of events.). 4. identifies the needs of animals. 5. knows the common and distinguishing characteristics of groups of vertebrate animals (mammals, birds, fish, reptiles, amphibians) and of groups of animals without backbones. 6. recognizes that animals go through predictable stages within their life cycles of birth, growth, development, reproduction, and death. 7. knows that many characteristics of an organism are inherited from the parents of the organism but that other characteristics are learned from an individual's actions with the environment. 8. recognizes that fossils provide evidence about the animals that lived long ago. 9. understands that changes in the habitat of an organism may be beneficial or harmful. 10. knows that to compare and contrast observations and results is an essential skill in science. 11. interprets and compares information from picto- and bar graphs including graphs from content area materials and periodicals. 12. uses reference materials to obtain information related to science concepts. 	1.1.1.1,3,4 1.1.2.1,2 1.1.3.2,3 2.2.1.1,2,3 2.2.2.2 2.3.2.2	1.1.A.1

1. LIFE SCIENCE (continued)

Third Grade

	The student...	Science Standards	LA Standards
C. Where Plants and Animals Live	<p>1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. knows that variations in light, temperature, and soil content are largely responsible for the existence of different kinds of organisms and population densities in an ecosystem.</p> <p>3. understands explicit and implicit ideas and information in third-grade or higher texts (for example, main idea, implied message, relevant supporting details and facts, chronological order of events).</p> <p>4. knows that the Sun provides energy for the Earth in the form of heat and light.</p> <p>5. knows that some source of energy is needed for organisms to stay alive and grow.</p> <p>6. understands the various ways that animals depend on plants for survival (for example, food, shelter, oxygen).</p> <p>7. knows that the size of a population is dependent upon the available resources within its community.</p> <p>8. distinguishes between grassland, desert, and tundra ecosystems.</p> <p>9. lists plants and animals that live in each type of land ecosystem.</p> <p>10. distinguishes between kinds of forest ecosystems.</p> <p>11. lists plants and animals that live in each type of forest ecosystem.</p> <p>12. distinguishes between kinds of water ecosystems.</p> <p>13. lists plants and animals that live in each type of water ecosystem.</p> <p>14. generates questions, collects responses, and displays data in a table, pictograph, or bar graph.</p> <p>15. understands the relationships between science concepts and the history of science and the contributions of scientists.</p>	<p>1.1.1.1,2,3,4,5 1.1.2.1,2 1.1.3.1,2 2.1.1.2 2.2.1.1,2,3,4 2.2.2.1 2.3.2.4</p>	<p>1.1.A.1,2</p>

1. LIFE SCIENCE (continued)**Third Grade**

	The student...	Science Standards	LA Standards
D. Plants and Animals Living Together	<ol style="list-style-type: none"> 1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. knows behavioral and structural adaptations that allow plants and animals to survive. 3. understands explicit and implicit ideas and information in third-grade or higher texts (for example, main idea, implied message, relevant supporting details and facts, chronological order of events). 4. explains how plants and animals interact. 5. understands various ways that animals depend on plants for survival (for example, food, shelter, oxygen). 6. knows examples of living things that are classified as producers, consumers, carnivores, herbivores, and omnivores. 7. understands that energy is transferred to living organisms through the food they eat. 8. knows how organisms with similar needs in a climatic region compete with one another for resources. 9. understands that plants and animals share and compete for limited resources. 10. understands that changes in the habitat of an organism may be beneficial or harmful. 11. knows that organisms are growing, dying, and decaying. 12. knows that the human body is made of systems with structures and functions that are related. 13. makes predictions and inferences based on observations. 14. compares and orders whole numbers through hundred thousands or more, using concrete materials, number lines, drawings, and numerals. 15. understands the relationships between science concepts and the history of science and the contributions of scientists. 	<p>1.1.1.1,3,4 1.1.2.1,2 1.1.3.1,2 2.2.1.1,2 2.2.2.1 2.2.3.1,2 2.3.1.1 2.3.2.1 3.1.1.1</p>	<p>1.1.A.1 1.1.C.1</p>

2. EARTH SCIENCE

Third Grade

	The student...	Science Standards	LA Standards
A. Water	<p>1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. uses various kinds of instruments to collect and analyze information (for example, meter sticks, timing devices, graduated cylinders, force meters, pan balances, calipers, microscopes, cameras, sound recorders, hot plates, magnets, collecting nets).</p> <p>3. reads and organizes information (for example, in story maps, graphs, charts) for different purposes (for example, being informed, following directions, making a report, conducting interviews, taking a test, performing a task).</p> <p>4. recognizes the importance of water to living things.</p> <p>5. knows the uses people derive from water resources.</p> <p>6. knows that approximately 75 percent of the surface of the Earth is covered by water.</p> <p>7. understands how water changes form.</p> <p>8. understands the stages of the water cycle (for example, evaporation, condensation, precipitation).</p> <p>9. understands ways to clean water so that it can be used again.</p> <p>10. uses charts and graphs to understand patterns of change.</p> <p>11. knows symmetry, congruency, and reflections in geometric figures using concrete materials (for example, pattern blocks, geoboards, mirrors).</p> <p>12. explores the connection between science, technology, society, and career opportunities.</p>	<p>1.1.1.1,3,4</p> <p>1.1.2.1,2</p> <p>2.1.1.1</p> <p>2.2.3.2</p> <p>2.3.1.1</p> <p>2.3.2.1,4</p> <p>3.1.1.2,4</p>	1.1.A.1
B. Weather	<p>1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. makes predictions and inferences based on observations.</p> <p>3. understands explicit and implicit ideas and information in third-grade or higher texts (for example, main idea, implied message, relevant supporting details and facts, chronological order of events).</p> <p>4. describes the parts of weather.</p> <p>5. identifies ways of measuring and predicting weather.</p> <p>6. identifies and evaluates ways people affect weather through their daily activities.</p> <p>7. describes ways weather depicts natural patterns of changes.</p> <p>8. compares types of severe weather.</p> <p>9. evaluates methods people use to protect themselves from the effects of severe weather.</p> <p>10. uses charts and graphs to understand patterns of change.</p> <p>11. interprets and explains orally and in writing displays of data.</p> <p>12. uses weather instruments and other resources to record and predict weather; examples: thermometer, cloud charts.</p> <p>13. explores the connection between science, technology, society, and career opportunities.</p>	<p>1.1.1.3,4</p> <p>1.1.3.1,3</p> <p>2.3.2.1,3,4</p>	<p>1.1.A.2</p> <p>1.1.C.4</p> <p>1.1.D.4</p>

2. EARTH SCIENCE (continued)

Third Grade

	The student...	Science Standards	LA Standards
C. Rocks and Soil	<ol style="list-style-type: none"> 1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. uses sketches, diagrams, and models to understand scientific ideas. 3. understands the use of comparison and contrast within a selection. 4. compares different kinds of rocks. 5. explains how rocks are formed. 6. describes how rocks can help explain life over time. 7. compares different kinds of minerals. 8. gives examples of ways in which minerals are used. 9. knows that some changes in the Earth's surface are due to slow processes and some changes are due to rapid processes. 10. compares properties of different kinds of soil. 11. uses a tool to observe and study minute details of objects (for example, hand lens). 12. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers using an appropriate method (for example, mental math, paper and pencil, concrete materials, calculator). 13. understands the relationships between science concepts and the history of science and the contributions of scientists. 	<p>1.1.1.1,3,4 1.1.2.1 1.1.3.1,2 2.1.1.1,2 2.2.2.1 2.2.3.2 2.3.2.1,2 3.1.1.3</p>	<p>1.1.A.1 1.1.C.1</p>
D. Changes on Earth	<ol style="list-style-type: none"> 1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. uses sketches, diagrams, and models to understand scientific ideas. 3. understands explicit and implicit ideas and information in third-grade or higher texts (for example, main idea, implied message, relevant supporting details and facts, chronological order of events). 4. describes the basic structure of the Earth. 5. lists types of ever-changing features of the Earth's surface. 6. knows that landforms change over time (for example, earthquakes, volcanoes). 7. knows that smaller rocks come from the breaking and weathering of bedrock and larger rocks. 8. understands the processes of weathering and erosion. 9. interprets and explains orally and in writing displays of data. 10. knows that, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas. 	<p>1.1.1.1,3,4 1.1.2.1 1.1.3.1,2 2.1.1.1 2.2.2.1 2.3.1.1 2.3.2.1,3,4</p>	<p>1.1.A.1</p>

2. EARTH SCIENCE (continued)**Third Grade**

	The student...	Science Standards	LA Standards
E. Natural Resources	<ol style="list-style-type: none">1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.2. classifies resources as renewable or nonrenewable.3. understands the use of comparison and contrast within a selection.4. knows ways natural resources are important.5. knows that reusing, recycling, and reducing the use of natural resources improve and protect the quality of life.6. makes predictions and inferences based on observations.7. interprets and explains orally and in writing displays of data.8. explores the connection between science, technology, society, and career opportunities.	<p>1.1.1.1,3,4 1.1.2.2 1.1.3.1,2,3 2.1.1.1,2 2.2.2.1 2.3.2.1,3,4 3.1.1.2,3</p>	<p>1.1.A.1 1.1.C.1</p>

3. PHYSICAL SCIENCE

Third Grade

	The student...	Science Standards	LA Standards
A. Matter and Its Properties	<p>1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. makes predictions and inferences based on observations.</p> <p>3. reads and organizes information (for example, in story maps, graphs, charts) for different purposes (for example, being informed, following directions, making a report, conducting interviews, taking a test, performing a task).</p> <p>4. observes and describes the properties of matter.</p> <p>5. compares and contrasts the forms of matter.</p> <p>6. explains the makeup of matter.</p> <p>7. determines the physical properties of matter using metric measurements that incorporate tools such as rulers, thermometers, balances.</p> <p>8. uses a tool to observe and study minute details of objects (for example, hand lens).</p> <p>9. uses various kinds of instruments to collect and analyze information (for example, meter sticks, timing devices, graduated cylinders, force meters, pan balances, calipers, microscopes, cameras, sound recorders, hot plates, magnets, collecting nets).</p> <p>10. knows that to work collaboratively, all team members should be free to reach, explain, and justify their own individual conclusions.</p> <p>11. uses customary and metric units to compare length, weight, and capacity.</p> <p>12. understands the relationships between science concepts and the history of science and the contributions of scientists.</p>	<p>1.1.1.1,2,3,4,5</p> <p>1.1.2.1,2</p> <p>1.1.3.1,3</p> <p>2.1.1.1</p> <p>2.3.2.3</p>	1.1.A.1

