

COMPONENT	OBJECTIVES	COMPETENCY
<p>I The Nature of Science as Inquiry</p>	<ol style="list-style-type: none"> 1. Construct an appropriate data table for organizing data. Make a table containing vertical columns for the manipulated variable. Subdivide the column for the dependent variable to reflect the number of trials. (SC.H.1.1.4) 2. Construct a graph with a curved line and describe the relationship before and after the curve changes direction. (SC.H.1.1.4) 3. Develop a specific problem statement that clearly defines the following conditions: variables that will be changed or manipulated and the measurable outcome(s) to be investigated. (SC.H.1.3.5) 4. Select appropriate attire to ensure personal protection (aprons, eye protection, cover for hair and clothes) when preparing, conducting, and concluding a science experiment. <ol style="list-style-type: none"> 1. Research contributions to science made by members of diverse cultures and ethnic groups. (SC.H.3.3.5) 2. Design a futuristic invention which extends a recent discovery that benefits society. 	<p>A. After using the science process skills in hands-on individual and group investigations, the student will: a) conduct a single manipulated variable experiment using the scientific method b) communicate both orally and in writing the conclusions derived from the investigation and, c) explain how these results are related to real life situations (application).</p> <p>B. After conducting research concerning contributions in science made by members of diverse cultures and ethnic groups, the student will design a potential futuristic invention that extends a present day discovery to benefit society. (SC.H.1.3.6)</p>
<p>II Life Science</p>	<ol style="list-style-type: none"> 1. Based on a variety of activities, give examples of how cells are the fundamental unit of life, that most organisms are composed of single cells, and that other organisms, including humans, are multicellular. 2. Describe the many functions that cells carry on to sustain life, including growth, division, taking in nutrients to provide energy for the work that cells do, and make the materials that a cell or an organism needs. 	<p>A. After using the science process skills, the student will communicate examples of how structure and function in organisms work together.</p>

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<p>III Earth and Space Science</p>	<ol style="list-style-type: none"> 3. Based upon activities and observations, describe how different types of cells are specialized to carry out different functions in multicellular organisms, including types of tissues, organs, and organ systems. 4. Identify and describe the human body systems and how structures and functions are related. (SC.F.1.2.1) 1. Describe the interrelationship among cells, tissues, and organs in the human body. (SC.F.1.3.3) 2. Observe and identify that the structural basis of most organisms is the cell and that most organisms are single cells, while some, including humans, are multicellular. (SC.F.1.3.2) 3. Describe the importance of the processes that green plants use carbon dioxide, water, and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction. (SC.G.1.2.3) 1. Observe a model and describe how the crust of the earth is made of plates and how the movements of the plates can cause major changes in the earth's crust. (SC.D.1.4.2) 2. Construct models and label plans of land forms including mountains, valleys, plains, plateaus, hills, deserts, and the ocean floor. (SC.D.1.2.4) 3. Simulate fossilization processes and classify fossils according to the Geologic Time Table. (SC.F.2.3.4) 	<ol style="list-style-type: none"> B. After using the science process skills, the student will observe and communicate an understanding that living things are made from cells and that cells are responsible for growth. (SC.F.1.3.2) A. After using the science process skills and models, the student will demonstrate how different forces produce changes on the earth's surface. (SC.D.1.4.2)

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<p>IV Physical Science</p>	<p>4. Interpret data and describe how earthquakes, volcanoes, and other forces build up the earth's surface. (SC.D.1.2.5)</p> <p>1. Research ways in which the oceans influence weather and climate. (SC.D.1.1.3)</p> <p>2. Explain the relationship between weather and ocean currents. (SC.D.1.1.3)</p> <p>3. Describe how technological devices (satellites, submersibles, sonar, decompression chambers, etc.) have enabled scientists to gather data and formulate hypotheses concerning oceanography. (SC.H.3.4.2)</p> <p>1. Demonstrate that heat can be produced in many ways, such as burning, rubbing, or mixing one substance with another.</p> <p>2. Demonstrate that heat can move from one object to another by conduction.</p> <p>1. Demonstrate that light travels in straight lines and can be reflected from plain or curved mirrors.</p> <p>2. Use light rays to demonstrate that light rays can change directions (be refracted) when transmitted through different substances such as air and water.</p> <p>3. Investigate differences between convex and concave lenses.</p>	<p>B. After using the science process skills, the student will describe that water, which covers the majority of the earth's surface, circulates through the crust, oceans, and atmosphere in what is known as the "water cycle." Water evaporates from the earth's surface, rises and cools as it moves to higher elevations, condenses as rain or snow, and falls to the surface where it collects in lakes, oceans, soil, and in rocks underground. (SC.D.1.1.3)</p> <p>A. After using the science process skills, the student will demonstrate that heat can be produced in many ways, such as burning, rubbing, or mixing one substance with another. Heat can move from one object to another by conduction.</p> <p>B. After using the science process skills and by conducting investigations, demonstrate that light travels in a straight line until it strikes an object. Light can be reflected by a mirror, refracted by a lens, or absorbed by the object. (SC.B.1.3.1)</p>

