

Habitats Near and Far

Engage

Grade: 2nd	Implementation Practice: Whole Class or Small Group
Subject Area: Life Science	Supporting Content: Language Arts
Objective(s):	
<ol style="list-style-type: none"> 1. Students will activate prior knowledge of habitats and the variety of plant and animal life present. 2. Students will observe and compare the similarities and differences of plants and animals. 	

Standards Addressed

NGSS	Performance Expectation 2-LS4-1 - Make observations of plants and animals to compare the diversity of life in different habitats.		
	Disciplinary Core Idea(s)	Science and Engineering Practices	Crosscutting Concept(s)
	<ul style="list-style-type: none"> • Biodiversity and Humans 	<ul style="list-style-type: none"> • Asking Questions and Defining Problems • Obtaining, Evaluating, and Communicating Information 	<ul style="list-style-type: none"> • Structure and Function • Stability and Change
Engineering, Technology, and Application - NA			
CCSS	ELA-Literacy <ul style="list-style-type: none"> • CCSS.ELA-Literacy SL.2.1 - Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups. <ul style="list-style-type: none"> ○ CCSS.ELA-Literacy SL.2.1A - Follow agreed-upon rules for discussion (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). ○ CCSS.ELA-Literacy SL.2.1B - Build on others' talk in conversations by linking their comments to the remarks of others. ○ CCSS.ELA-Literacy SL.2.1C - Ask for clarification and further explanation as needed about the topics and texts under discussion. • CCSS.ELA-Literacy SL.2.2 - Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. • CCSS.ELA-Literacy SL.2.3 - Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue. <ul style="list-style-type: none"> ○ CCSS.ELA-Literacy L.2.3 - Use knowledge of language and its conventions when writing, speaking, reading, or listening. 		

Vocabulary and Skills

Key Terms						Key Skills
habitat	biodiversity	living	alike	needs	temperature	<ul style="list-style-type: none"> compare and contrast categorize and classify observe infer communicate
nonliving	different	diversity	similar	factor	precipitation	
ecosystem	characteristic	needs	thrive	interact	depend	
survive	nutrients	plant	animal	provide	adaptations	

Essential Question(s):

- How are plants and animals similar, and how are they different?
- What are habitats?
- How are habitats similar, and how are they different?

Guiding Question(s): (Use as needed with your students.)

1. How can you tell if something is living or nonliving?
2. What basic needs do all living things have?
3. Can living things survive anywhere there is water, air, food, and shelter?
4. Can you think of any characteristics of an animal that could help it survive in the ocean/desert/rain forest?
5. Does the temperature of an area have any effect on the types of living things found there? What about the precipitation (rainfall)?
6. Does the temperature of an area have any effect on the quantity of living things found there? What about the precipitation (rainfall)?
7. What factors could potentially have an effect on the types of and numbers of living things in a particular habitat?
8. What does diversity mean?

Teacher Background Information

5E Instructional Model - Engage

The 5E instructional model organizes learning experiences so that students have the opportunity to develop their own understanding of the concept over time by building what they know. There are five phases of learning including: Engage, Explore, Explain, Elaborate, and Evaluate. In the 5E instructional model, the purpose of the Engage phase is to activate student's prior knowledge. This is a time for students to unpack what they already know about a concept. The Engage phase should be characterized by a free flowing exchange of ideas. It is not necessary to judge responses as correct or incorrect. Although the teacher should keep a close watch for any potential misconceptions and make a mental note to clear them up in later lessons.

During the Engage phase students should feel free to let their minds wander and feel comfortable sharing thoughts and ideas. The teachers' role is to guide students and help them record and organize their ideas.

As the lesson is introduced, be sure that the students understand that this is an Engage lesson and exactly what that means. Students should know that they need not worry about being right, that this is a time to speak freely and share all of their thoughts.

One way to help students feel more comfortable with accepting all ideas is to use a technique called amplify. When a student shares a response, ask for another student to restate and praise what the first student said. When students know their ideas will be immediately validated, they will be more likely to share freely.

Content Background - Habitats

A habitat is any place a plant or animal lives that provides its basic needs of food, water, air, and shelter. Habitats are made up of both living and nonliving things. The plants and animals that live in a habitat interact and depend on each other for survival.

Habitats can be large, like a desert or small, like a crack in the sidewalk. They can look very different and are found in ecosystems all over the world. For example, a coral reef is a habitat for many different plants and animals just like the boughs of a redwood tree provide a habitat for the plants and animals that live there.

Diversity, or biodiversity, refers to the variety of living things that can be found on Earth. The plants and animals that are found on Earth are always changing and adapting to better suit their environment and meet their basic needs. The variety of life that we have now is very different from what was here millions of years ago as well as different from what we can expect to find millions of years into the future.

