

## Academic Science Benchmarks and Science Topics Chart

Grades 9 - 12		CONCEPTS AND PROCESSES
Academic Benchmark		Possible Topics
11.A.S.1.1 Students identify activities taking place in an organism related to metabolic activities in cells.		<b>Life Systems</b>
		<ul style="list-style-type: none"> <li>Identify when a system is not functioning properly (e.g., when an individual cannot see or hear).</li> <li>Explain the stages of human aging/maturation (birth, infancy, early childhood, adolescence, adulthood, death).</li> </ul>
11.A.S.1.2. Students demonstrate the connections between natural selection and survival.		<ul style="list-style-type: none"> <li>Identify variations of offspring within the same species.</li> <li>Recognize and identify differences in appearance within a species.</li> <li>Understand adaptations of organisms</li> <li>Identify features of a particular organism that enable it to survive in its habitat.</li> <li>Observe and classify behavioral and seasonal adaptations of living things.</li> <li>Demonstrate an understanding that living things respond to their environment (e.g., if a person touches a hot object, he/she quickly removes hand.).</li> </ul>
11.A.S.1.3 Students demonstrate the inter-relationships of organisms and the ecosystem (including the ecosystem concept and competition for resources).		<ul style="list-style-type: none"> <li>Describe how organisms are dependent upon each other and upon their nonliving environment (e.g., food chain, ecosystem).</li> <li>Recognize and identify how a change in the environment can affect everything living in the environment (e.g., drought/fire – when plants die, animals do not have food).</li> <li>Demonstrate an understanding that when an area becomes overpopulated, natural resources become less available.</li> </ul>
11.A.S.1.4 Students describe a model of Earth as a closed system.		<b>Earth and Space Systems</b>
		<ul style="list-style-type: none"> <li>Identify features and weather patterns associated with catastrophic events (e.g., blizzard, tornado, flood, etc.).</li> <li>Using a simple tool (e.g., thermometer, weather vane, rain gauge) to make quantitative observations about the weather</li> </ul>
11.A.S.1.5 Students recognize the time scale involved in the gradual changes which occur during planetary evolution.		<ul style="list-style-type: none"> <li>Demonstrate an understanding that the surface of the Earth gradually changes by different processes and/or natural events (e.g., earthquakes, volcanoes, floods, erosion, etc.).</li> <li>Demonstrate an understanding that fossils provide evidence of Earth's history.</li> </ul>

## Academic Science Benchmarks and Science Topics Chart

Grades 9 - 12		CONCEPTS AND PROCESSES
Academic Benchmark		Possible Topics
11.A.S.1.6 Students distinguish between chemical and physical changes.		<b>Physical Systems</b>
		<ul style="list-style-type: none"> <li>▪ Demonstrate an understanding that combining two or more materials may result in a product that has different properties than the original materials.</li> <li>▪ Demonstrate an understanding that temperature is described by degrees (Fahrenheit, Celsius).</li> <li>▪ Demonstrate an understanding that volume is described by volume terms (e.g., teaspoon, tablespoon, cup, liter).</li> <li>▪ Demonstrate an understanding that there are appropriate units for measuring and describing mass (e.g., pounds and grams).</li> <li>▪ Demonstrate an understanding of conservation of mass/volume (e.g., a piece of paper is the same mass when flat or when crumpled up; a cup of water is the same volume whether in an 8 oz. cup or in a 16 oz. glass).</li> </ul>
11.A.S.1.7 Students describe an object in motion in terms of distance and time.		<ul style="list-style-type: none"> <li>▪ Demonstrate an understanding that a change in force will cause a change in speed and/or direction of the object.</li> <li>▪ Identify objects that need energy to function (e.g., cars need gas to go).</li> <li>▪ Describe ways in which objects get energy (e.g., changing the batteries in a CD player).</li> <li>▪ Describe transformation of forms of energy in terms of motion (e.g., fast, slow).</li> </ul>