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<p>V Interaction of Society and the Environment</p>	<ol style="list-style-type: none"> 4. Demonstrate that white light is composed of colors by using a prism. 5. Classify objects as translucent, opaque, and transparent. (SC.B.1.1.2) 1. Investigate the principle that an object may move in a straight line at a constant speed, speed up, slow down, or change direction dependent on net force acting on the object. (SC.C.2.2.2) 2. Investigate the principle that the more massive an object is, the less effect a given force has. (SC.C.2.2.3) 3. Describe examples of how the forces of gravity, magnetism, and electricity operate simple machines. (SC.C.2.2.1) 1. Research quality standards related to the use of soil, water, and air. Natural environments may contain substances (for example, radon and lead) that are harmful to human beings. Maintaining environmental health involves establishing or monitoring quality standards related to use of soil, water, and air. 2. Brainstorm safety precautions recommended for safe living. The potential for accidents and the existence of hazards imposes the need for injury prevention. Safe living involves the development and use of safety precautions and the recognition of risk in personal decisions. Injury prevention has personal and social dimensions. 	<ol style="list-style-type: none"> C. After using the science process skills by conducting investigations, demonstrate how the motion of an object can be described by its position, direction of motion, and speed. (SC.C.1.2.1) A. After using the science process skills by conducting investigations, develop an understanding of hazards, resources and environments. (SC.E.1.2.0)

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<p>VI Science and Technology Design</p>	<ol style="list-style-type: none"> 1. Identify Appropriate Problems for Technological Design. Identify a specific technological need, consider its various aspects, and talk to different potential users or beneficiaries, realizing how cultural backgrounds and beliefs of different groups can affect the criteria for a suitable product. (SC.H.3.3.5) 2. Design A Solution Or Product. Make and compare different proposals in the light of selected criteria and consider constraints-such as cost, time, tradeoffs, and materials needed. Communicate ideas with drawings and simple models. (SC.H.3.3.5) 3. Implement A Proposed Design. Organize materials and other resources, plan the work, make good use of group collaboration where appropriate, choose suitable tools and techniques, and work with appropriate measurement methods to ensure adequate accuracy. (SC.H.3.3.5) 4. Evaluate Completed Technological Designs Or Products. Use criteria relevant to the original purpose or need, consider a variety of factors that might affect acceptability and suitability for intended users or beneficiaries, and develop measures of quality with respect to such criteria and factors. Suggest improvements and, for the products, try proposed modifications. (SC.H.3.3.5) 5. Communicate The Process Of Technological Design. Review and describe any completed piece of work and identify the stages of problem identification, solution design, implementation, and evaluation. (SC.H.3.3.5) 6. Recognize that technological designs have constraints, are not perfect, have intended benefits and unintended consequences. (SC.H.3.3.5) 	<p>A. Collaboratively design and carry out a technology plan that is a solution or a product to an identified problem and communicate the results of the project. (SC.H.3.3.5)</p>

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<p>VII Comprehensive Health</p>	<ol style="list-style-type: none"> 1. Research how scientists and engineers often work in teams with different individuals doing different things that contribute to the results. This understanding focuses primarily on teams working together and secondarily, on the combination of scientist and engineer teams. (SC.H.3.3.5) 2. By research, identify scientists of various ethnic groups who are engaged in a variety of scientific and technological work. (SC.H.3.3.5) 3. Describe and list some of the tools used by specific science professionals. Tools help scientists make better observations, measurements, and equipment for investigations. They help scientists see, measure, and do things that they could not otherwise see, measure, and do. (SC.H.3.3.5) <ol style="list-style-type: none"> 1. Demonstrate an understanding of safety and security as basic needs of humans. Safety involves freedom from danger, risk, or injury. Security involves feelings of confidence and lack of anxiety and fear. Student understandings include following safety rules for home and school, preventing abuse and neglect, avoiding injury, knowing whom to ask for help, and when and how to say no. (Refer to Health Curriculum and the Human Growth and Development Curriculum for specific objectives) 2. Demonstrate an understanding of the concept that individuals have some responsibility for their own health. Students should engage in personal care, dental hygiene, cleanliness, and exercise, that will maintain and improve health. Understandings include how communicable diseases, such as colds, are transmitted and some of the body's defense mechanisms that prevent or overcome illness. (Refer to AIDS Curriculum and the Health Education Curriculum for specific objectives) 	<ol style="list-style-type: none"> B. Collaboratively research the roles of people of diverse cultures and ethnic groups in solving problems and inventing new tools and techniques. (SC.H.3.3.5) <ol style="list-style-type: none"> A. After utilizing the components of the Human Growth and Development, Health, Prevention of HIV/AIDS, and Substance Abuse Curriculums, the student will develop and promote a healthy lifestyle.

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	<p>3. Demonstrate an understanding of how different substances can damage the body and how it functions. Such substances include tobacco, alcohol, over-the-counter medicines, and illicit drugs. Demonstrate an understand that some substances, such as prescription drugs, can be beneficial, but that any substance can be harmful if used inappropriately. (Refer to the Substance Abuse Prevention Curriculum for specific objectives)</p>	