

**Teacher: Core Science Grade K**

**Year: 2008-2009**

**Course: Science/Health/Social Studies Grade K**

<b>Living/Nonliving</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>
Living things Nonliving things	Identify Characteristics of living things  Identify characteristics of nonliving things  Compare living and nonliving things  Find examples of both living and nonliving things	K.L.1.1 ~ Students are able to sort living from non-living things.  K.L.1.1.i.b ~ Students are able to compare size and shape of living things.

  

<b>Apples</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>
Trees are living things Trees bear fruit Types of apples Uses for apples Five senses Johnny Appleseed	Gather a variety of apples.  Examine a variety of apples.  Compare size, shape, color, taste.  Use the five senses while exploring activities with apples.  Identify who Johnny Appleseed	K.L.1.1 ~ Students are able to sort living from non-living things.  K.L.1.1.i.a ~ Students are able to discuss the basic needs of plants and animals.  K.L.1.1.i.b ~ Students are able to compare size and shape of living things.  K.NS.2.1.i.a ~ Students are able to use scientific thinking skills of observing and communicating.  K.NS.2.1.i.b ~ Students are able to safely conduct simple experiments.

was and his significance in history.

K.P.1.1 ~ Students are able to use senses to describe solid objects in terms of physical attributes.

### My Five Senses

Content	Skills	Standards
See Touch Hear Smell Taste	Explore an individual sense, with different objects.	K.NS.2.1.i.a ~ Students are able to use scientific thinking skills of observing and communicating.  K.NS.2.1.i.b ~ Students are able to safely conduct simple experiments.  K.P.1.1 ~ Students are able to use senses to describe solid objects in terms of physical attributes.

### Seasons and Weather

Content	Skills	Standards
Effects of weather  Seasons and the patterns in the Earth	Describe how weather affects our clothing choices and outdoor activities.  Describe changes that happen during the different seasons.  Identify the four seasons of the year.	K.E.1.1 ~ Students are able to describe simple Earth patterns in daily life.

## Fall/Harvest

Content	Skills	Standards
Seasons Harvest	<p>Explore the outdoors</p> <p>Look for changing colors in the leaves</p> <p>Discuss nature's changes</p> <p>Gather a variety of leaves</p> <p>Compare the likes/differences in the leaves</p> <p>Investigate possibilities of leaf projects</p> <p>Share thankful harvest stories</p>	<p>K.E.1.0 ~ Analyze the various structures and processes of the Earth system.</p> <p>K.E.1.1 ~ Students are able to describe simple Earth patterns in daily life.</p> <p>K.L.3.0 ~ Analyze how organisms are linked to one another and the environment.</p> <p>K.L.3.1.i.a ~ Students are able to explore the local habitat.</p> <p>K.P.1.1 ~ Students are able to use senses to describe solid objects in terms of physical attributes.</p>

## Bats

Content	Skills	Standards
Nocturnal Wings Mammals	<p>Identify a bat as a nocturnal animal.</p> <p>Discuss wing structure.</p> <p>Compare offspring to adult.</p>	<p>K.L.1.0 ~ Understand the fundamental structures, functions, classifications, and mechanisms found in living things.</p> <p>K.L.1.1 ~ Students are able to sort living from non-living things.</p> <p>K.L.1.1.i.a ~ Students are able to discuss the basic needs of plants and animals.</p> <p>K.L.1.1.i.b ~ Students are able to compare size and shape of living things.</p> <p>K.L.2.0 ~ Analyze various patterns and products of natural and</p>

		<p>induced biological change.</p> <p>K.L.2.1.i.a ~ Recognize similarities and differences between animal offspring and their parents.</p> <p>K.L.3.0 ~ Analyze how organisms are linked to one another and the environment.</p> <p>K.L.3.1.i.a ~ Students are able to explore the local habitat.</p>
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### Fire Safety

Content	Skills	Standards
Fire Safety	<p>Discuss fire safety</p> <p>Practice stop, drop, roll</p> <p>Discuss a fire safety plan</p> <p>Practice fire drills</p>	<p>1.3.1 ~ list various community health and safety helpers, e.g., nurse, police, firefighter, doctor, dentist.</p> <p>1.3.2 ~ describe safety rules in school and the community, e.g., crossing the street, wearing a bike helmet, using seat belts.</p> <p>2.3.2 ~ list community people who can provide help in case of an emergency.</p> <p>3.1.1 ~ list various harmful or risky behaviors, e.g., fighting, not wearing seatbelt.</p> <p>4.1.1 ~ list ways to be caring, courteous, and respectful.</p> <p>4.1.3 ~ explore how to listen attentively.</p> <p>5.2.3 ~ name classroom rules/strategies which promote health, e.g., fire and tornado drills.</p> <p>K.S.1.1.i.a ~ Students are able to recognize technology in school, home, and community.</p>

## Pumpkins

Content	Skills	Standards
Pumpkins	<p>Describe the size, shape, color, texture, and use of a pumpkin</p> <p>Discuss living/nonliving things</p> <p>Define the uses of pumpkins</p> <p>Determine basic needs of living things; specifically life cycle of a pumpkin.</p>	<p>K.L.1.1 ~ Students are able to sort living from non-living things.</p> <p>K.L.1.1.i.a ~ Students are able to discuss the basic needs of plants and animals.</p> <p>K.L.1.1.i.b ~ Students are able to compare size and shape of living things.</p> <p>K.NS.2.1.i.b ~ Students are able to safely conduct simple experiments.</p> <p>K.P.1.1 ~ Students are able to use senses to describe solid objects in terms of physical attributes.</p>

## Native Americans

Content	Skills	Standards
Native American people and culture	<p>Identify who Native Americans are.</p> <p>Engage in activities involving Native American traditions - tepees, timeline calendar (winter counts)</p> <p>Participate in Native American prayer service</p>	<p>K.US.1.1 ~ Students are able to identify examples of legendary and/or historical American figures.</p>

	Read cultural fairy tales.	
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## Emotions and Feelings

Content	Skills	Standards
Relationships	Describe what working together involves	1.1.1 ~ identify expressions and behaviors associated with different feelings.
Communication	Demonstrate how to express feelings	1.1.2 ~ identify appropriate ways to deal with emotions.
Expressions	Demonstrate working together to solve a problem.	1.2.0 ~ Students will evaluate the impact of mental, emotional, social, and physical health on various interrelated body systems.
Resolutions	Develop positive communication.	1.2.1 ~ Students will evaluate the impact of mental, emotional, social, and physical health on various interrelated body systems.
		1.2.2 ~ describe what being well means, e.g., physically, emotionally, and socially.
		3.1.0 ~ Students will evaluate health-enhancing behaviors that promote wellness.
		3.1.1 ~ list various harmful or risky behaviors, e.g., fighting, not wearing seatbelt.
		3.1.2 ~ describe how one can be a friend.
		3.1.3 ~ identify personal behavior that promotes health, e.g., adequate rest, bicycle safety.
		4.1.0 ~ Students will evaluate how communication affects relationships with family, peers, and community.
		4.1.1 ~ list ways to be caring, courteous, and respectful.

4.1.2 ~ explore ways to communicate with family members about health.

4.1.3 ~ explore how to listen attentively.

4.2.0 ~ Students will evaluate and select effective communication skills, which enhance personal health.

4.2.1 ~ Explore positive ways to express needs, wants, and feelings.

4.2.2 ~ explore ways to describe oneself, e.g., self-portrait/ drawings, collage.

4.2.3 ~ identify various healthrelated terms, e.g., germs, hygiene.

4.3.0 ~ Students will analyze conflict and engage in healthy communication and resolution strategies.

4.3.1 ~ define anger and how anger affects people.

4.3.2 ~ explore and define cooperation.

4.3.3 ~ identify ways to refuse harmful substances.

5.1.1 ~ explain how a student's health affects family.

5.3.0 ~ Students will advocate and support practices, which promote a healthy community and environment.

5.3.1 ~ identify ways to help others to improve personal health.

