### **<u>Standard 1</u>: Nature of Science**

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8-9 Physical Science	Grade 8-9 Earth Science	Grade 9- 10 Biology
Goal 1.1: Understand Systems, Order, and Organization	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	3.S.1.1.A Match the parts of a system.	4.S.1.1.1.A Arrange and organize a group of related objects that form a whole.		6.S.1.1.1.A Communicate different characteristics of systems.	7.S.1.1.1.A Arrange small systems as a part of a whole system.	8-9.PS.1.1.1.A Demonstrate understanding of a system.	8-9.ES.1.1.1.A Demonstrate understanding of a system	9-10.B.1.1.1.A Demonstrate understanding of a system.
								7.S.1.1.2.A Identify small systems that contribute to the function of the whole.	8-9.P.S.1.1.2.A Use a model to display order & organization to a given system.	8-9.ES.1.1.2.A Use a model to display order & organization to a given system.	9-10.B.1.1.2.A Use a model to display order & organization to a given system.
								7.S.1.1.3.A Identify different structures of an organisms, such as body parts, tissues, or organs			
	K.S.1.2.1.A Make and communicate observations.	1.S.1.2.1.A Make and communicate observations.	2.S.1.2.1.A Make observation and collect data.	3.S.1.2.1.A Make observations, collect and record data.	4.S.1.2.1.A Make and record observations and then communicate the collected data	5.S.1.2.1.A Use observations and data to make predictions.	6.S.1.2.1.A Respond to observations and data as recorded on a chart	7.S.1.2.1.A Compare and contrast relative data.	8-9.PS.1.2.1.A Compare and contrast relative data.	8-9.ES.1.2.1.A Compare and contrast relative data.	9-10.B.1.2.1.A Compare and contrast relative data.
				3.S.1.2.3.A Attend to and/or replicate scientific models.		5.S. 1.2.2.A Identify the difference between an observation and an inference.		7.S.1.2.2.A Identify observation data to use in defendable inferences.			
					4.S.1.2.3.A Replicate or make models.	5.S. 1.2.3.A Replicate or make a model to demonstrate a concept.	6.S.1.2.3.A Replicate or make a model to explain or demonstrate a concept.	7.S.1.2.3.A Use models to explain or demonstrate a concept.	8-9.PS.1.2.2.A Use models to explain concepts or systems.	8-9.ES.1.2.2.A Use models to explain concepts or systems.	9-10.B.1.2.2.A Use models to explain concepts or systems.
									8-9.PS.1.2.3.A Develop a scientific explanation based on known data.	8-9.ES.1.2.3.A Develop a scientific explanation based on known data.	9-10.B.1.2.3.A Develop a scientific explanation based on known data.

