

Swedesboro-Woolwich School District's Science Curriculum Guidance Document

Grade 2 - Unit 1 - Plants

Mission Statement

The primary goal of the Swedesboro-Woolwich School District is to prepare each student with the real life skills needed to compete in a highly competitive global economy. This will be achieved by providing a comprehensive curriculum, the integration of technology, and the professional services of a competent and dedicated faculty, administration, and support staff.

Guiding this mission will be Federal mandates, including No Child Left Behind, the New Jersey Core Curriculum Content Standards, and local initiatives addressing the individual needs of our students as determined by the Board of Education. The diverse resources of the school district, which includes a caring PTO and active adult community, contribute to a quality school system. They serve an integral role in supporting positive learning experiences that motivate, challenge and inspire children to learn.

Unit/Module Overview

- In this unit of study, students develop an understanding of what plants need to grow and how plants depend on animals for seed dispersal and pollination. Students also compare the diversity of life in different habitats. The crosscutting concepts of cause and effect and structure and function are called out as organizing concepts for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in planning and carrying out investigations and developing and using models. Students are also expected to use these practices to demonstrate understanding of the core ideas. Students will also be introduced to the Philadelphia Zoo UNLESS contest for the year and discuss the impacts environmental issues can have on wildlife.

Standards Covered in Current Unit/Module

Related Standards and Learning Goals

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.2-LS2	Ecosystems: Interactions, Energy, and Dynamics
SCI.2-LS2-1	Plan and conduct an investigation to determine if plants need sunlight and water to grow.
SCI.2-LS2-2	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

SCI.2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.

Disciplinary Core Ideas

- LS2.A: Interdependent Relationships in Ecosystems
 - Plants depend on water and light to grow. (2-LS2-1)
 - Plants depend on animals for pollination or to move their seeds around. (2-LS2-2)
- LS4.D: Biodiversity and Humans
 - There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)
- ETS1.A: Defining and Delimiting Engineering Problems
 - A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1)
 - Asking questions, making observations, and gathering information are helpful in thinking about problems. (K2-ETS1-1)
 - Before beginning to design a solution, it is important to clearly understand the problem. (K-2-ETS1-1)

Science and Engineering Practices

- Developing and Using Models
 - Develop a simple model based on evidence to represent a proposed object or tool. (2-LS2-2)
- Planning and Carrying Out Investigations
 - Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. (2-LS2-1)
 - Make observations (firsthand or from media) to collect data which can be used to make comparisons. (2-LS4- 1)
- Asking Questions and Defining Problems
 - Ask questions based on observations to find more information about the natural and/or designed world(s). (K2-ETS1-1)
 - Define a simple problem that can be solved through the development of a new or improved object or tool. (K2-ETS1-1)

Crosscutting Concepts

- Cause and Effect
 - Events have causes that generate observable patterns. (2-LS2-1)
- Structure and Function
 - The shape and stability of structures of natural and designed objects are related to their function(s). (2-LS2-2)
- Scientific Knowledge is Based on Empirical Evidence
 - Scientists look for patterns and order when making observations about the world. (2-LS4-1)

Learning Targets	Essential Questions
<ul style="list-style-type: none"> • I can analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs • I can ask questions, make observations, and gather information about a situation people want to change (e.g. climate change) to define a simple problem that can be solved through the development of a new or improved 	<ul style="list-style-type: none"> • How does the diversity of plants and animals compare among different habitats? • What do plants need to live and grow? • Why do some plants rely on animals for reproduction? • Why do we see different things in different habitats?

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object or too

- I can develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
- I can 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.
- I can 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.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.]
- I can plan and conduct an investigation to determine if plants need sunlight and water to grow. [Assessment Boundary: Assessment is limited to testing one variable at a time.]