5.3.2 ~ identify positive health messages.

5.3.3 ~ explain why children need good health care.

### Thanksgiving Day/Squanto and Veteran's Day

Content	Skills	Standards
Squanto	Identify who Squanto was.	K.C.1.1 ~ Students are able to identify patriotic symbols and participate in activities.
Thanksgiving Day	Discuss the Thanksgiving tradition.	K.C.2.1 ~ Students are able to recognize the important actions required in demonstrating citizenship.
Veteran's Day	Read stories about the first Thanksgiving, Squanto and Veteran's Day.	K.C.2.2 ~ Name the attributes of a good citizen.
	Discuss and identify patriotic symbols	K.US.1.1 ~ Students are able to identify examples of legendary and/or historical American figures.
	Make an American flag.	K.US.2.1 ~ Students are able to identify local and national celebrations.

### Health/Nutrition

Content	Skills	Standards
Human Body	Describe how to take care of your body	1.1.0 ~ Students will evaluate how personal behavior can impact the health of self, peers, and family.
Exercise	List healthy foods	1.1.4 ~ understand how practices in the home affect personal health, e.g., diet, sleep, hygiene.
Health	Participate in physical activities	1.2.0 ~ Students will evaluate the impact of mental, emotional, social, and physical health on various interrelated body systems.
Nutrition		1.2.1 ~ Students will evaluate the impact of mental, emotional, social, and physical health on various interrelated body systems.
Food		

		<p>1.2.2 ~ describe what being well means, e.g., physically, emotionally, and socially.</p> <p>2.1.1 ~ identify personal health habits and family beliefs/practices regarding health.</p> <p>5.1.2 ~ explore how to find community health related information.</p> <p>5.1.3 ~ list medicines that keep us well.</p>
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### Christmas Around the World

Content	Skills	Standards
Christmas Around the World	Participate in 5th grade activity of Christmas Around the World	<p>K.US.1.1 ~ Students are able to identify examples of legendary and/or historical American figures.</p> <p>K.US.2.1 ~ Students are able to identify local and national celebrations.</p>

### Needs and Wants

Content	Skills	Standards
Needs and wants	Differentiate needs and wants	K.E.1.2 ~ Students are able to identify the difference between basic needs (food, clothing, and shelter) and wants (luxuries).

### Physical Science

Content	Skills	Standards
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Magnets	Experiment with magnets	K..P.3.0 ~ Analyze interactions of energy and matter.
Motion	Distinguishing between different movable objects.	K.P.2.0 ~ Analyze forces, their forms, and their effects on motions. K.P.2.1.i.a ~ Students are able identify things that move. K.P.2.1.i.b ~ Students are able to explore magnets.
Vibration and Sound	Experiment with a variety of sounds.	K.P.3.1.i.a ~ Students are able to explore vibration and sound. K.S.1.0 ~ Analyze various implications/effects of scientific advancement within the environment and society.
Simple Machines	Explore a variety of simple machines.	K.S.1.1.i.a ~ Students are able to recognize technology in school, home, and community.

### Winter/Snow

Content	Skills	Standards
Weather	Discuss how the weather affects our daily lives	K.P.1.0 ~ Describe structures and properties of, and changes in, matter.
Snow	Share snow activity ideas	K.P.1.1 ~ Students are able to use senses to describe solid objects in terms of physical attributes.
Seasons	Make snow	K.P.1.2 ~ Students are able to identify water in its solid and liquid forms.
Winter	Recognize the change of season	K.P.1.2.i.a ~ Students are able to observe physical changes in matter.
	Define the date of the season	

### Martin Luther King, Jr. Day

Content	Skills	Standards
Martin Luther King, Jr. Day	Identify who Martin Luther King, Jr. was and his significance in history.  Read related books.	K.US.1.1 ~ Students are able to identify examples of legendary and/or historical American figures.  K.US.2.1 ~ Students are able to identify local and national celebrations.

## Hygiene

Content	Skills	Standards
Dental Health	Demonstrate brushing properly, and taking care of teeth.	1.1.0 ~ Students will evaluate how personal behavior can impact the health of self, peers, and family.
Personal Health	Recognize the importance of washing and taking care of body.	1.1.3 ~ practice personal hygiene habits, e.g., hand washing, blowing nose.
Germes	Define why we disinfect things and avoid contact to control the spread of germs.	1.1.4 ~ understand how practices in the home affect personal health, e.g., diet, sleep, hygiene.
Nutrition	Describe why we should eat a well balanced diet and make healthy choices.	1.2.0 ~ Students will evaluate the impact of mental, emotional, social, and physical health on various interrelated body systems. 1.2.1 ~ Students will evaluate the impact of mental, emotional, social, and physical health on various interrelated body systems.
Doctor visits	Discuss why we need shots and medications	1.2.2 ~ describe what being well means, e.g., physically, emotionally, and socially. 1.2.3 ~ identify various childhood injuries and illnesses, e.g., bicycle accidents, chicken pox, measles.
		1.3.0 ~ Students will analyze how medical research, government agencies, and public health policies influence health promotion and disease prevention.

		<p>1.3.1 ~ list various community health and safety helpers, e.g., nurse, police, firefighter, doctor, dentist.</p> <p>1.3.3 ~ list specific practices that help prevent and control the spread of germs, e.g., washing hands, covering mouth when coughing.</p> <p>2.1.0 ~ Students will evaluate the impact of culture, media, and technology on personal health decisions and practices.</p> <p>2.1.1 ~ identify personal health habits and family beliefs/practices regarding health.</p> <p>2.1.2 ~ Identify examples of health related products.</p> <p>2.1.3 ~ list commonly used health care technology, e.g., digital thermometers.</p> <p>2.2.0 ~ Students will evaluate community, state, regional, and global resources that provide health services, products, and information.</p> <p>2.2.1 ~ identify different roles of school and community health helpers, e.g., doctor, dentist.</p> <p>2.2.2 ~ list benefits of services provided by health helpers.</p> <p>2.2.3 ~ identify where to find various health helpers in the school/community, e.g., the nurse's office, teacher.</p> <p>2.3.0 ~ Students will analyze and evaluate situations requiring professional health services.</p> <p>2.3.1 ~ list personal/family situations, which require medical attention, e.g., ear aches, tummy aches, and elevated temperature.</p> <p>2.3.2 ~ list community people who can provide help in case of an emergency.</p>
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2.3.3 ~ identify medicines that keep us well, e.g., vitamins.

3.1.0 ~ Students will evaluate health-enhancing behaviors that promote wellness.

3.1.3 ~ identify personal behavior that promotes health, e.g., adequate rest, bicycle safety.

3.2.0 ~ Students will evaluate strategies for achieving and maintaining personal health goals.

3.2.1 ~ define what is good health.

3.2.2 ~ identify positive daily health habits, e.g., brushing teeth, cleanliness, eating properly.

3.2.3 ~ chart daily health practices.

3.3.0 ~ Students will evaluate the role of personal responsibility in health-related decisions.

3.3.1 ~ identify personal health decisions, e.g., wear a seat belt, brush teeth.

3.3.2 ~ define personal health responsibility.

3.3.3 ~ list healthy behaviors, e.g., asking adults for help.

5.1.2 ~ explore how to find community health related information.

5.1.3 ~ list medicines that keep us well.

5.2.1 ~ explore health problems in the classroom.

5.2.2 ~ list classroom health resources, e.g., first aid kit, school nurse, classmates.

### Presidents Day

Content	Skills	Standards
George Washington Abraham Lincoln	Identify the Presidents	K.US.1.1 ~ Students are able to identify examples of legendary and/or historical American figures.

### Money

Content	Skills	Standards
Money	Determine the use of money in every day life.	K.E.1.3 ~ Students are able to describe the role of money in everyday life.

