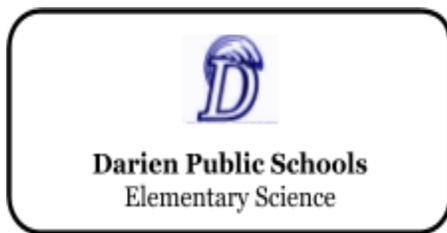


Curriculum at a Glance
Elementary Science K-5



Description:

The Science Department of the Darien Public Schools is dedicated to providing a program that offers students science instruction that begins with a real world phenomenon to promote inquiry, critical thinking, problem solving, and connections across science disciplines. Students develop greater capacity for connecting knowledge across, and between, the physical sciences, life sciences, earth and space sciences, and engineering design through "three-dimensional learning" which refers to the three pillars that support instruction. These three dimensions are: Science and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas.

Kindergarten	
Unit Name	Content
Weather Patterns	<ul style="list-style-type: none"> • Make observations to determine the effect of sunlight on Earth's surface; limited to relative measures such as warmer/cooler • Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth's surface • Use and share observations of local weather conditions to describe patterns over time • Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather
Pushes and Pulls	<ul style="list-style-type: none"> • 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 • 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
Living Things	<ul style="list-style-type: none"> • Use observations to describe patterns of what plants and animals (including humans) need to survive • Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs • Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live • Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment

Grade 1

Unit Name	Content
Space Patterns and Cycles	<ul style="list-style-type: none">● Use observations of the sun, moon, and stars to describe patterns that can be predicted● Make observations at different times of year to relate the amount of daylight to the time of year● Plan and conduct investigations collaboratively to produce evidence to answer a question
Light and Sound	<ul style="list-style-type: none">● Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate● Make observations to construct an evidence-based account that objects can be seen only when illuminated● Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light● Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance
Traits of Living Things	<ul style="list-style-type: none">● 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● Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive● Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents● 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

Grade 2

Unit Name	Content
The Earth's Land and Water	<ul style="list-style-type: none">● Use information from several sources to provide evidence that Earth events can occur quickly or slowly● Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land● Develop a model to represent the shapes and kinds of land and bodies of water in an area● Obtain information to identify where water is found on Earth and that it can be solid or liquid
Properties of Matter	<ul style="list-style-type: none">● Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties● Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose● Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object● Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot
Relationships in Ecosystems	<ul style="list-style-type: none">● Plan and conduct an investigation to determine if plants need sunlight and water to grow● Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants● Make observations of plants and animals to compare the diversity of life in different habitats

Grade 3

Unit Name	Content
Forces and Interactions	<ul style="list-style-type: none">● Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object● Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion● Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other● Define a simple design problem that can be solved by applying scientific ideas about magnets
Weather and Climate	<ul style="list-style-type: none">● Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season● Obtain and combine information to describe climates in different regions of the world● Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard● Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago
Living Things Adaptations	<ul style="list-style-type: none">● Construct an argument that some animals form groups that help members survive● Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago● Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all● Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death● Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms● Use evidence to support the explanation that traits can be influenced by the environment

Grade 4

Unit Name	Content
Processes That Shape The Earth	<ul style="list-style-type: none">● Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time● Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation● Analyze and interpret data from maps to describe patterns of Earth's features● Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans
Energy	<ul style="list-style-type: none">● Use evidence to construct an explanation relating the speed of an object to the energy of that object● Ask questions and predict outcomes about the changes in energy that occur when objects collide● Apply scientific ideas to design, test, and refine a device that converts energy from one form to another● Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment● Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move● Generate and compare multiple solutions that use patterns to transfer information
Structures and Systems of Living Things	<ul style="list-style-type: none">● Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen● Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction● Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways

Grade 5

Unit Name	Content
Earth and Space Systems	<ul style="list-style-type: none"> ● Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact ● Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment ● Support an argument that the gravitational force exerted by Earth on objects is directed down ● Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth ● Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky
Matter and Interactions	<ul style="list-style-type: none"> ● Develop a model to describe that matter is made of particles too small to be seen ● Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved ● Make observations and measurements to identify materials based on their properties ● Conduct an investigation to determine whether the mixing of two or more substances results in new substances
Matter and Energy in Organisms and Ecosystems	<ul style="list-style-type: none"> ● Use models to describe that energy in animals' food ● Support an argument that plants get the materials they need for growth chiefly from air and water ● Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment ● Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth