



Leonia School District

Science

Kindergarten

Course Description

In kindergarten science, students will explore topics in Earth, Physical, and Life sciences. In Earth science, students learn about patterns and variations in local weather as well as the effects of the sun on Earth's surface. In Physical science, students learn to compare the strength and direction of pushes and pulls. In Life science, students learn what plants and animals need to survive as well as a more in depth study of what humans need to survive.

Pacing Guide

Time Frame	Unit Title
Weeks 1-7	Unit 1 - Pushes and Pulls
Weeks 8-14	Unit 2 - Effects of the Sun
Weeks 15-21	Unit 3 - Weather
Weeks 22-33	Unit 4 - Basic Needs of Living Things
Weeks 34-40	Unit 5 - Basic Needs of Humans

Born on:

Board Approved:

Readopted:

Unit 1 - Pushes & Pulls

Goals/Objectives of Unit:

- 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.
- Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Core Instructional Resources/Materials:

- Books on motion and forces
- Materials for testing the motion of various objects (toy cars, balls, books, tape measure/ruler, etc.)

NJ-Student Learning Standards:

- K-PS2.A: Pushes and pulls can have different strengths and directions; Pushing and pulling on an object can change the speed or direction of its motion and can start or stop it.
- K-PS2.B: When objects touch or collide, they push on one another and can change motion.
- K-PS3.C: A bigger push or pull makes things speed up or slow down more quickly.
- K-ETS1.A: A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions.

Unit 2 - Effects of the Sun

Goals/Objectives of Unit:

Goals of Unit:

- Make observations to determine the effect of sunlight on Earth's surface.
- Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth's surface.
- 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.

Core Instructional Resources/Materials:

- Books on the sun, heat energy.
- Materials for testing heat absorption:
 - Sand, soil, rocks, water, thermometer, cloth, plastic wrap, heat lamp, etc.

NJ-Student Learning Standards:

- K-PS3-B: Conservation of Energy and Energy Transfer - Sunlight warms Earth's surface.

- K-2-ETS1.A: Asking questions, making observations, and gathering information are helpful in thinking about problems.

Unit 3 - Weather

Goals/Objectives of Unit:

- 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.
- 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.

Core Instructional Resources/Materials:

- Books on Weather.
- Classroom weather chart.

NJ-Student Learning Standards:

- K-ESS2.D: Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time.
- K-ESS3.B: Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events.
- K-2-ETS1.A: A situation that people want to change or create can be approached as a problem to be solved through engineering.
- K-2-ETS1.A: Asking questions, making observations, and gathering information are helpful in thinking about problems.

Unit 4 - Basic Needs of Living Things

Goals/Objectives of Unit:

- Use observations to describe patterns of what plants and animals need to survive.
- Use a model to represent the relationship between the needs of different plants and animals and the places they live.
- Construct an argument supported by evidence for how plants and animals can change the environment to meet their needs.

Core Instructional Resources/Materials:

- Books on plants and their needs.
- Books on animals and their habitats.
- Materials for student created models (paper, boxes, clay, glue etc.)

NJ-Student Learning Standards:

- K-LS1-1: All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.

- K-ESS3-1: Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do.
- K-ESS2-2: Plants and animals can change their environment.

Unit 5 - Basic Needs of Humans

Goals/Objectives of Unit:

- Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
- 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.

Core Instructional Resources/Materials:

- Books on Earth's resources.
- Materials to create a representation of their solution of human impact on Earth resources (drawing, model, digital), such as paper, drawing materials, clay, popsicle sticks, construction paper, glue, etc.

NJ-Student Learning Standards:

- K-ESS3-3: Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things.
- K-2-ETS1-1: A situation that people want to change or create can be approached as a problem to be solved through engineering.

General Assessments (may include but not limited to):

Possible Summative Assessment:

- Pre/Post Assessments

Optional Daily Assessment:

- Exit ticket/survey (game/web-based: [Kahoot!](#), [Pear Deck](#), [EdPuzzle](#), [Plickers](#), [Quizizz](#), [FlipGrid](#), Google Suite)
- Reflection/self-assessment tool
- Graphic organizers
- Anecdotal notes/teacher observations