### States of Matter

Content	Skills	Standards
Solid Liquid Gas	Identify the three states of matter Explore the three states of matter Engage in activities regarding the three states of matter	K..P.3.0 ~ Analyze interactions of energy and matter. K.P.1.0 ~ Describe structures and properties of, and changes in, matter. K.P.1.1 ~ Students are able to use senses to describe solid objects in terms of physical attributes. K.P.1.2 ~ Students are able to identify water in its solid and liquid forms. K.P.1.2.i.a ~ Students are able to observe physical changes in matter.

## Maps and Globes

Content	Skills	Standards
Maps Globes	Recognize different maps, i.e. U.S. and SD maps  Differentiate between a map and a globe	K.G.1.1 ~ Students are able to use map colors to recognize land and water.  K.G.1.2 ~ Students are able to compare the globe and a map as models of the Earth.  K.G.1.3 ~ Students are able to demonstrate familiarity with the layout of their own school.

## Famous Faces

Content	Skills	Standards
Famous people in history	Participate in 5th grade Famous Faces activities	K.US.1.1 ~ Students are able to identify examples of legendary and/or historical American figures.

## Earth

Content	Skills	Standards
Earth Spring Plants	Identify what makes up the earth  Brainstorm uses of the earth  Determine a plant is a living thing	K.E.1.0 ~ Analyze the various structures and processes of the Earth system.  K.E.1.1 ~ Students are able to describe simple Earth patterns in daily life.  K.E.1.i.a ~ Explore rocks, sand, water, and soil.

	Identify the season of spring	<p>K.L.1.0 ~ Understand the fundamental structures, functions, classifications, and mechanisms found in living things.</p> <p>K.L.1.1 ~ Students are able to sort living from non-living things.</p> <p>K.L.1.1.i.a ~ Students are able to discuss the basic needs of plants and animals.</p> <p>K.L.1.1.i.b ~ Students are able to compare size and shape of living things.</p> <p>K.S.1.0 ~ Analyze various implications/effects of scientific advancement within the environment and society.</p> <p>K.S.1.1.i.b ~ Care for the environment around the school.</p> <p>K.S.1.1.i.c ~ Recognize ways to reuse various materials.</p>
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### Citizenship

Content	Skills	Standards
Citizenship	<p>Recognize what being a good citizen is.</p> <p>Demonstrate being a good citizen.</p>	<p>K.C.2.1 ~ Students are able to recognize the important actions required in demonstrating citizenship.</p> <p>K.C.2.2 ~ Name the attributes of a good citizen.</p> <p>K.E.1.1 ~ Students are able to identify occupations with simple descriptions of work.</p>

### Occupations

Content	Skills	Standards
Occupations	<p>Identify a variety of occupations.</p> <p>Invite citizens to come and share their occupations.</p>	<p>K.C.2.1 ~ Students are able to recognize the important actions required in demonstrating citizenship.</p> <p>K.C.2.2 ~ Name the attributes of a good citizen.</p> <p>K.E.1.1 ~ Students are able to identify occupations with simple descriptions of work.</p>

## Animals

Content	Skills	Standards
Animals	<p>Determine that animals are living things</p> <p>Discuss how to take care of animals</p>	<p>K.L.1.0 ~ Understand the fundamental structures, functions, classifications, and mechanisms found in living things.</p> <p>K.L.1.1 ~ Students are able to sort living from non-living things.</p> <p>K.L.1.1.i.a ~ Students are able to discuss the basic needs of plants and animals.</p> <p>K.L.1.1.i.b ~ Students are able to compare size and shape of living things.</p> <p>K.L.2.0 ~ Analyze various patterns and products of natural and induced biological change.</p> <p>K.L.2.1.i.a ~ Recognize similarities and differences between animal offspring and their parents.</p> <p>K.L.3.0 ~ Analyze how organisms are linked to one another and the environment.</p> <p>K.L.3.1.i.a ~ Students are able to explore the local habitat.</p>

		<p>K.NS.2.1.i.a ~ Students are able to use scientific thinking skills of observing and communicating.</p>
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K.NS.2.1.i.b ~ Students are able to safely conduct simple experiments.

**Teacher: Core Science Grade 1**

**Year: 2008-2009**

**Course: Science Grade 1**

<b>Plants and Animals Living and Non living</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>
My senses	Testing your senses	1.L.1.0 ~ Understand the fundamental structures, functions, classifications, and mechanisms found in living things.
Living/nonliving	Identify properties/using senses	1.L.1.1 ~ Students are able to discover life needs of green plants.
Parts of a plant	Measure using a growth chart	1.L.1.2 ~ Students are able to identify the parts of a plant.
Plants and how they grow	Categorize using physical attributes	1.L.1.3 ~ Students are able to list life needs of people and other animals.
Animal needs	Compare objects	1.L.2.0 ~ Analyze various patterns and products of natural and induced biological change.
Kinds of animals	Predict	1.L.2.1 ~ Students are able to describe physical similarities and differences between parents and offspring.
Insects	Describe	1.L.3.0 ~ Analyze how organisms are linked to one another and the environment.
Animals and how they grow	Observe data	1.L.3.1 ~ Students are able to relate characteristics of plants and animals that allow them to live in specific habitats.
	Classify animals	1.NS.2.1.i.a ~ Use scientific thinking skills of observing, communicating, and comparing.
		1.P.1.1 ~ Students are able to categorize objects by physical attributes such as color, size, and shape.
		1.P.1.2 ~ Students are able to compare objects in terms of heavier or

		lighter.  1.P.1.3 ~ Students are able to predict how common materials interact with water.
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**Plants and Animals and Places to Live**

Content	Skills	Standards
Ways animals need/help plants	Observe leaf patterns	1.E.2.0 ~ Analyze essential principles and ideas about the composition and structure of the universe.
People need plants and animals	Discover the needs of plants	1.L.1.1 ~ Students are able to discover life needs of green plants.
Forests	Identify the parts of a plant	1.L.1.2 ~ Students are able to identify the parts of a plant.
Deserts	List the needs of animals/plants	1.L.1.3 ~ Students are able to list life needs of people and other animals.
Rain Forests	Compare similarities/differences of offspring	1.L.2.1 ~ Students are able to describe physical similarities and differences between parents and offspring.
Oceans/Seas		1.L.3.1 ~ Students are able to relate characteristics of plants and animals that allow them to live in specific habitats.
Characteristics of plants/animals habitat		

**Earth's Land and Natural Resources**

Content	Skills	Standards
Types of rocks	Measure mass	1.E.1.0 ~ Analyze the various structures and processes of the Earth system.
Fossils	Describe the properties of rocks	1.E.1.1 ~ Students are able to recognize changes in weather over time.

<p>Natural resources</p> <p>Air on the Earth</p> <p>Fresh water</p>	<p>Observe/record data</p> <p>Describe/define a natural resource</p>	<p>1.E.1.2 ~ Students are able to describe rocks in terms of properties.</p> <p>1.P.1.0 ~ Describe structures and properties of, and changes in, matter.</p> <p>1.S.1.1.i.b ~ Investigate natural resources and their uses.</p> <p>1.S.1.1.i.c ~ Investigate how to recycle and reuse products made from natural resources.</p> <p>1.S.2.0 ~ Analyze the relationships/interactions among science, technology, environment, and society.</p> <p>1.S.2.1.i.a ~ Identify how technology has helped people solve everyday problems.</p> <p>1.S.2.1.i.b ~ Develop personal habits that display concern for the environment.</p>
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<b>Weather/Seasons</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>
<p>Weather</p> <p>Temperature</p> <p>Wind</p> <p>Clouds/rain</p> <p>Day sky/night sky</p> <p>Spring</p>	<p>Observe seasons</p> <p>Read a bar graph</p> <p>Compare weather conditions</p> <p>Investigate what a meteorologist does</p> <p>Observe/predict temperatures</p>	<p>1.E.1.1 ~ Students are able to recognize changes in weather over time.</p> <p>1.E.2.1.i.a ~ Identify what can be observed in the sky by the unaided eye in the day and at night.</p> <p>1.NS.2.0 ~ Apply the skills necessary to conduct scientific investigations.</p> <p>1.NS.2.1.i.a ~ Use scientific thinking skills of observing, communicating, and comparing.</p>

Summer	Classify wind/storms	
Fall	Interpret the water cycle	
Winter	Read/measure/compare air temperatures	

## Matter and Sound

Content	Skills	Standards
Solids	Estimate volume	1.NS.2.1.i.b ~ Use safety procedures in conducting science investigations.
Liquids	Measure sounds	1.P.1.0 ~ Describe structures and properties of, and changes in, matter.
Objects that sink/float	Investigate sounds around the world	1.P.1.1 ~ Students are able to categorize objects by physical attributes such as color, size, and shape.
Solids/liquids	Sort solids	1.P.1.2 ~ Students are able to compare objects in terms of heavier or lighter.
Gases	Observe liquids	1.P.1.3 ~ Students are able to predict how common materials interact with water.
Forms of matter	Predict sink/float	1.P.1.3.i.a ~ Soluble/nonsoluble
Sounds	Identify different sounds	1.P.2.1 ~ Students are able to describe relative positions of objects.
Instruments/sounds		1.P.3.0 ~ Analyze interactions of energy and matter.
		1.P.3.1.i.a ~ Identify heat and light sources.

