DeRuyter Central School District

Science Grade 1

59 Benchmarks

Key:
LE=Living Environment
PS= Physical Setting
AID= Analysis, Inquiry & Design
I= Interconnectedness

➢**Standard 4: The Living Environment: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and the living environment and recognize the historical development of ideas in science.**

ES1.LE.1 Animals need air, water and food in order to live and thrive.

ES1.LE.2 Plants require air, nutrients, and light in order to live and thrive.

ES1.LE.3 Nonliving things do not live and thrive.

ES1.LE.4 Living things grow, take in nutrients, breathe, reproduce, eliminate waste, and die.

ES1.LE.5 Some traits of living things have been inherited (e.g., color of flowers, number of limbs on animals).

ES1.LE.6 Some characteristics result from an individuals interactions with the environment and cannot be inherited by the next generation (e.g., having scars, riding a bicycle).

ES1.LE.7 Plants and animals closely resemble their parents and other individuals in their species.

ES1.LE.8 Plants and animals can transfer specific traits to their offspring when they reproduce.

ES1.LE.9 Each animal has different structures that serve different functions in growth, survival, and reproduction.

ES1.LE.10 Each plant has different structures that serve different functions in growth, survival, and reproduction.

ES1.LE.11 In order to survive in their environment, plants and animals must be adapted to that environment.

ES1.LE.12 Individuals within a species may compete with each other for food, mates, water, and shelter in the environment.

ES1.LE.13 All individuals have variations, and because of these variations individuals of a species may have an advantage in surviving and reproducing.

ES1.LE.14 Plants and animals have life cycles. These may include beginning of a life, development into an adult, reproduction as adults, and eventually death.

ES1.LE.15 Each kind of plant goes through its own stages of growth and development that may include seed, young plant, and mature plant.

ES1.LE.16 Each generation of animals goes through changes in form from young to adult. This completed sequence of changes in form is called a life cycle. Some insects change from egg to larvae to pupa to adult.

ES1.LE.17 Each kind of animal goes through its own stages of growth and development during its life span.

ES1.LE.18 The length of time from an animal's birth to its death is called its life span. Life spans of different animals vary.

ES1.LE.19 Growth is the process by which plants and animals increase in size.

ES1.LE.20 Food supplies the energy and materials necessary for growth and repair.

ES1.LE.21 All living things grow, take in nutrients, breathe, reproduce, and eliminate waste.

ES1.LE.22 An organism's external features can enable it to carry out life functions in its particular environment.

ES1.LE.23 Plants respond to changes in their environment. For example, seasonal changes, leaves moving to direction of light, seeds germinating.

ES1.LE.24 Senses can provide essential information (regarding danger, food, mates, etc.) to animals about their environment.

ES1.LE.25 Some animals, including humans, move from place to place to meet their needs.

ES1.LE.26 Particular animal characteristics are influenced by changing environmental conditions including: fat storage in winter, coat thickness in winter, camouflage, shedding of fur.

ES1.LE.27 The health, growth, and development of organisms are affected by environmental conditions such as the availability of food, air, water, space, shelter, heat, and sunlight.

ES1.LE.28 Humans need a variety of healthy foods, exercise, and rest in order to grow and maintain good health.

ES1.LE.29 Green plants are producers because they provide the basic food supply for themselves and animals.

ES1.LE.30 All animals depend on plants. Some animals (predators) eat other animals (prey).

ES1.LE.31 Animals that eat plants for food may in turn become food for other animals. This sequence is called a food chain.

ES1.LE.32 Decomposers are living things that play a vital role in recycling nutrients.

ES1.LE.33 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.

ES1.LE.34 When the environment changes, some plants and animals survive and reproduce, and others die or move to new locations.

ES1.LE.35 Humans depend on their natural and constructed environment.

ES1.LE.36 Over time humans have changed their environment by cultivating crops and raising animals, creating shelter, using energy, manufacturing foods, developing means of transportation, changing populations, and carrying out other activities.

ES1.LE.37 Humans, as individuals or communities, change environments in ways that can be either helpful or harmful for themselves or other organisms.

➢**Standard 1: Analysis, Inquiry, and Design: Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.**

ES1.AID.1 Apply mathematical skills to describe the natural world.

➢**Standard 4: The Physical Setting: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and the living environment and recognize the historical development of ideas in science.**

ES1.PS.1 Natural cycles and patterns include: Earth rotating once every 24 hours, resulting in day and night. Earth revolving around the sun, resulting in one Earth year. The length of daylight and darkness varies.

ES1.PS.2 The sun and other stars appear to move in a recognizable pattern both daily and seasonally.

ES1.PS.3 Weather is the condition of the outside air at a particular moment.

ES1.PS.4 Weather can be described and measured by: temperature, wind speed and direction, form and amount of precipitation, general sky conditions (cloudy, sunny, partly cloudy).

ES1.PS.5 Matter takes up space and has mass. Two objects cannot occupy the same place at the same time.

ES1.PS.6 Matter has properties (color, hardness, odor, sound, taste, etc.) that can be observed through the senses.

ES1.PS.7 Objects have properties that can be observed, described, and/or measured: length, width, volume, size, shape, mass or weight, temperature, flexibility, reflectivity of light.

ES1.PS.8 The materials an object is made up of determine the specific properties of an object (sink/float, conductivity, magnetism). Properties can be observed or measured with tools such as hand lenses, metric rulers, thermometers, balances, magnets.

ES1.PS.9 Objects and/or materials can be sorted or classified according to their properties.

ES1.PS.10 Some properties of an object are dependent on the conditions of the present

surroundings in which the object exists. For example: temperature, lighting, moisture.

ES1.PS.11 Matter exists in three states: Solid, liquid, gas. Solids have a definite shape and volume. Liquids do not have a definite shape, but have a definite volume. Gases do not hold their shape or volume.

.

ES1.PS.12 Energy exists in various forms: heat, electric, sound, chemical, mechanical, and light.

ES1.PS.13 Energy can be transferred from one place to another.

ES1.PS.14 Every day events involve one form of energy being changed to another. Animals convert food to heat and motion. The sun's energy warms the air and water.

➢**Standard 6: Interconnectedness: Students will understand the relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning.**

ES1.I.1 Discover that a model of something is different than the real thing, but can be used to study the real thing.

ES1.I.2 Use different types of model such as graphs, sketches, diagrams, and maps, to represent various aspects of the world.

ES1.I.3 Observe that things in nature and things that people make have very different sizes, weight and ages.

ES1.I.4 Recognize that almost anything has limits on how big or small it can be.

ES1.I.5 Observe that things can change in some ways and stay the same in some ways.

ES1.I.6 Recognize that things can change in different ways such as size, weight, color, and movement. Some small changes can be detected by taking measurements.

ES1.I.7 Use simple instruments to measure such quantities as distance, size, and weight, and to look for patterns in the data.