Grades 9 - 12		SCIENCE AS INQUIRY
Academic Benchmark		Possible Topics
11.E.S.2.1 Students use science reference materials to answer science questions and present findings.		<ul style="list-style-type: none"> <li>▪ Identify resources to gain additional scientific information (e.g., web, encyclopedia, telephone book).</li> </ul>
11.E.S.2.2.a Students ask questions about objects, organisms, or events in the environment.		<ul style="list-style-type: none"> <li>▪ Pose a testable question (e.g., What makes ice melt, heat or cold?).</li> <li>▪ Ask questions to gain information (e.g., Are all leaves the same shape?).</li> <li>▪ Pose informational questions (e.g., who, what, when, where, why, how).</li> </ul>

## Academic Science Benchmarks and Science Topics Chart

Grades 9 - 12		SCIENCE AS INQUIRY
Academic Benchmark		Possible Topics
<b>11.E.S.2.2.b Students collect, organize and compare data related to a scientific question through measurement or observation given a science-based scenario using a teacher-provided graphic organizer.</b>		<ul style="list-style-type: none"> <li>▪ Use senses to make observations.</li> <li>▪ Collect information to answer a question</li> <li>▪ Indicate an awareness of collections within the environment (e.g., rocks, leaves, plants, animal families).</li> <li>▪ Identify appropriate objects to add to collections.</li> <li>▪ Identify ways to collect data (e.g., qualitative and quantitative methods).</li> <li>▪ Use a symbol to represent information/data.</li> <li>▪ Demonstrate ways to organize data.</li> <li>▪ Use appropriate tools for measurement (e.g., thermometer, scale, measuring cup).</li> <li>▪ Sort objects into categories and subcategories (e.g., living vs. nonliving).</li> <li>▪ Organize data to show patterns and trends (e.g., order, sequence).</li> <li>▪ Demonstrate an understanding that variations in data exist (e.g., differences in the height/eye color of classmates, variation in leaves).</li> <li>▪ Employ safe techniques for investigations.</li> <li>▪ Plan, set up and conduct a simple experiment (e.g., change just one thing at a time).</li> </ul>
<b>11.E.S.2.2.c Students communicate results of an investigation and make connections to scientific concepts.</b>		<ul style="list-style-type: none"> <li>▪ Demonstrate an understanding of cause and effect in scientific events (e.g., when more water is added to a full glass, the extra water will spill out).</li> <li>▪ Provide a justification for how objects were classified into groups.</li> <li>▪ Determine if the prediction is based upon experience and knowledge.</li> <li>▪ Ask questions to get more information when needed.</li> <li>▪ Make an appropriate prediction based on observation/information</li> <li>▪ Use data to construct explanation (graphs, pictures, etc.).</li> <li>▪ Describe data source for meaning (e.g., 10 shells, 5 rocks).</li> <li>▪ Determine if and how findings support or do not support the prediction.</li> <li>▪ Recognize and identify when patterns in data exist (e.g., indicate attributes or criteria for organizing data).</li> <li>▪ Recognize and identify when relationships in data exist (e.g., leaves are associated with trees).</li> <li>▪ Apply results to another situation.</li> </ul>
<b>11.E.S.2.3 Students identify safety symbols and the associated concept.</b>		<ul style="list-style-type: none"> <li>▪ Match fire extinguisher and fire exit to their locations in the classroom.</li> <li>▪ Recognize safety facts and symbols</li> </ul>