## Pushes and Pulls Magnets

Content	Skills	Standards
Objects and why they move	Identify cause/effect	1.P.1.1 ~ Students are able to categorize objects by physical attributes such as color, size, and shape.
Objects and the ways they move	Predict outcomes	1.P.1.2 ~ Students are able to compare objects in terms of heavier or lighter.
Various surfaces	Determine fact/fiction	1.P.2.0 ~ Analyze forces, their forms, and their effects on motions.
Simple machines	Define push/pull	1.P.2.1 ~ Students are able to describe relative positions of objects.
	Predict/record motion	1.P.2.1.i.a ~ Show how magnets can be used to make some things move without being touched.
Magnets	Measure magnetic force	1.P.2.1.i.b ~ Demonstrate ways to make objects move faster or slower or in a different direction.
Magnetic poles	Identify magnetic poles	1.S.1.0 ~ Analyze various implications/effects of scientific advancement within the environment and society.
Surfaces magnets can pull through		1.S.1.1.i.a ~ Describe ways technology makes life easier for people.

**Teacher: Core Science Grade 2**

**Year: 2008-2009**

**Course: Science Grade 2**

<b>Animals Grow and Change</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>
Animals similarities and differences	Describe how animals are alike and different.	2.L.2.2 ~ Students are able to compare life cycles of various living things.
Animal life cycles	Identify characteristics for classifying animals.  Analyze and describe the sequence of events of the life cycles of a bird and a mammal.	2.NS.2.1.i.a ~ Use scientific thinking skills of observing, communicating, classifying, and comparing.  2.NS.2.1.i.b ~ Write descriptions and/or draw pictures to represent sequences of steps, events, and observations.

  

<b>People Grow and Change</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>
How people grow	Describe the many ways people grow and change during their lives.	2.L.2.0 ~ Analyze various patterns and products of natural and induced biological change.
Bones and muscle function	Compare how people are alike and different at different stages of life.	2.L.3.0 ~ Analyze how organisms are linked to one another and the environment.
Heart and lung function	Understand how the bones and muscles work together to move the body.	2.L.3.1 ~ Students are able to describe ways that plants and animals depend on each other.
Food digestion	Explain the importance of exercise and healthful foods to keep bones and muscles healthy.  Describe how the heart and lungs	

work together to carry oxygen to all the body parts.

Describe the process of digestion.

## Habitats for Plants and Animals

Content	Skills	Standards
Habitat	Identify a habitat as a place where a plant or an animal lives and grows.	2.L.1.0 ~ Understand the fundamental structures, functions, classifications, and mechanisms found in living things.
Land Habitats		2.L.1.2 ~ Students are able to classify people and animals according to similarities and differences.
Water Habitats	Recognize that different habitats meet the needs of different plants and animals.	2.L.2.0 ~ Analyze various patterns and products of natural and induced biological change.
Animal Adaptations	Identify and describe different kinds of land environments and habitats.	2.L.3.0 ~ Analyze how organisms are linked to one another and the environment.
How plants and animals help each other	Identify and describe different kinds of water environments and habitats.	2.NS.1.0 ~ Understand the nature and origin of scientific knowledge.
	Describe different types of adaptations.	2.NS.2.0 ~ Apply the skills necessary to conduct scientific investigations.
	Recognize that adaptations enable an animal to survive.	
	Identify and describe ways in which plants and animals help each other.	
	Describe and give examples of	

food chains.

## Changes in Habitats

Content	Skills	Standards
How weather changes habitats	Explain how too little or too much rain changes habitats.	2.L.1.0 ~ Understand the fundamental structures, functions, classifications, and mechanisms found in living things.
How pollution changes environments	Identify how a fire can change a habitat.	2.L.2.0 ~ Analyze various patterns and products of natural and induced biological change.
How people help the environment	Identify the three main types of pollution.	2.L.3.0 ~ Analyze how organisms are linked to one another and the environment.
	Describe ways pollution can harm plants and animals.	2.L.3.2 ~ Students are able to associate adaptations in plants and animals in response to seasonal changes.
	Identify ways to keep the environment clean.	2.NS.1.0 ~ Understand the nature and origin of scientific knowledge.
	Give examples of ways people can make less pollution.	2.NS.1.1.i.a ~ Explore scientific contributions made by people.
		2.NS.2.0 ~ Apply the skills necessary to conduct scientific investigations.
		2.S.1.1.i.b ~ Recognize ways to recycle, reuse, renew, and reduce.
		2.S.2.1.i.b ~ Explain how scientific findings have generated solutions to various environmental and social concerns.

## Earth Long Ago

Content	Skills	Standards
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<p>Fossils</p> <p>Scientist and fossils</p> <p>Scientists and dinosaurs</p>	<p>Explain how some kinds of fossils are made.</p> <p>Describe what fossils are and where they are found.</p> <p>Describe how scientists collect and reconstruct fossils.</p> <p>Give examples of different kinds of dinosaurs.</p> <p>Describe what scientists have learned about dinosaurs.</p> <p>Recognize that all dinosaurs were not the same size.</p> <p>Recognize that scientists continue to find new information about dinosaurs.</p>	<p>2.E.1.3.i.a ~ Recognize ways fossils provide evidence about plants and animals that lived long ago.</p> <p>2.L.3.3 ~ Students are able to recognize what it means for a species to be extinct or endangered.</p> <p>2.NS.1.1.i.a ~ Explore scientific contributions made by people.</p> <p>2.S.2.0 ~ Analyze the relationships/interactions among science, technology, environment, and society.</p>
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### Earth's Resources

Content	Skills	Standards
<p>How people use rocks and soil</p> <p>How people use plants</p> <p>How people use water</p>	<p>Identify rocks and soil as natural resources that people use.</p> <p>Describe ways in which people use rocks and soil.</p> <p>Identify plants as a natural resource.</p> <p>Describe ways in which people</p>	<p>2.E.1.0 ~ Analyze the various structures and processes of the Earth system.</p> <p>2.E.2.0 ~ Analyze essential principles and ideas about the composition and structure of the universe.</p> <p>2.L.1.1 ~ Students are able to classify plants according to similarities and differences.</p> <p>2.L.2.1 ~ Students are able to describe how flowering plants go through a series of orderly changes in their life cycle.</p>

	<p>use plants.</p> <p>Recognize that living things need water to live and grow.</p> <p>Give examples of ways people use water.</p>	<p>2.S.2.1.i.a ~ Investigate and describe ways science/technology is used to solve problems.</p>
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## The Solar System

