

**Grades 5 & 6 – Science Curriculum
Student Friendly**

	Grade 5- Student Friendly	Grade 6 –Student Friendly
LS1:5-6:1.1 Identify ways in which living things can be grouped and organized, such as taxonomic groups of plants, animals and fungi.	I can use taxonomy groups to organize living things, based on their shared characteristics.	I can use taxonomy groups to organize living things, based on their shared characteristics.
LS1:5-6:1.2 Categorize organisms into kingdoms that are currently recognized according to their shared characteristics. Differentiate between living and nonliving things, and categorize objects in each group, using the significant observable characteristics they share, such as color, shape and size. (INACCURATE: Organisms are categorized based on shared DNA characteristics, regardless of color, shape or size.)	I can classify living and nonliving things.	I can classify living and nonliving things.
LS1:5-6:2.1 Recognize that all living things are composed of cells, and explain that while many organisms are single celled, such as yeast, others, including humans, are multi-cellular.	I can group organisms into single cell or multi-cellular groups.	I can group organisms into single cell or multi-cellular groups.
LS1:5-6:2.2 Explain that the way in which cells function is similar in all organisms.	I am able to explain the cells function in all living things.	I am able to explain the cells function in all living things.
LS1:5-6:2.3 Recognize that cells use energy, obtained from food, to conduct the functions necessary to sustain life, such as cell growth.	I will explain how cells use food to get energy to complete its functions.	I will explain how cells use food to get energy to complete its functions.
LS1:5-6:2.4 Recognize and describe the hierarchical organization of living systems, including cells, tissues, organs, organ systems, whole organisms, and ecosystems.	I can organize systems of living things.	I can organize systems of living things.

<p>LS1:5-6:2.5 Explain that multi-cellular organisms have specialized cells, tissues, organs and organ systems that perform certain necessary functions, including digestion, respiration, reproduction, circulation, excretion, movement, control and coordination and protection from disease.</p>	<p>I can examine relationships between all tissues, organs, and systems.</p>	<p>I can examine relationships between all tissues, organs, and systems.</p>
<p>LS1:5-6:2.6 Recognize that the human cells found in tissues and organs are similar to those of other animals, but somewhat different from cells found in plants.</p>	<p>I can compare plant and animal cells and name the similarities and differences.</p>	<p>I can compare plant and animal cells and name the similarities and differences.</p>
<p>LS1:5-6:3.1 Explain that cells repeatedly divide to make more cells for growth and repair.</p>	<p>I am able to explain cell division.</p>	<p>I am able to explain cell division.</p>
<p>LS1:5-6:3.2 Explain that the same genetic information is copied in each cell of a new organism.</p>	<p>The same genetic information is copied in each new cell.</p>	<p>The same genetic information is copied in each new cell.</p>
<p>LS1:5-6:3.3 Explain that all living things reproduce in order to continue their species.</p>	<p>In order to continue their species, I recognize that living things reproduce.</p>	<p>In order to continue their species, I recognize that living things reproduce.</p>
<p>LS2:5-6:1.1 Identify and describe the factors that affect the number and types of organisms an ecosystem can support, including the resources that are available, the range of temperatures, the composition of the soil, disease, the threat of predators, and competition from other organisms.</p>		<p>I can show you and describe all of the biotic and abiotic factors that make up an ecosystem.</p>
<p>LS2:5-6:1.2 Explain that most microorganisms do not cause disease and that many are beneficial to the environment.</p>	<p>I can compile ways in which microorganisms are beneficial to the environment.</p>	<p>I can compile ways in which microorganisms are beneficial to the environment.</p>
<p>LS2:5-6:2.1 Describe how energy is transferred through food webs in an ecosystem, and explain the roles and relationships between producers.</p>		<p>I can show you how energy moves through food webs in an ecosystem.</p>
<p>LS2:5-6:2.2 Recognize that one of the most general distinctions among organisms is between plants, which use sunlight to make their own food, and animals, which consume energy-rich foods.</p>		<p>I know the difference between producers and consumers.</p>

