

Enduring Understanding # 1: Scientific inquiry affords all learners opportunities to make observations, pose questions, develop hypotheses, design and conduct investigations, and analyze data to draw conclusions. Students will understand that...
K-8
1.1 Questioning: Scientists use observations to pose questions about the world around them.
1.2 Investigating: Scientists use an inquiry process to find answers to questions.
1.3 Data Collection & Analyzing: Scientists collect, measure, analyze, and organize their data in logical ways as part of a scientific process.
1.4 Communicating: Scientists routinely communicate and collaborate with others in an attempt to build knowledge and understanding.

Scope and Sequence of Understandings

Enduring Understanding # 2: Exploring systems, order, and organizations in our natural and designed world are integral to understanding the scientific disciplines and their interdependence. Students will understand that...				
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4
2.1 Everything is a part of a system. 2.2 Animals and plants react to the conditions of their environment. 2.3 Living things have needs.	2.1 Plants are part of environmental systems. 2.2 Plants have needs. 2.3 Plants have different growing parts. 2.4 Plants have life cycles.	2.1 Living things are part of small and large systems. 2.2 Systems are changed by other systems. 2.3 Living things have life cycles and vary according to species and habitat.	2.1 Plants and animals are organisms. 2.2 There are specific stages in life cycles.	2.1 The human body is made up of different systems. 2.2 Each system in the human body has its own form and function.

<p>2.4 Materials have many observable properties including texture, odor, weight, color, and the ability to react with other substances.</p> <p>2.5 Objects can be described and sorted by the properties of materials from which they are made.</p> <p>2.6 Objects are made from one or more materials.</p>	<p>2.5 Objects can be balanced in many ways.</p> <p>2.6 Counterweights can be used to help balance objects.</p> <p>2.7 Some objects and systems exhibit rotational motion.</p> <p>2.8 Pushing or pulling changes the motion of an object.</p> <p>2.9 The amount and position of mass affects the rotational and rolling motion of objects.</p>	<p>2.4 Matter exists in three fundamental states (solid, liquid, and gas).</p>	<p>2.3 Measurement in the areas of length, mass, temperature and volume are necessary in science.</p> <p>2.4 Metrics are a globally accepted unit of measurement.</p>	<p>2.3 Magnets have certain observable and predictable properties.</p> <p>2.4 Electricity in circuits can provide energy.</p> <p>2.5 Magnetism and electricity are related forms of energy.</p>
<p>2.7 Weather changes daily and over the seasons.</p>	<p>2.10 Rocks and soil have a variety of properties.</p> <p>2.11 Rocks and soil are an integral part of the Earth's natural resources.</p> <p>2.12 Soil is a mixture of materials.</p>	<p>2.5 Weather systems are impacted by various systems.</p> <p>2.6 Air takes up a space and interacts with other systems.</p>	<p>2.5 Earth is composed of different minerals.</p> <p>2.6 These minerals have different characteristics that can be identified and classified.</p>	<p>2.6 Water which covers most of the earth moves through the earth, oceans, and atmosphere in the water cycle.</p>

