

## School Science Curriculum Map

	August/September		October	November	December
Grade KG	<p><b>Living &amp; Nonliving</b></p> <ul style="list-style-type: none"> <li>Students will demonstrate workable knowledge of things that are living and nonliving.</li> </ul>	<p><b>Animals</b></p> <p>1.01 Observe and describe the similarities and differences among animals including:</p> <ul style="list-style-type: none"> <li>Structure.</li> <li>Growth.</li> <li>Changes.</li> <li>Movement.</li> </ul> <p>1.02 Observe how animals interact with their surroundings.</p> <p>1.03 Observe the behaviors of several common animals.</p> <p>1.04 Demonstrate how to care for a variety of animals.</p> <p>1.05 Observe the similarities of humans to other animals including:</p> <ul style="list-style-type: none"> <li>Basic needs.</li> <li>Growth and change.</li> <li>Movement.</li> </ul>	<p><b>Weather</b></p> <p>2.01 Observe and report daily weather changes throughout the year.</p> <p>2.02 Identify different weather features including:</p> <ul style="list-style-type: none"> <li>Precipitation.</li> <li>Wind.</li> <li>Temperature.</li> <li>Cloud cover.</li> </ul> <p>2.03 Identify types of precipitation, changes in wind, force, direction and sky conditions.</p> <p>2.04 Observe and determine the effects of weather on human activities.</p> <p>2.05 Use common tools to measure weather.</p>	<p><b>Properties of Matter</b></p> <p>3.01 Observe and describe the properties of different kinds of objects (clay, wood, cloth, paper, other) and how they are used.</p> <p>3.02 Develop and use a vocabulary associated with the properties of materials:</p> <ul style="list-style-type: none"> <li>Color.</li> <li>Size.</li> <li>Shape.</li> <li>Texture.</li> </ul>	<p><b>Properties Of Matter</b></p> <p>3.03 Describe how look, feel, smell, taste, objects and sound using their own senses.</p> <p>3.04 Observe that objects can be described and sorted by their properties.</p> <p>3.05 Identify some common objects and organisms that are considered to be natural resources in our world.</p>
Grade 1	<p><b>Investigate the needs of a variety of different plants: air, water, light, space.</b></p> <p>1.1 Compare living and non-living things</p> <p>1.2 Investigate the needs of a variety of different animals: air, water, food, shelter, space.</p> <p>1.3 Observe the ways in which humans are similar to other organism</p> <p>1.4 Identify local environments that support the needs of common North Carolina plants and animals</p> <p>1.5 Discuss the wide variety of living things on Earth.</p>		<p><b>Investigate the needs of different animals: food, water, and shelter</b></p> <p>1.3 Observe the ways in which humans are similar to other organism</p> <p>1.4 Identify local environments that support the needs of common North Carolina plants and animals</p> <p>1.5 Discuss the wide variety of living things on Earth.</p>	<p><b>Earth's Land and water</b></p> <p>2.1 Describe and sort a variety of earth materials based on their properties: color, hardness, Shape, size.</p> <p>2.2 Describe rocks and other earth materials in more than one way using student-made rules.</p>	<p><b>Earth's land and water</b></p> <p>2.3 Observe the various components that combine to make soil.</p> <p>2.4 Compare the components of soil samples from different places.</p> <p>2.5 Explore where useful earth materials are found and how they are useful.</p>
Grade 2	<p><b>Living Things Grow and Change Plants, Animals, and People Habitats and Changes in Habitats</b></p> <p>1.01 Describe the life cycle of animals</p>		<p><b>Exploring Earth's Surface</b></p> <p>2.01 Investigate and describe how moving</p>	<p><b>Earth's Natural Resources Earth Long Ago</b></p> <p>2.05 Discuss and determine how energy from the sun</p>	<p><b>Space and Weather</b></p> <p>2.03 Describe weather using quantitative measure</p> <p>2.04 Identify &amp; use common</p>

