

Big Idea: Plants and animals use various methods to obtain the things that they need to live and grow.

Guiding Questions:

What do plants need to live and grow?

What is the relationship between what plants need and where they live?

How can plants change their habitat?

21st Century Themes/Skills:

DCI (Disciplinary Core Ideas)	Science and Engineering Practices	Cross Cutting Concepts	Student Learning Objectives	Differentiated Activities (Consider the 5 Es)	Resources/Technology	Formative Assessment	Benchmark Assessment
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)	<u>Planning and Carrying Out Investigations</u> Make observations (firsthand or from media) to collect data that can be used to make comparisons. (K-PS3-1) <u>Analyzing and Interpreting Data</u> Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1) <u>Developing and Using Models</u> Use a model to represent relationships in the natural world. (K-ESS3-1) <u>Planning and Carrying Out Investigations</u> Make observations (firsthand or from media) to collect data that can be used to make comparisons. (K-PS3-1) <u>Analyzing and Interpreting Data</u> Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1) <u>Developing and Using Models</u>	Patterns Patterns in the natural and human designed world can be observed and used as evidence. (K-LS1-1) Systems and System Models Systems in the natural and designed world have parts that work together. (K-ESS3-1), (K-ESS2-2) 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)	SWBAT list the basic needs plants must have to survive. SWBAT list the basic needs animals must have to survive. SWBAT compare the basic needs of plants and animals. GUIDING LESSON QUESTIONS: What do plants need in order to survive? What do animals need in order to survive?	Engage 1: Begin by having students view the following images: Poisonous Frog hiding in plant, Koala in tree, Frog on water lily pad, Duck, Praying Mantis, Southern right Whale breaching, Rain forest, Sunflower with a person to show scale, For each image, ask students to identify and describe what is in the picture., After viewing all of the images, ask: What do all of these pictures have in common?, Viewing the picture of the sunflower, have students compare the height of the sunflower to the height of the person in the photo, using sentence frames as needed: The sunflower is _____ than the person. The person is _____ than the sunflower. Have students listen to the eBook, What Is Alive? Through a class discussion, help students realize that they, along with plants and other animals, are living things Engage 2: Have the students listen to the eBook, A Riddle. This eBook contains a riddle that describes air. Allow students to interact as a group to solve the riddle. Once students have solved the riddle, ask them why air is important to humans. (We must breathe many times every minute for our entire lives. This is why we need air.) Ask students if any other living things breathe. (Animals on land breathe with lungs. Animals in the water breathe with gills. Plants do not breathe, but they also need air to live.) Next, write the word “need” where the whole class can see it. Tell students that a need is something that a living thing must have in order to survive. Allow students to brainstorm as a group other needs of living things and write their answers on the board. If possible, write the answers in a corner of the board where they can remain for the duration of the lesson. Introduce students to the Hands-On Activity: What Do Pets Need? Students should complete the activity throughout the lesson. The observations that the students make will change as they become more familiar with the needs of animals. Have students view the video segment, Costs of a Pet: Calculating Expenses. After the segment, ask students if they realized how costly it could be to keep a pet. Have students do a think-pair-share to discuss what needs are more costly than others with a pet.	Model Lesson	1. Have students recall the Hands-On Activity: What Do Pets Need? Have students complete the writing prompt assignment, How Do Different Animals Meet Their Needs? To complete this prompt, students will view the video segment, The Living Things Around Us: Animals and Plants. They will observe and record physical characteristics and behaviors that an animal uses to meet its needs. Then students will compare the animal from the video segment to the classroom pet from the Hands-On Activity. Give students another writing prompt assignment, How Do Different Plants Meet Their Basic Needs? As part of this prompt, students will use the Fun-damental Being Alive and the video segment Desert Habitat. Then students will observe the physical characteristics of plants that help them survive and record them on the Student Sheet of the Fun-damental. Finally, students will compare how two different plants meet their needs. 2. Have students complete the Constructed Response (CR) items titled Primary Assessment: Basic Needs. Some students may wish to complete the Primary Assessment:	

