

Kindergarten Science Course Overview

Content Area: **Science**
Course(s): **SCIENCE-K**
Time Period:
Length: **Year**
Status: **Published**

Cover

EAST BRUNSWICK PUBLIC SCHOOLS

East Brunswick New Jersey

Superintendent of Schools

Dr. Victor P. Valeski

Science

Grade K Science

Course Number: 4100

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Course Overview

The K-12 science curriculum in all schools in New Jersey must be aligned with the New Jersey Student Learning Standards in Science. These standards focus on the processes of science as well as content in three major areas: physical, life and earth science. Each of these areas of science needs to be addressed at every grade level in order to foster a strong science knowledge base for students as well as an appreciation and understanding of how science works to help people solve problems.

One of the strong points of the East Brunswick Schools' science curriculum is the emphasis on hands-on investigations of the natural world. Our science program emphasizes doing science, not reading about it in a book. The Kindergarten science curriculum consists of two modules that were selected from two nationally-recognized programs – *Full Option Science System (FOSS)* and *Delta Science Module*. The Life/Earth Science unit is *Trees (FOSS)* which introduces students to the basic components of plants. The Physical/Earth science unit is *Sunshine and Shadows (DSM)* which examines the observable properties of light.

The *Big Ideas* in Kindergarten science cover two areas that are interrelated. The first is the process of science and the second is science content.

The *Big Ideas* will focus on beginning the science process standards including:

- Science is a way of thinking about and investigating the world in which we all live.
- Science is a human endeavor. People from many cultures have contributed to our understanding of science.
- Science cannot be practice or learned without an appreciation of the role of mathematics in discovering and expressing natural laws.
- The study of science and technology is interrelated and as such can assist in solving problems.

The *Big Ideas* in science content at the Kindergarten level, introduce various concepts of life and physical science. These include:

- *Earth Science* – The Earth's light and heat is provided by the sun.
- *Life Science* – The natural world is defined by organisms and life processes which conform to principles regarding conservation and transformation of matter and energy.
- *Physical Science* – Light travels in straight lines and, therefore, cannot bend around the object and strike the surface behind the object.

The *Essential Questions* that students seek to answer in Kindergarten science are:

- *Earth Science* – What is the sun's role in creating a shadow?
- *Life Science* – How does an organism change during each season?
- *Life Science* – What is a tree's role in a community?
- *Physical Science* – What makes a shadow?

The *Enduring Understandings* that students will acquire from the mastery of the Kindergarten science

curriculum are:

- Earth Science – Some organisms go through changes during each season.
- Life Science – All organisms have basic needs. Trees need water, nutrients in the soil, light and air.
- Physical Science – Energy takes many forms.

Textbooks and other resources

Delta DMS Sunshine & Shadows, Copyright 2004

Delta FOSS Trees, Copyright 2005

Delta FOSS Materails and Motion, Copyright 2014

Standards

CRP.K-12.CRP12	Work productively in teams while using cultural global competence.
SCI.1-PS4-3	Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.
SCI.1-PS4-2	Make observations to construct an evidence-based account that objects can be seen only when illuminated.
SCI.K-2-ETS1-2	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.
SCI.K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
SCI.K-2-ETS1-1	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.
SCI.K-ESS3-1	Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
SCI.K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
SCI.K-ESS3-3	Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
SCI.K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
SCI.K-ESS2-2	Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
SCI.K-LS1-1	Use observations to describe patterns of what plants and animals (including humans) need to survive.
SCI.K-PS2-1	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.
SCI.K-PS2-2	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.
SCI.K-PS3-2	Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.
SCI.K-PS3-1	Make observations to determine the effect of sunlight on Earth's surface.
TECH.8.2.2.D.3	Identify the strengths and weaknesses in a product or system.

Grading and Evaluation Guidelines

Common assessments are used throughout the units of study.

Assessments include: Journals, Classwork, and Participation

Other Details

SCED

53230 Science (Kindergarten)

Science (kindergarten) courses encourage students to observe and describe properties of organisms, systems, and the environment. Students may raise questions, identify patterns, and record observations.