	<p>1.02 Observe that insects need food, air, &amp; space to grow</p> <p>1.03 Observe the different stages of insect life cycle</p> <p>1.04 Compare &amp; contrast life cycles of other animals</p>	<p>air interacts with objects</p> <p>2.02 Observe the force of air pressure pushing on objects</p>	<p>warms the land, air &amp; water</p>	<p>tools to measure weather</p> <p>2.06 Observe and record weather changes over time and relate to time of day and time of the year</p>
Grade 3	N/A	<p><b>Plant Growth and Adaptations</b></p> <p>1.01 Observe and measure how the quantities and qualities of nutrients, light, and water in the environment affect plant growth.</p> <p>1.02 Observe and describe how environmental conditions determine how well plants survive and grow in a particular environment.</p> <p>1.03 Investigate and describe how plants pass through distinct stages in their life cycle including.</p> <ul style="list-style-type: none"> <li>• Growth.</li> <li>• Survival.</li> <li>• Reproduction.</li> </ul> <p>1.04 Explain why the number of seeds a plant produces depends on variables such as light, water, nutrients, and pollination.</p> <p>1.05 Observe and discuss how bees pollinate flowers.</p> <p>1.06 Observe, describe and record properties of germinating seeds.</p> <p>seeds</p>	<p><b>Soils</b></p> <p>2.01 Observe and describe the properties of soil:</p> <ul style="list-style-type: none"> <li>• Color.</li> <li>• Texture.</li> <li>• Capacity to hold water.</li> </ul> <p>2.02 Investigate and observe that different soils absorb water at different rates.</p> <p>2.03 Determine the ability of soil to support the growth of many plants, including those important to our food supply.</p> <p>2.04 Identify the basic components of soil:</p> <ul style="list-style-type: none"> <li>• Sand.</li> <li>• Clay.</li> <li>• Humus.</li> </ul> <p>2.05 Determine how composting can be used to recycle discarded plant and animal material.</p> <p>2.06 Determine the relationship between heat and decaying plant matter in a compost pile</p>	<p><b>SAT Objectives States of Matter</b></p> <p>SAT OBJ&gt;Apply and understanding of changes of matter.</p> <p>SAT OBJ&gt;Recognize the effects of changes in the states of matter.</p> <p>SAT OBJ&gt;Predict changes in the properties of matter due to the changes in the states of matter.</p> <p><b>Sound and Light</b></p> <p>SAT OBJ&gt;Apply the understanding of the behavior of light.</p> <p>SAT OBJ&gt;Predict location of moving objects by evaluating models.</p> <p>SAT OBJ&gt;Use and understanding of properties of materials to group objects.</p> <p>SAT OBJ&gt;Predict the effects of structure on the sound produced by an object.</p>
Grade 4	<p><b>Animal Behavior</b></p> <p>1.01 Observe and describe how all living and nonliving things affect the life of a particular animal including:</p> <ul style="list-style-type: none"> <li>• Other animals.</li> <li>• Plants.</li> <li>• Weather.</li> </ul>	<p><b>Animal Habitats</b></p> <p>1.03 Observe and discuss how behaviors and body structures help animals survive in a particular habitat.</p> <p>1.04 Explain and discuss how humans and other animals can adapt their behavior to live in changing habitats.</p> <p>1.05 Recognize that humans can understand themselves better by learning</p>	<p><b>Rocks &amp; Minerals</b></p> <p>2.01 Describe and evaluate the properties of several minerals.</p> <p>2.02 Recognize that minerals have a definite chemical composition and structure, resulting in specific physical properties including:</p>	<p><b>Rocks &amp; Minerals</b></p> <p>2.06 Classify rocks and rock-forming minerals using student-made rules.</p> <p>2.07 Identify and discuss different rocks and minerals in North Carolina including their role in geologic formations and distinguishing</p>

