

## Galway Science 3<sup>rd</sup> Grade Curriculum Guide

NYS PI	Major Understandings: The Physical Setting
3.1	Observe and describe properties of materials, using appropriate tools.
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
	• lighting - shadows, color
	• moisture - wet or dry
3.2	Describe chemical and physical changes, including changes in states of matter.
3.2c	Changes in the properties or materials of objects can be observed and described.
4.1	Describe a variety of forms of energy (e.g., heat, chemical, light) and the changes that occur in objects when they interact with those forms of energy.
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.
4.1f	Heat can be released in many ways, for example, by burning, rubbing (friction), or combining one substance with another.
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).
4.2b	Humans utilize interactions between matter and energy.
	• chemical to electrical, light, and heat: battery and bulb
	• electrical to sound (e.g., doorbell buzzer)
	• mechanical to sound (e.g., musical instruments, clapping)
	• light to electrical (e.g., solar-powered calculator)
5.1	Describe the effects of common forces (pushes and pulls) of objects, such as those caused by gravity, magnetism, and mechanical forces.
5.1b	The position or direction of motion of an object can be changed by pushing or pulling.
5.1c	The force of gravity pulls objects toward the center of Earth.
5.1d	The amount of change in the motion of an object is affected by friction.
5.1f	Mechanical energy may cause change in motion through the application of force and through the use of simple machines such as pulleys, levers, and inclined planes.

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

NYS PI	Major Understandings: The Living Environment
1.1	Describe the characteristics of and variations between living and nonliving things.
1.1a	Animals need air, water, and food in order to live and thrive.
1.1b	Plants require air, water, nutrients, and light in order to live and thrive.
1.1c	Nonliving things do not live and thrive.
1.2	Describe the life processes common to all living things.
1.2a	Living things grow, take in nutrients, breathe, reproduce, eliminate waste, and die.
2.1	Recognize that traits of living things are both inherited and acquired or learned.
2.2	Recognize that for humans and other living things there is genetic continuity between generations.
2.2a	Plants and animals closely resemble their parents and other individuals in their species.
2.2b	Plants and animals can transfer specific traits to their offspring when they reproduce.
3.1	Describe how the structures of plants and animals complement the environment of the plant or animal.
3.1b	Each plant has different structures that serve different functions in growth, survival, and reproduction. <ul style="list-style-type: none"> <li>• roots help support the plant and take in water and nutrients</li> <li>• leaves help plants utilize sunlight to make food for the plant</li> <li>• stems, stalks, trunks, and other similar structures provide support for the plant</li> <li>• some plants have flowers</li> <li>• flowers are reproductive structures of plants that produce fruit which contains seeds</li> <li>• seeds contain stored food that aids in germination and the growth of young plants</li> </ul>
3.1c	In order to survive in their environment, plants and animals must be adapted to that environment. <ul style="list-style-type: none"> <li>• seeds disperse by a plant's own mechanism and/or in a variety of ways that can include wind, water, and animals</li> <li>• leaf, flower, stem, and root adaptations may include variations in size, shape, thickness, color, smell, and texture</li> </ul>
3.2	Observe that differences within a species may give individuals an advantage in surviving and reproducing.
3.2a	Individuals within a species may compete with each other for food, mates, space, water, and shelter in their environment.
3.2b	All individuals have variations, and because of these variations, individuals of a species may have an advantage in surviving and reproducing.
4.1	Describe the major stages in the life cycles of selected plants and animals.
4.1a	Plants and animals have life cycles. These may include beginning of a life, development into an adult, reproduction as an adult, and eventually death.
4.1b	Each kind of plant goes through its own stages of growth and development that may include seed, young plant, and mature plant.
4.1c	The length of time from beginning of development to death of the plant is called its life span.
4.1d	Life cycles of some plants include changes from seed to mature plant.
4.2	Describe evidence of growth, repair, and maintenance, such as nails, hair, and bone, and the healing of cuts and bruises.
4.2a	Growth is the process by which plants and animals increase in size.
4.2b	Food supplies the energy and materials necessary for growth and repair.
5.2	Describe some survival behaviors of common living specimens.
5.2a	Plants respond to changes in their environment. For example, the leaves of some green plants change position as the direction of light changes; the parts of some plants undergo seasonal changes that enable the plant to grow; seeds germinate, and leaves form and grow.
5.3	Describe the factors that help promote good health and growth in humans.
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.
6.1f	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.
6.2	Describe the relationship of the Sun as an energy source for living and nonliving cycles.
6.2a	Plants manufacture food by utilizing air, water, and energy from the Sun.
6.2b	The Sun's energy is transferred on Earth from plants to animals through the food Chain.
6.2c	Heat energy from the Sun powers the water cycle.

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NYS PI	Major Understandings: The Living Environment continued
7.1	Identify ways in which humans have changed their environment and the effects of those changes.
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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