Content	Skills	Standards
<p>Stars and planets</p> <p>Day and night</p> <p>Seasons</p>	<p>Identify and compare stars and planets.</p> <p>Identify a group of stars as a constellation.</p> <p>Identify characteristics of the sun.</p> <p>Compare day and night. Describe how they occur.</p> <p>Describe how Earth orbits the sun.</p> <p>Identify the causes of seasons on Earth.</p> <p>Demonstrate how the reflection of the sun's light enables us to see the moon.</p> <p>Explain how sunlight and the moon's orbit around the Earth make the moon appear to change the shape.</p>	<p>2.E.1.0 ~ Analyze the various structures and processes of the Earth system.</p> <p>2.E.2.1.i.a ~ Identify the basic components of space.</p> <p>2.P.3.1.i.a ~ Describe ways heat can be produced.</p> <p>2.P.3.1.i.c ~ Explore sources of energy.</p> <p>2.S.1.0 ~ Analyze various implications/effects of scientific advancement within the environment and society.</p>

## Earth's Weather

Content	Skills	Standards
Weather change	Identify ways the weather can change from day to day.	2.E.1.1 ~ Students are able to describe types and patterns of weather during different seasons.
Water cycle	Recognize how the weather changes from season to season.	2.E.1.1.i.a ~ Practice reading thermometers.
Measuring weather conditions	Explain how water gets into the air.	2.E.1.2 ~ Students are able to identify and locate geological features using maps and globes.
Preparing for weather	Identify tools used to measure weather conditions.	2.E.1.3 ~ Students are able to recognize and distinguish between forms of water in the Earth system.
	Predict the weather using different kinds of clouds as indicators of weather changes.	
	Identify different weather conditions.	

## Observing and measuring matter

Content	Skills	Standards
Matter	Identify and describe properties of matter.	2.NS.2.1.i.c ~ Recognize importance of safety procedures and equipment.
Solids	Identify three forms of matter - solids liquid, and gases.	2.P.1.0 ~ Describe structures and properties of, and changes in, matter.
Liquids		
Gases	Compare solids and describe how they are alike and different.	2.P.1.1 ~ Students are able to classify solids in terms of the materials they are made of and their physical properties.

	<p>Identify two ways to measure solids.</p> <p>Identify the two properties all liquids have.</p> <p>Identify the ways to measure liquids.</p> <p>Recognize the properties of a gas.</p> <p>Identify ways to measure a gas.</p>	<p>2.P.1.2 ~ Students are able to describe visually observable properties of liquids and classify liquids by their physical properties.</p> <p>2.P.1.2.i.a ~ Explore properties of gases.</p> <p>2.P.1.3 ~ Students are able to identify mixtures of solid substances and ways to separate them.</p>
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## Changes in Matter

Content	Skills	Standards
Mixing matter	Observe how cutting, shaping, and mixing change matter.	2.P.1.1 ~ Students are able to classify solids in terms of the materials they are made of and their physical properties.
Changes in water	Describe what happens when matter is cut or mixed.	2.P.1.2 ~ Students are able to describe visually observable properties of liquids and classify liquids by their physical properties.
Changes in matter	Recognize that water can be a solid, liquid, or gas.	2.P.1.3 ~ Students are able to identify mixtures of solid substances and ways to separate them.
	Describe how water can be made to change from one state to another.	2.P.3.0 ~ Analyze interactions of energy and matter.
	Identify some changes in matter that are reversible.	2.P.3.1.i.b ~ Demonstrate how light can pass through some objects and not others.

## Forces and Motion

Content	Skills	Standards
Forces Magnets Measuring motion	<p>Recognize a force as something that pushes or pulls on an object to make it move.</p> <p>Identify that a force is used to change the location of an object and the direction it is moving in.</p> <p>Describe which poles of magnets attract and repel each other.</p> <p>Give examples of ways magnets are used.</p> <p>Recognize that weight, friction, and distance affect the force needed to move objects.</p> <p>Explain how to measure motion.</p>	<p>2.P.2.0 ~ Analyze forces, their forms, and their effects on motions.</p> <p>2.P.2.1 ~ Students are able to demonstrate how moving objects exhibit different types of motion.</p> <p>2.P.2.1.i.a ~ Explore magnetic poles.</p> <p>2.P.2.2 ~ Students are able to predict the effects of magnets on other magnets and other objects.</p>

### Hearing sound

Content	Skills	Standards
Sound How sounds vary How sound travels Different sounds	<p>Explain what makes sound.</p> <p>Identify the body parts people use to make and hear sound.</p> <p>Identify sounds as being either loud or soft.</p> <p>Identify sounds as being either high or low.</p>	<p>2.P.3.1 ~ Students are able to compare sounds in terms of high pitch, low pitch, loud and soft (volume).</p>

Recognize that sound travels through the three forms of matter: gases, liquids, and solids.

Identify animals that use sound to locate objects and to communicate with one another under water.

Describe ways to change the pitch of sound.

Explain what causes the loudness of a sound to change.

**Teacher: Core Science Grade 3**

**Year: 2008-2009**

**Course: Science Grade 3**

<b>Types of Plants</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>
Basic needs of plants Parts of a plant Simple plant Plants that have seeds Plants that do not have seeds Plants make food	Identify the four basic needs of plants.  Analyze the parts of a plant.  Compare/Contrast plants and simple plants.  Recognize the basic needs of seeds.  List ways plants reproduce.  Identify ways that seeds are spread.  Identify photosynthesis as the food-making process of plants, and recognize the role of chlorophyll.	3.L.1.1 ~ Students are able to identify the basic structures, functions, and needs of plants in relation to their environment.  3.L.3.1 ~ Students are able to describe how species depend on one another and on the environment for survival.  3.L.3.2 ~ Students are able to explain how environments support a diversity of plants and animals.

  

<b>Types of Animals</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>
Basic needs of animals	Identify the four basic needs of animals.	3.L.1.2 ~ Students are able to identify characteristic features of animals and their related functions in relation to their environment.

<p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p>	Traits of mammals	Compare/Contrast the needs of plants to the needs of animals.	3.L.1.3 ~ Students are able to describe life cycles, including growth and metamorphosis, of familiar organisms.
	Traits of birds	Identify inherited traits of some animals.	3.L.2.1 ~ Students are able to explain how animals instinctively meet basic needs in their environment.
	Traits of amphibians	Identify the 4 traits of mammals. Analyze how these traits allow them to survive.	3.L.3.1 ~ Students are able to describe how species depend on one another and on the environment for survival.
	Traits of fish	Identify the 5 traits of birds. Analyze how these traits allow them to survive.	3.L.3.3 ~ Students are able to describe ways humans impact air, water, and habitat quality.
	Traits of reptiles	Identify the 3 traits of amphibians. Analyze how these traits allow them to survive.	3.L.3.4 ~ Students are able to examine fossils and describe how they provide evidence of change in organisms.
	Animal behavior	Identify the 2 traits of fish. Analyze how these traits allow them to survive.	
	Extinction	Identify the 3 traits of reptiles. Analyze how these traits allow them to survive.	
		Recognize that animal behavior is either instinctive or learned.	
		Conclude that migration and hibernation are instinctive behaviors.	
		Justify reasons for the instinctive behavior of hibernation and migration.	
	Observe camouflage and mimicry		

	<p>as a way of protection.</p> <p>Classify animals as threatened, endangered, or extinct based on the species decreasing populations.</p> <p>Identify past and present reasons for extinction.</p> <p>Predict how we can better protect species that are threatened or endangered.</p>	
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### Where Living Things Are Found

Content	Skills	Standards
<p>Habitats within an ecosystem</p> <p>Four different types of ecosystems: Forest, Desert, Grassland, and Ocean</p>	<p>Observe and describe the habitats of organisms within an ecosystem.</p> <p>Recognize that organisms with similar needs compete with each other for resources.</p> <p>Identify some living things that make their homes in the four different types of ecosystems.</p> <p>Recognize that living things have characteristics for surviving in the different types of ecosystems.</p>	<p>3.L.1.1 ~ Students are able to identify the basic structures, functions, and needs of plants in relation to their environment.</p> <p>3.L.1.2 ~ Students are able to identify characteristic features of animals and their related functions in relation to their environment.</p> <p>3.L.2.1 ~ Students are able to explain how animals instinctively meet basic needs in their environment.</p> <p>3.L.3.1 ~ Students are able to describe how species depend on one another and on the environment for survival.</p>