	<ul style="list-style-type: none"> <li>• Climate.</li> </ul> <p>1.02 Observe and record how animals of the same kind differ in some of their characteristics and discuss possible advantages and disadvantages of this variation.</p>	<p>about other animals.</p>	<ul style="list-style-type: none"> <li>• Hardness.</li> <li>• Streak color.</li> <li>• Luster.</li> <li>• Magnetism.</li> </ul> <p>2.03 Explain how rocks are composed of minerals. 2.04 Show that different rocks have different properties. 2.05 Discuss and communicate the uses of rocks and minerals.</p>	<p>geologic regions.</p>
Grade 5	<p style="text-align: center;"><b>Ecosystems</b></p> <p>1.01 Describe and compare several common ecosystems (communities of organisms and their interaction with the environment). 1.02 Identify and analyze the functions of organisms within the population of the ecosystem:</p> <ul style="list-style-type: none"> <li>• Producers.</li> <li>• Consumers.</li> <li>• Decomposers.</li> </ul> <p>1.03 Explain why an ecosystem can support a variety of organisms. 1.04 Discuss and determine the role of light, temperature, and soil composition in an ecosystem's capacity to support life. 1.05 Determine the interaction of organisms within an ecosystem.</p>	<p style="text-align: center;"><b>Ecosystems</b></p> <p>1.06 Explain and evaluate some ways that humans affect ecosystems.</p> <ul style="list-style-type: none"> <li>• Habitat reduction due to development.</li> <li>• Pollutants.</li> <li>• Increased nutrients.</li> </ul> <p>1.07 Determine how materials are recycled in nature.</p> <p style="text-align: center;"><b>Water Cycle</b></p> <p>3.01 Investigate the water cycle including the processes of:</p> <ul style="list-style-type: none"> <li>• Evaporation.</li> <li>• Condensation.</li> <li>• Precipitation.</li> <li>• Run-off.</li> </ul>	<p style="text-align: center;"><b>Land Forms</b></p> <p>2.01 Identify and analyze forces that cause change in landforms over time including:</p> <ul style="list-style-type: none"> <li>• Water and Ice.</li> <li>• Wind.</li> <li>• Gravity.</li> </ul> <p>2.02 Investigate and discuss the role of the water cycle and how movement of water over and through the landscape helps shape land forms. 2.03 Discuss and consider the wearing away and movement of rock and soil in erosion and its importance in forming:</p> <ul style="list-style-type: none"> <li>• Canyons.</li> <li>• Valleys.</li> <li>• Meanders.</li> <li>• Tributaries.</li> </ul> <p>2.04 Describe the deposition of eroded material and its importance in establishing landforms including:</p> <ul style="list-style-type: none"> <li>• Deltas.</li> <li>• Flood Plains.</li> </ul>	<p style="text-align: center;"><b>Land Forms</b></p> <p>2.05 Discuss how the flow of water and the slope of the land affect erosion.</p> <p>2.06 Identify and use models, maps, and aerial photographs as ways of representing landforms.</p> <p>2.07 Discuss and analyze how humans influence erosion and deposition in local communities, including school grounds, as a result of:</p>

Grade 6	<b>Unit 1</b> <b>Cycling of Matter</b>	<b>Unit 2</b> <b>Population Dynamics</b>	<b>Unit 3</b> <b>Soil</b>	<b>Unit 4</b> <b>Rocks and Minerals</b>	<b>Unit 5</b> <b>Science Fair</b>
	<p>4.01 Describe the flow of energy and matter in natural systems:</p> <ul style="list-style-type: none"> <li>● Energy flows through ecosystems in one direction, from the sun through producers to consumers to decomposers.</li> <li>● Matter is transferred from one organism to another and between organisms and their environments.</li> <li>● Water, nitrogen, carbon dioxide, and oxygen are substances cycled between the living and non-living environments.</li> </ul> <p>4.02 Evaluate the significant role of decomposers.</p> <p>4.03 Examine evidence that green plants make food.</p> <ul style="list-style-type: none"> <li>● Photosynthesis is a process carried on by green plants and other organisms containing chlorophyll.