**Big Idea:**
Why do we see different living things in different habitats
**Guiding 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?

**21st Century Themes/Skills:**

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| LS2.A: Interdependent Relationships in LS4.D: Biodiversity and Humans<br>· 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)<br>Ecosystems<br>· Plants depend on water and light to grow. (2-LS2-1) | Practices:<br>.Planning and Carrying Out Investigations<br>· Plan and conduct investigations collaboratively to produce evidence to answer a question. (1-PS4-1),(2-LS2-1)<br>· Make observations (firsthand or from media) to collect data that can be used to | Cause and Effect<br>· Events have causes that generate observable patterns. (2-LS2-1)<br>Structure and Function<br>· The shape and stability of structures of natural and designed objects are related to their function(s). (2-LS2-2), (K-2-ETS1-2) | SWBAT: Sort objects as living or non living.<br>SWBAT: Identify needs of living things.<br>SWBAT: Observe and describe the characteristics of plants and animals.<br>SWBAT: Recognize when stories give attributes to plants and animals that they don't really have. | **ENGAGE 1:**<br>Have students view the short video and then discuss how they can and can't use different senses.<br>Ask students what they think they would observe in their own backyards or another familiar spot, such as the school playground or nearby park, using different senses.<br>Guide students through Hands-On Activity. Throughout the activity, guide students to make connections between what they are observing and whether or not what they are observing is living. Use the term **evidence.**<br>Ask: What evidence do you have that X is living/nonliving? | A1=HYPERLINK("https://drive.google.com/open?id=0BwzEDu0zDzEqQ2RMWlNzLUtaMnc","Unit 1 Resources") | Have students complete the assessment. Encourage students to explain how they know the answer as well as what the answer is.<br><br>Have students use the Board Builder tool to create a presentation about how to care for a specific plant or animal. The presentation should include what the plant or animal | |

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| · Plants depend on animals for pollination or to move their seeds around. (2-LS2-2)<br>ETS1.B: Developing Possible Solutions<br>· 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.(secondary to 2-LS2-2)<br>ETS1.A: Defining and Delimiting Engineering Problems<br>· A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1) | make comparisons. (2-LS4-1)<br>Developing and Using Models<br>· Develop a simple model based on evidence to represent a proposed object or tool. (2-LS2-2)<br>Asking Questions and Defining Problems<br>· Ask questions based on observations to find more information about the natural and/or designed world(s). (K-2-ETS1-1)<br>· Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1) | Connections to Nature of Science<br>Scientific Knowledge is Based on Empirical Evidence<br>Scientists look for patterns and order when making observations about the world. (2-LS4-1) | | **EXPLORE 1:**<br>Present students with the Lesson Questions. Display the Scientific Explanation and as a class, complete the "My Question" section of the Scientific Explanation using the Lesson Questions.<br>Introduce the "Evidence" section: Evidence is what you find out about the question during the lesson. As we learn, we can use this area to take notes.<br>Guide students to think about what they already know about each question or what they learned during the Engage session.<br>As a class, begin the Evidence section with information students already know and information they gathered during Engage.<br>**EXPLORE 2:**<br>Have students work in pairs or small groups to explore the text, video segments, and reading passages of the CIT.<br>As students are exploring, circulate to make sure they are making connections between what they are reading and viewing, and what living things need. Ask: *What makes something living or nonliving? What do living things need? How do you know?* Refer to the samples that they collected in nature during the Engage activity and encourage students to use their observations (grows, does not grow; needs food, does not need food) to make statements about what living things need.<br>Guide students to recognize any new knowledge they have gained from the CIT. Did you learn anything new?<br>Come back together as a class to add to the Evidence section of the Scientific Explanation. In this case, evidence can be in the form of examples. *Did we find any evidence to help us answer this question?*<br>**EXPLORE 3:**<br>Key vocabulary. Write terms on the board (from Review): You might have seen these words before. Draw a picture that illustrates this word.<br>Have students turn and talk with a partner to come up with a sentence that uses each word. Ideally the sentence should be related to one or more of the Lesson Questions.<br>Show or review with students how to use Interactive Glossary to find out what a scientific term means, and have students use the glossary to learn more. What other terms could we look up today that are related to what we have been learning about?<br>**EXPLORE 4:**<br>Guide students through the investigation. Note that this investigation is designed to last at least five days.<br>On each day of the investigation, use the Lesson Questions as a guide to discuss observations and interpretations. Ask students about the relationship between the parts of the plant and the needs of the plant. *Why are leaves important? What are they doing? What does the stem do? How does the plant get water from the soil?*<br>Have students sketch one or two plants in their notebooks and make note of anything they observe about the plants. Remind them that they will be looking for signs of life, so they should sketch as carefully as they can to see changes over time.<br>Have students apply measurement and graphing skills by having students measure the plants each day and use graphs to either show change over time or compare different sets of plants.<br>**EXPLORE 5:**<br>Transition from talking about the needs of plants to the needs of plants and animals by making connections from the plants needs to the needs of animals. If students collected any insects or worms during their nature inspection, use those as examples: *What do you think would happen if a worm didn't have water? What would happen to a dog? What would happen to you?*<br>As a class, read the passages, pausing to allow them to respond to the questions in the text.<br>The last two questions in the passage *What Do People Need?* are open-ended. Use a Venn diagram to compare plants and animals and their needs.<br>**EXPLORE 6:**<br>Allow students to explore the **Fun-damental (Life's Basic Needs).**<br>Come back together as a class and complete the activity together. Have students discuss their choices as they classify needs of living things and label parts of plants and animals.<br>Use the activity to facilitate a discussion about the relationships between the parts of a plant or animal and what the plant or animal needs to stay alive.<br>Return to the Venn diagram comparing plants and animals. *Do we need to add anything?* to review answers.<br>**EXPLORE 7:**<br>Once the class has completed the Plant Needs investigation, facilitate a discussion on what happens when the needs of a plant are not met.<br>Introduce the term **stress**.<br>Have students complete the investigation. Note that this investigation will take at least three days, and can be extended for as long as wanted | | needs, why they have these needs, and what will happen if the needs are not met. | |