### Living Things Depend on One Another

Content	Skills	Standards
<p>Energy from the sun</p> <p>Energy from food</p> <p>Characteristics for getting food</p> <p>Animals depend on one another for food and energy</p> <p>Movement of food and energy through an ecosystem</p>	<p>Recognize that energy comes from the sun.</p> <p>Conclude that all living things get energy from food.</p> <p>Identify characteristics of living things that helps them get food.</p> <p>Recognize that animals depend on plants and other animals for energy.</p> <p>Arrange organisms to show the movement of food and energy through a food chain.</p>	<p>3.L.1.2 ~ Students are able to identify characteristic features of animals and their related functions in relation to their environment.</p> <p>3.L.2.1 ~ Students are able to explain how animals instinctively meet basic needs in their environment.</p> <p>3.L.3.1 ~ Students are able to describe how species depend on one another and on the environment for survival.</p> <p>3.L.3.2 ~ Students are able to explain how environments support a diversity of plants and animals.</p>
	<p>Observe the competition of food between organisms in an ecosystem.</p> <p>Discover that there is more than one food chain in an ecosystem.</p> <p>Connect that food chains in an ecosystem can form into a food web.</p>	

**Minerals, Rocks, and Fossils**

Content	Skills	Standards
Minerals and rocks - with examples	Explain the difference between rocks and mineral.	3.E.1.1 ~ Students are able to define the difference between a rock and a mineral.  3.E.1.1.i.a ~ Examine fossils and describe how they are formed.
Layers of Earth's structure	Give examples of the uses of rocks and minerals.	3.NS.1.1.i.a ~ Identify scientific contributions.
Three types of rocks		3.NS.1.1.i.b ~ Explain science as a process involving asking and answering questions.
Uses of rocks		
Sequence of events in the rock cycle	Identify the layers of Earth's structure.	3.NS.2.1.i.a ~ Use investigations in science to acquire knowledge.
Fossil formation	Identify the three types of rocks and explain how they form.	
Different types of fossils	Describe the sequence of events in the rock cycle that can change one type of rock into another.	
Fossils show that life has changed	Describe how fossils form.  Explain the different types of fossils.  Recognize where fossils are found.  Conclude how life has changed over time.	

## Earth's Resources

Content	Skills	Standards
Resources, with examples of common ones Uses of resources Renewable and nonrenewable resources Recycling and conserving resources	Describe what resources are. Identify common resources, and show examples of how we use them. Identify resources that will never run out, as well as those that could be used up. Describe recycling, and explain how that saves resources. Discuss other ways to conserve energy.	3.E.1.2 ~ Describe how humans use Earth's natural resources. 3.NS.1.1.i.a ~ Identify scientific contributions. 3.NS.1.1.i.b ~ Explain science as a process involving asking and answering questions. 3.NS.2.1.i.a ~ Use investigations in science to acquire knowledge. 3.P.3.1 ~ Students are able to define energy and differentiate between sources of renewable and non-renewable energy. 3.S.1.1 ~ Students are able to recognize ways to recycle, reuse, and reduce consumption of natural resources. 3.S.2.1.i.a ~ Investigate how natural events and human influences can affect the survival of species. 3.S.2.1.i.b ~ Describe solutions to environmental problems.

## Earth and Its Place in the Solar System

Content	Skills	Standards
Eight planets Other bodies in the solar system, including new dwarf planets	Identify the eight planets and Earth's relation among them. Describe other bodies in the solar system, including Pluto's new classification. Show why we have seasons, and	3.E.2.1 ~ Students are able to identify the Earth as one of the planets that orbits the Sun. 3.E.2.2 ~ Students are able to recognize changes in the appearance of the Moon over time. 3.E.2.2.i.a ~ Explain the relationship between the rotation of the Earth on its axis and the day/night cycle.

Seasons	day and night.	
Day and night		
Moon and its phases	Illustrate the moon's phases.	
Eclipses	Identify causes of eclipses.	

### Changes in Matter

Content	Skills	Standards
Multiple forms of matter	Recognize that matter has multiple forms.	3.NS.1.1.i.b ~ Explain science as a process involving asking and answering questions.
Chemical changes	Observe that matter can change from one form to another.	3.NS.2.1.i.a ~ Use investigations in science to acquire knowledge.
Formation of new substances	Describe a chemical change.	3.P.1.1 ~ Students are able to describe physical properties of matter using the senses (touch, smell, etc.).
	Recognize that when two or more substance combines, a new substance may form.	3.P.1.2 ~ Students are able to use tools to relate composition to physical properties.
		3.P.1.3 ~ Students are able to demonstrate how a different substance can be made by combining two or more substances.

### Properties of Matter

Content	Skills	Standards
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Physical properties of matter Solids, liquids, and gases Evaporation Tools that gather information about mass and volume	Observe physical properties of matter. Identify matter as solid, liquid, or gas. Describe evaporation. Demonstrate how to gather information about mass and volume. Use appropriate tools to identify physical properties of matter.	3.NS.1.1.i.b ~ Explain science as a process involving asking and answering questions. 3.NS.2.1.i.a ~ Use investigations in science to acquire knowledge. 3.P.1.1 ~ Students are able to describe physical properties of matter using the senses (touch, smell, etc.). 3.P.1.2 ~ Students are able to use tools to relate composition to physical properties. 3.P.1.3 ~ Students are able to demonstrate how a different substance can be made by combining two or more substances.
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## Energy and Forces

Content	Skills	Standards
Energy moves objects Sources of energy and the different forms it can take Stored energy Energy travels as waves Energy in batteries Thermal energy Energy changes forms Machines convert energy	Demonstrate one way energy can be used to move objects. Identify sources of energy and the different forms energy can take. Compare various kinds of stored energy. Observe that energy can travel as a wave, such as sound waves. Recognize that energy moves out of a battery and into other objects. Describe how thermal energy	3.NS.1.1.i.a ~ Identify scientific contributions. 3.NS.1.1.i.b ~ Explain science as a process involving asking and answering questions. 3.NS.2.1.i.a ~ Use investigations in science to acquire knowledge. 3.P.3.1 ~ Students are able to define energy and differentiate between sources of renewable and non-renewable energy. 3.P.3.2 ~ Students are able to demonstrate how sound consists of vibrations and pitch. 3.P.3.3 ~ Students are able to identify how sound is used as a means of communication.

Heat and motion

moves as heat.

Observe that energy can change from one form to another.

Describe how machines and living things can convert stored energy into motion and heat.

Recognize that heat is sometimes produced as a waste product of motion.

**Teacher: Core Science Grade 4**

**Year: 2008-2009**

**Course: Science Grade 4**

<b>Life Science (Living Things)</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>
Vertebrates and invertebrates Adaptations of plants and animals Function of plant parts	Explain that living things are made up of one or more cells.  Recognize that animals have adaptations to help them meet their needs.  Illustrate how plants have important plant structures.  Differentiate that cells have different parts.	4.L.1.1 ~ Students are able to identify the basic systems (digestive, skeletal, muscular, nervous, respiratory, and circulatory) and major organs.  4.L.1.1.i.a ~ Primary function in the human body.  4.L.1.2 ~ Students are able to differentiate between vertebrates and invertebrates, and classify the five groups of vertebrates (mammal, reptile, amphibian, bird, and fish) based on characteristics.  4.L.2.1 ~ Students are able to identify behavioral and structural adaptations that allow a plant or animal to survive in a particular environment.  4.NS.1.1.i.a ~ Identify people who have revolutionized scientific thinking.  4.NS.1.1.i.b ~ Describe science as the process of asking and answering questions and comparing the results to what is already known.  4.NS.2.1.i.a ~ Use investigations in science to acquire knowledge.
<b>Life Science</b>		
<b>Content</b>	<b>Skills</b>	<b>Standards</b>

LIFE SCIENCE	Ecosystems	Describe how living and nonliving parts interact to form complex, diverse ecosystems.	4.L.2.2 ~ Students are able to explain how a size of a population is dependent upon the available resources within its community.
	Parts of an ecosystem		4.L.3.1 ~ Students are able to describe the flow of energy through food chains and webs.
	Communities, habitats and niches	Explore ecosystem changes.	4.NS.1.1.i.a ~ Identify people who have revolutionized scientific thinking.
	Food webs	Describe how ecosystem changes help us know more about rapid changes caused by natural disasters and by human actions.	4.NS.1.1.i.b ~ Describe science as the process of asking and answering questions and comparing the results to what is already known.
	Ecosystem changes		4.NS.2.1.i.a ~ Use investigations in science to acquire knowledge.
	South Dakota environment		4.S.1.1 ~ Students are able to describe how people continue to invent new ways of doing things, solving problems, and getting work done.
	4.S.1.2 ~ Students are able to explain how new ideas and inventions often affect people.		
		4.S.2.1.i.a ~ Identify South Dakota environmental concerns and describe possible solutions.	