</li> <li>● During photosynthesis, light energy is converted into</li> </ul>	<p>7.01 Describe ways in which organisms interact with each other and with non-living parts of the environment:</p> <ul style="list-style-type: none"> <li>● Coexistence/Cooperation/Competition.</li> <li>● Symbiosis.</li> <li>● Mutual dependence.</li> </ul> <p>7.02 Investigate factors that determine the growth and survival of organisms including:</p> <ul style="list-style-type: none"> <li>● Light.</li> <li>● Temperature range.</li> <li>● Mineral availability.</li> <li>● Soil/rock type.</li> <li>● Water.</li> <li>● Energy.</li> </ul> <p>7.03 Explain how changes in habitat may affect organisms.</p> <p>7.04 Evaluate data related to human population growth, along with problems and solutions:</p> <ul style="list-style-type: none"> <li>● Waste disposal.</li> <li>● Food supplies.</li> <li>● Resource availability.</li> <li>● Transportation.</li> <li>● Socio-economic patterns.</li> </ul> <p>7.05 Examine evidence that overpopulation by any species impacts the environment.</p> <p>7.06 Investigate processes which, operating over long periods of time, have resulted in the diversity of plant and animal life present today:</p> <ul style="list-style-type: none"> <li>● Natural selection.</li> <li>● Adaptation.</li> </ul>	<p>3.05 Analyze soil properties that can be observed and measured to predict soil quality including:</p> <ul style="list-style-type: none"> <li>● Color.</li> <li>● Horizon profile.</li> <li>● Infiltration.</li> <li>● Soil temperature.</li> <li>● Structure.</li> <li>● Consistency.</li> <li>● Texture.</li> <li>● Particle size.</li> <li>● pH.</li> <li>● Fertility.</li> <li>● Soil moisture.</li> </ul> <p>3.06 Evaluate ways in which human activities have affected Earth's pedosphere and the measures taken to control the impact:</p> <ul style="list-style-type: none"> <li>● Vegetative cover.</li> <li>● Agriculture.</li> <li>● Land use.</li> <li>● Nutrient balance.</li> <li>● Soil as a vector.</li> </ul> <p>3.07 Assess the use of technology and information systems in monitoring lithospheric phenomenon.</p> <p>3.08 Conclude that the good health of environments and organisms requires:</p> <ul style="list-style-type: none"> <li>● Monitoring of the pedosphere.</li> <li>● Taking steps to maintain soil quality.</li> </ul> <p style="text-align: center;">Stewardship</p>	<p>3.01 Evaluate the forces that shape the lithosphere including:</p> <ul style="list-style-type: none"> <li>● Crustal plate movement.</li> <li>● Folding and faulting.</li> <li>● Deposition.</li> <li>● Volcanic Activity.</li> <li>● Earthquakes.</li> </ul> <p>3.02 Examine earthquake and volcano patterns.</p> <p>3.03 Explain the model for the interior of the earth.</p> <p>3.04 Describe the processes which form and the uses of earth materials.</p> <ul style="list-style-type: none"> <li>● Rock cycle.</li> <li>● Minerals.</li> <li>● Characteristics of rocks.</li> <li>● Economic use of rocks and minerals.</li> <li>● Value of gems and precious metals.</li> <li>● Common gems, minerals, precious metals and rocks found in N.C.</li> </ul>	<p>1.01 Identify and create questions and hypotheses that can be answered through scientific investigations.</p> <p>1.02 Develop appropriate experimental procedures for:</p> <ul style="list-style-type: none"> <li>● Given questions.</li> <li>● Student generated questions.</li> </ul> <p>1.03 Apply safety procedures in the laboratory and in field studies:</p> <ul style="list-style-type: none"> <li>● Recognize potential hazards.</li> <li>● Manipulate materials and equipment.</li> <li>● Conduct appropriate procedures.</li> </ul> <p>1.04 Analyze variables in scientific investigations:</p> <ul style="list-style-type: none"> <li>● Identify dependent and independent.</li> <li>● Use of a control.</li> <li>● Manipulate.</li> <li>● Describe relationships between.</li> <li>● Define operationally.</li> </ul> <p>1.05 Analyze evidence to:</p> <ul style="list-style-type: none"> <li>● Explain observations.</li> <li>● Make inferences and predictions.</li> <li>● Develop the relationship between evidence and explanation.</li> </ul>