Advance Preparation

- Choose a location and a good time for a nature walk in your schoolyard habitat.
- Load the 360° video onto the devices the students will be using.
- Model how to use the 360° video, including spinning around, looking up and down.
- Set up a projector to show the 360° video to the whole group.

Potential Misconceptions

- Plants and animals can live anywhere there is air, food, and shelter.
- Most living things are found on land.
- Coral is a rock and therefore, nonliving.

Before Viewing

Think about the plants and animals you have seen around your neighborhood or school.

Discussion Question(s):

1. What types of plants have you seen? Describe color, shape, size, smell, texture.
2. What types of animals have you seen? Describe color, shape, size, sound, behavior.
3. Have you seen that plant/animal there before?
4. Why do you think that plant grows in that particular spot?
5. Why do you think that animal lives in that particular spot?
6. Were you surprised to see that plant/animal?
7. Would you be surprised if you saw a (choose an improbable plant/animal)?

Student Activity: *(Access student prior knowledge and build background knowledge.)*

Set the Stage:

- Use the discussion questions above to help students uncover what they already know about the many different types of plants and animals they see in their everyday lives. Record their answers on chart paper to display.
- Students should record their thoughts in a science journal using a T-Chart or other graphic organizer. Students should use both words **and** pictures that describe the different plants and animals they have observed in their neighborhood or around the school campus.

Take it Outside:

- Take the students on a short walk to observe the schoolyard habitat. Students should bring their science journals and add their new observations to their graphic organizer from the class discussion.

Encourage students to look for:

- Plants of different sizes and colors and where they are growing.
- Animals on the ground, in the trees, and in the air.
- The nonliving parts of the habitat that are used by the living things.

After the Walk:

- Lead a short discussion about what the students observed, allow them to share examples. Ask if they were surprised by any of the plants/animals they observed.

While Viewing

*As you experience the 360° video, think about how the living things you see are the **same** and how they are **different** from the ones we observed on our nature walk through the schoolyard habitat.*

Discussion Question(s):

1. Do you see the same types of life we saw on our nature walk?
2. How are the plants and animals here the same as the ones we saw on our nature walk? What are some possible reasons for those similarities?
3. How are the plants and animals here different than the ones we saw on our nature walk? What are some possible reasons for those differences?

4. Do you see more or less animals on the coral reef than you did on our nature walk?
5. Do you see more or less plants on the coral reef than you did on our nature walk?

Student Activity: *(How are students engaged? How are students recording their observations and processing what they are learning?)*

Students should observe the different living things in the 360° video and add these observations to their graphic organizer using words and pictures. Encourage students to watch the video multiple times to experience all the different views of the 360° video.

After Viewing

Think about the living things that you observed in the 360 video.

Discussion Question(s):

1. Did you see many different types of living things in the video?
2. Describe the plants and animals you observed in the video.
3. Were you surprised by anything you saw?
4. Did you see any of the same plants or animals that we saw on our nature walk?
5. Could the (bird) from the nature walk also live on the coral reef? What about the (bird) enables it to thrive in our school yard habitat?
6. Could the sea snake from the video also live in our schoolyard habitat? What about the sea snake enables it to thrive in the ocean?
7. If a habitat were to undergo a drastic change in temperature (or precipitation), what effect would that have on the plants and animals living there?
8. How are the schoolyard habitat and the coral reef habitat the same? What are some possible reasons for those similarities?
9. How are the schoolyard habitat and the coral reef habitat different? What are some possible reasons for those differences?

Student Activity: *(How are students synthesizing and analyzing what they learned from the activity/video?)*

Creature Characteristics

Use this culminating engage activity as a way to review the diversity of life that students have observed and discussed. Students should collaborate in groups of three to create their own creature. Students will assign their creature specific characteristics. (Review the suggested categories below. Choose categories and terminology that your students would be comfortable using)

Each group will generate a picture and written description of their creature and present it to the class. Based on the characteristics that were chosen by the students, the audience should speculate about the different habitats that this creature could thrive in as well as examples of habitats in which the creature would most likely NOT thrive.

Suggested Characteristics

Body Covering: scales, feathers, fur, or skin

Appendages: tail, wings, legs, arms,

Climate: hot and dry, hot and wet, cold and dry, cold and wet

Living Thing: plant, insect, mammal, bird, reptile, amphibian, fish, invertebrate

Shelter: cave, nest, burrow, tree, tall grass

Extension Ideas

Literature Extension: To further increase student awareness of the biodiversity that is present in water ecosystems, read and discuss the picture book, *A Swim through the Sea*, Written and Illustrated by Kristin Joy Pratt

This book is a wonderfully playful way to introduce young students to the richness of life that can be found in our oceans. From fish to reptiles, mammals to invertebrates, Kristin Joy Pratt's beautiful pictures and engaging alliteration will excite students and get them wanting to learn more about biodiversity.