3. PHYSICAL SCIENCE (continued)

Third Grade

	The student...	Science Standards	LA Standards
B. Changes in Matter	<p>1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. makes predictions and inferences based on observations.</p> <p>3. reads and organizes information (for example, in story maps, graphs, charts) for different purposes (for example, being informed, following directions, making a report, conducting interviews, taking a test, performing a task).</p> <p>4. describes features of matter involved in physical changes.</p> <p>5. describes ways matter can undergo a physical change.</p> <p>6. understands that physical changes in the states of matter can be produced by heating and cooling.</p> <p>7. knows that different materials are made by physically combining substances and that different objects can be made by combining different materials.</p> <p>8. knows that materials made by chemically combining two or more substances may have properties that differ from the original materials.</p> <p>9. describes some uses of chemical change.</p> <p>10. uses various kinds of instruments to collect and analyze information (for example, meter sticks, timing devices, graduated cylinders, force meters, pan balances, calipers, microscopes, cameras, sound recorders, hot plates, magnets, collecting nets).</p> <p>11. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers using an appropriate method (for example, mental math, paper and pencil, concrete materials, calculator).</p> <p>12. explores the connections between science, technology, society, and career opportunities.</p>	<p>1.1.1.1,2,3,4</p> <p>1.1.2.1,2</p> <p>1.1.3.1</p> <p>2.1.1.1,2</p> <p>2.1.2.4</p> <p>2.1.3.1,3</p> <p>2.2.2.1</p> <p>2.3.2.4</p> <p>3.1.1.2,3</p>	1.1.A.1

3. PHYSICAL SCIENCE (continued)**Third Grade**

	The student...	Science Standards	LA Standards
C. Forces and Motion	<p>1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. describes the motion of various objects (for example, forward, circular, wave).</p> <p>3. uses a variety of strategies to monitor reading in third-grade or higher texts (for example, rereading, self-correcting, summarizing, checking other sources, class and group discussions, reading on, trying alternative pronunciations, asking questions).</p> <p>4. lists ways to view objects in relation to other objects.</p> <p>5. describes ways to view the motion of objects in relation to each other and the background.</p> <p>6. knows that an object may move in a straight line at a constant speed, speed up, slow down, or change direction dependent on net force acting on the object.</p> <p>7. knows that the more massive an object is, the less effect a given force has.</p> <p>8. knows that the motion of an object is determined by the overall effect of all the forces acting on the object.</p> <p>9. explains how forces can be harnessed to perform work.</p> <p>10. knows the six types of simple machines (screw, inclined plane, wedge, pulley, lever, and wheel and axle).</p> <p>11. uses various kinds of instruments to collect and analyze information.</p> <p>12. explains the inverse relationship of multiplication and division and writes related fact families.</p> <p>13. identifies contact/noncontact forces that affect the motion of an object (e.g., gravity, magnetism, and collision).</p> <p>14. understands the relationships between science concepts and the history of science and the contributions of scientists.</p>	<p>1.1.1.1,2,3,4,5</p> <p>1.1.2.1</p> <p>1.1.3.1</p> <p>2.1.2.4</p> <p>2.1.3.1,2,3,4</p>	1.1.A.1,2

3. PHYSICAL SCIENCE (continued)**Third Grade**

	The student...	Science Standards	LA Standards
D. Energy	<ol style="list-style-type: none"> 1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. knows that most things that emit light also emit heat. 3. understands explicit and implicit ideas and information in third-grade or higher texts (for example, main idea, implied message, relevant supporting details and facts, chronological order of events). 4. knows that objects emit heat and light. 5. knows examples of potential and kinetic energy. 6. knows different forms of energy (for example, heat, light, sound). 7. understands the characteristics of waves (for example, crest, trough, length). 8. knows that heat can be produced. 9. knows that when a warmer object comes in contact with a cooler one, the warm object loses heat. 10. understands that changes in states of matter relate to changes in temperature. 11. knows that the Sun provides energy for the Earth in the form of heat and light. 12. knows that waves travel at different speeds through different materials. 13. understands static electricity in terms of attraction and repulsion. 14. recognizes various forms of energy (e.g., heat, light, and electricity). 15. uses a variety of tools to measure the gain or loss of energy. 16. knows temperature scales and uses thermometers. 17. understands the relationships between science concepts and the history of science and the contributions of scientists. 	<p>1.1.1.1,3,4 1.1.2.2 1.1.3.1,2 2.1.2.1,2,3,4 2.1.3.2 2.3.2.2,4 3.1.1.2,3</p>	1.1.A.1,2

3. PHYSICAL SCIENCE (continued)**Third Grade**

	The student...	Science Standards	LA Standards
E. Sound	<ol style="list-style-type: none"> 1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. uses charts and graphs to understand patterns of change. 3. understands the use of comparison and contrast within a selection. 4. knows characteristics of sound. 5. knows what causes sound. 6. knows ways of using contact with solid objects to vary the properties of pitch and loudness in sound. 7. knows ways of using air to vary the properties of pitch and loudness in sound. 8. understands the characteristics of waves (for example, crest, trough, length). 9. knows that waves travel at different speeds through different materials. 10. knows the ear is the receiver of sound vibrations. 11. knows ways animals make sound. 12. makes predictions and inferences based on observations. 13. solves real-world problems involving measurement using concrete and pictorial models for the following: length (for example, half-inch, centimeter); weight (for example, pound, kilogram); time (fifteen-, five-, and one-minute intervals); capacity (for example, cup, liter); temperature (Fahrenheit and Celsius); angles (right). 14. understands how scientific discoveries have helped or hindered progress regarding human health and lifestyles. 	1.1.1.1,2,3,4,5 1.1.2.2 1.1.3.1,2,3 2.1.1.1,2 2.1.2.4 2.1.3.3,4 2.3.2.3	1.1.A.1 1.1.C.1

4. SPACE AND TECHNOLOGY

Third Grade

	The student...	Science Standards	LA Standards
A. Patterns in the Sky	<ol style="list-style-type: none"> 1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. makes predictions and inferences based on observation. 3. understands explicit and implicit ideas and information in third-grade or higher texts (for example, main idea, implied message, relevant supporting details and facts, chronological order of events). 4. knows that the Sun provides energy for the Earth in the form of heat and light. 5. explains how the movement of Earth in relation to the Sun determines the pattern of day and night. 6. explains the patterns of change in shadows cast by the Sun in terms of the movement of Earth in relation to the Sun. 7. knows that days and nights change in length throughout the year. 8. knows the patterns of average temperatures throughout the year. 9. explains how the Moon and Earth interact. 10. knows the frequency of the lunar cycle is approximately 28 days. 11. describes ways to study stars. 12. explains how constellations are in patterns that are stable. 13. explains how constellations move in the night sky. 14. uses sketches, diagrams and models to understand scientific ideas. 15. uses schedules, calendars, and elapsed time in hour intervals to solve real-world problems. 16. knows that, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas. 17. understands the relationship between science concepts and the history of science and the contributions of scientists. 	<p>1.1.1.1,2,3,4 1.1.2.2 1.1.3.1,2 2.1.2.1 2.3.1.1,2,3,4,5</p>	<p>1.1.A.1 2.2.A.4</p>

4. SPACE AND TECHNOLOGY (continued)**Third Grade**

	The student...	Science Standards	LA Standards
B. The Solar System	<p>1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. uses sketches, diagrams and models to understand scientific ideas.</p> <p>3. understands the use of comparison and contrast within a selection.</p> <p>4. knows the Sun is a star that is much nearer to the Earth than the other stars.</p> <p>5. knows that, in addition to the Sun, there are many other stars that are far away.</p> <p>6. knows the relative positions of all the planets.</p> <p>7. knows characteristics of Mercury, Venus, Earth, and Mars.</p> <p>8. knows the planets differ in size, characteristics, and composition and that they orbit the Sun in our Solar System.</p> <p>9. understands that scientific information can be presented in several ways (for example, using numbers and mathematics, drawings, words, graphs, tables).</p> <p>10. describes, extends, and creates numerical and geometric patterns through models (for example, concrete objects, drawings, simple number sequences).</p> <p>11. knows that, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas.</p>	<p>1.1.1.1,2,3,4</p> <p>1.1.2.1</p> <p>1.1.3.1,2,3</p> <p>2.1.2.1,3</p> <p>2.3.1.1,2</p> <p>2.3.2.4</p>	<p>1.1.A.1</p> <p>1.1.C.1</p>

4. SPACE AND TECHNOLOGY (continued)**Third Grade**

	The student...	Science Standards	LA Standards
C. Science in Our Lives	<ol style="list-style-type: none"> 1. uses simple strategies, to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. makes predictions and inferences based on observations. 3. understands explicit and implicit ideas and information in third-grade or higher texts (for example, main idea, implied message, relevant supporting details and facts, chronological order of events). 4. knows that, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas. 5. describes ways construction technology affects the way we live. 6. shows how a modern house consists of systems of parts working together. 7. describes ways in which improvements in technology over time have raised the standard of living in the modern home. 8. understands how scientific discoveries have helped or hindered progress regarding human health and lifestyles. 9. understands that people, alone or in groups, invent new tools to solve problems and do work that affects aspects of life outside of science. 10. describes ways technology provides energy resources. 11. evaluates the costs and benefits of using certain kinds of energy resources. 12. recognizes the costs and risks to society and the environment posed by the use of nonrenewable energy. 13. knows that alternate energy sources (for example, synthetic fuels, geothermal energy) are being explored using natural and mechanical processes. 14. lists milestone inventions of technology in history. 15. uses sketches, diagrams and models to understand scientific ideas. 16. compares and orders whole numbers through hundred thousands or more, using concrete materials, number lines, drawings, and numerals. 17. explores the connections between science, technology, society, and career opportunities. 	<p>1.1.1.2,3,4,5 1.1.2.1,2 1.1.3.1,2,3 2.1.2.1 2.2.2.1 2.3.1.1,2,5 2.3.2.3 3.1.1.1,2,3</p>	<p>1.1.A.1 1.1.B.1</p>

SCIENCE CURRICULUM
FOURTH GRADE

1. LIFE SCIENCE

Fourth Grade

	The student...	Science Standards	LA Standards
A. Classifying Plants and Animals	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. uses a variety of tools to observe and study minute details of objects.. 3. understands a variety of textual organizations (i.e., compare and contrast, cause-and-effect, sequence of events). 4. knows that living things are composed of cells. 5. knows that processes needed for life are carried out by the cells. 6. knows that similar cells form different kinds of structures. 7. knows that living things are different but share similar structures. 8. knows characteristics that allow members within a species to survive and reproduce. 9. knows the life cycles of various animals. 10. knows that all living things must compete for Earth's limited resources; organisms best adapted to compete for the available resources will be successful and pass their adaptations (traits) to their offspring. 11. knows that many characteristics of an organism are inherited from its parents. 12. constructs and analyzes graphs, tables, maps, and charts to organize, examine, and evaluate information. 13. knows symmetry, congruence, and reflections in geometric figures using drawing and concrete materials (for example, pattern blocks, mirrors). 14. knows that, through the use of science processes and knowledge, people can solve problems, make decisions, and form ideas. 	1.1.1.1,2 1.1.2.1,2 2.2.1.1,3,5 2.2.2.1,2,3 2.2.3.1,2 3.1.1.4	1.1.A.1 1.1-B.2
B. Energy from Plants	<ol style="list-style-type: none"> 1. Uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. knows that most living things use energy from the sun to live and grow. 3. reading text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. 4. knows how the energy of the Sun can be captured as a source of heat and light on Earth. 5. knows that green plants use carbon dioxide, water and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction. 6. knows that a plant has structures that serve different functions in growth, survival, and reproduction. 7. works collaboratively to collect, share, and record information for a scientific investigation. 8. interprets and compares information from different types of graphs including graphs form content area materials and periodicals. 9. knows ways that, through the use of science processes and knowledge, people can solve problems, make decision, and form new ideas 	1.1.1.2 1.1.2.1,2 1.1.3.3 2.1.2.1,2 2.2.1.1,3,5 2.2.2.2 3.1.1.4	1.1-A.1 1.1-C.5 2.2.C-1

