Unit 2: Interdependent Relationships in Ecosystems

Content Area: **Science**
Course(s):
Time Period: **Full Year**
Length: **Full Year**
Status: **Published**

Unit 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. Lessons in this unit satisfy Climate Change Mandate.

Enduring Understandings

Plants depend on animals for pollination to grow.
Plants need water and light to grow.
Living things exist in many places in land and in water.

Essential Questions

What do plants depend on to grow?
What do plants depend on animals for?
Where do living things exist?

Learning Objectives

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.
Observe differences between climate and weather
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.
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.
Explain how plants and animals are impacted by changes in the climate.
Identify and explain the difference between climate and weather.
Identify the link between the earths' systems-land, air, living things and water- and how if one changes it impacts all systems
Climate Change - Develop possible solutions to climate change.

Standards: Content

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 problem to compare the strengths and weaknesses of how each performs.
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.
2-LS4-1	Make observations of plants and animals to compare the diversity of life in different habitats.

Standards: Interdisciplinary

RI.CR.2.1	Ask and answer questions to demonstrate understanding of key details in an informational text, referring explicitly to the text as the basis for the answers.
RI.CI.2.2	Recount a text in oral and written form and determine main topic (in multi-paragraph informational text, focusing on specific paragraphs).
RI.IT.2.3	Describe the connection between a series of historical events, scientific ideas or concepts, or steps in a sequence within a text.
RI.TS.2.4	Describe the overall structure of a text and effectively use various text features (e.g., graphs, charts, images, captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information.
RI.PP.2.5	Identify the main purpose of a text, including what the author seeks to explore, answer, explain, or describe.
RI.MF.2.6	Explain how specific illustrations and images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
RI.AA.2.7	Describe and identify the logical connections of how reasons support specific points the author makes in a text.
RI.CT.2.8	Compare and contrast two informational versions of the same idea or topic by different authors or authors from different cultures.
W.IW.2.2.A	Introduce a topic clearly.
W.IW.2.2.B	Develop a topic with facts definitions, concrete details, text evidence, or other information

	and examples related to the topic.
W.IW.2.2.C	Provide a conclusion.
W.WP.2.4.A	Identify audience and purpose before writing.
W.WP.2.4.B	Participate in self-evaluation of written work.
W.WP.2.4.C	With feedback and digital or print tools such as a primary dictionary, find and correct errors.
SL.PE.2.1.B	Build on others' talk in conversations by linking their explicit comments to the remarks of others.
SL.PE.2.1.C	Ask for clarification and further explanation as needed about the topics and texts under discussion.

Assessment Evidence

Formative	Teacher observations, Class discussions, Lab Activities, Key concepts and vocabulary quizzes, Science Starter's/Do Nows, Open Ended Responses, Modeling, Simulations, Innovators Monthly Research, Lab Activities, Vocabulary Responses, Exit Questions, Interactive Digital Assessments embedded in Exploring Science Digital Book
Summative	In correlation with the NGSS, students must demonstrate the following as summative assessments: 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. 2-LS4-1., Make observations of plants and animals to compare the diversity of life in different habitats. Other summative assessments will include but are not limited to: projects, summative tests, lab skills demonstrations, and vocabulary quizzes.
Alternative & Benchmark	Alternative - Read to the student and chart oral responses. Word banks, sentence frames, oral responses, graphic organizers, observations, portfolios of student work, orally administered assessments, and anecdotal notes. Benchmark – LinkIt Benchmark Assessment, Teacher Generated Assessments
Assessment Evidence Resource	

Instructional Resources

Smartboard, Computers, Websites and digital interactives/models, Multi-media presentations, Video Streaming, Brain Pop, Middle School Science, Generation Genius Digital Curriculum, Mystery Science Digital Curriculum, Amplify Digital Curriculum, Microsoft 365, Primary and Secondary Source Documents, BrainPop Jr., Assorted lab materials., Assorted lab materials, Crayons, Scissors, Markers, Paper, Graph Paper, Rulers, Tape, Construction Paper Second Grade Science Labs

Instructional Resource List

Curricular Mandates

Below are the curricular requirements as defined in NJ Administrative Code and Statute

	Amistad		Diversity, Equity, and Inclusion
	Holocaust		LGBT and Disabilities (Grades 6-12)
X	Climate Change		Asian American & Pacific Islander

Social Emotional Learning (SEL) Competencies

NJ Social and Emotional Learning Competencies & Sub-Competencies

	Self-Awareness		Relationship Skills
X	Responsible Decision-Making	X	Social Awareness
	Self-Management		

21st Century Skills & Themes

X	Global and Cultural Awareness		Technology Literacy		Planning and Budgeting
X	Creativity and Innovation		Financial Institutions		Risk Management and Insurance
X	Information and Media Literacy		Digital Citizenship		Economic and Government Influences
X	Critical Thinking and Problem Solving		Credit Profile		Career Awareness and Planning
	Civic Financial Responsibility		Financial Psychology		