<p>LS2:5-6:2.3 Describe the process of photosynthesis and explain that plants can use the food they make immediately or store it for later use.</p>		<p>I can explain photosynthesis and how plants can use their food right away or save it for a long time.</p>
<p>LS2:5-6:2.4 Recognize that energy, in the form of heat, is usually a byproduct when one form of energy is converted to another, such as when living organisms transform stored energy to motion.</p>		<p>I know that when organisms use energy they make heat</p>
<p>LS2:5-6:3.1 Define a population as all individuals of a species that exist together at a given place and time and explain that all populations living together in a community, along with the physical factors with which they interact, compose an ecosystem.</p>		<p>I can define an organism, population and community. I can show you how they all fit into an ecosystem.</p>
<p>LS2:5-6:3.2 Identify and describe the ways in which organisms interact and depend on one another in an ecosystem, using food webs.</p>		<p>I can show you the ways that organisms interact with one another in an ecosystem and throughout a food web.</p>
<p>LS2:5-6:3.3 Explain how insects and various other organisms depend on dead plant and animal matter for food, and describe how this process contributes to the system.</p>		<p>I can explain how insects and other organisms depend on dead biotic factors for food. I also can describe how this helps a food web in an ecosystem.</p>
<p>LS3:5-6:1.1 Provide examples of how all organisms, including humans, impact their environment and explain how some changes can be detrimental to other organisms.</p>		<p>I can show you different ways that humans affect the environment, good and bad.</p>
<p>LS3:5-6:1.2 Explain how changes in environmental conditions can affect the survival of individual organisms and the entire species.</p>		<p>I can explain how changes in the environment can affect how well organisms live.</p>
<p>LS3:5-6:2.1 Describe the fundamental concepts related to biological evolution, such as biological adaptations and the diversity of species.</p>	<p>I can trace a species biological evolution.</p>	<p>I can trace a species biological evolution.</p>

<p>LS3:5-6:3.1 Recognize that there are genetic variations among individuals in groups of organisms and provide examples of ways these variations affect the survival of an organism.</p>	<p>I can identify genetic variations made by organisms to insure their survival.</p>	<p>I can identify genetic variations made by organisms to insure their survival.</p>
<p>LS3:5-6:3.2 Recognize that only organisms that are able to reproduce can pass on their genetic information to the next generation.</p>	<p>In order to create future generations, a species must reproduce.</p>	<p>In order to create future generations, a species must reproduce.</p>
<p>LS5:5-6:1.1 Recognize that an agricultural system is designed to maximize the use of all the elements in the system, including using plants for food, oxygen, for the filtration of air and water, and for making compost.</p>		<p>I know that agricultural systems make the most use of all of the elements in their ecosystem, including plants, oxygen, water, air and compost.</p>
<p>LS5:5-6:2.1 Demonstrate the appropriate use of tools, such as thermometers, probes, microscopes and computers to gather, analyze and interpret scientific and medical data.</p>	<p>I am able to use a variety of tools to gather, analyze, and interpret information.</p>	<p>I am able to use a variety of tools to gather, analyze, and interpret information.</p>
<p>LS5:5-6:3.4 Identify and describe some of the processes and systems used to grow food in New Hampshire, including irrigation, pest control, and harvesting.</p>	<p>I can identify systems and processes used to grow food in New Hampshire.</p>	<p>I can identify systems and processes used to grow food in New Hampshire.</p>
<p>LS5:5-6:4.1 Understand that some form of science is used in most jobs/careers, and that some jobs/careers specifically require knowledge of Life science.</p>	<p>I can identify the use of science in many careers and jobs.</p>	<p>I can identify the use of science in many careers and jobs.</p>

Physical Science GLE	Grade 5- Student Friendly	Grade 6 –Student Friendly
PS1:5-6:1.1 Explain that matter is composed of minute particles called atoms, and explain that all substances are composed of atoms, each arranged into different groupings.		I can explain that all matter is made up of atoms and that those atoms are grouped in a certain way.
PS1:5-6:1.2 Identify elements as substances that contain only one kind of atom, and explain that elements do not break down by normal laboratory reactions, such as heating, exposure to electric current, and reaction to acid.		I can point out things that are made up of only one type of atom. I can also explain why elements can't be broken apart by normal laboratory experiments.
PS1:5-6:1.3 Recognize that over 100 elements exist and identify the periodic table as a tool for organizing the information about them.		I can recognize over 100 different elements. I can use the Periodic Table to find information about them.
PS1:5-6:2.1 Classify elements according to their common properties, such as highly reactive metals, less reactive metals, highly reactive non-metals and almost non-reactive gases.		I can group elements based on their similarities.
PS1:5-6:2.2 Identify substances by their physical and chemical properties, such as magnetism, conductivity, density, solubility, boiling and melting points.		I can use that knowledge to help identify things.
PS1:5-6:2.3 Differentiate between weight and mass.		I know the difference between weight and mass.
PS1:5-6:2.4 Identify energy as a property of many substances.		I know that energy is a part of all substances.
PS2:5-6:1.1 Differentiate between physical change, such as melting, and chemical change, such as rusting.		I can tell the difference between a physical property and a chemical property. I can also give examples of each.