	<p>stored energy which the plant, in turn, uses to carry out its life processes.</p> <p>4.04 Evaluate the significance of photosynthesis to other organisms:</p> <ul style="list-style-type: none"> <li>• The major source of atmospheric oxygen is photosynthesis.</li> <li>• Carbon dioxide is removed from the atmosphere and oxygen is released during photosynthesis.</li> <li>• Green plants are the producers of food that is used directly or indirectly by consumers.</li> </ul> <p>4.05 Evaluate designed systems for ability to enable growth of certain plants and animals.</p>				<p>1.06 Use mathematics to gather, organize, and present quantitative data resulting from scientific investigations:</p> <ul style="list-style-type: none"> <li>• Measurement.</li> <li>• Analysis of data.</li> <li>• Graphing.</li> <li>• Prediction models.</li> </ul> <p>1.07 Prepare models and/or computer simulations to:</p> <ul style="list-style-type: none"> <li>• Test hypotheses.</li> <li>• Evaluate how data fit.</li> </ul> <p>1.08 Use oral and written language to:</p> <ul style="list-style-type: none"> <li>• Communicate findings.</li> <li>• Defend conclusions of scientific investigations.</li> </ul> <p>1.09 Use technologies and information systems to:</p> <ul style="list-style-type: none"> <li>• Research.</li> <li>• Gather and analyze data.</li> <li>• Visualize data.</li> <li>• Disseminate findings to others.</li> </ul> <p>1.10 Analyze and evaluate information from a scientifically literate viewpoint by reading, hearing, and/or viewing:</p> <ul style="list-style-type: none"> <li>• Scientific text.</li> <li>• Articles.</li> </ul> <p>Events in the popular press.</p>
Grade 7	<p><b>Unit 1</b> <b>Human Body Systems</b></p> <p>4.01 Analyze how human body systems interact to</p>	<p><b>Unit 2</b> <b>Weather</b></p> <p>3.01 Explain the composition, properties and structure of the atmosphere:</p>	<p><b>Unit 3</b> <b>Motion</b></p> <p>6.03 Evaluate motion in terms of Newton's Laws:</p>	<p><b>Unit 4</b> <b>Forces</b></p> <p>6.06 Investigate and analyze the real world interactions of</p>	<p><b>Unit 5</b> <b>Science Fair</b></p> <p>1.01 Identify and create questions and hypotheses that</p>

	<p>provide for the needs of the human organism:</p> <ul style="list-style-type: none"> <li>• Musculoskeletal.</li> <li>• Cardiovascular.</li> <li>• Endocrine and Nervous.</li> <li>• Digestive and Circulatory.</li> <li>• Excretory.</li> <li>• Reproductive.</li> <li>• Respiratory.</li> <li>• Immune.</li> <li>• Nervous system.</li> </ul> <p>4.02 Describe how systems within the human body are defined by the functions it performs.</p> <p>4.03 Explain how the structure of an organ is adapted to perform specific functions within one or more systems.</p> <ul style="list-style-type: none"> <li>• Liver.</li> <li>• Heart.</li> <li>• Lung.</li> <li>• Brain</li> <li>• Stomach.</li> <li>• Kidney.</li> </ul> <p>4.04 Evaluate how systems in the human body help regulate the internal environment.</p> <p>4.05 Analyze how an imbalance in homeostasis may result from a disruption in any human system.</p> <p>4.06 Describe growth and development of the human organism.</p> <p>4.07 Explain the effects of environmental influences on human embryo development</p>	<ul style="list-style-type: none"> <li>• Mixture of gases.</li> <li>• Stratified layers.</li> <li>• Each layer has distinct properties.</li> <li>• As altitude increases, air pressure decreases.</li> <li>• Equilibrium.</li> </ul> <p>3.02 Describe properties that can be observed and measured to predict air quality:</p> <ul style="list-style-type: none"> <li>• Particulate matter.</li> <li>• Ozone.</li> </ul> <p>3.03 Conclude that the good health of environments and organisms requires:</p> <ul style="list-style-type: none"> <li>• The monitoring of air quality.