

2nd Grade Unit 1 - Relationships in Habitats

Content Area: **Science**
Course(s): **Science Grade 2**
Time Period: **MP1**
Length: **22 days**
Status: **Published**

NJSLS - Science

SCI.K-2-ETS1-1	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 object or tool.
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.

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). (K-2-ETS1-1)

Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1)

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. (K-2-ETS1-1)

Before beginning to design a solution, it is important to clearly understand the problem. (K-2-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)

Rationale and Transfer Goals

Why do we see different living things in different habitats?

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 an understanding of the core ideas.

Enduring Understandings

All life is cyclical and interdependent.

Each living thing has certain structures that allow it to function in unique ways within its own habitat.

Living things are all interdependent on one another so it is important for us to take care of each other and our habitat.

Essential Questions

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?

Content - What will students know?

- People look for patterns and order when making observations about the world.
- There are many different kinds of living things in any area, and they exist in different places on land and in water.
- Events have causes that generate observable patterns.
- Plants depend on water and light to grow.
- The shape and stability of structures of natural and designed objects are related to their function.
- Plants depend on animals for pollination or to move their seeds around.
- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.

Skills - What will students be able to do?

- Look for patterns and order when making observations about the world.
- Make observations (firsthand or from media) to collect data that can be used to make comparisons.
- Make observations of plants and animals to compare the diversity of life in different habitats. (Note: The emphasis is on the diversity of living things in each of a variety of different habitats; assessment does not include specific animal and plant names in specific habitats.)
- Observe patterns in events generated by cause-and-effect relationships.
- Plan and conduct an investigation collaboratively to produce data to serve as a basis for evidence to answer a question.
- Plan and conduct an investigation to determine whether plants need sunlight and water to grow. (Note: Assessment is limited to one variable at a time.)
- Describe how the shape and stability of structures are related to their function.
- Develop a simple model based on evidence to represent a proposed object or tool.

- Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
- 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.
- Explore and compare the diversity of life in different habitats.
- Develop an understanding of what plants need to grow and how plants depend on animals for seed dispersal and pollination.
- Students learn about cause-and-effect relationships and how an organism’s structures are related to the function that each structure performs.
- Students explore and collect data about different habitats that exist in the world and how plants and animals have structures that help them survive in their habitats.

Activities - How will we teach the content and skills?

- Mystery Science Animal Adventures Anchor Phenomenon
- Mystery Science Animal Adventures Lesson 1
- Mystery Science Animal Adventures Lesson 2
- Mystery Science Animal Adventures Lesson 3
- Mystery Science Animal Adventures Lesson 4
- Mystery Science Plant Adventures Anchor Phenomenon
- Mystery Science Plant Adventures Lesson 1
- Mystery Science Plant Adventures Lesson 2
- Mystery Science Plant Adventures Lesson 3
- Mystery Science Plant Adventures Lesson 4
- Mystery Science Plant Adventures Lesson 5
- Whole group instruction and discussion.
- Read Alouds
- Group and Individual Projects
- Hands-on discovery when possible; creating models
- Webquests/Internet “field trips”

Evidence/Assessments - How will we know what students have learned?

- Mystery Science Animal Adventures Lesson 1 Assessment
- Mystery Science Animal Adventures Lesson 2 Assessment
- Mystery Science Animal Adventures Lesson 3 Assessment
- Mystery Science Animal Adventures Lesson 4 Assessment
- Mystery Science Animal Adventures Performance Task
- Mystery Science Plant Adventures Lesson 1 Assessment
- Mystery Science Plant Adventures Lesson 2 Assessment
- Mystery Science Plant Adventures Lesson 3 Assessment
- Mystery Science Plant Adventures Lesson 4 Assessment
- Mystery Science Plant Adventures Lesson 5 Assessment
- Mystery Science Plant Adventures Performance Task
- Teacher Observation
- Student projects/models
- Exit Tickets
- [Grade 2 Science Unit 1 Benchmark](#)

Spiraling for Mastery

Content or Skill for this Unit	Spiral Focus from Previous Unit	Instructional Activity
<ul style="list-style-type: none">• Plants depend on water and light to grow.• There are many different kinds of living things in any area, and they exist in different places on land and in water.	<p>Kindergarten: A situation that people want to change or create can be approached as a problem to be solved through engineering.</p> <p>Kindergarten: Asking questions, making observations, and gathering information are helpful</p>	<p>K-LS1-1 Resources</p>

	<p>in thinking about problems.</p> <p>Kindergarten: Before beginning to design a solution, it is important to clearly understand the problem.</p> <p>Kindergarten: 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.</p> <p>Kindergarten: 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.</p>	
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21st Century Life and Careers

WRK.9.1.2.CAP.1

Make a list of different types of jobs and describe the skills associated with each job.

Career Readiness, Life Literacies, & Key Skills

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.CT.1

Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2).

TECH.9.4.2.CT.2

Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).

TECH.9.4.2.CT.3

Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

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).

Interdisciplinary Connections/Companion Standards

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)

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)

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 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.