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	Use a model to represent relationships in the natural world. (K-ESS3-1) Engaging in Argument from Evidence Construct an argument with evidence to support a claim. (K-ESS2-2)			Explore 1: Present students with the first Lesson Question and have them complete the first section of the Scientific Explanation: Basic Needs using this question. Students may type their responses directly into the digital resource or they may write or draw their responses on a printed copy of the resource. The digital resource includes a link to a PDF version of the Student Sheet. Guide students to think about what they already know about the question, and record their prior knowledge in the Prior Knowledge section. Encourage students to think about and record how they know what they do (evidence and reasoning). Introduce the Evidence section, explaining to students that they will fill this in as they go through the rest of the lesson. Have students begin the Evidence section with information gathered during Engage. Explore 2: Have students view the video segment, How Plants Are Different from and Similar to Other Living Things. Help students list the difference between plants and animals. (Plants can make their own food and cannot move in the same way that animals do. Animals cannot make their own food, but can move at some point in their lives.) Next, return to your brainstorming list from the Engage activity in Session 1. Ask students which of the needs on the list are needed by plants in order to survive. Circle the answers that students think plants need to survive. Have students draw a two-column chart in their science notebooks. Students should label one column "Plant Needs" and one column "Animal Needs." Tell students they will be learning five basic needs of plants. To begin focusing on the needs of plants, have students investigate the Explore section of the Core Interactive Text, focusing on the first Lesson Question: What do plants need in order to survive? Have them follow along as you read the text related to the first Lesson Question aloud. Then, have them view the glossary animations for the following terms: plant, animal, light, water, minerals, soil, air, and temperature. Show students the video segment, What Plants Need to Live. Have students list some of the basic needs of plants in their charts as they view the video. Pause the video at 0:21 and ask students what will happen to plants that don't get enough water. Pause again at 1:51 and ask students how plants get their water. (Most plants use roots in the ground to get water and minerals from the soil.) Ask students if plants from the rain forest could live in the desert. (The answer is no. This is because plants are adapted to a certain conditions, including a certain temperature range. Plants need a specific temperature range in order to survive.) At 2:26, help students relate the energy we get from food to the energy plants get from the sun. (Plants convert energy from the sun into sugar that they use for food. That is why many living things are able to use plants as a food source.) At 3:07, ask students what they think will happen to the plant that does not get enough light. What does this say about a plant's need for light? This video segment clearly identified water and light as basic needs of plants. These are two main needs of plants, but you will need to explain that plants also require air, minerals, and a certain temperature range. Explain that photosynthesis is very important for plants. It is the process they use to make their own food. Plants need light, water, and air to conduct photosynthesis. This means without light, water, or air, plants cannot make food. Have students begin the Hands-On Activity: What Do Plants Need? Students will grow two plants, one that can receive fresh air and one that is covered so that it cannot receive fresh air. Students can set up the activity and make their observations throughout the lesson. Plants use air to make their own food. Challenge students with the following question. Ask: If plants do not have air then what other basic need will not be met? (Plants will not be able to make their own food, and without food, plants have no energy to live and grow.) Now students know that plants need light. Have students read the passage, What Is Light? Light is visible energy. Many different things give off light. However, plants need sunlight to make food. Sunlight is the primary energy source for all life on Earth. Have students view the video segment, Solar Energy. At the end of the segment, ask students to explain why plants need sunlight. Then, ask students to explain why other living things need plants. Explain that plants also need minerals that they cannot get by making their own food. Most plants use their roots to get minerals from the soil. Finally, explain that plants cannot move like animals do, and this means they cannot find shelter when it is too hot or too cold. Plants can survive in certain temperatures. Some plants can survive in very cold temperatures and some plants can survive in very warm temperatures. Plants grow in areas that provide the best temperature range for that particular type of plant. At the end of this Explore activity, make sure students have listed the following basic plant needs in their charts: water, air, light, minerals, and temperature range.		Basic Needs (Spanish Version).1.	

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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)			Explain 1: Have students use the evidence that they collected in the Explore sessions to complete the sections of the Scientific Explanation: Basic Needs titled "Claim" and "Explanation" for the first Lesson Question. Students may type their responses directly into the digital resource, or they may write or draw their responses on a printed copy of the resource. The digital resource includes a link to a PDF version of the Student Sheet. Have groups of 2–4 students share their explanations with each other. Students should then revise or enhance their explanations based on group discussion. Explain 2: Tell students that a nutrient is a substance that organisms need to live and grow. Minerals are nutrients that plants need. Most plants get nutrients from the soil. Have students read the passage, Hungry Plants, and view the video segment Venus Flytrap: The Nutrient Trap. Then have students view the image, Insect eating pitcher plants. Ask students to have a think-pair-share in which they explain to each other how the pitcher plants might trap insects. Also, ask students to explain which basic needs plants are meeting when they trap and digest insects.			
ESS2.E: Biogeology				Explore 1: Remind students of the Lesson Questions and have them review what they have written on the Scientific Explanation: Basic Needs Student sheet or its PDF version. Explain to students that they will gather more evidence about the following Lesson Question: What do animals need to survive? Explore 2: Return to the list of needs the class compiled during the brainstorming session in the Engage activity. Ask students which of these needs are specific to animals. Circle these needs with a different color of chalk or put a star by them. Have students should return to the two-column chart in their science notebooks. The chart should now have the five basic			
Plants and animals can change their environment. (K-ESS2-2)				Explain 1: Have students use the evidence that they collected in the Explore 2 sessions to add to the sections of the Scientific Explanation: Basic Needs titled "Claim" and "Explanation." Students may type their responses directly into the digital resource or they may write or draw their responses on a printed copy of the resource. The digital resource includes a link to a PDF version of the Student Sheet. Have groups of 2–4 students share their explanations with each other. Students should then revise or enhance their explanations based on group discussion. Explain 2: Students should complete the "Life's Basic Needs" section of the Fun-damental activity Being Alive. Introduce students to the concept of Venn diagrams. Venn diagrams are a way to compare two topics. Show students how to make a Venn diagram by drawing two overlapping circles; alternatively, you may direct them to the Venn Diagram resource. Characteristics that the two topics have in common go in the overlapping circles. Characteristics that are unique to each topic are placed in the individual circles. As a class, complete a Venn diagram that compares the needs of plants and animals. Remind students to use their charts from the Explore activities to know what needs go into each part of their diagram. As students make suggestions from their notes, write them in the diagram. Then review the completed Venn diagram with students, pointing to each word and reading it aloud as students follow along.			
				Elaborate: By now, students should recognize that all living things require water. Have students brainstorm ways that humans get water. Have students view the video segment, Where Do We Get Our Water? After they view video segment, ask students if they were aware of the fact that our drinking water could come from the ground. Have students brainstorm the ways that they use water every day. Have students view the video segment, How Much Water Do People Use? Discuss with students the fact that many people in the United States do not drink most of the water they use. We use it for such things as showers, laundry, or cooking. Have the students view the video segment, Is There Enough Water for Everybody's Needs and Wants? This segment brings to light the fact that not all people on the planet have enough fresh water			

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