</li> <li>• Taking steps to maintain healthy air quality.</li> <li>• Stewardship.</li> </ul> <p>3.04 Evaluate how humans impact air quality including:</p> <ul style="list-style-type: none"> <li>• Air quality standards.</li> <li>• Point and non-point sources of air pollution in North Carolina.</li> <li>• Financial and economic trade-offs.</li> <li>• Local air quality issues.</li> </ul> <p>3.05 Examine evidence that atmospheric properties can be studied to predict atmospheric conditions and weather hazards:</p> <ul style="list-style-type: none"> <li>• Humidity.</li> <li>• Temperature.</li> <li>• Wind speed and direction.</li> <li>• Air pressure.</li> <li>• Precipitation.</li> <li>• Tornados.</li> <li>• Hurricanes.</li> <li>• Floods.</li> <li>• Storms.</li> </ul> <p>3.06 Assess the use of technology in</p>	<ul style="list-style-type: none"> <li>• The force of friction retards motion.</li> <li>• For every action there is an equal and opposite reaction.</li> <li>• The greater the force, the greater the change in motion.</li> <li>• An object's motion is the result of the combined effect of all forces acting on the object:</li> <li>• A moving object that is not subjected to a force will continue to move at a constant speed in a straight line</li> <li>• An object at rest will remain at rest.</li> </ul> <p>6.04 Analyze that an object's motion is always judged relative to some other object or point.</p> <p>6.05 Describe and measure quantities that characterize moving objects and their interactions within a system:</p> <ul style="list-style-type: none"> <li>• Time.</li> <li>• Distance.</li> <li>• Mass.</li> <li>• Force.</li> <li>• Velocity.</li> <li>• Center of mass.</li> <li>• Acceleration</li> </ul>	<p>balanced and unbalanced forces:</p> <ul style="list-style-type: none"> <li>• Sports and recreation.</li> <li>• Transportation.</li> <li>• The human body.</li> </ul> <p>6.01 Demonstrate ways that simple machines can change force.</p> <p>6.02 Analyze simple machines for mechanical advantage and efficiency.</p>	<p>can be answered through scientific investigations.</p> <p>1.02 Develop appropriate experimental procedures for:</p> <ul style="list-style-type: none"> <li>• Given questions.</li> <li>• Student generated questions.</li> </ul> <p>1.03 Apply safety procedures in the laboratory and in field studies:</p> <ul style="list-style-type: none"> <li>• Recognize potential hazards.</li> <li>• Manipulate materials and equipment.</li> <li>• Conduct appropriate procedures.</li> </ul> <p>1.04 Analyze variables in scientific investigations:</p> <ul style="list-style-type: none"> <li>• Identify dependent and independent.</li> <li>• Use of a control.</li> <li>• Manipulate.</li> <li>• Describe relationships between.</li> <li>• Define operationally.</li> </ul> <p>1.05 Analyze evidence to:</p> <ul style="list-style-type: none"> <li>• Explain observations.</li> <li>• Make inferences and predictions.</li> <li>• Develop the relationship between evidence and explanation.</li> </ul> <p>1.06 Use mathematics to gather, organize, and present quantitative data resulting from scientific investigations:</p>
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	<p>and human health including:</p> <ul style="list-style-type: none"> <li>• Smoking.</li> <li>• Alcohol.</li> <li>• Drugs.</li> <li>• Diet.</li> </ul> <p>4.08 Explain how understanding human body systems can help make informed decisions regarding health.</p>	<p>studying atmospheric phenomena and weather hazards:</p> <ul style="list-style-type: none"> <li>• Satellites.</li> <li>• Weather maps.</li> <li>• Predicting.</li> <li>• Recording.</li> <li>• Communicating information about conditions.</li> </ul>			<ul style="list-style-type: none"> <li>• Measurement.</li> <li>• Analysis of data.</li> <li>• Graphing.</li> <li>• Prediction models.