Earth Science		
Content	Skills	Standards
Earth's atmosphere and wind	Describe how air masses form, move and change in predictable ways.	4.E.1.1 ~ Students are able to describe the basic stages of the water cycle.
South Dakota environment		4.E.1.2 ~ Students are able to describe how weather conditions and phenomena occur and can be predicted.
Air and weather	Observe air mass patterns in Earth's atmosphere and describe how it is essential to weather	4.E.1.2.i.a ~ Explain the use of weather instruments.

Weather predictions	predictions.	
Water cycle	Consider how sunlight interacts with air and water to drive the water cycle.	4.E.1.2.i.b ~ Identify the Earth's atmosphere, biosphere, lithosphere, and hydrosphere.
Ocean floor		4.E.2.1 ~ Students are able to describe the motions of Earth, Sun, and Moon.
Moon and Earth orbits	Relate how ocean currents and tides can be caused by interactions among the sun and moon and Earth's atmosphere and ocean water.	4.E.2.1.i.a ~ Use terminology to describe the phases of the Moon.
Motions of Earth		4.E.2.1.i.b ~ Describe relative size and position of moons, planets, and stars.
Movement of objects in the solar system		4.E.2.1.i.c ~ Identify the characteristics of the planets.
Earth and the seasons	Describe how telescopes and space probes can extend observations far out into space.	4.NS.1.1.i.a ~ Identify people who have revolutionized scientific thinking.
Solar Systems		4.NS.1.1.i.b ~ Describe science as the process of asking and answering questions and comparing the results to what is already known.
Planets	Model how the Earth and planets move.	4.NS.2.1.i.a ~ Use investigations in science to acquire knowledge.
Properties of Earth		4.S.2.1.i.a ~ Identify South Dakota environmental concerns and describe possible solutions.
Investigations		

## Forces

### Content

### Skills

### Standards

Simple Machines, Complex Machines, and Investigations

Demonstrate how a force exerted by a person interacts with a simple machine to do work. Systems of simple machines and forces can be manipulated to solve

4.NS.1.1.i.a ~ Identify people who have revolutionized scientific thinking.

Inventors and Inventions

4.NS.1.1.i.b ~ Describe science as the process of asking and answering questions and comparing the results to what is already

Invention Convention	<p>technological problems.</p> <p>Describe, explain, and demonstrate how inventions provide new ways of doing things, solving problems, and getting work done.</p> <p>Analyze how inventions affect people.</p>	<p>known.</p> <p>4.NS.2.1.i.a ~ Use investigations in science to acquire knowledge.</p> <p>4.P.2.1 ~ Students are able to demonstrate how forces act over a distance.</p> <p>4.S.1.1 ~ Students are able to describe how people continue to invent new ways of doing things, solving problems, and getting work done.</p> <p>4.S.1.2 ~ Students are able to explain how new ideas and inventions often affect people.</p>
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## Physical Science

Content	Skills	Standards
Static electricity	Recognize that sound waves are regular patterns of change in matter.	4.NS.1.1.i.a ~ Identify people who have revolutionized scientific thinking.
Electric currents		4.NS.1.1.i.b ~ Describe science as the process of asking and answering questions and comparing the results to what is already known.
Controlling current	Demonstrate that light can be reflected, refracted and absorbed by various materials.	4.NS.2.1.i.a ~ Use investigations in science to acquire knowledge.
Series and parallel circuits		4.P.1.1 ~ Students are able to describe observable physical changes and properties in matter.
Magnets	Build on the concept of electricity and magnetism as examples of energy in use.	4.P.1.2 ~ Students are able to explain how some physical properties remain the same as the mass is changed.
Forces		4.P.1.3 ~ Students are able to differentiate between the states of matter caused by changes in temperature using water.
Matter	Study the interactions among gravity, friction and masses.	
States of matter		
Physical changes of matter	Prove that magnets and electric circuits both cause motion or otherwise change their	

	<p>surroundings.</p> <p>Assess how technology uses electricity to produce light, heat, sound and motion.</p> <p>Describe structures and properties of, and changes in matter.</p> <p>Illustrate physical properties of matter.</p>	<p>4.P.2.1 ~ Students are able to demonstrate how forces act over a distance.</p> <p>4.P.3.1 ~ Students are able to identify materials as being conductors or insulators of electricity.</p> <p>4.P.3.1.i.a ~ Define parallel and series circuits.</p> <p>4.P.3.2 ~ Students are able to construct and define a simple circuit.</p> <p>4.P.3.3 ~ Students are able to use magnets, electromagnets, magnetic fields, and compasses to explore magnetic energy.</p> <p>4.P.3.3.i.a ~ Explain that electrical circuits can produce magnetic force.</p> <p>4.P.3.3.i.b ~ Demonstrate polarity using magnets and dry cells.</p>
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**Teacher: Core Science Grade 5**

**Year: 2008-2009**

**Course: Science Grade 5**

### Earth, Moon, and Beyond

Content	Skills	Standards
Earth, moon, beyond Solar System Space exploration Science and technology	Recognize the similarities and differences of Earth and the Moon.  Recognize the time-and-space relationships of the sun-Earth-moon system  Identify Earth's daily and seasonal cycles in relation to the sun.  Compare the objects in the solar system.  Identify telescopes, satellites, and space probes as instruments scientists use to study the solar system.  Identify how science and technology are advancing society.	5.E.2.1 ~ Students are able to describe the components (Sun, planets, and moons) of the solar system.  5.E.2.1.i.a ~ Describe the relative scale of the Earth to the Sun, planets, and the Moon.  5.E.2.2 ~ Students are able to explain how the Earth's rotation affects the appearance of the sky.  5.NS.1.1.i.a ~ Investigate scientific contributions of people who have revolutionized scientific thinking.  5.NS.1.1.i.b ~ Describe science as a body of knowledge and an investigative process.  5.NS.1.1.i.c ~ Describe how scientific knowledge increases and changes over time.  5.NS.2.1.i.a ~ Use investigations in science to accumulate knowledge.  5.S.1.1 ~ Students are able to identify scientific changes that have affected transportation, health, sanitation, and communication.  5.S.1.2 ~ Students are able to describe how designing a solution may have constraints.

## Changes to Earth's Surface

Content	Skills	Standards
Landforms Mountains, volcanoes, earthquakes Changes in Earth's surface Science and technology Topographic maps	Distinguish between erosion and deposition. Explain how Earth's crust is broken down into soil. Describe how water, wind, and ice change landforms. Describe the three layers of Earth. Explain how mountains form. Describe what causes volcanoes and earthquakes. Explain the theory of continental drift. Identify how science and technology are advancing society. Examine topographic maps	5.E.1.1 ~ Students are able to describe the basic structure of Earth's interior. 5.E.1.1.i.a ~ Explain the formation of geological features of the Earth through plate tectonics. 5.E.1.1.i.b ~ Describe how Earth's surface is constantly changing. 5.E.1.1.i.c ~ Examine topographical maps. 5.NS.1.1.i.a ~ Investigate scientific contributions of people who have revolutionized scientific thinking. 5.NS.1.1.i.b ~ Describe science as a body of knowledge and an investigative process. 5.NS.1.1.i.c ~ Describe how scientific knowledge increases and changes over time. 5.NS.2.1.i.a ~ Use investigations in science to accumulate knowledge. 5.S.1.2 ~ Students are able to describe how designing a solution may have constraints.