1. LIFE SCIENCE (continued)

Fourth Grade

	The student...	Science Standards	LA Standards
<p>C. Ecosystems</p>	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, root words, multiple meanings, antonyms, synonyms, and word relationships 2. works collaboratively to collect, share and record information for scientific investigation. 3. understands a variety of textual organizations (for example, comparison and contrast, cause –and-effect, sequence of events). 4. describes the basic characteristics of an ecosystem. 5. knows how plants and animals interact with one another in an ecosystem (i.e., organization of communities, flow of energy through food webs). 6. understands patterns of interdependency in ecological systems. 7. knows that most living things use energy from the Sun to live and grow. 8. understands the relationship among organisms in aquatic and terrestrial food chains (i.e., the role of producers, consumers, and decomposers). 9. knows how to trace the flow of energy in a system 10. understands the need for nutrients and minerals for living organisms. 11. knows basic patterns, sequences, and cycles occurring in nature. 12. knows that organisms are growing, dying and decaying and that new organisms are being produced 13. knows organisms that act as decomposers. 14. understand the process of decay (i.e., that stages of decay, the organisms that help the decay process, the nonliving factors that influence the rate of decay, and the products of decay. 15. interprets and compares information from different types of graphs including graphs from content area materials and periodicals. 16. analyzes and explains orally or in writing the implication of data displays 17. knows that technologies often have costs, as well as benefits, and can have an enormous effect on people and other living things. 18. researches and reports on a scientific topic. 	<p>1.1.1.2 1.1.2.1,2,3,4 1.1.3.3 2.2.1.3,4 2.2.2.1,2,3</p>	<p>1.1-D.2</p>

1. LIFE SCIENCE (continued)

Fourth Grade

	The student...	Science Standards	LA Standards
D. Changes in Ecosystems	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. constructs and analyzes graphs, tables, maps, and charts to organize, examine, and evaluate information.</p> <p>3. understands a variety of textual organizations (i.e., comparison and contrast, cause-and-effect, sequence of events).</p> <p>4. knows that the size of a population is dependent upon the available resources within its community.</p> <p>5. knows characteristics that allow members within a species to survive and reproduce.</p> <p>6. understands that what benefits one organisms may be harmful to other organisms.</p> <p>7. understands that changes in an ecological system usually affect that whole system.</p> <p>8. knows the kinds of organisms that lives in the past and compares them to existing species.</p> <p>9. knows that variations in water, temperature, and soil content are largely responsible for the existence of different kinds of organisms and population densities in an ecosystem.</p> <p>10. knows that a successful method to explore the natural world is to observe and record, then analyze and communicate the results.</p> <p>12. read, writes, and identifies fraction and mixed numbers with denominators including 1, 2, 3, 4, 5, 6, 8, 10, 12, 20, 25, 100, and 1000.</p>	<p>1.1.1.1,2,4</p> <p>1.1.2.1,2</p> <p>1.1.3.3</p> <p>2.2.1.2</p> <p>2.2.2.1,2,3</p> <p>3.1.1.1</p>	2.2.C.2
E. Systems of The Human Body.	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. knows that a model of something is different from the real thing, but can be used to learn something about the real thing.</p> <p>3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order.</p> <p>4. knows that complex animals have specialized organs to carry out life processes.</p> <p>5. knows that living things are composed of cells.</p> <p>6. knows the major organ systems of the human body.</p> <p>7. understands the functions of various body systems.</p> <p>8. selects an appropriate measurement unit for labeling the solution to real-word problems.</p>	<p>1.1.1.1,2,4</p> <p>1.1.2.1,2,3</p> <p>2.2.1.1,2,5</p> <p>2.2.2.1</p> <p>2.2.3.1,2</p> <p>3.1.1.4</p>	1.1A.3

2. EARTH SCIENCE

Fourth Grade

	The student...	Science Standards	LA Standards
A. Water Cycle and Weather.	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. works collaboratively to collect, share, and record information for a scientific investigation. 3. understands a variety of textual organization (example, comparison and contrast, cause-and-effect, sequence of events). 4. knows that 75 percent of the surface of the Earth is covered by water. 5. identifies salt as the major difference between fresh and ocean waters. 6. explains why some oceans are more salty than others. 7. understands how the water cycle is influenced by temperature and land features. 8. knows basic patterns, sequences, and cycles occurring in nature. 9. knows that the water cycle is influenced by temperature, pressure, and the topography of the land. 10. describes how air masses form and how warm and cold fronts affect weather. 11. describes clouds that form when air masses meet. 12. recognizes weather patterns. 13. understands how meteorologists track and predict the weather. 14. knows how to interpret a weather map. 15. uses metric tools to measure, record, and interpret data. 16. makes predictions based on data from picture graphs, bar graphs, and line graphs. 17. interprets and compares information from different types of graphs including graphs from content area materials and periodicals. 18. generates questions, collects responses, and displays data on a pictograph, circle graph, bar, double bar, or line graph. 19. analyzes and explains orally or in writing the implications of data displays. 20. knows that technologies often have costs, as well as benefits, and can have an enormous effect on people and other living things. 21. researches and reports on a scientific topic. 	<p>1.1.1.1,3,4 1.1.2.1,2,3 1.1.3.1,2,3 2.1.1.1,2 2.1.3.4 2.2.2.3 2.3.2.2,3 3.1.1.1</p>	1.1C.2

2. EARTH SCIENCE (continued)

Fourth Grade

	The student...	Science Standards	LA Standards
B. Hurricanes and Tornadoes	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. knows that a model of something is different from the real thing, but can be used to learn something about the real thing. 3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. 4. understands severe weather phenomena and related safety concerns. 5. understands the effects of oceans on climate. 6. knows that hurricanes may have positive or negative impacts on living things. 7. knows that a model of something is different from the real thing, but can be used to learn something about the real thing. 8. knows ways that, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas. 9. understands weather by measurable quantities such as wind direction, wind speed, precipitation, and barometric pressure. 10. constructs and analyzes graphs, tables, maps, and charts to organize, examine, and evaluate information. 11. compares and orders whole numbers through millions or more, using concrete materials, number lines, drawing, and numerals. 12. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers, and addition and subtraction of decimals and fractions using an appropriate method. 13. uses information from physical models, graphs, or tables to solve problems. 	<p>1.1.2.2,3 1.1.3.1 2.3.2.3 3.1.1.3</p>	1.1C.1
C. Minerals and Rocks	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, and word relationships. 2. works collaboratively to collect, share, and record information for a scientific investigation. 3. clarifies understanding by rereading, self-correction, summarizing, checking other sources, and class or group discussion. 4. develops an understanding of the properties of earth's materials. 5. knows that larger rocks can be broken down into smaller rocks, which in turn can be broken down to combine with organic material to form soil. 6. understands the stages of the rock cycle. 7. knows basic patterns, sequences, and cycles occurring in nature. 8. constructs and analyzes graphs, tables, maps, and charts to organize, examine, and evaluate information. 9. reads, writes, and identifies whole numbers through millions or more. 	<p>1.1.1.1,2,4 1.1.2.1,2 2.1.1.1 2.3.2.1</p>	1.1.C.2

2. EARTH SCIENCE (continued)

Fourth Grade

	The student...	Science Standards	LA Standards
D. Changes to Earth's Surface	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary of reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. understands how processes of weathering and erosion constantly change the surface of the earth. 3. understands a variety of textual organization. 4. knows that some changes in the Earth's surface are due to slow processes and some changes are due to rapid processes. 5. knows that the surface of the Earth is in a continuous state of change of waves, weather, and shifts of the land constantly change and produce many new features. 6. constructs and analyzes graphs, tables, maps, and charts to organize, examine, and evaluate information. 7. compares and orders commonly used fractions and decimals to hundredths using concrete materials, drawings, and numerals. 8. identifies the range in a set of numerical data. 	<p>1.1.1.1,2,4 1.1.2.1,2 2.1.1.1 2.1.3.4 2.3.2.1</p>	1.1.C.2
E. Using Natural Resources	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary of reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. knows that to compare and contrast observations and results in an essential skill in science. 3. understands a variety of textual organizations. 4. develops and understanding of properties of earth materials. 5. identifies properties of different types of soil. 6. explains that soil consists of weathered rocks and minerals, decaying plants and animals, as well as living organisms. 7. knows how the energy of the Sun can be captured as a source of heat and light on Earth. 8. knows the risk factors associated with the use of nonrenewable energy sources. 9. understands the processes that created fossil fuels and why they are nonrenewable. 10. knows ways misuse of natural resources affects the quality of life for all species. 11. understands the reasons for energy conservation. 12. knows ways in which people can conserve natural resources. 13. knows that a successful method to explore the natural world is to observe and record, then analyze and communicate the results. 14. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers, and addition and subtraction of decimals and fractions using an appropriate method. 15. interprets and compares information from different types of graphs including graphs form content area materials and periodicals. 16. plans and investigates experiments in which hypotheses are formulated based on cause and effect relationships; distinctions are made among observations, conclusion/inferences and predictions; a limited number of variables are controlled; and numerical data that are contradictory or unusual in experimental results are recognized. 	<p>1.1.1.1,2,4 1.1.2.1,2 1.1.3.3 2.1.1.1 2.1.2.1,2 2.1.3.1 2.2.1.3 2.3.2.1 3.1.1.1,2,4</p>	1.1.C.2