#### **<u>Standard 1</u>: Nature of Science** (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8-9 Physical Science	Grade 8-9 Earth Science	Grade 9-10 Biology
Goal 1.3: Understand Constancy, Change, and Measurement	K.S.1.3.1.A Measure in non- standard units.	1.S.1.3.1.A Measure in non- standard units.	2.S.1.3.1.A Measure in standard or non-standard units.	3.S.1.3.1.A Measure changes that occur.	4.S.1.3.1.A Communicate observed change.	5.S.1.3.1.A Demonstrate changes that occur in systems.	6.S.1.3.1.A Demonstrate changes that occur in systems.		8-9.PS.1.3.1.A Measure changes that can occur in systems.	8-9.ES.1.3.1.A Measure changes that can occur in systems.	9-10.B.1.3.1.A Measure changes that can occur in and among systems.
								Recognize changes that	8-9.PS.1.3.2.A Respond to changes that can occur in systems.	8-9.ES.1.3.2.A Respond to changes that can occur in systems.	9-10.B.1.3.2.A Respond to changes that can occur in and among systems.
				3.S.1.3.2.A Measure in U.S. Customary System of Measurement.	3.S.1.3.2.A Measure in U.S. Customary System of Measurement.	3.S.1.3.2.A Measure in U.S. Customary System of Measurement.	6.S.1.3.2.A Measure in U.S. Customary System of Measurement or the metric system.	Make measurements using appropriate tools in the metric or U.S.	8-9.PS.1.3.3.A Measure using the metric system or U.S. Customary System of Measurement.	8-9.ES.1.3.3.A Measure using the metric system or U.S. Customary System of Measurement.	9-10.B.1.3.3.A Measure using the metric system or U.S. Customary System of Measurement.
Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State	Demonstrate the	1.S.1.4.1.A Demonstrate the concepts of yesterday, today, and tomorrow.	2.S.1.4.1.A Demonstrate the concepts of past, present, and future.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.		No objectives in Physical Science.	No objectives in Earth Science.	Reference to 7.S.3.2.1
Goal 1.5: Understand Concepts of Form and Function	No objectives at this grade level.	No objectives at this grade level.	2.S.1.5.1.A Sort objects by shape.	3.S.1.5.1.A Sort common objects by use.	4.S.1.5.1.A Communicate the relationship between shape and use.	5.S.1.5.1.A Respond how the shape or form of an object or system is frequently related to its use or function.	6.S.1.5.1.A Identifies how the shape or form of an object is frequently related to its use and/or function.		No objectives in Physical Science.	No objectives in Earth Science.	No objectives in Biology.
Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills		1.S.1.6.1.A Make and record observations.	2.S.1.6.2.A Make observations, collect, and record data.								
			2.S.1.6.1.A Respond to questions about observation.	3.S.1.6.1.A Generate questions about observations.	4.S.1.6.1.A Identify questions that can be answered by conducting scientific tests.	5.S.1.6.1.A Identify questions that can be answered by conducting scientific experiments.	6.S.1.6.1.A Identify questions that can be answered by conducting scientific experiments.	Identify a control and a variable in an	8-9.PS.1.6.1 A Identify questions that can guide scientific investigations.	8-9.ES.1.6.1 A Identify questions that can guide scientific investigations.	9-10.B.1.6.1 A Identify questions that can guide scientific investigations.
				3.S.1.6.2.A Follow steps in scientific test.	4.S.1.6.2 .A Follow steps in scientific tests.	5.S.1.6.2.A Observe change in scientific investigations using a control and a variable.	6.S.1.6.2.A Observe change in scientific investigations using a control and variables.		8-9.PS.1.6.2.A Communicate results of investigations.	8-9.ES.1.6.2.A Communicate results of investigations.	9-10.B.1.6.2.A Identify the basic components of an experiment design.

#### **<u>Standard 1</u>: Nature of Science** (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8-9 Physical Science	Grade 8-9 Earth Science	Grade 9-10 Biology
Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills (continued from previous page)			2.S.1.6.3.A Choose information for evidence.					7.S.1.6.3.A Use data in order to form conclusions.			
				3.S.1.6.3.A Use appropriate tools to gather data.	4.S.1.6.3.A Use appropriate tools to gather data.		6.S.1.6.3.A Use appropriate tools and techniques to gather and display data.			8-9.ES.1.6.3.A Select and use appropriate technology to make investigations.	9-10.B.1.6.3.A Select and use appropriate technology to make investigations.
			2.S.1.6.4.A Communicate observations.	3.S.1.6.4.A Use data for a reasonable explanation.	4.S.1.6.4.A Use data for a reasonable explanation.	5.S.1.6.4.A Use data for a reasonable explanation.	6.S.1.6.4.A Use data for a reasonable explanation or prediction.	7.S.1.6.4.A Use evidence to accept or reject a hypothesis.	8-9.PS.1.6.4.A Construct explanations and/or models using evidence.	8-9.ES.1.6.4.A Construct explanations and/or models using evidence.	9-10.B.1.6.4.A Construct explanations and/or models using evidence.
				3.S.1.6.5.A Make simple predictions based on data.	4.S.1.6.5.A Make simple predictions based on data.	5.S.1.6.5.A State a prediction or hypothesis based on observations.	6.S.1.6.5.A Test a prediction or hypothesis based on observations.				
				3.S.1.6.6.A Select reasonable explanations.	4.S.1.6.6.A Select reasonable explanations.	5.S.1.6.6.A Compare reasonable explanations and predictions.		7.S.1.6.5.A Use reasonable explanations or predictions.	8-9.PS.1.6.5.A Select alternative explanations and models.	8-9.ES.1.6.5.A Select alternative explanations and models.	9-10.B.1.6.5.A Select alternative explanations and models.
				3.S.1.6.7.A State a result of a test to others.	4.S.1.6.7.A Communicate results of tests to others.	5.S.1.6.7.A Communicate scientific procedures.	6.S.1.6.6.A Communicate scientific procedures.	7.S.1.6.6.A Communicate scientific procedures and explanations.	8-9.PS.1.6.6.A Communicate scientific procedures and explanations.	8-9.ES.1.6.6.A Communicate scientific procedures and explanations.	9-10.B.1.6.6.A Communicate scientific procedures and explanations.
									8-9.PS.1.6.7.A Compare the differences among observations.	8-9.ES.1.6.7.A Compare the differences among observation.	9-10.B.1.6.7.A Compare the differences among observations.
	K.S.1.7.1 A Use cooperation and interaction skills.	1.S.1.7.1.A Demonstrate cooperation and interaction skills.	2.S.1.7.1.A Practice cooperation and interaction skills.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives in Physical Science.	No objectives in Earth Science.	No objectives in Biology.
	K.S.1.8.1.A Follow one step instruction.	1.S.1.8.1.A Follow instructions.	2.S.1.8.1.A Follow instructions.	3.S.1.8.1.A Follow multi-step instructions.	4.S.1.8.1.A Follow multi-step instructions.	5.S.1.8.1.A Follow technical instructions.	6.S.1.8.1.A Follow technical instructions.	7.S.1.8.1.A Read and follow technical instructions.	8-9.PS.1.8.1.A Use graphs, charts, and diagrams.	8-9.ES.1.8.1.A Use graphs, charts, and diagrams.	9-10.B.1.8.1.A Use graphs, charts, and diagrams.

