

<p><u>Science</u></p>	
<p>Properties and Principles of Matter and Energy</p>	
	<p>The students will be able to:</p> <ul style="list-style-type: none"> ▪ Recognize how changes in state (i.e., freezing/melting, condensation/evaporation) provide evidence that matter is made of particles too small to be seen. ▪ Classify matter as a solid, a liquid, or a gas, as it exists at room temperature, using physical properties (i.e., volume, shape, ability to flow). ▪ Predict the effect of heat energy on the physical properties of water as it changes to and from a solid, liquid, or gas (i.e., freezing/melting, evaporation/condensation). ▪ Recognize the mass of water remains constant as it changes state (as evidenced in a closed container).
<p>Properties and Principles of Force and Motion</p>	
	<p>Work and Simple Machines</p> <p>The students will be able to:</p> <ul style="list-style-type: none"> ▪ Identify the forces acting on a load and use a spring scale to measure the weight (resistance force) of the load. ▪ Describe how friction affects the amount of force needed to do work over different surfaces or through different media. ▪ Explain how work affects an object (force applied and distance moved) (No formula calculations at this level). ▪ Recognize simple machines change the amount of effort force and/or direction of force. ▪ Compare the measures of effort force (measured using a spring scale to the nearest Newton) needed to lift a load with and without the use of simple machines. ▪ Identify the simple machines in common tools and household items.

	<ul style="list-style-type: none"> ▪ Design and construct a machine, using materials and/or existing objects, which can be used to perform a task (assess locally).
<p>Characteristics and Interactions of Living Organisms</p>	
	<p>Classification of Plants and Animals The students will be able to:</p> <ul style="list-style-type: none"> ▪ Compare structures (e.g., wings vs. fins vs. legs; gills lungs; feathers vs. hair vs. scales) that serve similar functions for animals belonging to different vertebrate classes. ▪ Explain how similarities are the basis for classification. ▪ Distinguish between plants (which use sunlight to make their own food) and animals (which must consume energy rich food). ▪ Classify vertebrate animals into classes (amphibians, birds, reptiles, mammals, fish) based on their characteristics. ▪ Identify plants or animals using simple dichotomous keys. ▪ Recognize the major life processes carried out by the major systems of plants and animals (e.g., support, reproductive, digestive, transport/circulatory, excretory, response) (Do not assess naming of organs within each system or explanation of the processes carried out by those systems).
<p>Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere and Hydrosphere)</p>	
	<p>Water Cycle and Weather The student will be able to:</p> <ul style="list-style-type: none"> ▪ Recognize the Sun as the primary source of energy for temperature change on Earth. ▪ Classify major bodies of surface water (e.g., rivers, lakes, oceans, glaciers) as fresh or salt

	<p>water, flowing or stationary, large or small, solid or liquid, surface or groundwater.</p> <ul style="list-style-type: none"> ▪ Relate the type of water body to the process by which it was formed. ▪ Recognize the atmosphere is composed of a mixture of gases, water, and minute particles. ▪ Describe and trace the path of water as it cycles through the hydrosphere, geosphere, and atmosphere (i.e., the water cycle: evaporation, condensation, precipitation, surface runoff/groundwater flow). ▪ Identify the different forms water can take (e.g., snow, rain, sleet, fog, clouds, dew) as it moves through the water cycle. ▪ Identify and use appropriate tools (i.e., thermometer, anemometer, wind vane, hygrometer, barometer, rain gauge, satellite images, weather maps) to collect weather data (i.e., temperature, wind speed and direction, relative humidity, air pressure, precipitation, cloud type and cover). ▪ Recognize and summarize relationships between weather data (e.g., temperature and time of day, cloud cover and temperature, wind direction and temperature) collected over a period of time. ▪ Explain how major bodies of water are important natural resources for human activity (e.g., food, recreation, habitat, irrigation, solvent, transportation). ▪ Describe how human needs and activities (e.g., irrigation, damming of rivers, waste treatment, sources of drinking water) have affected the quantity and quality of major bodies of fresh water. ▪ Propose solutions to problems related to water quality and availability that result from human activity.
<p>Composition and Structure of the Universe and the Motion of the Objects</p>	

<p>Within It</p>	
	<p>Solar System The students will be able to:</p> <ul style="list-style-type: none"> ▪ Recognize light can be transferred from the source to the receiver (eye) through space in straight lines. ▪ Recognize how an object (e.g., moon, mirror, objects in a room) can only be seen when light is reflected from that object to the receiver (eye). ▪ Recognize the Earth is one of several planets within a solar system that orbits the Sun. ▪ Recognize the moon orbits the Earth. ▪ Recognize planets look like stars and appear to move across the sky among the stars. ▪ Describe physical features of the planet Earth that allows life to exist (e.g., air, water, temperature) and compare these to the physical features of the Sun, the moon, and other planets. ▪ Sequence images of the lit portion of the moon seen from Earth as it cycles day-to-day in about a month in order of occurrence (Do NOT assess cause of moon phases). ▪ Recognize the Earth rotates once every 24 hours. ▪ Relate changes in the length and position of a shadow to the time of day and apparent position. ▪ Recognize the Earth rotates once every 24 hours. ▪ Relate changes in the length and position of a shadow to the time of day and apparent position of the Sun in the sky, as determined by Earth's rotation. ▪ Relate the apparent motion of the Sun, moon, and stars in the sky to the rotation of the Earth (Do not assess apparent motion of polar constellations).
<p>Scientific Inquiry and General Science Principles</p>	

Fifth Grade

The students will be able to:

- Formulate testable questions and explanations (hypotheses).
- Recognize the characteristics of a fair and unbiased test.
- Conduct a fair test to answer a question.
- Make suggestions for reasonable improvements or extensions of a fair test.
- Make qualitative observations using the five senses.
- Determine the appropriate tools and techniques to collect data.
- Use a variety of tools and equipment to gather data (e.g., hand lenses, magnets, thermometers, metric rulers, balances, graduated cylinders, spring scales).
- Measure length to the nearest centimeter, mass to the nearest gram, volume to the nearest milliliter, temperature to the nearest degree Celsius, weight to the nearest Newton.
- Compare amounts/measurements.
- Judge whether measurements and computation of quantities are reasonable.
- Use quantitative and qualitative data as support for reasonable explanations.
- Use data as support for observed patterns and relationships, and to make predictions to be tested.
- Evaluate the reasonableness of an explanation.
- Analyze whether evidence and scientific principles support proposed explanations.
- Communicate the procedures and results of investigations and explanations through oral presentations, drawings and maps, data tables, graphs (bar, single line, pictograph), and writings.
- Research biographical information about various scientists and inventors from different gender and ethnic backgrounds, and describe how their work contributed to science and technology
- Identify a question that was asked, or could be asked, or a problem that needed to be solved

Fifth Grade

	<p>when given a brief scenario (fiction or nonfiction of people working alone or in groups solving everyday problems or learning through discovery).</p> <ul style="list-style-type: none">▪ Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member
Impact of Science, Technology and Human Activity	
	<p>The students will be able to:</p> <ul style="list-style-type: none">▪ Describe how new technologies have helped scientists make better observations and measurements for investigations (e.g., telescopes, electronic balances, electronic microscopes, x-ray technology, computers, ultrasounds, computer probes such as thermometers).▪ Identify how the effects of inventions or technological advances (e.g., complex machinery, technologies used in space exploration, satellite imagery, weather observation and prediction, communication, transportation, robotics, tracking devices) may be helpful, harmful, or both (assess locally).