3. PHYSICAL SCIENCE

Fourth Grade

	The student...	Science Standards	LA Standards
A. Properties of Matter	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. works collaboratively to collect, share, and record information for a scientific investigation.</p> <p>3. understands a variety of textual organizations.</p> <p>4. knows that materials may be made of parts too small to be seen without magnification.</p> <p>5. uses a variety of measurements to compare and contrast the physical properties of matter.</p> <p>6. knows that different materials are made by physically combining substances and that different objects can be made by combining different materials.</p> <p>7. understands that heating or cooling of matter will speed up or slow down, respectively, the motion of the small particles within matter and that this is what causes a phase change.</p> <p>8. knows that materials made by chemically combining two or more substances may have properties that differ from the original materials.</p> <p>9. compares and order commonly used fractions and decimals to hundredths using concrete materials, drawings, and numerals.</p>	<p>1.1.1,2,4</p> <p>1.1.2.1,2</p> <p>1.1.3.3</p> <p>2.1.1.1,2,3</p> <p>3.1.1.1,2,3</p>	1.1.C.2
B. Heat	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. works collaboratively to collect, share, and record information for a scientific investigation.</p> <p>3. understands a variety of textual organizations.</p> <p>4. understands that heating or cooling of matter will speed up or slow down, respectively, the motion of the small particles within matter and that this is what causes a phase change.</p> <p>5. extends and refines use of a variety of tools to measure the gain or loss of energy.</p> <p>6. knows ways that energy can be transformed.</p> <p>7. knows ways that heat can move from one object to another.</p> <p>8. knows that most objects that emit light also emit heat.</p> <p>9. uses metric tools to measure, record, and interpret data.</p> <p>10. makes predictions based on data from picture graphs, bar graphs, and line graphs.</p> <p>11. solves real-world problems involving measurement of the following: weight, capacity, temperature and angles</p>	<p>1.1.1.1,2</p> <p>1.1.2.1,2,3</p> <p>1.1.3.2,3</p> <p>2.1.1.1,2</p> <p>2.1.2.1,3</p> <p>2.1.3.1</p> <p>3.1.1.2</p>	1.1.A.2

3. PHYSICAL SCIENCE (continued)

Fourth Grade

	The student...	Science Standards	LA Standards
C. Electricity and Magnetism	<ol style="list-style-type: none"> 1. student uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, and word relationships. 2. works collaboratively to collect, share, and record information for a scientific investigation. 3. understands a variety of textual organizations. 4. knows ways that energy can be transformed. 5. recognizes various forms of energy. 6. knows the difference between parallel and series circuits and knows some of their everyday uses. 7. knows that a magnet pulls things made of iron and either pushes or pulls other magnets. 8. understands the relationship between a compass and a magnetic field. 9. knows that moving electric charges produce magnetic forces and moving magnets produce electric currents. 10. knows that scientists make the results of their investigations public, and they describe the investigations I ways that enable others to repeat the investigation. 11. knows that there are a variety of sources for electricity. 12. uses concrete models and real-world examples to explore the inverse relationship of positive and negative numbers. 	<p>1.1.1.1,2 1.1.2.1,2,3 1.1.3.2 2.1.1.2 2.1.2.1,2,4 2.1.3.1,4</p>	1.1.B.1
D. Sound and Light	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. works collaboratively to collect, share, and record information for a scientific investigation. 3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts and arranges events in chronological order. 4. knows sound is produced by vibrating objects. 5. knows the relationship between attribute of all waves and attributes of sound waves. 6. understands that waves behave differently in different media. 7. understands that different pitches of sound are produced by changing the size, tension, or amount of the vibrating material. 8. knows how the human ear receives and transmit sound from the environment 9. understands that light waves travel in a straight line and knows sources of light. 10. understands that waves behave differently in different media. 11. understands the development and use of optical tools, such as eyeglasses and magnifying lenses. 12. analyzes and explains orally or in writing the implications of data displays. 	<p>1.1.1.1,2 1.1.2.1,2 1.1.3.3 2.1.1.2 2.1.2.1,3 2.1.3.1 2.2.1.2 2.3.1.2 3.1.1.2</p>	1.1.C.5

3. PHYSICAL SCIENCE (continued)

Fourth Grade

	The student...	Science Standards	LA Standards
E. Objects in Motion	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. constructs and analyzes graphs, tables, maps, and charts to organize, examine, and evaluate information. 3. understands a variety of textual organizations. 4. understands that the motion of an object can be described and measured 5. knows that velocity describes a change in distance or time. 6. knows that an object may move in a straight line at constant speed, speed up, slow down, or change direction dependent on net force acting on the object. 7. knows that the motion of an object is determined by the overall effect of all the forces acting on the object. 8. knows that the more massive an object is, the less effect a given force has. 9. understands that gravity is a force that pulls. 10. understands that distance affects the strength of force between objects. 11. understands the difference between stored energy and energy of motion. 12. knows that energy can be stored and converted to a different form of energy. 13. works collaboratively to collect, share, and record information for a scientific investigation. 14. uses tools to measure changes in position, direction, and speed of an object after a push or pull has been applied. 15. solves problems involving equations or simple inequalities using manipulatives, diagrams, or models, symbolic expressions, or written phrases. 	<p>1.1.1.1,2 1.1.2.1,2,3 1.1.3.1,2,3 2.1.1.2 2.1.2.1,2,3,4 2.1.3.1,2,3,4</p>	1.1.B.1
F. Simple Machines	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. works collaboratively to collect, share and record information for scientific investigation. 3. clarifies understanding by rereading, self-correction, summarizing, checking other sources, and class or group discussion. 4. understands how simple machines are used to make task possible. 5. knows ways that , through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas. 6. knows the inverse relationship of multiplication and division and demonstrates that relationship by writing related fact families. 7. solves real-world multiplication problems with whole numbers using concrete materials, drawings, and pencil and paper. 8. solves real-world division problems having divisors of one digit an dividends of three digits, with or without remainders. 	<p>1.1.1.1,2,3,4 1.1.2.1,2,3 1.1.3.1,3 2.1.3.1,4</p>	1.1.C.5

4. SCIENCE AND TECHNOLOGY

Fourth Grade

	The student...	Science Standards	LA Standards
A. Earth's Cycles	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. works collaboratively to collect, share, and record information for scientific investigation. 3. understands a variety of textual organizations. 4. knows the reason for the apparent movement of objects across the sky. 5. knows basic patterns, sequences, and cycles occurring in nature. 6. knows that the tilt of the Earth causes the change of seasons, length of day, and the amount of energy available. 7. understands the cause of the phases of the Moon. 8. understands the positional relationship between Earth and the Moon their positional relationship to the Sun. 9. knows safe ways to observe the Sun. 10. constructs and analyzes graphs, tables, maps, and charts to organize, examine, and evaluate information. 11. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers, and addition and subtraction of decimals and fractions using an appropriate method. 12. identifies the mean, median and mode from a set of data. 	<p>1.1.1.2 1.1.2.1,2,3 1.1.3.3 2.1.3.2 2.3.1.1,3</p>	1.1.B.1
B. Inner and Outer Planets	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. knows that a model of something is different from the real thing, but can be used to learn something about the real thing. 3. uses prior knowledge integrated with text feature to generate questions and make predictions about content of text. 4. student understands that the Sun is a medium-sized star located near the edge of a galaxy containing billions of other stars, which in turn is one of innumerable galaxies in the Universe. 5. knows that gravity is one of the forces that keeps planets arranged in orbits around the Sun and Moon in orbit around the Earth. 6. knows that the planets differ in size, characteristics, and composition and that they orbit the Sun in our Solar System. 7. understands the arrangement of planets in our Solar System. 8. knows characteristics of Jupiter, Saturn, Uranus, and Neptune. 9. knows that a model of something is different from the real thing, but can be used to learn something about the real thing. 10. multiplies by 10, 100, and 1,000 recognizing and demonstrating patterns. 11. Identifies the mean, median, and mode from a set of data. 	<p>1.1.1.1,2 1.1.2.1,2 1.1.3.3 2.1.3.4 2.3.1.1,2,3</p>	1.1.A.3

4. SCIENCE AND TECHNOLOGY (continued)**Fourth Grade**

	The student...	Science Standards	LA Standards
C. Effects of Technology	<ol style="list-style-type: none">1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.2. knows that a model of something is different from the real thing, but can be used to learn something about the real thing.3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order.4. knows that technologies often have costs, as well as benefits, and can have enormous effect on people and other living things.5. knows ways that, through the use of science processes and knowledge, people can solve problems, make decision, and form new ideas.6. uses criteria to understand and analyze the impact of scientific discoveries.7. knows proportional relationships in scale drawings.8. uses scale drawings to solve real-world problems including distance.	<p>1.1.1.1,2,4 1.1.2.1,2,3 1.2.1.1 2.1.2.3 3.1.1.1,2,3</p>	1.1.A.3

SCIENCE CURRICULUM
FIFTH GRADE

1. LIFE SCIENCE

Fifth Grade

	The student...	Science Standards	LA Standards
A. Classifying Organisms	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. knows that through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas. 3. recognize the use of comparison and contrast in a text. 4. knows that living things are different but share similar structures. 5. understands the various roles of single-celled organisms in the environment. 6. knows ways in which protests interact with plants and animals in the environment. 7. uses magnifying tools to identify similar cells and different kinds of structures. 8. draws and classifies two dimensional figures having up to ten or more sides and three dimensional figures. 9. knows symmetry, congruency, and reflections in geometric figures. 	1.1.1.1,2,5 1.1.3.2 2.2.2.1 3.1.1.1	1.1.C.1 1.1.D.2
B. Cells to Systems	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. selects appropriate graphical representation for example, graphs, charts, diagrams) to collect, record, and report data. 3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. 4. describes the cell as the basic unit of all living things. 5. describes the needs and functions of cells. 6. knows the parts of plant and animal cells. 7. knows that living things are different but share similar structure. 8. knows that similar cells form different kinds of structures. 9. understands how similar cells are organized (for example, tissue, organs) in plants and animals. 10. understands how body systems interact (for example, how bones and muscles work together for movement). 11. knows that a model of something is different from the real thing, but can be used to learn something about the real thing. 12. knows that numbers in different forms are equivalent or nonequivalent, using whole numbers, decimals, fractions, mixed numbers, and percents. 	1.1.1.1,5 1.1.3.3 2.2.2.3 2.2.3.1,2,3,5 3.1.1.2	2.2.A.2

1. LIFE SCIENCE (continued)**Fifth Grade**

	The student...	Science Standards	LA Standards
C. Human Body Systems	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. understands how body systems interact (for example, how bones and muscles work together for movement). 3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. 4. knows that the human body is made of systems with structures and functions that are related. 5. uses metric tools to determine the density and volume of materials. 6. interprets and compares information from different types of graphs including graphs from content area materials and periodicals. 7. chooses reasonable title, labels, scales, and intervals for organizing data on graphs. 	1.1.1.1,3,4,5 1.1.3.1,2 2.2.3.3 2.3.1.2,3 3.1.1.2	1.1.A.2,4
D. Plants	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. makes a prediction for a new investigation using the data from a previous investigation. 3. uses devices to develop relationships among ideas (for example, transitional devices; paragraphs that show a change in time, idea, or place; cause and effect relationships). 4. understands how similar cells are organized to form structures (for example, tissue, organs) in plants and animals. 5. knows that green plants use carbon dioxide, water, and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction. 6. uses magnifying tools to identify similar cells and different kinds of structures. 7. describes how seed-bearing plants reproduce. 8. describes how plants without seeds reproduce. 9. identifies factors that affect plant growth. 10. selects appropriate graphical representations (for example, graphs, charts, diagrams) to collect, record, and report data. 11. interprets and compares information from different types of graphs including graphs from content area and periodicals. 	1.1.1.1,3,4,5 1.1.3.1,2,3 2.2.2.1,2,3 2.2.3.1,3 2.3.1.3	1.1.C.5