### **<u>Standard 2</u>: Physical Science**

Goals:	Kinderparten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8-9 Physical Science	Grade 8-9 Earth Science	Grade 9-10 Biology
Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions	K.S.2.1.1.A Use senses to sort properties of matter.	1.S.2.1.1.A Identify properties of objects.	2.S.2.1.1.A Identify properties of an object.	3.S.2.1.2.A Observe & match physical properties to solids, liquids, or gases.		5.S.2.1.1.A Create mixtures.	6.S.2.1.1.A Compare mixtures.	No objectives at this grade level.	No objectives in Physical Science.	No objectives in Earth Science.	No objectives in Biology.
					4.S.2.1.2.A Observe the physical properties of solids, liquids, and gases.	5.S.2.1.2.A Describe the physical differences among solids, liquids, and gases.	6.S.2.1.2.A Identify properties of matter.				
				3.S.2.1.1.A Use instruments to measure properties.	4.S.2.1.1.A Use instruments to measure properties.						
				3.S.2.1.3.A Observe that heating and cooling can cause changes of state in common materials.	4.S.2.1.3.A Communicate the changes caused by heating and cooling materials.		6.S.2.1.4.A Describe the effects of temperature.				
							6.S.2.1.3.A Compare density of equal volumes of a solid and a liquid.				
						5.S.2.1.3.A Observe a physical change and how it relates to physical properties.	6.S.2.1.5.A Show a physical change and how it relates to its physical properties.				
Goal 2.2: Understand Concepts of Motion and Forces	No objectives at this grade level.	1.S.2.2.1.A Observe the position and motion of objects. (ex. revolve, rotate, at rest, float, and fall)	2.S.2.2.1.A Communicate how force affects the position and motion of objects.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	6.S.2.2.1.A Observe and identify the effects of different forces (gravity and friction) on speed or movement.	No objectives at this grade level.	8-9.PS.2.2.1.A Observe motion using Newton's Laws of Motion.	No objectives in Earth Science.	No objectives in Biology.
Goal 2.3: Understand the Total Energy in the Universe is Constant	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	3.S.2.3.1.A Observe potential and kinetic energy.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	8-9.PS.2.3.1.A Show and communicate that energy can be transformed but cannot be created nor destroyed.	No objectives in Earth Science.	No objectives in Biology.
									8-9.PS.2.3.2.A Sort energy as potential and/or kinetic.		

