



UNIT 4

INTERDEPENDENT RELATIONSHIPS IN ECOSYSTEMS: ANIMALS, PLANTS, AND THEIR ENVIRONMENT



Unit 4: Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

14 weeks

In this unit, students will develop an understanding of what plants and animals, including humans, need to survive, and the relationship between their needs and where they live. Students will understand the basic needs for animals and plants to live and grow. They will make observations about the needs of plants and animals and describe patterns they find in their needs to survive.

They will use models (such as drawings, physical representations, dioramas, diagrams, drama, or storyboards) to represent why a plant or animal lives in a specific environment. (For example, a deer eats buds and leaves; therefore they usually live in forested areas.) Students will also use evidence to support an argument that plants and animals, including humans, can change the environment to meet their needs (for example, a beaver builds a dam in the river.)

Students will understand that we use resources from the land. We use these natural resources for everything we do. When we use these resources, we can impact the world around us. However, we can make choices that will reduce their impacts on the land, water, air, and other living things. Students will be able to communicate solutions that will help reduce the impact that humans may have on the land, water, air and/or other living things in their local environment.

Unit 4 Performance Expectations

- ❖ **K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.**
Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and that all living things need water.
- ❖ **K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.**
Clarification Statement: Examples of plants and animals changing their environment could include squirrels digging in the ground to hide food and tree roots breaking concrete.
- ❖ **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.**
Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.
- ❖ **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.***
Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.



Unit 4 Essential Questions:

- ❖ What do plants/animals need to survive?
- ❖ Where do organisms live and why do they live there?
- ❖ How can plants/animals change (use) their environment to meet their needs?
- ❖ How can we reduce our impact on land, water, air, and other living things?

In Unit 4, students will understand...

- ❖ All animals need food in order to live and grow.
- ❖ Animals get their food from plants and other animals.
- ❖ Plants need water and light to live and grow.
- ❖ Plants and animals can change their environment.
- ❖ Living things need water, air, and resources from the land.
- ❖ Organisms live in places that have the things they need.
- ❖ Humans use natural resources for everything they do.
- ❖ Things that people do to live comfortably can affect the world around them.
- ❖ We can make choices that will reduce our impacts on the land, water, air, and other living things.

Unit Vocabulary:

observe/observation	human	water
pattern	basic needs	land
living thing (organism)	survive/survival	air
plant	environment	light
animal	natural resource	food

Additional Content Connections:

*These connections provide opportunities to score to other content standards with focused instruction.

ELA:

- ❖ Speaking and Listening
 - SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood
 - SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups



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Students who demonstrate understanding can:

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

[Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and that all living things need water.]

K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include squirrels digging in the ground to hide food and tree roots breaking concrete.]

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. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]

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.* [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Developing and Using Models Modeling in K–2 builds on prior experiences and progresses to include using and developing models (e.g., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions. - Use a model to represent relationships in the natural world. (K-ESS3-1) Analyzing and Interpreting Data Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. - Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1) Engaging in Argument from Evidence Engaging in argument from evidence in K–2 builds on prior experiences and progresses to comparing ideas and representations about the natural and designed world(s). - Construct an argument with evidence to support a claim. (K-ESS2-2) Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information. - Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (K-ESS3-3)	LS1.C: Organization for Matter and Energy Flow in Organisms - 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-LS1-1) ESS2.E: Biogeology - Plants and animals can change their environment. (K-ESS2-2) ESS3.A: Natural Resources - 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-ESS3-1) ESS3.C: Human Impacts on Earth Systems - 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-ESS2-2, K-ESS3-3) ETS1.B: Developing Possible Solutions - 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. (K-ESS3-3)	Patterns - Patterns in the natural and human designed world can be observed and used as evidence. (K-LS1-1) Cause and Effect - Events have causes that generate observable patterns. (K-ESS3-3) Systems and System Models - Systems in the natural and designed world have parts that work together. (K-ESS2-2, K-ESS3-1) Connections to Nature of Science Scientific Knowledge is Based on Empirical Evidence Scientists look for patterns and order when making observations about the world. (K-LS1-1)