1. LIFE SCIENCE (continued)

Fifth Grade

	The student...	Science Standards	LA Standards
E. Interactions in Ecosystems	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. understands the importance of accuracy in conducting measurements, and uses estimation when exact measurements are not possible. 3. selects from a variety of simple strategies, including confirming simple predictions from various texts, illustrations, graphics, and charts. 4. knows that variations in light, water, temperature, and soil content are largely responsible for the existence of different kinds of organisms and population densities in an ecosystem. 5. identifies living and nonliving parts of an ecosystem. 6. describes characteristics of land biomes and gives examples of plants and animals that live in each. 7. explains how organisms have adapted to the physical conditions in their biome. 8. describes characteristics of water biomes and gives examples of plants and animals that live in each. 9. compares and contrasts relationships between organisms in an ecosystem. 10. knows how to trace the flow of energy in a system (e.g., as in an ecosystem). 11. knows that organisms are growing, dying, and decaying and that new organisms are being produced from the materials of dead organisms. 12. knows that green plants use carbon dioxide, water, and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction. 13. interprets and compares information from different types of graphs including graphs from content area materials and periodicals. 	<p>1.1.1.1,3 1.1.3.2,3 2.1.2.4 2.2.1.1,2,3 2.2.3.3 3.1.1.2</p>	<p>1.1.C.5 1.1.D.2</p>
F. Changes in the Ecosystem	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. understands that scientists use different kinds of investigations (for example, observations of events in nature, controlled experiments) depending on the questions they are trying to answer. 3. uses devices to develop relationships among ideas (for example, transitional devices; paragraphs that show a change in time, idea, or place; cause and effect relationships). 4. understands how changes in the environment affect organisms (for example, some organisms survive and reproduce, other die). 5. knows that many characteristics of an organism are inherited from the genetic ancestors of the organism (for example, eye color, flower color). 6. knows that some characteristics result from the organism's interactions with the environment (for example, flamingos eat a certain crustacean that causes their feathers to be pink). 7. knows that adaptations to their environment may increase the survival of a species. 8. constructs models to compare objects in science. 9. selects appropriate graphical representations (for example, graphs, charts, diagrams) to collect, record, and report data. 10. interprets and compares information from different types of graphs including graphs from content area materials and periodicals. 	<p>1.1.1.1,4,5 1.1.2.2 1.1.3.1,2,3 2.2.1.3,4 2.2.2.2,3 2.3.1.3 3.1.1.2</p>	<p>1.1.C.1,5</p>

2. EARTH SCIENCE

Fifth Grade

	The student...	Science Standards	LA Standards
A. Water on Earth	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. determines that the properties of materials (e.g., density and volume) can be compared and measured, (e.g., using rulers, balances, and thermometers). 3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. 4. knows that 75 percent of the surface of the Earth is covered with water. 5. describes the properties and features of water in the oceans. 6. describes the various forms of fresh water. 7. explains the process of getting fresh water to where it is used. 8. compares and contrasts ocean water and fresh water. 9. knows that the water cycle is influenced by temperature, pressure, and the topography of the land. 10. understands how atmospheric pressure affects the water cycle. 11. will describe the formation of clouds and their role in the water cycle. 12. knows that common materials (e.g., water can be changed from one state to another by heating and cooling). 13. knows how to estimate the area and perimeter of regular and irregular polygons. 	<p>1.1.1.1,3,5 1.1.3.1,2,4 2.1.1.2 2.3.1.3 2.3.2.1,3 3.1.1.1,2</p>	<p>1.1.D.2,4 2.2.C.1</p>
B. Weather Patterns	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. understands that scientists use different kinds of investigations (for example, observations of events in nature, controlled experiments) depending on the questions they are trying to answer. 3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. 4. describes how air pressure relates to altitude, convection currents, and the water cycle. 5. explains what happens when air masses meet. 6. will compare and contrast causes and structure of types of severe weather. 7. will explain how weather data is collected and analyzed. 8. knows that natural events are often predictable and logical. 9. compares and contrasts weather and climate. 10. explains how climates have changed over time. 11. makes a prediction for a new investigation using the data from a previous investigation. 12. selects appropriate graphical representation (for example, graphs, charts, diagrams) to collect, record, and report data. 13. interprets and compares information from different types of graphs including graphs from content area materials and periodicals. 14. uses range and measures of central tendency in real-world situations. 	<p>1.1.1.1,3,4,5 1.1.2.2 1.1.3.1,2,3,4 2.1.2.1 2.3.1.3 2.3.2.1,2</p>	<p>1.1.C.1 1.1.D.2</p>

2. EARTH SCIENCE (continued)

Fifth Grade

	The student...	Science Standards	LA Standards
C. Earth's Changing Surface	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. constructs models to compare objects in science. 3. clarifies understanding by rereading, self correction, summarizing, checking other sources, and class or group discussion. 4. describes Earth's layers. 5. understands that geological features result from the movement of the crust of the Earth (for example, mountains, volcanic islands). 6. understands how the surface of the Earth is shaped by both slow processes and rapid, cataclysmic events. 7. understands how eroded materials are transported and deposited over time in new areas to form new features (for example, deltas, beaches, dunes). 8. describes characteristics used to identify minerals. 9. describes characteristics used to classify rocks. 10. explains the rock cycle and how it can be used to determine the relative ages of rocks. 11. knows that rocks are constantly being formed and worn away. 12. constructs models to compare objects in science. 13. draws and classifies two-dimensional figures having up to ten or more sides and three dimensional figures (for example, cubes, rectangular prisms, pyramids). 	<p>1.1.1.1,3,5 1.1.3.2,4 2.1.3.3 2.3.2.3 3.1.1.1,2</p>	<p>1.1.C.2 1.1.D.2 2.2.C.3</p>
D. Protecting Earth's Resources	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. constructs models to compare objects in science. 3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. 4. will be able to identify resources as being renewable or nonrenewable. 5. recognizes the costs and risks to society and the environment posed by the use of nonrenewable energy. 6. knows that the limited supply of usable energy sources (for example, fuels such as coal or oil) places great significance on the development of renewable energy sources. 7. understands that wind is an example of a renewable energy resource. 8. understands that moving water is an example of a renewable energy resource. 9. describes a variety of sources for producing different forms of energy. 10. will describe materials taken from the Earth. 11. will investigate ways Earth's renewable resources (for example, fresh water, air) can be maintained. 12. extends and refines knowledge of ways people can reuse, recycle, and reduce the use of resources to improve and protect the quality of life. 13. knows that reusing, recycling, and reducing the use of natural resources improve and protect the quality of life. 14. solves real world problem involving addition, subtraction, multiplication, and division of whole numbers, mixed numbers, decimals, and fractions using an appropriate method (for example, mental math, pencil and paper, calculator). 	<p>1.1.1.1,5 1.1.3.2,4 2.1.2.4 2.2.1.4 3.1.1.1,2</p>	<p>1.1.C.2 1.1.D.2 2.2.C.1</p>

3. PHYSICAL SCIENCE

Fifth Grade

	The student...	Science Standards	LA Standards
A. Matter and It's Properties	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. uses metric tools to determine the density and volume of material.</p> <p>3. selects from a variety of simple strategies, including the use of phonics, word structure, context clues, self-questioning, confirming simple predictions, retelling, and using visual cues to identify words and construct meaning from various texts, illustrations, graphics, and charts.</p> <p>4. knows that the weight of an object always equals the sum of its parts.</p> <p>5. determines that the properties of materials (e.g., density and volume) can be compared and measured (e.g., using rulers, balances, and thermometers).</p> <p>6. knows that materials may be made of parts too small to be seen without magnification.</p> <p>7. understands that elements combine to form molecules.</p> <p>8. knows the common properties of salts.</p> <p>9. knows that matter is conserved during heating and cooling.</p> <p>10. knows that mixtures are physical combinations of materials and can be separated by physical means.</p> <p>11. knows the differences and similarities between mixtures and solutions.</p> <p>12. uses sketches and diagrams to propose scientific solutions to problems.</p> <p>13. selects appropriate graphical representations (for example, graphs, charts diagrams) to collect, record, and report data.</p> <p>14. interprets and compares information from different types of graphs including graphs from content area materials and periodicals.</p>	<p>1.1.1.1,2,3,4,5</p> <p>1.1.2.2</p> <p>1.1.3.1,2,3,4</p> <p>2.1.1.1,2,3,4,5,6</p> <p>2.3.1.3</p> <p>2.3.2.1</p>	<p>1.1.C.1</p> <p>1.1.D.2</p> <p>2.2.C.3</p>

3. PHYSICAL SCIENCE (continued)**Fifth Grade**

	The student...	Science Standards	LA Standards
B. Changes in Matter	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. extends and refines use of a variety of tools to measure the gain or loss of energy. 3. selects appropriate graphical representations (for example, graphs, charts, diagrams) to collect, record, and report data. 4. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. 5. knows the difference between physical and chemical changes. 6. knows materials made by chemically combining two or more substances may have properties that differ from original materials. 7. knows that different materials can be physically combined to produce different substances. 8. knows differences in chemical properties of substances are used to identify compounds. 9. knows areas in which technology has improved human lives (for example, transportation, communication, nutrition, sanitation, health care, entertainment). 10. makes a prediction for a new investigation using the data from a previous investigation. 11. selects appropriate graphical representations to collect, record, and report data. 12. solves problems involving simple equations of inequalities using diagrams of models, symbolic expressions, or written phrases. 13. uses a variable to represent a given verbal expression (for example, 5 more than a number is $N+5$). 	<p>1.1.1.1,3,4,5 1.1.2.2 1.1.3.1,2,4 2.1.1.1,2 2.1.2.2 3.1.1.2</p>	<p>1.1.C.1 1.1.D.2 2.2.C.1</p>

3. PHYSICAL SCIENCE (continued)

Fifth Grade

	The student...	Science Standards	LA Standards
C. Forces in Motion	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. understands how inertia, gravity, friction, mass, and force affect motion. 3. uses devices to develop relationships among ideas (for example, transitional devices; paragraphs that show a change in time, idea, or place; cause and effect relationships). 4. understands that the motion of an object can be described and measured. 5. describes the motion of an object based on its position, direction, and speed. 6. knows the relationship between the strength of a force and its effect on an object. 7. knows that motion in space is different from motion on Earth. 8. knows that objects do not change their motion unless acted upon by an outside force. 9. understands how friction affects an object in motion. 10. knows that the motion of an object is determined by the overall effect of all the forces acting on the object. 11. knows that the motion of an object is determined by the overall effect of all the forces acting on the object. 12. understands the relationship between force and distance as it relates to simple machines. 13. describes the difference between simple and complex machines. 14. selects appropriate graphical representations (for example, graphs, charts, diagrams) to collect, record, and report data. 15. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers, and addition, subtraction, and multiplication of decimals, fractions, and mixed numbers using an appropriate method (for example, mental math, pencil and paper, calculator). 	<p>1.1.1.1,3,4,5 1.1.3.1,2,3,4 2.1.3.1,2,3,4,5 3.1.1.1,2</p>	<p>1.1.C.5 1.1.D.2</p>