### Standard 2: Physical Science (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8-9 Physical Science	Grade 8-9 Earth Science	Grade 9-10 Biology
Goal 2.4: Understand the Structure of Atoms	No objectives at this grade level.	8-9.PS.2.4.1.A Identify the location of protons, neutrons, and electrons.		No objectives in Biology.							
									8-9.PS.2.4.2.A Demonstrate a simple process of fission and fusion.		
									8-9.PS.2.4.3.A Identify a characteristic of an isotope		
									8-9.PS.2.4.4.A Identify matter that has basic electrical properties.		
									8-9.PS.2.4.5.A Identify matter that have magnetic properties		
Goal 2.5: Understand Chemical Reactions	No objectives at this grade level.	8-9.PS.2.5.1.A Observe and identify how chemicals react.		No objectives in Biology.							

#### **Standard 3: Biology**

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8-9 Physical Science	Grade 8-9 Earth Science	Grade 9-10 Biology
Goal 3.1: Understand the Theory of Biological Evolution	K.S.3.1.1.A Observe the characteristics of plants and animals.	1.S.3.1.1.A Observe the life cycle of a plant (seed, growth, death).	No objectives at this grade level.	and animals adapt to their environment.	4.S.3.1.1.A Communicate how plants and animals adapt to their environment.	No objectives at this grade level.	No objectives at this grade level.	7.S.3.1.1.A Communicate how natural selection explains species change over time.	No objectives in Physical Science.		9-10.B.3.1.1.A Show how a species has changed over time.
		1.S.3.1.2.A Sequence a simple life cycle of an animal (birth, development, death).			4.S.3.1.2.A Communicate the difference between vertebrate and invertebrate animals.						9-10.B.3.1.2.A Identify what happens to a species: when there is a little supply of resources or with offspring better able to survive and reproduce.
					4.S.3.1.3.A Sort into groups of vertebrates (mammal, reptiles, amphibians, birds, and fish) based on characteristics.						
Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems	K.S.3.2.1.A Sort between living and non-living things.	1.S.3.2.1.A Observe that living things need food to survive.	2.S.3.2.1.A Identify basic needs of all living things (food, shelter, water, space).	3.S.3.2.1.A Select the energy needed for a living system to survive.	No objectives at this grade level.	5.S.3.2.1.A Communicate how plants need energy from the sun.	No objectives at this grade level.	7.S.3.2.1.A Identify that energy stored in food is primarily derived from the sun.	No objectives in Physical Science.	No objectives in Earth Science.	9-10.B.3.2.1.A Show that matter tends to undergo spontaneous changes.
			2.S.3.2.2.A Match animals to their suitable habitats.	3.S.3.2.2.A Identify how energy requirements of plants and animals are different.				7.S.3.2.2.A Show how the availability of resources limits organisms.			9-10.B.3.2.2.A Show that organisms need continuous energy and matter to maintain life.
				3.S.3.2.3.A Organize a food chain.				7.S.3.2.3.A Illustrate how atoms and molecules make up living and nonliving resources in the environment.			9-10.B.3.2.3.A Identify the sun as the primary source of energy for life.
				3.S.3.2.4.A Develop a food web.				7.S.3.2.4.A Show how energy flows through the ecosystem in one direction.			9-10.B.3.2.4.A Identify that respiration involves the release of energy.

### **<u>Standard 3</u>: Biology** (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8-9 Physical Science	Grade 8-9 Earth Science	Grade 9-10 Biology
Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems (continued from previous page)											9-10.B.3.2.5 A Show how matter cycles and energy flows through a living system.
Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things		No objectives at this grade level.		6.S.3.3.1.A Identify the difference between cells, organs, organ systems and organism.	7.S.3.3.1.A Sequence the relationships of cells, tissues, organs, organ systems, and organisms.	No objectives in Physical Science.	No objectives in Earth Science.	9-10.B.3.3.1.A Identify a cell and its particular structures.			
							6.S.3.3.2.A Compare the structural differences between plant and animal cells.	7.S.3.3.2.A Label parts of plant and animal cells.			9-10.B.3.3.2.A Identify different functions of particular cell structures.
								7.S.3.3.3.A Identify different functions of particular cell structures.			9-10.B.3.3.3.A Identify that cells store information for transferring to the next generation of cells.
								7.S.3.3.4.A Describe the functions of particular cell structures.			9-10.B.3.3.4.A Identify how the role of genes plays in differentiation.
						passed from parents to		7.S.3.3.5.A Communicate how dominant and recessive traits are inherited.			

