

## Galway Science 4<sup>th</sup> Grade Curriculum Guide

NYS PI	Major Understandings: The Physical Setting
3.1	Observe and describe properties of materials, using appropriate tools.
3.1a	Matter takes up space and has mass. Two objects cannot occupy the same place at the same time.
3.1b	Matter has properties (color, hardness, odor, sound, taste, etc.) that can be observed through the senses.
3.1c	Objects have properties that can be observed, described, and/or measured: length, width, volume, size, shape, mass or weight, temperature, texture, flexibility, reflectiveness of light.
3.1d	Measurements can be made with standard metric units and nonstandard units. <i>(Note: Exceptions to the metric system usage are found in meteorology.)</i>
3.1e	The material(s) an object is made up of determine some specific properties of the object (sink/float, conductivity, magnetism). Properties can be observed or measured with tools such as hand lenses, metric rulers, thermometers, balances, magnets, circuit testers, and graduated cylinders.
3.1f	Objects and/or materials can be sorted or classified according to their properties.
3.1g	Some properties of an object are dependent on the conditions of the present surroundings in which the object exists. For example:
	• temperature - hot or cold
	• moisture - wet or dry
3.2	Describe chemical and physical changes, including changes in states of matter.
3.2b	Temperature can affect the state of matter of a substance.
3.2c	Changes in the properties or materials of objects can be observed and described.
4.1a	Energy exists in various forms: heat, electric, sound, chemical, mechanical, light.
4.1b	Energy can be transferred from one place to another.
4.1c	Some materials transfer energy better than others (heat and electricity).
4.1d	Energy and matter interact: water is evaporated by the Sun's heat; a bulb is lighted by means of electrical current; a musical instrument is played to produce sound; dark colors may absorb light, light colors may reflect light.
4.1e	Electricity travels in a closed circuit.
4.1g	Interactions with forms of energy can be either helpful or harmful.
4.2	Observe the way one form of energy can be transferred into another form of energy present in common situations (e.g., mechanical to heat energy, mechanical to electrical energy, chemical to heat energy).
	• chemical to electrical, light, and heat: battery and bulb
5.1	Describe the effects of common forces (pushes and pulls) of objects, such as those caused by gravity, magnetism, and mechanical forces.
5.1e	Magnetism is a force that may attract or repel certain materials.
5.2	Describe how forces can operate across distances.
5.2a	The forces of gravity and magnetism can affect objects through gases, liquids, and solids.
5.2b	The force of magnetism on objects decreases as distance increases.

NYS PI	Major Understandings: The Living Environment
5.3	Describe the factors that help promote good health and growth in humans.
5.3b	Good health habits include hand washing and personal cleanliness; avoiding harmful substances (including alcohol, tobacco, illicit drugs); eating a balanced diet; engaging in regular exercise.
6.1	Describe how plants and animals, including humans, depend upon each other and the nonliving environment.
6.1a	Green plants are producers because they provide the basic food supply for themselves and animals.
6.1b	All animals depend on plants. Some animals (predators) eat other animals (prey).
6.1c	Animals that eat plants for food may in turn become food for other animals. This sequence is called a food chain.
6.1d	Decomposers are living things that play a vital role in recycling nutrients.
6.1e	An organism's pattern of behavior is related to the nature of that organism's environment, including the kinds and numbers of other organisms present, the availability of food and other resources, and the physical characteristics of the environment.
6.1f	When the environment changes, some plants and animals survive and reproduce, and others die or move to new locations. Describe the relationship of the Sun as an energy source for living and nonliving cycles.
7.1	Identify ways in which humans have changed their environment and the effects of those changes.

Based on NYS Core Curriculum Performance Indicators and Major Understandings. Prepared with teacher input summer curriculum work 2008.

<b>NYS PI</b>	<b>Major Understandings: The Living Environment continued</b>
7.1a	Humans depend on their natural and constructed environments.
7.1b	Over time humans have changed their environment by cultivating crops and raising animals, creating shelter, using energy, manufacturing goods, developing means of transportation, changing populations, and carrying out other activities.
7.1c	Humans, as individuals or communities, change environments in ways that can be either helpful or harmful for themselves and other organisms.

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