## Academic Science Benchmarks and Science Topics Chart

Grades 9 - 12		HISTORY AND NATURE OF SCIENCE IN PERSONAL AND SOCIAL DECISIONS
Academic Benchmark		Possible Topics
<b>11.E.S.3.1 Students identify how scientific information impacts personal decisions.</b>		<ul style="list-style-type: none"> <li>▪ Demonstrate an understanding that technology is human-made.</li> <li>▪ Recognize and identify examples of practical technology (e.g., computers, printers, telephone, electronic games, and electric wheelchairs).</li> <li>▪ Identify ways that a problem/need can be solved/met through the use of technology.</li> <li>▪ Identify ways in which science and technology are related (e.g., electricity to turn on computer, thermometer to measure temperature, etc.).</li> <li>▪ Identify contributions of science and technology to quality of life (e.g., how a device, such as a wheelchair, has changed over time)</li> <li>▪ Recognize and identify benefits as well as risks of technological advances (e.g., cars benefit people to travel from one place to another. A risk from cars is air pollution or dirty air from the car's exhaust.).</li> </ul>
<b>11.E.S.3.2.a Students identify and perform a task associated with a local problem regarding limited natural resources.</b>		<ul style="list-style-type: none"> <li>▪ Recognize and identify benefits as well as risks of technological advances (e.g., cars benefit people to travel from one place to another. A risk from cars is air pollution or dirty air from the car's exhaust.).</li> <li>▪ Understand that humans affect their world through technology and science</li> <li>▪ Describe a technological intervention that would improve personal quality of life.</li> <li>▪ Understand that humans affect their world through technology and science</li> </ul>
<b>11.E.S.3.2.b Students group science topics with careers in science.</b>		<ul style="list-style-type: none"> <li>▪ Identify careers related to the science/technology fields.</li> <li>▪ Describe how different careers affect the world through science and technology (e.g., doctor takes care of body, mechanic fixes cars, meteorologist helps people to prepare for the weather, etc.).</li> </ul>

## Academic Science Benchmarks and Science Topics Chart

Grades 5 - 8			CONCEPTS AND PROCESSES
Academic Benchmark			Possible Topics
<b>8.A.S.1.1 Students relate different organ systems with their specialized function.</b>			<b>Life Systems</b>
			<ul style="list-style-type: none"> <li>Identify the observable parts of the body (e.g., eyes, mouth, legs, etc).</li> <li>Describe the functions of observable parts of the body (e.g. see, breath, eat, etc).</li> <li>Identify the main, internal parts of the body (e.g., lungs, hearts, bones).</li> <li>Describe functions of internal parts of the body (e.g., provide oxygen, pump blood).</li> <li>Understand that certain parts of the body make up a subsystem (e.g., blood, veins, arteries, heart make up the circulatory system).</li> <li>Identify basic needs of living things (e.g., air, food, water, shelter and space).</li> <li>Identify how living organisms attain basic needs (e.g., breathing, eating, drinking, reproducing).</li> </ul>
<b>8.A.S.1.2 Students describe the traits offspring inherit from their parents.</b>			<ul style="list-style-type: none"> <li>Understand relationship between parents and offspring</li> <li>Recognize and identify similarities and differences between parents and offspring.</li> <li>Demonstrate an understanding that parents of one species give birth to offspring of the same species.</li> <li>Match offspring with parent(s).</li> <li>Recognize and identify the ways in which offspring are a composite of the parents (mother's eye color, father's hair texture).</li> <li>Recognize and identify characteristics that are inherited (passed down from parents).</li> </ul>
<b>8.A.S.1.3 Students describe interconnectedness of diverse organisms within an ecosystem.</b>			<ul style="list-style-type: none"> <li>Describe the parts of a food chain.</li> <li>Demonstrate an understanding of the steps of a food chain (e.g., sun, producer, consumer).</li> <li>Demonstrate an understanding that the food chain is affected by changes to other living and nonliving things in the environment.</li> <li>Describe the parts of a food web.</li> <li>Demonstrate an understanding that the food web is affected by other living and non-living things in the environment.</li> </ul>
<b>8.A.S.1.4 Students describe Earth's features in relation to other objects in the Solar System.</b>			<b>Earth and Space Systems</b>
			<ul style="list-style-type: none"> <li>Recognize and identify differences in land forms and different surfaces (mountain, valley, river, etc).</li> <li>Match earth materials to land forms (e.g., sand to beaches, rocks to mountains, water to lakes and rivers).</li> <li>Identify natural events (erosion, floods, blizzards, volcanoes, etc.).</li> <li>Label objects in the sky that can be viewed unaided (e.g., birds, the Sun, the Moon, stars, clouds, plane).</li> <li>Identify the Sun, the Moon, and stars.</li> <li>Associate the Sun with daylight and stars with twilight/evening; identify the Sun as a source of heat and light.</li> <li>Demonstrate an understanding that objects in the sky have patterns of movement (e.g., the sun appears to move across the sky).</li> <li>Identify the moon's appearance using quantitative labels (full moon, half moon, quarter moon).</li> </ul>

