Greenwich Public Schools Curriculum Overview

Grade 1: Science

Families as Partners in Learning

In Grade 1, instructional time is focused on comparing the effects of different strengths and directions of pushes and pulls on the motion of an object and if a solution designed to change the speed or direction of the motion of an object is effective; use observations of the sun, moon and stars to identify patterns that can be predicted; and use a model to explain what the relationship between the needs of different plants and animals and the places where they live. **All grade 1 units of study are directly aligned with the approved Next Generation Science Standards** **The GPS Science Program uses the practice of inquiry-based science instruction, applying science concepts to real-world scenarios. Students are required to communicate results and their process to teachers and peers, using a variety of methods to demonstrate their learning and construct viable arguments and critique the reasoning of others, engaging in evidence-based arguments.**	
Unit	**Student Learning Expectations**
Unit 1: Science Notebook Launch ***Enduring Understandings:*** ● Students learn about the world around them through asking questions and making observations. ● Data analysis, interpretation and evaluation help students to apply science concepts in multiple contexts.	**Students will Do:** ● Students will use their senses to make observations about the world around them. ● Students will document their observations with accurate words, photos, and drawings. ● Students will ask questions about their observations and develop predictions. ● Students will organize and interpret data. ● Students will model a natural phenomena. ● Students will state a claim and support the claim with evidence. Click Next Generation Science Standards to learn more.

Unit 2: Force and Motion ***Enduring Understandings:*** ● Objects move in different ways. ● A force applied on an object will change the way the object moves. ● The surface an object travels on will affect the distance the object travels.	**Students will Do:** ● Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] ● Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.* [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] ● Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. ● Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. ● Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs. **Science and Engineering Practices:** ● Asking questions (for science) and defining problems (for engineering) ● Developing and using models ● Planning and carrying out investigations ● Analyzing and interpreting data ● Constructing explanations (for science) and designing solutions (for engineering)
Unit 3: Sun, Moon, and Stars ***Enduring Understanding:***	**Students will Do:** ● Use observations of the sun, moon, and stars to describe patterns that can be predicted. [Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are

● Patterns of the sun, moon and stars in the sky can be observed, described, and predicted.	visible at night but not during the day.] ● Make observations at different times of year to relate the amount of daylight to the time of year. [Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.] **Science and Engineering Practices:** ● Asking questions (for science) and defining problems (for engineering) ● Developing and using models ● Analyzing and interpreting data ● Obtaining, evaluating, and communicating information

Unit 4: Survival ***Enduring Understandings:*** ● All living things have needs. ● Offspring are similar to their parents but not the same. ● Living things use their external parts to help them survive, grow, and meet their needs. ● There is a variety of living things in a variety of habitats in the world.	**Students will Do:** ● Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.] ● Construct an argument supported by evidence for how plants and animals can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.] ● Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.] ● Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).] ● Plan and conduct an investigation to determine if plants need sunlight and water to grow. ● Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. [Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.] ● Make observations of plants and animals to compare the diversity of life in different habitats. [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.] ● Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.* [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.] **Science and Engineering Practices:** ● Asking questions (for science) and defining problems (for engineering)

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