3. PHYSICAL SCIENCE (continued)

Fifth Grade

	The student...	Science Standards	LA Standards
D. Changing Forms of Energy	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. extends and refines use of a variety of tools to measure the gain or loss of energy.</p> <p>3. selects from a variety of simple strategies, including the use of phonics, word structure, context clues, self-questioning, confirming simple predictions, retelling, and using visual cues to identify words and construct meaning from various texts, illustrations, graphics, and charts.</p> <p>4. knows how to trace the flow of energy in a system (for example, electricity in a circuit to produce heat, light, sound, or magnetic fields).</p> <p>5. knows that energy can be described as stored energy (potential) or energy of motion (kinetic).</p> <p>6. knows the many ways in which energy can be transformed from one type to another.</p> <p>7. knows how to trace the flow of energy in a system (for example, electricity in a circuit to produce heat, light, sound, or magnetic fields).</p> <p>8. knows that waves travel at different speeds through different materials.</p> <p>9. knows ways that heat can move from one object to another.</p> <p>10. knows that some materials conduct heat better than others.</p> <p>11. understands that convection, radiation, and conduction are methods of heat transfer.</p> <p>12. uses sketches and diagrams to propose scientific solutions to problems.</p> <p>13. solves problems involving simple equations or inequalities using diagrams or models, symbolic expressions, or written phrases.</p> <p>14. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers, and addition, subtraction, and multiplication of decimals, fractions, and mixed numbers using an appropriate method (for example, mental math, pencil and paper, calculator).</p>	<p>1.1.1.1,2,3,5 1.1.2.2 1.1.3.1,2,3,4 2.1.1.2,6 2.1.2.1,2,3,4 3.1.1.2</p>	<p>1.1.D.2 2.2.C.3</p>

3. PHYSICAL SCIENCE (continued)**Fifth Grade**

	The student...	Science Standards	LA Standards
E. Electricity	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. constructs models to compare objects in science.</p> <p>3. uses devices to develop relationships among ideas (for example, transitional devices; paragraphs, that show a change in time, idea, or place; cause and effect relationships).</p> <p>4. recognizes various forms of energy (e.g., heat, light, and electricity).</p> <p>5. describes and identifies various conductors and insulators.</p> <p>6. knows how to trace the flow of energy in a system (for example, electricity in a circuit to produce heat, light, sound, or magnetic fields).</p> <p>7. knows that various forms of energy in a system (for example, electricity in a circuit to produce heat, light, sound, or magnetic fields).</p> <p>8. understands that scientists use different kinds of investigations (for example, observations of events in nature, controlled experiments) depending on the questions they are trying to answer.</p> <p>9. selects appropriate graphical representations (for example, graphs, charts, diagrams) to collect, record, and report data.</p> <p>10. solves problems involving simple equations or inequalities using diagrams or models, symbolic expressions, or written phrases.</p> <p>11. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers, and addition, subtraction, and multiplication of decimals, fractions, and mixed numbers using an appropriate method (for example, mental math, pencil and paper, calculator).</p>	<p>1.1.1.1,4,5</p> <p>1.1.2.2</p> <p>1.1.3.2,3,4</p> <p>2.1.2.4</p> <p>3.1.1.2</p>	<p>1.1.C.5</p> <p>1.1.D.2</p>

4. SPACE AND TECHNOLOGY

Fifth Grade

	The student...	Science Standards	LA Standards
A. Stars and Galaxies	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. uses scientific tools (for example, stopwatch, meter stick, compass) to measure speed, distance, and direction of an object. 3. clarifies understanding by rereading, self correction, summarizing, checking other sources, and class or group discussion. 4. knows that natural events are often predictable and logical. 5. identifies structures ancient people built to show the importance of the movements of the Sun, Moon, and stars for their culture. 6. identifies equipment and instruments that were used to explore the universe, including early telescopes. 7. describes how telescopes have changed and understands how high-tech telescopes work. 8. describes the characteristics of stars, including the Sun. 9. knows that, in addition to the Sun, there are many more stars that are far away. 10. knows that natural events are often predictable and logical. 11. identifies different types of galaxies. 12. explains the apparent motion of the stars in the sky. 13. constructs models to compare objects in science. 14. makes predictions based on data from picture graphs, bar graphs, and line graphs. 15. multiplies by powers of 10 (100; 1,000; 10,000) demonstrating patterns. 16. explains and demonstrates the inverse nature of multiplication and division, with particular attention to multiplication by a fraction (for example, multiplying by $\frac{1}{4}$ yields the same result as dividing by 4). 	<p>1.1.1.1,5 1.1.2.2 1.1.3.1,2,4 2.3.1.1,2,3</p>	<p>1.1.D.2,4</p>

4. SPACE AND TECHNOLOGY (continued)

Fifth Grade

	The student...	Science Standards	LA Standards
B. Earth and Space	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. constructs models to compare objects in science. 3. extends previously learned knowledge and skills of the fourth grade level with increasingly complex reading texts and assignments and tasks (for example, explicit and implicit ideas). 4. knows that the tilt of the Earth on its own axis as it rotates and revolves around the Sun causes changes in season, length of day, and energy available. 5. knows that the angle that the rays of the Sun strike the surface of the Earth determines the amount of energy received and thus the seasons of the year. 6. knows the effect of the tilt of the Earth on polar climates. 7. knows that the planets differ in size. 8. knows the arrangement of the planets and the asteroid belt in our Solar System. 9. describes the parts of a comet. 10. describes the features of the Moon. 11. knows the relative positions of the Moon, Earth, and Sun during each of the phases of the Moon. 12. understands the role of the relative positions of the Sun and Moon on Earth's tides. 13. knows the relative positions of the Moon, Earth, and Sun during each of the phases of the Moon. 14. constructs models to compare objects in science. 15. interprets and compares information from different types of graphs including graphs from content area materials and periodicals. 	<p>1.1.1.1,3,5 1.1.3.2 2.3.1.1,2,3 2.3.2.4</p>	<p>1.1.C.1 1.1.D.2</p>
C. Technology in Our Lives	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. makes a prediction for a new investigation using the data from a previous investigation. 3. reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. 4. knows that new inventions often lead to other new inventions and ways of doing things. 5. knows areas in which technology has improved human lives (for example, transportation, communication, nutrition, sanitation, health care, entertainment). 6. understands how a solution to one scientific problem can create another problem. 7. extends and refines knowledge of ways that, through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas. 8. knows that it is important to keep accurate records and descriptions to provide information and clues on causes of discrepancies in repeated experiments. 9. knows proportional relationships in scale drawings. 10. uses scale drawings to solve real-world problems including distance (as in map reading). 	<p>1.1.1.1,2,4,5 1.1.2.2 1.1.3.1,2,3,4 2.3.1.3 3.1.1.1,2</p>	<p>1.1.D.2</p>

SCIENCE CURRICULUM
SIXTH GRADE

1. LIFE SCIENCE

Sixth Grade

	The student...	Science Standards	LA Standards
A. Classification	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and work relationships. 2. compares and contrasts a physical characteristic of mushrooms. 3. compares and contrasts two items from a science article. 4. knows that organisms within Earth's biosphere interact with each other and the environment. 5. knows that organisms have different characteristics that enable them to live in their environments. 6. knows that organisms can be classified according to structure and function. 7. understands that organisms are separated into kingdoms according to their cell structure and how they get food and reproduce. 8. knows examples of organisms that cannot be neatly classified as either plants or animals, such as fungi and bacteria. 9. understands how scientists classify plants into smaller groups. 10. uses a dichotomous key to identify organisms. 11. reads and analyzes data displayed in a graph. 12. knows ways that scientists investigate natural phenomena. 13. knows ways that scientists investigate natural phenomena. 	1.1.1.1 1.1.2.2 2.2.1.1,3 2.2.2.2	1.1.A.2 1.1.B.1 2.2.C.3
B. Cells	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and work relationships. 2. uses water as a magnifier 3. reads texts and uses facts to make inferences. 4. knows that the cell is the basic unit of structure and function in all living things. 5. knows that all living things are composed of cells whose details are usually visible only through a microscope. 6. knows the steps in the development of cell theory. 7. knows the functions of various organelles in plant and animal cells. 8. understands the processes of diffusion and osmosis within a cell. 9. understands how and why cells reproduce. 10. understands how the processes of mitosis and cell division produce two identical cells. 11. makes a model of a cell membrane. 12. observes how some materials pass through a seemingly solid barrier. 13. compares objects according to their length, weight or mass, and capacity using customary or metric units. 14. will discover how scientists use technology to study living things. 	1.1.1.3 1.1.2.1,2 2.2.3.1 2.2.1.1	1.1.A.2 1.1.B.1 2.2.C.3

1. LIFE SCIENCE (continued)

Sixth Grade

	The student...	Science Standards	LA Standards
C. Reproduction	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. compares and contrasts seeds. 3. sequences the stages of a process from the facts in a science article. 4. knows that an organism's traits are a result of heredity, the environment, and learning. 5. knows that in all types of asexual reproduction, all the inherited traits come from a single parent. 6. understands the role of DNA, chromosomes, and genes in heredity.. 7. knows the process by which DNA copies itself during mitosis. 8. knows that a mutation can change the instructions that a gene sends. 9. knows that in sexual reproduction, traits come from both parents, so that offspring are never identical to either parent. 10. knows that fertilization takes place in different ways in plants and animals. 11. knows the advantages and disadvantages of asexual and sexual reproduction. 12. knows that an offspring's characteristics depend on the dominant and recessive genes it inherits from the parents. 13. knows the basic patterns of inheritance. 14. makes a model to show how genes are inherited. 15. calculates simple mathematical probabilities. 16. knows ways scientists investigate natural phenomena. 	<p>1.1.2.2,3 1.1.3.2</p>	1.1.C.3
D. Body Systems	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and work relationships. 2. observes human cheek cells and human blood cells. identifies causes and effects in a science article. 3. knows that multicellular organisms have a variety of specialized cells, tissues, organs, and organ systems that perform specialized functions. 4. knows the parts and functions of the skeletal and muscular systems. 5. knows the parts and functions of the nervous system. 6. knows the parts and functions of the endocrine system. 7. knows that feedback mechanisms within systems serve to keep changes within specified limits. 8. knows the parts and functions of the digestive system. 9. knows the parts and functions of the circulatory and respiratory systems. 10. knows the parts and functions of the immune system. 11. knows how systems of the human body are interrelated and regulate the body's internal environment. 12. makes a model that reflects how alveoli increase the surface area of a lung. 13. describes relationships and patterns using words, tables, symbols, variables, expressions, or equations. will explore connections between medical science, math, and career opportunities. 	<p>1.1.1.1 1.1.2.1,2 1.1.3.2 2.2.1.1 3.1.1.1,2</p>	1.1.C.3