### **<u>Standard 4</u>: Earth and Space Systems**

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8-9 Physical Science	Grade 8-9 Earth Science	Grade 9-10 Biology
Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems	K.S.4.1.1.A Observe characteristics of the four seasons.	1.S.4.1.1.A Identify characteristics of the four seasons.		3.S.4.1.1.A Identify how the sun relates to the length of a day and/or the seasons on Earth.				No objectives at this grade level.	No objectives in Physical Science.		No objectives in Biology.
	K.S.4.1.2.A Sequence the seasons						6.S.4.1.2.A Illustrate the water cycle and its relationship to weather and climate.				
			2.S.4.1.1.A Identify characteristics of different weather conditions.				6.S.4.1.3.A Discuss how clouds relate to weather changes.				
										8-9.ES.4.1.2.A Identify terms used in geological time.	
						5.S.4.1.1.A Discuss how the interactions among the solid earth, oceans and atmosphere (erosion, climate, tectonics and continental drift) are connected.	6.S.4.1.1.A Identify interactions among the solid earth, oceans, atmosphere, and organisms that are connected.			8-9.ES.4.1.3 Show interactions among the solid earth, oceans, atmosphere, and organisms have changed.	
					4.S.4.1.1.A Identify basic components of our solar system (planets, sun, moon, asteroids, or comets).					8-9 ES.4.1.1.A Compare and contrast the basic components of our solar system (planets, sun, moon, asteroids, comets, meteors).	
					4.S.4.1.2.A Demonstrate how gravity affects orbits and objects.						
					4.S.4.1.3.A Explore how the Earth's tides change.						
Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	5.S.4.2.1.A Label the rock cycle.	No objectives at this grade level.	No objectives at this grade level.	No objectives in Physical Science.		No objectives in Biology.

### **<u>Standard 5</u>**: Personal and Social Perspectives; Technology

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8-9 Physical Science	Grade 8-9 Earth Science	Grade 9-10 Biology
Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced		1.S.5.1.1.A Match the characteristics of local natural environments. (playground, backyard).	2.S.5.1.1.A Sort man-made and natural environments.	3.S.5.1.1.A Recognize local environmental issues.	No objectives at this grade level.	5.S.5.1.1.A List issues for environmental studies.	6.S.5.1.1.A Identify issues for environmental studies.	No objectives at this grade level.	No objectives in Physical Science.	8-9.ES.5.1.1.A Identify environmental issues, issues such as water and air quality, hazardous waste, depletion of natural resources.	9-10.B.5.1.1.A Identifies environmental issues such as water, air, or trash.
Goal 5.2: Understand the Relationship between Science and Technology	No objectives at this grade level.	No objectives at this grade level.	2.S.5.2.1.A Explore tools that people have invented for everyday life and for scientific investigations.	Explore how technology helps	4.S.5.2.1.A Attends to discussion of tools used for space exploration and for scientific investigations.	5.S.5.2.1.A Demonstrate how science and technology are part of a student's life.	6.S.5.2.1.A Identify how science and technology are part of our society.	7.S.5.2.1.A Identify how science and technology are interrelated.	8-9.PS.5.2.1.A Show how science and technology are interrelated.		9-10.B.5.2.1.A Identifies an improvement science research has made in technology.
				3.S.5.2.2.A Order the development of tools over time.		5.S.5.2.2.A List examples of science and technology.	6.S.5.2.2.A Identify when science and technology are interrelated.	7.S.5.2.2.A Show how science advances technology.	8-9.PS.5.2.2.A Show how technology advances science.		9-10.B.5.2.2.A Show how technology advances science.
									8-9.PS.5.2.3.A Identifies different purposes for science research and technology.	8-9.ES.5.2.3.A Identifies different purposes for science research and technology.	9-10.B.5.2.3.A Identifies different purposes for science research and technology.
Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	3.S.5.3.1.A Uses methods of recycling.	No objectives at this grade level.	5.S.5.3.1.A Sort resources as renewable and nonrenewable resources.	6.S.5.3.1.A Identifies between renewable and nonrenewable resources.		No objectives in Physical Science.	renewable and	9-10.B.5.3.1A Identifies between renewable and nonrenewable resources.
								7.S.5.3.1 Identify an alternative source of energy.			