## Living Things Interact

Content	Skills	Standards
Ecosystems Energy flow	Describe interactions that occur within an ecosystem. Analyze adaptive characteristics	5.L.2.1 ~ Students are able to predict physical characteristics with family lineage. 5.L.3.1 ~ Students are able to describe how natural events and/or

Competition and survival	that result in an organism's unique niche in an ecosystem.	human influences may help or harm ecosystems.
Extinction	Identify factors that limit the number and type of organisms in an ecosystem.	5.L.3.2 ~ Students are able to analyze the roles of organisms to determine the transfer of energy using an energy pyramid model.
Science and technology	Identify the roles of producers, consumers, and decomposers in an ecosystem.	5.L.3.3 ~ Students are able to describe how interrelationships enable some organisms to survive.
Inherited traits	Describe how energy flows from one organism to another in food chains and food webs.	5.L.3.3.i.a ~ Adaptation, parasitism, mutation
	Recognize that because energy is lost as heat at each level of consumption, ecosystems must have more producers than consumers.	5.NS.1.1.i.a ~ Investigate scientific contributions of people who have revolutionized scientific thinking.
	Identify ways in which organisms are adapted to compete for resources.	5.NS.1.1.i.b ~ Describe science as a body of knowledge and an investigative process.
	Describe some mutually beneficial interactions that occur within ecosystems.	5.NS.1.1.i.c ~ Describe how scientific knowledge increases and changes over time.
	Identify trends in resource use.	5.NS.2.1.i.a ~ Use investigations in science to accumulate knowledge.
	Describe some natural and human causes of extinction.	5.S.1.1 ~ Students are able to identify scientific changes that have affected transportation, health, sanitation, and communication.
	Identify how science and technology advance society.	5.S.1.2 ~ Students are able to describe how designing a solution may have constraints.
	Identify how physical traits are	5.S.2.1.i.a ~ Describe conservation practices.

inherited

## Plant Adaptation

Content	Skills	Standards
Roots, stems, leaves	Compare characteristics of plants that improve their ability to survive in a specific environment.	5.L.1.1 ~ Students are able to describe the basic process of photosynthesis and the role of light as a source of energy in plants.
Plant reproduction	Describe how food is transported in plants.	5.L.2.2 ~ are able to describe structures and processes involved in plant reproduction.
Plant use	Describe the function of plant leaves.	5.NS.1.1.i.a ~ Investigate scientific contributions of people who have revolutionized scientific thinking.
Science and technology	Compare the adaptive characteristics of species that improve their ability to survive and reproduce in an ecosystem.	5.NS.1.1.i.b ~ Describe science as a body of knowledge and an investigative process.
	Compare life cycles of plants and animals.	5.NS.1.1.i.c ~ Describe how scientific knowledge increases and changes over time.
	Identify the role of plants in the daily diet.	5.NS.2.1.i.a ~ Use investigations in science to accumulate knowledge.
	Describe how people use plants in their daily lives.	5.S.1.1 ~ Students are able to identify scientific changes that have affected transportation, health, sanitation, and communication.
	Analyze how science and technology advance society.	5.S.1.2 ~ Students are able to describe how designing a solution may have constraints.

## Matter and Its Properties

Content	Skills	Standards
Matter States of matter Physical change of matter Elements Science and technology	<p>Recognize that matter is anything that has mass and takes up space.</p> <p>Conclude that an object's physical properties remain constant and can be used to identify it.</p> <p>Compare and classify matter according to its physical state.</p> <p>Recognize that heat is responsible for changes in the state of matter</p> <p>Identify melting and boiling points as constant temperatures at which substances change state.</p> <p>Compare a physical change and a chemical change.</p> <p>Conclude that physical and chemical properties can be used to identify substances and to separate mixtures.</p> <p>Observe that matter is conserved during both physical change and chemical reaction.</p> <p>Analyze how science and technology have advanced society.</p>	<p>5.NS.1.1.i.a ~ Investigate scientific contributions of people who have revolutionized scientific thinking.</p> <p>5.NS.1.1.i.b ~ Describe science as a body of knowledge and an investigative process.</p> <p>5.NS.1.1.i.c ~ Describe how scientific knowledge increases and changes over time.</p> <p>5.NS.2.1.i.a ~ Use investigations in science to accumulate knowledge.</p> <p>5.P.1.1 ~ Students are able to define matter on the basis of observable physical properties.</p> <p>5.P.1.1.i.a ~ Explain differences and similarities between a solution and other mixtures and changes that occur within.</p> <p>5.S.1.1 ~ Students are able to identify scientific changes that have affected transportation, health, sanitation, and communication.</p> <p>5.S.1.2 ~ Students are able to describe how designing a solution may have constraints.</p>

**Forces**

Content	Skills	Standards
Friction, magnetism, gravity Acceleration, net force Machines Science and technology	Describe what forces are and what they do.  Explain how the forces of friction, magnetism, and gravity act in our everyday lives.  Describe balanced and unbalanced forces.  Define acceleration  Calculate net force when more than one force acts on an object.  Define work and explain how it is measured.  Define power and explain how it is measured.  Describe what machines do.	5.NS.1.1.i.a ~ Investigate scientific contributions of people who have revolutionized scientific thinking.  5.NS.1.1.i.b ~ Describe science as a body of knowledge and an investigative process.  5.NS.1.1.i.c ~ Describe how scientific knowledge increases and changes over time.  5.NS.2.1.i.a ~ Use investigations in science to accumulate knowledge.  5.P.2.1 ~ Students are able to identify forces in specific situations that require objects to interact, change directions, or stop.  5.P.2.2 ~ Students are able to analyze the structure and design of simple and compound machines to determine how the machines make work easier by trading force for distance.  5.S.1.1 ~ Students are able to identify scientific changes that have affected transportation, health, sanitation, and communication.  5.S.1.2 ~ Students are able to describe how designing a solution may have constraints.

### Forms of Energy

Content	Skills	Standards
Kinetic/Potential Energy Light/ Sound Energy Thermal/Chemical Energy	Describe potential and kinetic energy.  List the various forms of energy.  Describe the characteristics of light	5.NS.1.1.i.a ~ Investigate scientific contributions of people who have revolutionized scientific thinking.  5.NS.1.1.i.b ~ Describe science as a body of knowledge and an investigative process.

<p>Science and technology</p> <p>Energy resources</p> <p>Define and describe a variety of energy resources, renewable and non renewable</p>	<p>energy and sound energy.</p> <p>Identify and compare the characteristics of light waves and sound waves</p> <p>Describe thermal energy.</p> <p>Explain how thermal energy moves.</p> <p>Describe chemical energy.</p>	<p>5.NS.1.1.i.c ~ Describe how scientific knowledge increases and changes over time.</p> <p>5.NS.2.1.i.a ~ Use investigations in science to accumulate knowledge.</p> <p>5.P.3.1 ~ Students are able to demonstrate and explain how to measure heat flow into an object.</p> <p>5.P.3.2 ~ Students are able to describe the Sun's ability to produce energy in the forms of light and heat.</p> <p>5.P.3.2.i.a ~ Describe significant characteristics of different forms of energy.</p> <p>5.P.3.2.i.b ~ Explain energy transfers and transformation of light.</p> <p>5.P.3.3 ~ Students are able to describe basic properties of light.</p> <p>5.S.1.1 ~ Students are able to identify scientific changes that have affected transportation, health, sanitation, and communication.</p> <p>5.S.1.2 ~ Students are able to describe how designing a solution may have constraints.</p> <p>5.S.2.1 ~ Students are able to explain the interrelationship of populations, resources, and environments.</p>
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