1. LIFE SCIENCE (continued)

Sixth Grade

	The student...	Science Standards	LA Standards
E. Plants	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. observes what happens to leaves whose stomata are obstructed.</p> <p>3. compares and contrasts two items from a science journal entry.</p> <p>4. knows the structures and functions of plant roots.</p> <p>5. knows the structures and functions of plant stems and leaves.</p> <p>6. understands the processes of photosynthesis and respiration.</p> <p>7. can explain how photosynthesis and cellular respiration form the carbon dioxide-oxygen cycle.</p> <p>8. understands the structures and functions of seeds and fruits.</p> <p>9. knows that plant germination and growth depend on environmental conditions.</p> <p>10. can relate tropisms in plants to specific stimuli.</p> <p>11. observes the growth of a plant through a maze.</p> <p>12. given initial terms in a pattern, supplies a specific missing term in the pattern.</p> <p>13. will explore connections between science, art, and career opportunities.</p>	<p>1.1.1.1,2,3</p> <p>1.1.2.2</p> <p>1.1.1.3</p> <p>1.1.3.2</p> <p>2.2.1.1</p>	<p>1.1.A.2</p> <p>1.1.C.3</p> <p>2.2.C.3</p>
F. Biomes	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. observes water loss related to surface area and infers how plants conserve water.</p> <p>3. identifies the main idea and details of a paragraph.</p> <p>4. understands that the organisms within the biosphere share Earth's resources.</p> <p>5. knows how organisms may interact with one another in an ecosystem.</p> <p>6. recognizes that abiotic and biotic factors shape the communities within an ecosystem.</p> <p>7. knows how Earth is divided into biomes.</p> <p>8. knows the major characteristics of land biomes.</p> <p>9. makes a model to illustrate how the Sun's rays striking Earth at different angles affects temperature.</p> <p>10. describes a set of data by using the measures of central tendency.</p> <p>11. will explore connections between science, park systems, and career opportunities.</p>	<p>1.1.1.1,2,3</p> <p>1.1.2.2</p> <p>1.1.3.1</p> <p>2.2.1.1,3</p> <p>2.2.1.2,3</p> <p>2.2.2.2</p>	<p>1.1.B.1</p>

1. LIFE SCIENCE (continued)

Sixth Grade

	The student...	Science Standards	LA Standards
G. Ecosystems	<p>1.uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. examines owl pellets in order to identify owls' prey.</p> <p>3. makes an educated guess or prediction about what will happen in the future based on important facts and what he or she already knows.</p> <p>4. understands how organisms develop a unique set of adaptations that help them survive in their environments.</p> <p>5. knows how to follow energy transfer.</p> <p>6. knows that all organisms, including humans, are part of, and depend on, one global food web.</p> <p>7. knows how to describe the flow of energy in an energy pyramid.</p> <p>8. knows that in all environments, organisms with similar needs may compete with one another for resources.</p> <p>9. recognizes ways in which organisms interact.</p> <p>10. knows how nitrogen cycles through ecosystems.</p> <p>11. knows that carbon and water cycle through ecosystems.</p> <p>12. understands that ecosystems undergo natural changes over time.</p> <p>13. knows the ecological consequences of human interactions with the environment.</p> <p>14. measures the air pollution in multiple locations.</p> <p>15.solves real-world problems involving whole numbers, fractions, decimals, and common percents using one or two-step problems.</p> <p>16.knows how technology can be used to obtain scientific information.</p> <p>17. understands how individuals can contribute to ecosystem conservation.</p>	<p>1.1.1.1,2,3</p> <p>1.1.2.1,2</p> <p>1.1.3.1,2</p> <p>2.1.2.3,4</p> <p>2.2.2.2</p> <p>2.2.1.1,2,3</p> <p>2.2.2.2</p> <p>2.3.2.4</p>	1.1.B.1

2. EARTH SCIENCE

Sixth Grade

	The student...	Science Standards	LA Standards
A. Plate Tectonics	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. models seismic waves.</p> <p>3. uses facts from a science article to draw conclusions.</p> <p>4. knows the composition of Earth's layers.</p> <p>5. understands that Earth's crust is made up of moving plates.</p> <p>6. knows that evidence of continental drift is derived from the fit of the continents, the distribution of fossils, and seafloor spreading.</p> <p>7. knows how the theory of plate tectonics explains Earth's features</p> <p>8. knows the causes and effects of earthquakes and volcanoes.</p> <p>9. makes and observes convection currents in water.</p> <p>10. constructs, interprets, and explains displays of data, such as tables and graphs.</p> <p>11. describes the contributions of research scientists to the development of science.</p>	<p>1.1.1.2,3</p> <p>1.1.2.1,3</p> <p>1.1.3.1,2</p> <p>2.1.2.4</p> <p>2.2.1.2</p> <p>2.3.2.1,2,4,7,8</p>	<p>1.1.C.3</p> <p>2.2.C.3</p>
B. Rocks and Minerals	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. compares the crystal structure of two substances.</p> <p>3. compares and contrasts two items from a science article.</p> <p>4. knows the characteristics of minerals.</p> <p>5. understands that minerals are identified by their characteristic properties, including hardness, cleavage patterns, colors, and luster.</p> <p>6. knows that rocks are made of one or more minerals.</p> <p>7. understands the processes involved in the rock cycle and can describe the characteristics of the rocks involved.</p> <p>8. understands how rocks and fossils are used to determine the age and geologic history of Earth.</p> <p>9. explains how rock breaks down to form soil.</p> <p>10. knows that the amount of organic matter in soil determines its fertility and texture.</p> <p>11. knows that there are different factors that affect soil and that there are different types of soil.</p> <p>12. constructs a scale model of geologic time.</p> <p>13. expresses a given quantity in a variety of ways, such as fractions, decimals, or numbers expressed as percents.</p> <p>14. describes the contributions of a paleontologist to science.</p>	<p>2.1.1.2</p> <p>2.2.1.1</p> <p>2.2.2.1</p> <p>2.2.3.2</p> <p>2.3.2.3</p>	<p>1.1.A.2</p> <p>1.1.B.1</p> <p>2.2.C.3</p>

1. EARTH SCIENCE (continued)

Sixth Grade

	The student...	Science Standards	LA Standards
C. Reshaping Earth's Surface	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. makes a topographic map of a three-dimensional object.</p> <p>3. draws conclusions using facts from a science article and previous knowledge.</p> <p>4. understands that Earth's landforms are changed by gradual and rapid processes.</p> <p>5. knows how weathering and erosion change Earth's features.</p> <p>6. describes how water changes Earth's features.</p> <p>7. knows that river systems are always changing and that flooding can move sediment to places that generally do not receive sediment.</p> <p>8. knows the characteristics and causes of waves.</p> <p>9. understands that beaches are dynamic systems that are constantly changing.</p> <p>10. makes and uses a model to observe stalactite formation.</p> <p>11. uses scale drawings to solve real-world problems including distance.</p> <p>12. explores connections between Web editors and science career opportunities.</p>	<p>1.1.1.3</p> <p>1.1.2.2</p> <p>2.1.3.1</p> <p>2.2.1.2</p> <p>2.3.2.5,7,8</p>	1.1.C.3
D. Earth's Resources	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. classifies objects made from natural resources.</p> <p>3. identifies the main idea and the details of a paragraph.</p> <p>4. knows ways renewable and nonrenewable resources can be classified and managed.</p> <p>5. knows that pollution makes resources unavailable or suitable for living things.</p> <p>6. understands the importance of fresh water and ocean water to life and industry.</p> <p>7. identifies the effects that human activities have on natural resources and how the negative impacts can be reduced.</p> <p>8. knows that humans use energy from a variety of sources and that the need for energy has increased over time.</p> <p>9. knows sources of energy.</p> <p>10. knows that energy from renewable resources is assumed to be available indefinitely if it is managed responsibly.</p> <p>11. identifies types of fossil fuels and identifies ways they are used.</p> <p>12. knows how fossil fuels formed from the remains of plants and animals over millions of years.</p> <p>13. understands that petroleum is processed and then shipped to locations where it is used.</p> <p>14. knows that coal mining can be harmful to the environment and that mined land can be reclaimed.</p> <p>15. makes and uses a model water treatment process.</p> <p>16. explores uses and misuses of statistics in real-world situations such as advertisements and polls.</p> <p>17. explores connections between science, technology, and career opportunities.</p>	<p>1.1.1.2</p> <p>1.1.2.2</p> <p>2.1.2.1,4</p> <p>2.2.1.1</p> <p>2.2.2.2</p> <p>2.2.3.1,2</p> <p>2.3.1.4</p>	1.1.B.1

2. EARTH SCIENCE (continued)**Sixth Grade**

	The student...	Science Standards	LA Standards
E. Climate and Weather	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. recognizes that air occupies space and exerts pressure.</p> <p>3. identifies causes and effects in a newspaper article.</p> <p>4. can identify the main gases in air and describe their origin in the atmosphere.</p> <p>5. understands how temperature and air pressure are related.</p> <p>6. knows the characteristics of Earth's atmosphere.</p> <p>7. understands the causes of global and local winds.</p> <p>8. knows how clouds form.</p> <p>9. can explain how different kinds of precipitation form.</p> <p>10. knows how air masses and fronts interact to cause weather.</p> <p>11. knows the causes and characteristics of different types of severe weather</p> <p>12. knows ways to stay safe during severe weather.</p> <p>13. knows what tools scientists use to make weather predictions.</p> <p>14. knows the factors that determine climate.</p> <p>15. constructs a model tornado.</p> <p>16. finds patterns in real-world situations.</p> <p>17. knows how global processes are related.</p> <p>18. explores the connection between trees and past climates by understanding the work of a paleoclimatologist.</p>	<p>1.1.1.1,3</p> <p>1.1.2.1,2</p> <p>1.1.3.2</p> <p>2.2.1.1</p> <p>2.3.2.4,5,6</p>	<p>1.1.A.2</p> <p>1.1.C.3</p>