## Academic Science Benchmarks and Science Topics Chart

Grades 5 - 8		CONCEPTS AND PROCESSES
Academic Benchmark		Possible Topics
<b>8.A.S.1.5 Students demonstrate processes which are evidence of the formation and development of the Earth.</b>		<ul style="list-style-type: none"> <li>▪ Demonstrate an understanding that the surface of the Earth changes by different processes and/or natural events (e.g., earthquakes, volcanoes, floods, erosion, etc.).</li> <li>▪ Demonstrate an understanding that fossils provide evidence of Earth's history.</li> <li>▪ Demonstrate an understanding that the Earth has been changed by catastrophes (e.g., volcanoes, earthquakes).</li> </ul>
<b>8.A.S.1.6 Students identify physical characteristics of a substance.</b>		<p style="text-align: center;"><b>Physical Systems</b></p> <ul style="list-style-type: none"> <li>▪ Use senses to make observations about physical properties.</li> <li>▪ Use simple descriptors such as color, odor, texture, size, shape, etc., to relate information about properties of living and nonliving matter.</li> <li>▪ Describe temperature using labels such as hot/cold/warm/tepid.</li> <li>▪ Describe volume using labels such as more/less/same.</li> <li>▪ Describe mass using labels such as heavy/light.</li> <li>▪ Identify homogenous mixtures from non-homogenous mixtures (e.g., salt water is a homogenous mixture and chocolate chip cookie batter is a heterogeneous mixture).</li> <li>▪ Classify objects based on physical properties (e.g., textures, living vs. nonliving, type of object).</li> <li>▪ Use appropriate tools for measurement (e.g., thermometer, scale, measuring cup).</li> <li>▪ Demonstrate an understanding that temperature is described by degrees (Fahrenheit, Celsius).</li> <li>▪ Demonstrate an understanding that volume is described by volume terms (e.g., teaspoon, tablespoon, cup, liter).</li> <li>▪ Demonstrate an understanding that there are appropriate units for measuring and describing mass (e.g., pounds and grams).</li> <li>▪ Demonstrate an understanding of conservation of mass/volume (e.g., a piece of paper is the same mass when flat or when crumpled up; a cup of water is the same volume whether in an 8 oz. cup or in a 16 oz. glass).</li> </ul>
<b>8.A.S.1.7 Students demonstrate that pushing and pulling can change the position, direction, and motion of objects.</b>		<ul style="list-style-type: none"> <li>▪ Describe transformation of forms of energy in terms of motion (e.g., fast, slow).</li> <li>▪ Demonstrate an understanding that the position and motion of objects can be changed by pushing or pulling.</li> <li>▪ Demonstrate an understanding that objects move as a result of force.</li> <li>▪ Demonstrate an understanding that objects can move at different speeds based on the amount of force.</li> <li>▪ Demonstrate an understanding that objects can move at different speeds.</li> <li>▪ Demonstrate an understanding that objects can move at different speeds and directions based on the amount and type of force.</li> <li>▪ Demonstrate an understanding that a change in force will cause a change in speed and/or direction of the object.</li> </ul>