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| | | | | **EXPLAIN:**<br>Have students use the evidence they collected in the Explore sessions to complete the "My Claim" and "My claim is true because" sections of the Scientific Explanation student sheet.<br>Begin by giving students a few minutes to think on their own and write down their claims (answers to the question).<br>Then have students get together in groups of 2–4 to share their claims.<br>Come together as a class to complete the Scientific Explanations.<br>Make sure students are able to explain how they know or why they think their claim is true based on the observations they have made or text, video, and other resources they have explored. | Video Segment: Using More Than One Sense at a Time | | |
| | | | | **ELABORATE:**<br>Have students complete the Life Cycles portion of the Fun-damental to introduce the idea of reproduction as a need of living things. Why do living things need to reproduce? What would happen if they did not?<br>Have students watch the video segment and then discuss how the girl made a table to organize data about different types of pets.<br>Divide students into groups and have each group choose a pet. Groups should research the needs of the pet and make a list of all the supplies they would need to take care of it for a month. Have students use the Internet to find out how much the supplies will cost, and add them up to find the total cost.<br>Have groups present the total estimated cost of caring for the animal for a month, and then compare costs using a picture or bar graph.<br>Extend the activity by having students present arguments, based on evidence, about which animals would be best to have as pets in the classroom. Arguments should be based on the animals' needs and the cost or ability to meet its needs.<br>Read with students a story or story excerpt about a living or nonliving things that is given attributes that they don't really have. Discuss, what is real in this story and what is make-believe?<br>Ask students to consider:<br>living vs. nonliving things<br>food sources<br>water sources<br>shelter<br>community<br>other needs of an animal or plant<br>Create a Venn diagram for students on chart paper to compare Real and Make-Believe.<br>Finally, have students write their own stories or poems about living or nonliving things that are different from those in real-life. Students can record their stories or poems and illustrate them. | Video Segment: What Plants Need to Grow | | |
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