

	<b>Science as Inquiry</b>
<b>1.1</b>	<b>The student will demonstrate abilities necessary to do the processes of scientific inquiry.</b>
1.1.1	The student identifies questions that can be answered through scientific investigations.
1.1.2	The student designs and conducts scientific investigations safely using appropriate tools, mathematics, technology, and techniques to gather, analyze, and interpret data.
1.1.3	The student identifies the relationship between evidence and logical conclusions.
1.1.4	The student communicates scientific procedures, results and explanations.
<b>1.2</b>	<b>The student will apply different kinds of investigations to different kinds of questions.</b>
1.2.1	The student develops questions and adapts (frames) the inquiry process to guide the appropriate type of investigation.
1.2.2	The student differentiates between qualitative and quantitative data in an investigation.
<b>1.3</b>	<b>The student will analyze how science advances through the interaction of new ideas, scientific investigations, skepticism, and examinations of evidence of varied explanations.</b>
1.3.1	The student after completing an investigation, generates alternative methods of investigation and/or further questions for inquiry.
1.3.2	The student evaluates the work of others to determine evidence which scientifically supports or contradicts the results, identifying faulty reasoning or conclusions that go beyond evidence and/or are not supported by data.
	<b>Physical Science</b>
<b>2.1</b>	<b>The student will observe, compare, and classify properties of matter.</b>
2.1.1	The student identifies and communicates properties of matter (including but not limited to: phases of matter, boiling point, solubility, and density).
2.1.2	The student distinguishes components of various types of mixtures and categorizes chemicals.
<b>2.2</b>	<b>The student will observe, measure, infer, classify changes in properties of matter.</b>

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2.2.1	The student understands the relationship of atoms to elements and elements to compounds.
2.2.2	The student measures and graphs the effects of temperature on matter.
<b>2.3</b>	<b>The student will investigate motion and forces.</b>
2.3.1	The student identifies the forces that act on an object (e.g. gravity and friction).
2.3.2	The student describes, measures, and represents data on a graph showing the motion of an object (position, direction of motion, speed).
2.3.3	The student recognizes and describes examples of Newton's Laws of Motion.
2.3.4	The student investigates how simple machines multiply force at the expense of distance.
<b>2.4</b>	<b>The student will understand and demonstrate the transfer of energy.</b>
2.4.1	The student understands that when work is done energy may transform from one form to another, including mechanical, heat, light, sound, electrical, chemical, and nuclear energy, yet is conserved.
2.4.2	The student observes and communicates how light (electromagnetic) energy interacts with matter: transmitted, reflected, refracted, and absorbed.
2.4.3	The student understands that heat energy can be transferred from hot to cold by radiation, convection, and conduction.
	<b>Life Science</b>
<b>3.1</b>	<b>The student will model structures of organisms and relate functions to the structures.</b>
3.1.1	The student understands that organisms are composed of one or more cells and compares organisms composed of single cells with organisms that are multi-cellular.
3.1.2	The student relates the structure of cells, tissues, organs, organ systems, and whole organisms to their functions and concludes that breakdowns in structure or function may be caused by disease, damage, heredity, or aging.
<b>3.2</b>	<b>The student will understand the role of reproduction and heredity for all living things.</b>
3.2.1	The student differentiates between asexual and sexual reproduction of organisms.
3.2.2	The student understands how hereditary information of each cell is passed from one generation to the next.

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3.2.3	The student infers that the characteristics of an organism result from heredity and interactions with the environment.
<b>3.3</b>	<b>The student will describe homeostasis, the regulation and balance of internal conditions in response to a changing external environment.</b>
3.3.1	The student understands that internal and/or environmental conditions affect an organism's behavior.
<b>3.4</b>	<b>The student will identify and relate interactions of populations of organisms within an ecosystem.</b>
3.4.2	The student traces the energy flow from the sun (source of radiant energy) to producers (via photosynthesis - chemical energy) to consumers and decomposers in food webs.
3.4.3	The student identifies limiting factors which contribute to the growth, decline, and survival of each species.
<b>3.5</b>	<b>The student will observe the diversity of living things and relate their adaptations to their survival or extinction.</b>
3.5.1	The student concludes that species of animals, plants, and microorganisms may look dissimilar on the outside but have similarities in internal structures, developmental characteristics, chemical processes, and genomes.
3.5.2	The student understands that adaptations of organisms (changes in structure, function, or behavior that accumulate over successive generations) contribute to biological diversity.
3.5.3	The student associates extinction of a species with environmental changes and insufficient adaptive characteristics.