<p>PS2:5-6:2.1 Describe how mass remains constant in a closed system and provide examples relating to both physical and chemical change.</p>		<p>I can describe why mass of a substance stays the same in a closed system. I can also give examples of that in terms of physical changes and chemical changes.</p>
<p>PS2:5-6:3.1 Explain that the pitch of a sound depends on the frequency of the vibration producing it.</p>	<p>I can demonstrate the pitch of a sound by using vibrations.</p>	
<p>PS2:5-6:3.2 Explain that sound vibrations move at different speeds, have different wavelengths and establish wave-like disturbances that spread out from the source.</p>	<p>I can show that sound moves at different speeds and has different wavelengths. I can show that sound can spread out from its source.</p>	
<p>PS2:5-6:3.3 Recognize that energy, in the form of heat, is usually a byproduct when one form of energy is converted to another, such as when machines convert stored energy to motion.</p>	<p>I can demonstrate that heat is produced when energy is used.</p>	
<p>PS2:5-6:3.4 Describe heat energy as flowing from warmer materials or regions to cooler ones through convection, conduction, and radiation.</p>	<p>Through air masses, I can identify heat energy and the path it follows.</p>	
<p>PS2:5-6:3.5 Explain how electrical circuits can be used to transfer energy to produce heat, light, sound, and chemical changes.</p>		<p>I can explain how electrical circuits transfer energy to make heat, light, sound and chemical changes.</p>
<p>PS3:5-6:1.1 Recognize that just as electric currents can produce magnetic forces, magnets can cause electric currents.</p>		<p>I know that electric currents make magnetic currents and that magnetic currents make electric currents.</p>
<p>PS3:5-6:1.2 Explain that when a force is applied to an object, the object speeds up, slows down, or goes in a different direction.</p>	<p>I can demonstrate the effects of force on an object.</p>	
<p>PS3:5-6:1.3 Describe the relationship between the strength of a force and its effect on the object, such as the greater the force, the greater the change in motion.</p>	<p>I am able to show how the strength of a force affects an object.</p>	
<p>PS3:5-6:2.1 Explain how balanced and unbalanced forces are related to an object's motion.</p>	<p>I can demonstrate balanced and unbalanced forces.</p>	

<p>PS3:5-6:2.2 Explain that an object's motion can be tracked and measured over time and that the data can be used to describe its position.</p>	<p>I am able to collect data on an object's motion over time.</p>	
<p>PS4:5-6:1.1 Understand that scientific principles are used in the design of technology.</p>		<p>I know that we have to use scientific principles in order to design technology.</p>
<p>PS4:5-6:2.1 Recognize that manufacturing processes use a variety of tools and machines to separate, form, combine and condition natural and synthetic materials.</p>		<p>I know that when we make things, we use a lot of different tools and machinery to separate, form, combine and condition natural and man-made materials.</p>
<p>PS4:5-6:3.1 Explain how a battery changes chemical energy into electrical energy.</p>		<p>I can explain how a battery changes chemical energy into electrical energy.</p>
<p>PS4:5-6:3.2 Demonstrate how to produce a magnetic force with an electric current such as an electromagnet, and how to produce an electric current with a magnet such a generator.</p>		<p>I can show you how to make a magnetic force with an electric current and how to make an electric current with a magnet.</p>
<p>PS4:5-6:3.3 Provide an example to show that manufacturing processes involve changing natural materials into finished products through a series of processes that involve physical and/or chemical changes.</p>		<p>I can give examples to show how when we make things we change natural materials into finished products by making physical and chemical changes.</p>
<p>PS4:5-6:4.1 Understand that some form of science is used in most jobs/careers and that most jobs/careers specifically require knowledge of Physical Science.</p>	<p>I can identify science in my career and jobs.</p>	<p>I know that what I learn in Physical Science might be important to the job I choose in the future.</p>
<p>PS4:5-6:1.1 Understand that scientific principles are used in the design of technology.</p>	<p>I know that science principles are used to design technology.</p>	
<p>PS4:5-6:2.1 Recognize that manufacturing processes use a variety of tools and machines to separate, form, combine and condition natural and synthetic materials.</p>	<p>I can explain how manufacturing uses a variety of tools and machines.</p>	