3. PHYSICAL SCIENCE

Sixth Grade

	The student...	Science Standards	LA Standards
A. Matter	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading, including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. measures the volume of a solid. 3. Sequences the step-by-step order in an activity procedure. 4. knows that matter has properties such as mass and volume that can be measured. 5. knows how to calculate the density of a substance given its mass and volume. 6. knows how to investigate and classify the properties of matter as either physical or chemical. 7. knows the characteristics of the four states of matter: solid, liquid, gas, and plasma. 8. knows that a change of state may occur when a substance gains or loses heat. 9. understands the difference between physical and chemical changes. 10. observes the movement of coloring in room-temperature water, cold water, and very warm water. 11. constructs, interprets, and explains displays of data, such as tables and graphs. 12. explores the life and work of chemist Antoine Lavoisier. 	1.1.1.1,2,3 1.1.2.2,3 1.1.3.1,2 2.1.1.1,2,4 2.1.2.1 2.1.3.2	1.1.A.2 1.1.D.1 2.2.C.3
B. Building Blocks of Matter	<ol style="list-style-type: none"> 1. uses simple strategies to determine meaning and increase vocabulary for reading including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships. 2. identifies an unseen object 3. applies skills in comparing and contrasting to learn about the atomic structure of boron and nitrogen. 4. can describe the structure of the atom. 5. understands the history of the atomic model. 6. knows that elements are made of only one kind of matter. 7. can describe properties of metals, nonmetals, and metalloids. 8. understands the organization of the periodic table. 9. can explain how elements are arranged in the periodic table. 10. understands that elements combine in an exact way to form compounds. 11. understands that a mixture is a combination of substances that are not chemically combined. 12. identifies a solution and its components. 13. distinguishes between acids and bases. 14. uses PH paper to identify acids and bases. 15. translates simple algebraic expressions, equations, or formulas representing real-world relationships into verbal expressions or sentences. 16. learns how students can design and enter a science experiment in a NASA competition. 17. explores connections between science, technology, society, and career opportunities. 	1.1.1.3 1.1.2.1,2,3 2.1.1.1,2,3,4	1.1.A.2 1.1.B.1 2.2.C.3

3. PHYSICAL SCIENCE (continued)

Sixth Grade

	The student...	Science Standards	LA Standards
C. Forces and Motion	<p>1.uses simple strategies to determine meaning and increase vocabulary for reading including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. finds the relative weight of small objects.</p> <p>3. uses facts to make a prediction.</p> <p>4. can identify forces acting on objects.</p> <p>5. knows that total forces acting on an object determine the effect of the forces.</p> <p>6. understands that friction can be both helpful and harmful.</p> <p>7. knows how mass and distance affect the gravitational force between objects.</p> <p>8. knows how gravity affects Earth’s tides and planetary movement.</p> <p>9. understands how frame of reference is used to describe motion.</p> <p>10. understands the relationship among speed, velocity, and acceleration.</p> <p>11. can explain and give examples of Newton’s first law of motion.</p> <p>12. can explain and give examples of Newton’s second law of motion.</p> <p>13. can explain and give examples of Newton’s third law of motion.</p> <p>14. calculates that the buoyant force of water is the difference between an object’s weight in air minus its weight in water.</p> <p>15.knows proportional relationships and describes such relationships in words, tables, or graphs.</p> <p>16.explores how the work of scientist Albert Einstein led to important discoveries.</p>	<p>1.1.1.1</p> <p>1.1.2.1</p> <p>1.1.3.2</p> <p>2.1.2.1,3</p> <p>2.1.3.1,2</p>	<p>1.1.A.2</p> <p>1.1.B.1</p> <p>2.2.C.3</p>
D. Machines	<p>1.uses simple strategies to determine meaning and increase vocabulary for reading including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships</p> <p>2. balances weights placed on a balance.</p> <p>3. identifies causes and effects in a passage.</p> <p>4. knows that work is done when a force moves an object.</p> <p>5. understands how machines help people do work.</p> <p>6. can identify and describe six types of simple machines.</p> <p>7. knows how a lever can be used to do work.</p> <p>8. knows how an inclined plane, wedge, screw, and wheel and axle can be used to do work.</p> <p>9. knows how pulleys can be used to do work.</p> <p>10.understands how simple machines combine to make compound machines.</p> <p>11. observes that a wheel and axle can change the direction of applied force.</p> <p>12. measures the difference in distance moved for a wheel and axle with different circumferences.</p> <p>13. solves real-world problems involving whole numbers, fractions, decimals, and common percents using one or two-step problems.</p> <p>14. explores connections between science, technology, society, and career opportunities.</p>	<p>2.1.3.5</p> <p>1.1.1.3</p> <p>1.1.1.3</p> <p>2.1.3.5</p> <p>2.1.3.5</p> <p>1.1.2.2</p> <p>3.1.1.2</p>	<p>LA1.1-A.PS2</p> <p>LA1.1-B.PS1</p> <p>LA2.2-C.PS3</p>

3. PHYSICAL SCIENCE (continued)

Sixth Grade

	The student...	Science Standards	LA Standards
E. Changing Energy Forms	<p>1.uses simple strategies to determine meaning and increase vocabulary for reading including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships</p> <p>2.observes the effect a rolling marble has on a group of standing marbles.</p> <p>3. places events in sequential order.</p> <p>4. knows that energy exists in many different forms.</p> <p>5. identifies ways energy changes from one form to another.</p> <p>6. explains the law of conservation of mass and energy.</p> <p>7. understands how electricity flows in an electric current.</p> <p>8. describes magnetic fields and magnetic domains.</p> <p>9. knows Earth is a magnet.</p> <p>10. understands the relationship between electricity and magnetism in an electromagnet.</p> <p>11. understands how magnetism can be used to produce electricity.</p> <p>12. makes a model of a working circuit board.</p> <p>13. knows the appropriate operations to solve real-world problems involving whole numbers, decimals, and fractions.</p> <p>14. explores connections between science, technology, society, and career opportunities.</p>	<p>1.1.1.3</p> <p>1.1.2.2</p> <p>1.1.3.1</p> <p>2.1.2.1,3,4</p>	<p>1.1.A.2</p> <p>2.2.C.3</p>
F. Thermal and Light Energy	<p>1.uses simple strategies to determine meaning and increase vocabulary for reading including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. infers that both light and heat are forms of energy.</p> <p>3. compares and contrasts information presented in a diagram.</p> <p>4. knows that an object has potential energy due to its position and kinetic energy due to its motion.</p> <p>5. understands that thermal energy is the total kinetic and potential energy of the particles in a substance.</p> <p>6. knows the difference between thermal energy, temperature, and heat.</p> <p>7. knows that heat flows in solids by conduction.</p> <p>8. knows how heat is transferred through convection and radiation.</p> <p>9. knows that heat moves easily through conductors but not through insulators.</p> <p>10. knows that waves carry energy.</p> <p>11. can identify the differences and similarities between transverse waves, and compressional waves.</p> <p>12.knows that light can be reflected, refracted, Transmitted, and absorbed by matter.</p> <p>13. knows that white light is made up of a mixture of many different colors of light.</p> <p>14. measures temperature change.</p> <p>15.recognizes that a graph can show some types of data more clearly than a table.</p> <p>16. solves real-world problems involving whole numbers, fractions, decimals, and common percents using one or two-step problems.</p> <p>17.explores connections between science, technology, society, and career opportunities.</p>	<p>1.1.1.1,2,3</p> <p>1.1.2.1,2,4</p> <p>2.1.2.1,2,3,4</p>	<p>LA1.1-A.PS2</p> <p>LA1.1-B.PS1</p> <p>LA2.2-C.PS3</p>

4. SPACE AND TECHNOLOGY

Sixth Grade

	The student...	Science Standards	LA Standards
A. Earth, Sun, and Moon	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. makes a sundial to tell time.</p> <p>3. determines the main idea in a text and identifies relevant details and facts.</p> <p>4. understands that the Sun provides Earth with heat and light needed to sustain life.</p> <p>5. can explain how the regular motions of the Moon cause Moon phases.</p> <p>6. understands how Earth's tilt on its axis and its rotation cause changes on Earth.</p> <p>7. understands how Earth's orbit causes seasons.</p> <p>8. knows the causes and effects of solar and lunar eclipses.</p> <p>9. constructs a spectroscope and then observes, describes, compares and contrasts spectra.</p> <p>10. solves problems using the metric or customary system involving conversions within the same system.</p> <p>11. knows areas in which technology has improved human lives.</p> <p>12. will examine connections between the science of exploring the universe and career opportunities.</p>	<p>1.1.1.2,3</p> <p>1.1.2.1</p> <p>2.1.2.4</p> <p>2.3.1.3,4</p> <p>3.1.1.1</p>	<p>LA1.1-A.PS2</p> <p>LA1.1-C.PS3</p> <p>LA22-C.PS3</p>
B. The Universe	<p>1. uses simple strategies to determine meaning and increase vocabulary for reading including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships.</p> <p>2. identifies a planet image among star images by using a grid.</p> <p>3. uses facts from a science article to draw conclusions.</p> <p>4. knows that the universe contains billions of stars grouped into galaxies.</p> <p>5. understands that the planets in our solar system have different sizes, compositions, and surface features.</p> <p>6. understands why planets differ.</p> <p>7. knows that stars have different sizes, temperatures, and colors</p> <p>8. understands how stars are born, age, and die.</p> <p>9. can explain and describe constellations.</p> <p>10. makes a model that shows the relative orbits of the planets.</p> <p>11. expresses numbers greater than one in scientific notation.</p> <p>12. will explore how the ideas of Greek astronomer Ptolemy provided the groundwork for future scientists.</p>	<p>1.1.1.2</p> <p>1.1.2.1,2</p> <p>1.1.3.2</p> <p>2.3.1.1,2,3</p> <p>2.3.2.5</p>	<p>1.1.B.1</p> <p>2.2.C.3</p>

4. SPACE AND TECHNOLOGY (continued)

Sixth Grade

	The student...	Science Standards	LA Standards
C. Technology	<p>1.uses simple strategies to determine meaning and increase vocabulary for reading including the use of prefixes, suffixes, root words, multiple meanings, antonyms, synonyms, and word relationships</p> <p>2.models how robots might be expected to complete simple tasks.</p> <p>3. determines the main idea or essential message in a text and identifies relevant details, facts, and patterns of organization.</p> <p>4. understands the relationship between robots and technologies.</p> <p>5. can explain how robots speed up or extend people’s ability to accomplish tasks.</p> <p>6. knows how robots enable people to access information from places humans are unable to go.</p> <p>7. can give examples of how nanotechnology may be Applied to areas such as the environment and medicine.</p> <p>8. can identify nanotechnology applications.</p> <p>9. can explain the benefits and risks of nanotechnology.</p> <p>10. makes a model robot arm that can pick up specialized objects.</p> <p>11. knows the meaning and use of exponential notation.</p> <p>12. will examine connections between the science of exploring the universe and career opportunities.</p>	<p>1.1.1.1,2</p> <p>1.1.2.2,3</p> <p>1.1.3.2</p> <p>2.1.1.1</p> <p>2.1.2.2</p> <p>2.2.1.2</p> <p>2.2.3.1</p> <p>2.3.2.2</p> <p>3.1.1.2,2</p>	<p>1.1.A.2</p> <p>1.1.B.1</p> <p>2.2.C.3</p>