



### Unit 1

## Plant and Animal Survival

### Essential Question

*This question guides the student experience throughout the unit and is open-ended and enduring.*

How do the needs of plants and animals determine where they live and how they survive?

### Unit Summary

*This summary provides high-level information about the main learning outcomes within this unit.*

Students are introduced to the unit's anchoring phenomenon of how one strawberry plant grew berries while another one wilted. In this unit, students explore what kinds of living things are present in an area, and why some plants and animals live in certain places, but others do not. Students discover what animals and plants need to survive and how sometimes that survival comes down to dependence on another plant or animal. Students explore the many different kinds of living things in an area as they examine case studies of how plants and animals survive in four different habitats: rainforest, desert, pond, and ocean. Then, using what they know about what plants need and biodiversity, students plan their own food garden. Will students figure out what plants need to live to make their garden a success?

### Guiding Questions

*At the end of this unit, students should be able to respond to these questions as they demonstrate understanding of key concepts, skills and relevance to their own lives.*

### Content

- What do strawberry plants need to grow and survive?
- How do pollinators help strawberry plants?
- Why can't a strawberry plant survive in every habitat?

### Process

- How can you figure out if a habitat has what a strawberry plant needs to survive?
- What clues help you decide if a plant and animal depend on each other?
- What steps would you take to test where a strawberry plant could grow best?

## Reflective

- What did you learn about what plants and animals need to survive that surprised you?
- Have you ever seen a plant or animal in a place where it didn't seem to belong? What do you think happened?
- Why do you think it's important to understand how living things depend on each other and their environment?

## Power Standards

*These state standards have been identified as critical to students' long-term learning progression in this discipline. They are assessed within the scope of this unit.*

- **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.
- **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.



## Unit 2

### Materials and Their Uses

#### Essential Question

*This question guides the student experience throughout the unit and is open-ended and enduring.*  
How do the properties of materials help us understand how they are used and how they change?

#### Unit Summary

*This summary provides high-level information about the main learning outcomes within this unit.*  
Students are introduced to the unit's anchoring phenomenon of how sometimes ponds are filled with water, but other times, they appear icy. In this unit, students find out what everything is made of by classifying materials by their properties and comparing the differences between liquids and solids. Students understand how materials are used for different purposes, how materials are reused, what happens when materials are mixed, and what happens when materials are heated or cooled. Using what they know about materials, can students determine which materials to use in different weather, specifically to stay dry?

#### Guiding Questions

*At the end of this unit, students should be able to respond to these questions as they demonstrate understanding of key concepts, skills and relevance to their own lives.*

#### Content

- What is the difference between water and ice, and how are they the same?
- Why are different materials used to build different types of bridges?
- What happens to water when it is heated or cooled?

#### Process

- How can you test whether a material is a solid or a liquid?
- What steps would you take to decide which material is best for building a bridge?
- What do you observe when you mix different materials together or change their temperature?

## Reflective

- Have you ever seen water freeze or melt? What did you notice, and how does that connect to what we learned?
- Why do you think it's important to choose the right material for building something?
- What surprised you about what happens when materials are mixed or reused?

## Power Standards

*These state standards have been identified as critical to students' long-term learning progression in this discipline. They are assessed within the scope of this unit.*

- **2-PS1-1** Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- **2-PS1-2** Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
- **2-PS1-3** Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.
- **2-PS1-4** Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
- **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.



### Unit 3

## Earth's Surface

### Essential Question

*This question guides the student experience throughout the unit and is open-ended and enduring.*

How do natural forces shape Earth's surface, and how can we understand and represent those changes?

### Unit Summary

*This summary provides high-level information about the main learning outcomes within this unit.*

Students are introduced to the unit's anchoring phenomenon of how Earth's land takes on many different shapes. In this unit, students discover the features of the Earth's surface, including its many different forms of land and water. Students understand how maps are used to represent land and water. Students go on a video tour of some national parks in America to examine rapid and slow changes including how natural events such as earthquakes, volcanoes, and erosion from wind and water shape Earth's surface. Students find out how problems that are caused by wind and water are solved. Using what they know, can students develop a design to protect a shoreline from erosion?

### Guiding Questions

*At the end of this unit, students should be able to respond to these questions as they demonstrate understanding of key concepts, skills and relevance to their own lives.*

### Content

- What are some common land and water features found on Earth's surface?
- How do earthquakes and volcanoes change Earth's surface?
- What symbols do maps use to show land and water?

### Process

- How can you use a map to find different land and water features?
- What patterns do you notice in how wind and water slowly shape the land?
- What steps would you take to investigate how land changes after a flood or tsunami?

## Reflective

- Have you ever seen a landform like a mountain, river, or valley? What did it make you wonder about Earth's surface?
- Why do you think it's important to understand how Earth's surface changes?
- What did you learn that changed the way you think about land and water on Earth?

## Power Standards

*These state standards have been identified as critical to students' long-term learning progression in this discipline. They are assessed within the scope of this unit.*

- **2-ESS1-1** Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
- **2-ESS2-1** Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
- **2-ESS2-2** Develop a model to represent the shapes and kinds of land and bodies of water in an area.
- **2-ESS2-3** Obtain information to identify where water is found on Earth and that it can be solid or liquid.
- **K-2-ETS1-3** Analyze data from texts of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.