Unit/Module Weekly Learning Activities and Pacing Guide

Topic & # Days	NJ Standards	Critical Knowledge & Skills	Possible Resources & Activities
Plant Adaptations 17 days	<ul style="list-style-type: none"> • 2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow. • 2-LS2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants • 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. 	<p>Obj. We are learning to:</p> <ul style="list-style-type: none"> • Targets Listed Above <p>Suggested Formative Assessment(s):</p> <ul style="list-style-type: none"> • Graphic Organizers • Mystery Science Formative Assessments • Mystery Science Summative Assessments • Plant Drawings • Plant Pattern Recordings 	<p>Materials</p> <ul style="list-style-type: none"> • Mystery Science Lessons • Read Alouds • Cross Cut Weather Reading Activities • Mystery Labs • Additional Hands on Activities • Teacher Devised or Created Worksheets • Barinpop Jr. • Philadelphia Zoo Unless Contest

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	<ul style="list-style-type: none"> ● 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. ● 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats. ● 2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid. 		
<p>Animal Diversity</p> <p>20 days</p>	<ul style="list-style-type: none"> ● 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats. ● 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. ● 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. ● K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same 	<p>Obj. We are learning to:</p> <ul style="list-style-type: none"> ● Targets Listed Above <p>Suggested Formative Assessment(s):</p> <ul style="list-style-type: none"> ● Graphic Organizers ● Mystery Science Formative Assessments ● Mystery Science Summative Assessments ● Plant Drawings ● Plant Pattern Recordings 	<p>Materials</p> <ul style="list-style-type: none"> ● Mystery Science Lessons ● Read Alouds ● Cross Cut Weather Reading Activities ● Mystery Labs ● Additional Hands on Activities ● Teacher Devised or Created Worksheets ● Barinpop Jr. ● Philadelphia Zoo Unless Contest

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	problem to compare the strengths and weaknesses of how each performs.		
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Interdisciplinary Connections	Career Ready, Life Literacies, and Key Skills
<p>NJSLS ELA W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (2-LS2-1, 2-LS4-1) W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-LS2-1, 2-LS4-1) SL.2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. (2-LS2-2) RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (K-2-ETS1-1) W.2.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. (K-2-ETS1-1)</p> <p>NJSLS Mathematics MP.2 Reason abstractly and quantitatively. (2-LS2-1, 2-LS4-1, K-2-ETS1-1) MP.4 Model with mathematics. (2-LS2-1), (2-LS2-2, 2-LS4-1, K-2-ETS1-1) MP.5 Use appropriate tools strategically. (2-LS2-1, K-2-ETS1-1) 2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. (2-LS2-2, 2-LS4-1, K-2-ETS1-1)</p> <p>English Language Arts/Literacy English Language Arts can be leveraged in this unit in a number of ways. Students can participate in shared research using trade books and online resources to learn about the diversity of life in different habitats or to discover ways in which animals help pollinate plants or distribute seeds. Students can record their findings in science journals or use the research to write and illustrate their own books. Students can also learn to take notes in their journals in order to help them recall information from experiences or gather information from provided sources. They can add drawings or</p>	<p>CS.K-2.8.1.2.DA.3 Identify and describe patterns in data visualizations. CS.K-2.8.1.2.DA.4 Make predictions based on data using charts or graphs. CAEP.9.2.4.A.2 Identify various life roles and civic and work - related activities in the school, home, and community. CAEP.9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. TECH.9.4.2.CI.1 Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2). TECH.9.4.2.CI.2 Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a). TECH.9.4.2.IML.3 Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults (e.g., 6.3.2.GeoGI.2, 6.1.2.HistorySE.3, W.2.6, 1-LSI-2). TECH.9.4.2.IML.4 Compare and contrast the way information is shared in a variety of contexts (e.g., social, academic, athletic) (e.g., 2.2.2.MSC.5, RL.2.9).</p>

other visual displays to their work, when appropriate, to clarify ideas, thoughts, and feelings.

Mathematics

Throughout this unit of study, students need opportunities to represent and interpret categorical data by drawing picture graphs and/or bar graphs (with a single unit scale) to represent a data set with up to four categories. This will lead to opportunities to solve simple put-together, take-apart, and compare problems using information presented in these types of graphs. For example, students could create bar graphs that show the number of seedlings that sprout with and without watering or that document plant growth. They could also create a picture graph showing the number of plant species, vertebrate animal species, and invertebrate animal species observed during a field trip or in a nature photograph. As students analyze the data in these types of graphs, they can use the data to answer simple put-together, take apart, and compare problems. This unit also presents opportunities for students to model with mathematics. They can diagram situations mathematically or solve a one-step addition or subtraction word problems. Data collected in bar graphs and picture graphs can easily be used for this purpose.

[Link to Additional Components including Cross Curricular Connections, Accommodations, Assessments, Etc](#)

[ELA Enduring Understanding Statements](#)