Scope and Sequence of Understandings

<p>Enduring Understanding # 2: Exploring systems, order, and organizations in our natural and designed world are integral to understanding the scientific disciplines and their interdependence. Students will understand that...</p>			
Grade 5	Grade 6	Grade 7	Grade 8
<p>2.1 Variables need to be controlled and manipulated in fair experiments.</p> <p>2.2 The motion of an object can be described by its position, direction of motion and speed.</p> <p>2.3 Motion can be measured and represented on a graph.</p>	<p>2.1 Biological and physical systems influence and react to changes.</p> <p>2.2 Ecosystems constantly change and adapt</p> <p>2.3 Living things interact with biotic and abiotic components of their environments</p>	<p>2.1 Living things are systematically classified.</p> <p>2.2 Cells are the basic unit of structure.</p> <p>2.3 Plant and animal cells have distinct differences.</p> <p>2.4 Cells are the basic unit of function.</p>	<p>2.1 All living systems are interdependent and can be altered by natural events and cycles as well as human "footprints".</p> <p>2.2 Humans are composed of cells, tissues, organs, and organ systems.</p> <p>2.3 Genetics is the study of how traits are passed on.</p>
<p>2.4 People are capable of creating simple machines that make work easier.</p>	<p>2.4 Matter can have many forms</p> <p>2.5 Energy is a fundamental part of all physical and chemical changes.</p> <p>2.6 Chemistry is the study of how substances react with other substances.</p>	<p>2.5 Matter moves in predictable ways.</p> <p>2.6 There is a relationship between force and motions using simple machines.</p> <p>2.7 Energy comes in many forms and allows work to be done.</p>	<p>2.4 Matter can be classified as an element, compound or a mixture.</p> <p>2.5 Matter exists in various states which are determined by the movement of the matter's particles.</p> <p>2.6 Electricity and magnetism are caused by the behavior of atomic particles.</p> <p>2.7 Electrons flow in a</p>

			<p>predictable path.</p> <p>2.8 The atom is the fundamental unit of structure and function of matter.</p> <p>2.9 The Periodic Table of Elements is a tool to show the relationships among elements.</p>
2.5 Food contains several nutrient groups which contribute to healthful nutrition.	2.7 Forces on earth are constantly changing the geological features.	2.8 Weather and climate affect all living things on earth. 2.9 Meteorologists collect and analyze and interpret weather conditions.	

Scope and Sequence of Understandings

<p>Enduring Understanding # 3: Both contemporary and historical scientific understandings inform technological, ethical, cultural and life decisions.</p> <p>Students will understand that...</p>				
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4
<p>3.1 Tools are used to help with scientific investigations.</p> <p>3.2 There are many ways to communicate scientific information.</p>	<p>3.1 Tools have always been a part of our world.</p> <p>3.2 Safety is important</p>	<p>3.1 Tools have always been a part of our world.</p> <p>3.2 Safety is important.</p>	<p>3.1 Technology can help or harm the environment. -Technology can either be a tool or a result of scientific investigation.</p> <p>3.2 Investigations must be conducted safely.</p>	<p>3.1 Historical scientific information has changed as new technologies have changed the study of science.</p>
<p>3.3 It is an ethical responsibility to recycle our natural resources</p>	<p>3.3 It is our ethical responsibility to take care of the Earth.</p>	<p>3.3 Scientists respect the environment.</p>	<p>3.3 Doing possible harm in scientific investigation requires ethical questioning.</p>	<p>3.2 Scientific investigation requires the highest level of ethical consideration in both design and communication.</p>
<p>3.4 People from many cultures including Montana American Indians have helped the world.</p>	<p>3.4 People from many cultures including Montana American Indians have included science practices in their everyday lives.</p>	<p>3.4 Respect for the earth is important from a scientific and cultural perspective.</p>	<p>3.4 Scientific investigation can result in cultural or life changes.</p>	<p>3.4 Many cultures throughout history have had many and varied understandings of science.</p>

Scope and Sequence of Understandings

Enduring Understanding # 3: Both contemporary and historical scientific understandings inform technological, ethical, cultural and life decisions. Students will understand that...			
Grade 5	Grade 6	Grade 7	Grade 8
3.1 Technology changes our ability to understand our world.	3.1 Technology changes our ability to understand our world.	3.1 Scientific observations and interpretations are influenced by culture and diversity.	3.1 Scientific observations and interpretations are influenced by culture and diversity.
3.2 Ethical decisions and scientific understanding impact one another.	3.2 Scientific understanding informs ethnic life decisions.	3.2 Scientific knowledge and technological advances occur in response to natural inquiry.	3.2 Scientific knowledge and technological advances occur in response to natural inquiry.
3.3 Past and present diverse cultures have contributed to today's science.		3.3 Past and present scientific discoveries have ethical implications.	3.3 Past and present scientific discoveries have ethical implications.