</li> </ul> <p>1.07 Prepare models and/or computer simulations to:</p> <ul style="list-style-type: none"> <li>• Test hypotheses.</li> <li>• Evaluate how data fit.</li> </ul> <p>1.08 Use oral and written language to:</p> <ul style="list-style-type: none"> <li>• Communicate findings.</li> <li>• Defend conclusions of scientific investigations.</li> </ul> <p>1.09 Use technologies and information systems to:</p> <ul style="list-style-type: none"> <li>• Research.</li> <li>• Gather and analyze data.</li> <li>• Visualize data.</li> <li>• Disseminate findings to others.</li> </ul> <p>1.10 Analyze and evaluate information from a scientifically literate viewpoint by reading, hearing, and/or viewing:</p> <ul style="list-style-type: none"> <li>• Scientific text.</li> <li>• Articles.</li> <li>• Events in the popular press.</li> </ul>
Grade 8	<p><b>Unit 1</b> <b>Periodic Table</b> 4.01 Understand that both naturally occurring and synthetic substances are chemicals. 4.02 Evaluate evidence that</p>	<p><b>Unit 2</b> <b>Chemical Reactions/Effects</b> 4.05 Identify substances based on characteristic physical properties:</p> <ul style="list-style-type: none"> <li>• Density.</li> <li>• Boiling/Melting points.</li> </ul>	<p><b>Unit 3</b> <b>Properties of Water/ Care of Water</b> 3.01 Analyze the unique properties of water including:</p> <ul style="list-style-type: none"> <li>• Universal solvent.</li> <li>• Cohesion and adhesion.</li> </ul>	<p><b>Unit 4</b> <b>Water Distribution/ Technology</b> 3.02 Explain the structure of the hydrosphere including:</p> <ul style="list-style-type: none"> <li>• Water distribution on earth.</li> </ul>	<p><b>Unit 5</b> <b>Science Fair</b> 1.01 Identify and create questions and hypotheses that can be answered through scientific investigations. 1.02 Develop appropriate</p>

	<p>elements combine in a multitude of ways to produce compounds that account for all living and nonliving substances.</p> <p>4.03 Explain how the periodic table is a model for:</p> <ul style="list-style-type: none"> <li>• Classifying elements .</li> <li>• Identifying the properties of elements.</li> </ul> <p>4.04 Describe the suitability of materials for use in technological design:</p> <ul style="list-style-type: none"> <li>• Electrical Conductivity.</li> <li>• Density.</li> <li>• Magnetism.</li> <li>• Solubility.</li> <li>• Malleability.</li> </ul>	<ul style="list-style-type: none"> <li>• Solubility.</li> <li>• Chemical reactivity.</li> <li>• Specific heat.</li> </ul> <p>4.06 Describe and measure quantities related to chemical/physical changes within a system:</p> <ul style="list-style-type: none"> <li>• Temperature.</li> <li>• Volume.</li> <li>• Mass.</li> <li>• Precipitate.</li> <li>• Gas production.</li> </ul> <p>4.07 Identify evidence supporting the law of conservation of matter.</p> <ul style="list-style-type: none"> <li>• During an ordinary chemical reaction matter cannot be created or destroyed.</li> <li>• In a chemical reaction, the total mass of the reactants equals the total mass of the products mass of the products.</li> </ul> <p>4.08 Identify evidence that some chemicals may contribute to human health conditions including:</p> <ul style="list-style-type: none"> <li>• Cancer.</li> <li>• Autoimmune disease.</li> <li>• Birth defects.</li> <li>• Heart disease.</li> <li>• Diabetes.</li> <li>• Learning and behavioral disorders.</li> <li>• Kidney disease.</li> <li>• Asthma.</li> </ul> <p>4.09 Describe factors that determine the effects a chemical has on a living organism including:</p> <ul style="list-style-type: none"> <li>• Exposure.</li> <li>• Potency.</li> <li>• Dose and the resultant concentration of chemical in the organism.</li> </ul>	<ul style="list-style-type: none"> <li>• Polarity.</li> <li>• Density and buoyancy.</li> <li>• Specific heat.</li> </ul> <p>3.07 Describe how humans affect the quality of water:</p> <ul style="list-style-type: none"> <li>• Point and non-point sources of water pollution in North Carolina.