## Academic Science Benchmarks and Science Topics Chart

Grades 5 - 8 SCIENCE AS INQUIRY		
Academic Benchmark		Possible Topics
<b>8.E.S.2.1 Students use science reference materials to answer science questions and present findings.</b>		<ul style="list-style-type: none"> <li>Identify resources to gain additional scientific information (e.g., web, encyclopedia, telephone book).</li> </ul>
<b>8.E.S.2.2.a Students ask questions about objects, organisms, or events in the environment.</b>		<ul style="list-style-type: none"> <li>Ask questions for information based on observations</li> <li>Pose a testable question (e.g., What makes ice melt, heat or cold?).</li> <li>Ask questions to gain information (e.g., Are all leaves the same shape?).</li> <li>Pose informational questions (e.g., who, what, when, where, why, how).</li> </ul>
<b>8.E.S.2.2.b Students conduct simple investigations using simple technology and tools to collect and organize data.</b>		<ul style="list-style-type: none"> <li>Use senses to make observations.</li> <li>Collect information to answer a question</li> <li>Indicate an awareness of collections within the environment (e.g., rocks, leaves, plants, animal families).</li> <li>Identify appropriate objects to add to collections.</li> <li>Identify ways to collect data (e.g., qualitative and quantitative methods).</li> <li>Determine appropriate data to collect for a problem or situation.</li> <li>Use a symbol to represent information/data.</li> <li>Choose appropriate units of measurement.</li> <li>Use appropriate tools for measurement (e.g., thermometer, scale, measuring cup).</li> <li>Demonstrate ways to organize data.</li> <li>Sort objects into categories and subcategories (e.g., living vs. nonliving).</li> <li>Employ safe techniques for investigations.</li> <li>Set up and conduct a simple experiment (e.g., change just one thing at a time).</li> </ul>
<b>8.E.S.2.2.c Students communicate results of an investigation and match connections to daily life.</b>		<ul style="list-style-type: none"> <li>Demonstrate an understanding of cause and effect in scientific events (e.g., when more water is added to a full glass, the extra water will spill out).</li> <li>Ask questions to get more information when needed.</li> <li>Use data to construct explanation (graphs, pictures, etc.).</li> <li>Describe data source for meaning (e.g., 10 shells, 5 rocks).</li> <li>Determine if and how findings support or do not support the prediction.</li> <li>Explain how the data support findings.</li> <li>Provide a justification for how objects were classified into groups.</li> <li>Recognize and identify when relationships in data exist (e.g., leaves are associated with trees).</li> <li>Demonstrate an understanding that variations in data exist (e.g., differences in the height/eye color of classmates, variation in leaves).</li> <li>Explain the patterns and relationships in the data</li> </ul>

## Academic Science Benchmarks and Science Topics Chart

Grades 5 - 8      SCIENCE AS INQUIRY		
Academic Benchmark		Possible Topics
8.E.S.2.3 Students identify safety symbols and the associated concept.		<ul style="list-style-type: none"> <li>▪ Match fire extinguisher and fire exit to their locations in the classroom.</li> <li>▪ Match a poison hazard symbol to the term or concept of poison.</li> </ul>

Grades 5 - 8      HISTORY AND NATURE OF SCIENCE IN PERSONAL AND SOCIAL DECISIONS		
Academic Benchmark		Possible Topics
8.E.S.3.1 Students identify scientific information related to a task associated with a healthy life style choice.		<ul style="list-style-type: none"> <li>▪ Demonstrate an understanding of how environmental conditions and personal decisions can affect parts of the body (e.g., allergies, smoking, food quality, etc.).</li> <li>▪ Describe skills associated with personal health</li> <li>▪ Demonstrate knowledge of safety, avoiding injury (i.e., poisons, and dangerous situations)</li> <li>▪ Identify common illnesses and ways to keep healthy (e.g., washing hands)</li> </ul>
8.E.S.3.2.a Students identify and perform a task associated with a local problem regarding natural resources.		<ul style="list-style-type: none"> <li>▪ Recognize and identify benefits as well as risks of technological advances (e.g., cars benefit people to travel from one place to another. A risk from cars is air pollution or dirty air from the car's exhaust.).</li> <li>▪ Understand that humans affect their world through technology and science</li> </ul>
8.E.S.3.2.b Students group science topics with careers in science.		<ul style="list-style-type: none"> <li>▪ Identify careers related to the science/technology fields.</li> <li>▪ Describe how different careers affect the world through science and technology (e.g., doctor takes care of body, mechanic fixes cars, meteorologist helps people to prepare for the weather, etc.).</li> </ul>