	<b>Earth and Space Science</b>
<b>4.1</b>	<b>The student will understand that the structure of the Earth system is continuously changing due to earth's physical and chemical processes.</b>
4.1.1	The student identifies properties of the solid earth, the oceans and fresh water, and the atmosphere.
4.1.2	The student models Earth's cycles, constructive and destructive processes, and weather systems.
<b>4.2</b>	<b>The student will understand past and present Earth processes and their similarity.</b>

4.2.1	The student understands that there are similarities between present Earth processes (including movement of lithospheric plates, constructive and destructive forces, and changes in atmospheric conditions) and historical events from the past; occasional catastrophes like a major volcanic eruptions or the impact of a large meteorite have also affected the history of the Earth.
<b>4.3</b>	<b>The student will identify and classify stars, planets, and other solar system components.</b>
4.3.1	The student compares and contrasts the characteristics of stars, planets, moons, comets, and asteroids.
4.3.2	The student models spatial relationships of the earth/moon/planets/sun system to scale.
4.3.3	The student identifies past and present methods used to explore space.
<b>4.4</b>	<b>The student will model motions and identify forces that explain Earth phenomena.</b>
4.4.1	The student demonstrates and models object/space/time relationships that explain phenomena such as the day, the month, the year, seasons, phases of the moon, eclipses and tides.
4.4.2	The student understands the effect of the angle of incidence of solar energy striking Earth's surface on the amount of heat energy absorbed at Earth's surface.
	<b>Science and Technology</b>
<b>5.1</b>	<b>The student will demonstrate abilities of technological design.</b>
5.1.1	The student evaluates problems to see if they can be properly solved using technology, devise an answer or product to solve the problem, use the answer or product, test its effectiveness, and share the answer or product using various means of communication.
<b>5.2</b>	<b>The student will develop understandings of the similarities, differences, and relationships in science and technology.</b>
5.2.1	The student compares the work of research scientists with that of applied scientists and technologists.
5.2.2	The student evaluates benefits, risks, limitations and trade-offs of technological solutions.
5.2.3	The student identifies contributions to science and technology by many people and many cultures.
	<b>Science in Personal and Environmental Perspectives</b>

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<b>6.1</b>	<b>The student will understand scientific knowledge relative to personal health.</b>
6.1.1	The student identifies individual nutrition, exercise, and rest needs based on science and uses a scientific approach to thinking critically about personal health, lifestyle choices, risks and benefits.
<b>6.2</b>	<b>The student will understand the impact of human activity on resources and environment.</b>
6.2.1	The student investigates the effects of human activities on the environment and bases decisions on knowledge of benefits and risks.
<b>6.3</b>	<b>The student will understand that natural hazards are dynamic examples of earth processes which cause us to evaluate risks.</b>
6.3.1	The student recognizes patterns of natural processes that may cause natural hazards and human activities that may contribute to natural hazards.
6.3.2	The student evaluates the risks involved with a natural hazard and identify appropriate actions in response to a natural hazard.
	<b>History and Nature of Science</b>
<b>7.1</b>	<b>The student will develop scientific habits of mind.</b>
7.1.1	The student practices intellectual honesty, demonstrates skepticism appropriately, displays open mindedness to new ideas, and bases decisions on evidence
<b>7.2</b>	<b>The student will research contributions to science throughout history.</b>
7.2.1	The student recognizes that new knowledge leads to new questions and new discoveries, replicates historic experiments to understand principles of science, and relates contributions of men and women to the fields of science.