</li> <li>• Possible effects of excess nutrients in North Carolina waters.</li> <li>• Economic trade-offs.</li> <li>• Local water issues.</li> </ul> <p>3.08 Recognize that the good health of environments and organisms requires:</p> <ul style="list-style-type: none"> <li>• Monitoring of the hydrosphere.</li> <li>• Water quality standards.</li> <li>• Methods of water treatment.</li> <li>• Maintaining safe water quality. Stewardship</li> </ul>	<ul style="list-style-type: none"> <li>• Local river basin.</li> <li>• Local water availability.</li> </ul> <p>3.03 Evaluate evidence that Earth's oceans are a reservoir of nutrients, minerals, dissolved gases, and life forms:</p> <ul style="list-style-type: none"> <li>• Estuaries.</li> <li>• Marine ecosystems.</li> <li>• Upwelling.</li> <li>• Behavior of gases in the marine environment.</li> <li>• Value and sustainability of marine resources.</li> <li>• Deep ocean technology and understandings gained.</li> </ul> <p>3.04 Describe how terrestrial and aquatic food webs are interconnected.</p> <p>3.05 Analyze hydrospheric data over time to predict the health of a water system including:</p> <ul style="list-style-type: none"> <li>• Temperature.</li> <li>• Dissolved oxygen.</li> <li>• pH.</li> <li>• Nitrates.</li> <li>• Turbidity.</li> <li>• Bio-indicators.</li> </ul> <p>3.06 Evaluate technologies and information systems used to monitor the hydrosphere.</p>	<p>experimental procedures for:</p> <ul style="list-style-type: none"> <li>• Given questions.</li> <li>• Student generated questions.</li> </ul> <p>1.03 Apply safety procedures in the laboratory and in field studies:</p> <ul style="list-style-type: none"> <li>• Recognize potential hazards.</li> <li>• Manipulate materials and equipment.</li> <li>• Conduct appropriate procedures.</li> </ul> <p>1.04 Analyze variables in scientific investigations:</p> <ul style="list-style-type: none"> <li>• Identify dependent and independent.</li> <li>• Use of a control.</li> <li>• Manipulate.</li> <li>• Describe relationships between.</li> <li>• Define operationally.</li> </ul> <p>1.05 Analyze evidence to:</p> <ul style="list-style-type: none"> <li>• Explain observations.</li> <li>• Make inferences and predictions.</li> <li>• Develop the relationship between evidence and explanation.</li> </ul> <p>1.06 Use mathematics to gather, organize, and present quantitative data resulting from scientific investigations:</p> <ul style="list-style-type: none"> <li>• Measurement.</li> <li>• Analysis of data.</li> <li>• Graphing.</li> </ul>
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		<ul style="list-style-type: none"> <li>● Individual susceptibility.</li> <li>● Possible means to eliminate or reduce effects.</li> </ul> <p>4.10 Describe risks and benefits of chemicals including:</p> <ul style="list-style-type: none"> <li>● Medicines.</li> <li>● Food preservatives.</li> <li>● Crop yield.</li> <li>● Sanitation.</li> </ul>			<ul style="list-style-type: none"> <li>● Prediction models.</li> </ul> <p>1.07 Prepare models and/or computer simulations to:</p> <ul style="list-style-type: none"> <li>● Test hypotheses.</li> <li>● Evaluate how data fit.</li> </ul> <p>1.08 Use oral and written language to:</p> <ul style="list-style-type: none"> <li>● Communicate findings.</li> <li>● Defend conclusions of scientific investigations.</li> </ul> <p>1.09 Use technologies and information systems to:</p> <ul style="list-style-type: none"> <li>● Research.</li> <li>● Gather and analyze data.</li> <li>● Visualize data.</li> <li>● Disseminate findings to others.</li> </ul> <p>1.10 Analyze and evaluate information from a scientifically literate viewpoint by reading, hearing, and/or viewing:</p> <ul style="list-style-type: none"> <li>● Scientific text.</li> <li>● Articles.</li> </ul> <p>Events in the popular press</p>
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