Earth and Space Science GLE	Grade 5- Student Friendly	Grade 6 –Student Friendly
ESS1:5-6:1.1 Describe and make predictions about local and regional weather conditions using observation and data collection methods.	I will make weather predictions for the local and regional areas.	
ESS1:5-6:1.2 Identify weather patterns by tracking weather related events, such as hurricanes.	I will use a weather map and longitude/latitude coordinates to track hurricanes.	
ESS1:5-6:1.3 Explain the composition and structure of the Earth's atmosphere.	I can describe the layers of the Earth's atmosphere.	
ESS1:5-6:1.4 Describe weather in terms of temperature, wind speed and direction, precipitation, and cloud cover.	I can describe the current weather in temperature, wind speed/direction, cloud cover and precipitation.	
ESS1:5-6:1.5 Describe how clouds affect weather and climate, including precipitation, reflecting light from the Sun, and retaining heat energy emitted from the Earth's surface.	I can explain how clouds produce precipitation. I can also explain how clouds reflect light back to the Earth and act as insulation.	
ESS1:5-6:4.2 Explain that satellites can be used to view and track storms and Earth events, such as hurricanes and wild fires.	Using satellite images from the Internet, I can watch and track hurricanes.	
ESS1:5-6:5.3 Recognize that vibrations in materials set up wavelike disturbances that spread away from the source, as with earthquakes.	I can demonstrate that vibrations move in waves away from sources.	
ESS1:5-6:7.1 Explain the properties that make water an essential component of the Earth's system, including solvency, and its ability to maintain a liquid state at most temperatures.	I understand that water is essential to the Earth.	

<p>ESS2:5-6:1.1 Recognize and describe how the regular and predictable motions of the Earth and Moon explain certain Earth phenomena, such as day and night, the seasons, the year, shadows and the tides.</p>	<p>I can demonstrate the patterns of the Earth such as day and night, seasons, and the year. I can demonstrate solar and lunar eclipses and follow tide patterns.</p>	
<p>ESS2:5-6:2.1 Recognize how the tilt of the Earth's axis and the Earth's revolution around the Sun affect seasons and weather patterns.</p>	<p>I can demonstrate how the Earth tilts on its axis to produce seasonal weather patterns.</p>	
<p>ESS2:5-6:2.2 Identify and describe seasonal, daylight and weather patterns as they relate to energy.</p>	<p>Using solar energy, I will describe daylight and season patterns and their connection to weather.</p>	
<p>ESS4:5-6:1.1 Understand that technology is used to design tools that improve our ability to measure and observe the world.</p>	<p>I understand how changes in technology improve the development in weather instruments.</p>	
<p>ESS4:5-6:2.1 GRADE 5 Recognize that satellites and Doppler radar can be used to observe or predict the weather.</p>	<p>I know that weather data is generated from satellites and Doppler radar.</p>	
<p>ESS4:5-6:2.1 GRADE 6 Provide examples of products that man has developed that have helped humans do things that they could not do otherwise, and identify the natural materials used to produce these products.</p>		<p>I can give examples of products that people have made that help us do things that we could not do naturally by ourselves. I can also tell you which parts of them are from natural materials.</p>
<p>ESS4:5-6:2.2 Employ knowledge of basic weather symbols to read and interpret weather and topographic maps.</p>	<p>I can apply weather symbols to weather and topographic maps.</p>	
<p>ESS4:5-6:2.3 Read and interpret data from barometers, sling psychrometers, and anemometers.</p>	<p>I am able to read and understand information from a barometer, psychrometer, and an anemometer.</p>	
<p>ESS4:5-6:3.2 Identify the most appropriate materials for a given design task with requirements for specific properties such as weight, strength, hardness, flexibility.</p>		<p>I can show you the most appropriate materials in order to perform a specific task. I will take into account properties like weight, strength, hardness and flexibility.</p>
<p>ESS4:5-6:4.1 Understand that some form of science is used in most jobs/careers and that most jobs/careers specifically require knowledge of Earth science.</p>	<p>I can identify science in many careers or jobs.</p>	