## Academic Science Benchmarks and Science Topics Chart

Grades K - 4		CONCEPTS AND PROCESSES
Academic Benchmark		Possible Topics
4.E.S.1.1 Students demonstrate which features of living organisms serve specific functions.		<b>Life Systems</b>
		<ul style="list-style-type: none"> <li>Describe the human life cycle, including the concept of aging, sickness, health, change.</li> <li>Identify the observable parts of the body (e.g., eyes, mouth, legs, etc).</li> <li>Describe the functions of observable parts of the body (e.g. see, breath, eat, etc).</li> <li>Identify when a system is not functioning properly (e.g., when an individual cannot see or hear).</li> </ul>
4.E.S.1.2 Students describe how plants and animals resemble their parents.		<ul style="list-style-type: none"> <li>Recognize and identify similarities and differences between parents and offspring.</li> <li>Demonstrate an understanding that parents of one species give birth to offspring of the same species.</li> <li>Match offspring with parent(s).</li> </ul>
4.E.S.1.3 Students demonstrate which features of living organisms serve specific functions in survival within different habitats.		<ul style="list-style-type: none"> <li>Recognize and identify how organisms are affected by other living and nonliving things in the environment.</li> <li>Identify features of a particular organism that enable it to survive in its habitat.</li> <li>Distinguish between living and nonliving matter (e.g., leaves vs. rocks).</li> <li>Describe characteristics of living matter (including reproduction, movement, growth, response to environment).</li> <li>Describe characteristics of nonliving matter (including lack of reproduction, lack of movement, lack of growth, lack of response to environment).</li> </ul>
4.E.S.1.4 Students describe and compare observable characteristics of water, air, rocks, and soil.		<b>Earth and Space Systems</b>
		<ul style="list-style-type: none"> <li>Use appropriate qualitative labels to describe properties of earth materials (wet, hard, rough, dry, smooth).</li> <li>Distinguish among earth materials (soil, water, sand, rock).</li> <li>Recognize and identify differences in rocks (e.g., color, texture, composition).</li> <li>Recognize and identify differences in land forms and different surfaces (mountain, valley, river, etc).</li> <li>Match earth materials to land forms (e.g., sand to beaches, rocks to mountains, water to lakes and rivers).</li> </ul>
4.E.S.1.5 Students describe gradual changes to the earth's surface.		<ul style="list-style-type: none"> <li>Identify natural events (erosion, floods, blizzards, volcanoes, etc.).</li> <li>Demonstrate an understanding that the surface of the Earth changes by different processes and/or natural events (e.g., earthquakes, volcanoes, floods, erosion, etc.).</li> <li>Demonstrate an understanding that the Earth has been changed by catastrophes (e.g., volcanoes, earthquakes).</li> <li>Demonstrate an awareness of changes in weather/temperature.</li> <li>Identify types of weather.</li> <li>Use simple qualitative labels to indicate weather properties (e.g., hot, cold, wet).</li> <li>Indicate an understanding of the seasons.               <ul style="list-style-type: none"> <li>Label seasons.</li> <li>Identify types of weather related to a season.</li> </ul> </li> </ul>

## Academic Science Benchmarks and Science Topics Chart

Grades K - 4		CONCEPTS AND PROCESSES
Academic Benchmark		Possible Topics
4.E.S.1.6 Students demonstrate that heating or cooling can change water between a solid or liquid by measuring and recording different observable physical properties.		<b>Physical Systems</b>
		<ul style="list-style-type: none"> <li>▪ Demonstrate an understanding that when heat is introduced, changes in matter take place (e.g., solid to a liquid; liquid to a gas).</li> <li>▪ Identify natural sources of water (e.g., lake, river, ocean).</li> <li>▪ Identify the uses of water (e.g., bathing, drinking, cooking, toilet flushing, washing clothes, growing plants, recreation, etc.).</li> <li>▪ Associate snow, ice, hail, etc., with water.</li> <li>▪ Recognize and identify states of water (solid, liquid, gas)</li> <li>▪ Identify where water is found on the earth (e.g., ground water, rivers, lakes, springs, oceans)</li> <li>▪ Demonstrate an understanding that water flows downward.</li> <li>▪ Classify objects based on states of matter (e.g., ice vs. boiling water).</li> </ul>
4.E.S.1.7 Students demonstrate that pushing or pulling can change the position of objects.		<ul style="list-style-type: none"> <li>▪ Demonstrate an understanding that the position and motion of objects can be changed by pushing or pulling.</li> <li>▪ Demonstrate an understanding that objects move as a result of force.</li> <li>▪ Demonstrate an understanding that a change in force will cause a change in direction of the object.</li> </ul>

