

Galway Science 2nd Grade Curriculum Guide

NYS PI	Major Understandings: The Physical Setting
1.1	Describe patterns of daily, monthly, and seasonal changes in their environment.
1.1a	Natural cycles and patterns include: <ul style="list-style-type: none"> • Earth spinning around once every 24 hours (rotation), resulting in day and night • Earth moving in a path around the Sun (revolution), resulting in one Earth year • The length of daylight and darkness varying with the seasons • Weather changing from day to day and through the seasons • The appearance of the Moon changing as it moves in a path around Earth to complete a single cycle
1.1b	Humans organize time into units based on natural motions of Earth: <ul style="list-style-type: none"> • second, minute, hour • week, month
1.1c	The Sun and other stars appear to move in a recognizable pattern both daily and seasonally.
2.1	Describe the relationship among air, water, and land on Earth.
2.1a	Weather is the condition of the outside air at a particular moment.
2.1b	Weather can be described and measured by: <ul style="list-style-type: none"> • temperature • wind speed and direction • form and amount of precipitation • general sky conditions (cloudy, sunny, partly cloudy)
2.1c	Water is recycled by natural processes on Earth. <ul style="list-style-type: none"> • evaporation: changing of water (liquid) into water vapor (gas) • condensation: changing of water vapor (gas) into water (liquid) • precipitation: rain, sleet, snow, hail • runoff: water flowing on Earth's surface • groundwater: water that moves downward into the ground
2.1d	Erosion and deposition result from the interaction among air, water, and land. <ul style="list-style-type: none"> • interaction between air and water breaks down earth materials • pieces of earth material may be moved by air, water, wind, and gravity • pieces of earth material will settle or deposit on land or in the water in different places • soil is composed of broken-down pieces of living and nonliving earth material
2.1e	Extreme natural events (floods, fires, earthquakes, volcanic eruptions, hurricanes, tornadoes, and other severe storms) may have positive or negative impacts on living things.
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: <ul style="list-style-type: none"> • temperature - hot or cold • lighting - shadows, color • moisture - wet or dry
3.2	Describe chemical and physical changes, including changes in states of matter.
3.2a	Matter exists in three states: solid, liquid, gas. <ul style="list-style-type: none"> • solids have a definite shape and volume • liquids do not have a definite shape but have a definite volume

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

NYS PI	Major Understandings: The Physical Setting continued
	<ul style="list-style-type: none"> gases do not hold their shape or volume
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.
4.1	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.
4.1d	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.
4.2	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).
	<ul style="list-style-type: none"> the Sun's energy warms the air and water
4.2b	Humans utilize interactions between matter and energy.
	<ul style="list-style-type: none"> 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.
5.1a	The position of an object can be described by locating it relative to another object or the background (e.g., on top of, next to, over, under, etc.).
5.1e	Magnetism is a force that may attract or repel certain materials.
5.2	Describe how forces can operate across distances.

NYS PI	Major Understandings: The Living Environment
1.1	Describe the characteristics of and variations between living and nonliving things.
1.2	Describe the life processes common to all living things.
3.1	Describe how the structures of plants and animals complement the environment of the plant or animal.
3.1c	In order to survive in their environment, plants and animals must be adapted to that environment.
	<ul style="list-style-type: none"> animal adaptations include coloration for warning or attraction, camouflage, defense mechanisms, movement, hibernation, and migration
4.1	Describe the major stages in the life cycles of selected plants and animals.
4.2	Describe evidence of growth, repair, and maintenance, such as nails, hair, and bone, and the healing of cuts and bruises.
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.
6.2	Describe the relationship of the Sun as an energy source for living and nonliving cycles.
6.2c	Heat energy from the Sun powers the water cycle.

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