Grades K - 4		SCIENCE AS INQUIRY
Academic Benchmark		Possible Topics
4.E.S.2.1 Students use science reference materials to answer science questions and present findings.		<ul style="list-style-type: none"> <li>▪ Identify resources to gain additional scientific information (e.g., web, encyclopedia, telephone book).</li> </ul>
4.E.S.2.2.a Students ask questions about objects, organisms, or events in the environment.		<ul style="list-style-type: none"> <li>▪ Ask questions for information based on observations</li> <li>▪ Pose a testable question (e.g., What makes ice melt, heat or cold?).</li> <li>▪ Ask questions to gain information (e.g., Are all leaves the same shape?).</li> <li>▪ Pose informational questions (e.g., who, what, when, where, why, how).</li> </ul>

## Academic Science Benchmarks and Science Topics Chart

Grades K - 4		SCIENCE AS INQUIRY
Academic Benchmark		Possible Topics
4.E.S.2.2.b Students conduct simple investigations using simple equipment and tools to collect data.		<ul style="list-style-type: none"> <li>Use senses to make observations.</li> <li>Collect information to answer a question</li> <li>Indicate an awareness of collections within the environment (e.g., rocks, leaves, plants, animal families).</li> <li>Identify appropriate objects to add to collections.</li> <li>Employ safe techniques for investigations.</li> <li>Choose appropriate tools for measurement (e.g., thermometer, scale, measuring cup).</li> </ul>
4.E.S.2.2.c Students use data to complete simple graphs, charts, diagrams, and/or models.		<ul style="list-style-type: none"> <li>Sort objects into categories and subcategories (e.g., living vs. nonliving).</li> <li>Show a quantity.</li> <li>Apply a number label to a quantity</li> </ul>
4.E.S.2.2.d Students communicate results of an investigation.		<ul style="list-style-type: none"> <li>Provide a justification for how objects were classified into groups.</li> <li>Use data to construct explanation (graphs, pictures, etc.).</li> <li>Describe data source for meaning (e.g., 10 shells, 5 rocks).</li> </ul>
4.E.S.2.3 Students identify safety symbols and the associated concept.		<ul style="list-style-type: none"> <li>Name the danger when shown a symbol such as skull and crossbones.</li> <li>Match safety symbols with warnings such fire, poison, etc.</li> </ul>

Grades K - 4		HISTORY AND NATURE OF SCIENCE IN PERSONAL AND SOCIAL DECISIONS
Academic Benchmark		Possible Topics
4.E.S.3.1 Students demonstrate the sequence of events which link a technological advance to their environment.		<ul style="list-style-type: none"> <li>Discriminate between human-made and natural objects.</li> <li>Demonstrate an understanding that technology is human-made.</li> <li>Recognize and identify examples of practical technology (e.g., computers, printers, telephone, electronic games, and electric wheelchairs).</li> <li>Understand that humans affect their world through technology and science</li> <li>Recognize and identify scientific/technological inventions.</li> </ul>
4.E.S.3.2 Students identify and perform a task associated with a healthy life style.		<ul style="list-style-type: none"> <li>Describe skills associated with personal health</li> <li>Demonstrate knowledge of safety, avoiding injury (i.e., poisons, and dangerous situations)</li> <li>Recognize good dental and personal hygiene practices</li> <li>Name aspects of proper nutrition</li> </ul>