

Plants and Animals

Lesson 1d: Environments

Grade: Kindergarten	Length of lesson: 40 minutes	Placement of lesson in unit: 1d of 6 lessons on plants and animals
Unit central question: Do plants and animals need the same things to live and grow? Explain your thinking.		Lesson focus question: Where do plants and animals in other places around the world get what they need to live and grow?
Main learning goal: There are many different kinds of environments around the world.		
Science content storyline: We have many ideas about what plants and animals need to live and grow. We'll do some investigating to find out which of our ideas are correct. But one thing that's very important for all plants and animals is where they live. They must live in a place—an environment—where they can get everything they need to live and grow. There are many different kinds of environments around the world where plants and animals live.		
Ideal student response to the focus question: Plants and animals get what they need to live and grow from their environment. An environment includes both living and nonliving things. There are many different kinds of environments around the world where plants and animals live.		

Preparation

Materials Needed

- Science notebooks
- Chart paper and markers
- Class terrarium (from lesson 1a)
- Circle map from lesson 1c (What Plants and Animals Need)

Student Handouts and Teacher Masters

- 1.1 Terrarium Instructions and Mantis Care (Teacher Master) (from lesson 1a)
- 1.4 Environment Picture Cards, laminated (1 set per pair; 1 set for teacher)

Ahead of Time

- Review the content background document and Common Student Ideas about Plants and Animals.
- Prepare and laminate one set of environment picture cards (handout 1.4) for each pair of students and one set for you.
- Make sure the *environment* definition is posted on the board or on a word wall for students to refer to throughout the lesson series.
- Review the care instructions for the terrarium and mantis from handout 1.1. Follow the feeding schedule, mist the inside walls of the terrarium with water every 2 or 3 days, and lightly water the soil for the plants. Be careful not to overwater.
- **ELL support:** Meet with ELL students in advance and introduce them to the lesson content, structure, materials, and activities so they know what's expected and can participate more fully. Identify vocabulary terms in the lesson plan to review with students in advance, including *evidence*. Make a list of key terms from the lesson and display them for easy reference. Students may not be familiar with some of the environmental images used in this lesson, so have them look at the picture cards from handout 1.4 and practice describing what they see in English. Students are expected to use these images as *evidence* for why environments are alike or different, so make sure to explain the word *evidence* in advance and have them write it in their notebooks. It might also be helpful if they think of an image that reminds them of the word and add the word, the definition, and the image to a picture dictionary.

Lesson 1d General Outline

Time	Phase of Lesson	How the Science Content Storyline Develops
6 min	Link to previous lesson: The teacher reviews the unit central question and engages students in summarizing their findings from the previous lesson.	<ul style="list-style-type: none"> • An environment is a place where living things can get the things they need to live and grow. It also contains nonliving things. • Our terrarium is an environment because the plants and animals can get what they need to live and grow, and it contains nonliving things. Our own human environment also has what we need to live and grow.
1 min	Lesson focus question: The teacher introduces the focus question, <i>Where do plants and animals in other places around the world get what they need to live and grow?</i>	
5 min	Setup for activity: Students revisit the picture of a deer in a meadow from the previous lesson and explain why they think it shows an environment. Then the teacher sets up a new activity in which students look at picture cards from different parts of the world and decide whether they show an environment.	<ul style="list-style-type: none"> • All living things need an environment where they can get what they need to live and grow. An environment includes both living and nonliving things. • There are many different kinds of environments around the world that have a variety of plants and animals.
8 min	Activity: Working in pairs, students examine picture cards from different parts of the world and determine whether each picture shows an environment based on the definition they learned.	
10 min	Follow-up to activity: Pairs share their decisions about which picture cards represent an environment and why they think so. Then pairs discuss whether all environments are alike based on the evidence they gathered.	
10 min	Synthesize/summarize today's lesson: The teacher revisits the focus question. Then students draw pictures of an environment where plants and animal can get what they need to live and grow. Afterward, they share their drawings and discuss ways to improve them based on the definition of an environment.	<ul style="list-style-type: none"> • An environment includes living things, like plants and animals, and nonliving things, like water, dirt, and air. Plants and animals can get what they need to live and grow in an environment. There are many different kinds of environments around the world.
1 min	Link to next lesson: The teacher foreshadows the focus of the next lesson.	

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
6 min	<p>Link to Previous Lesson</p> <p>Synopsis: The teacher reviews the unit central question and engages students in summarizing their findings from the previous lesson.</p> <p>Main science idea(s):</p> <ul style="list-style-type: none"> • An environment is a place where living things can get the things they need to live and grow. It also contains nonliving things. • Our terrarium is an environment because the plants and animals can get what they need to live and grow, and it contains nonliving things. Our own human environment also has what we need to live and grow. 	Link science ideas to other science ideas.	<p>Show slides 1 and 2.</p> <p>Who remembers the big question we’ve been thinking about in this unit? Let’s read it together:</p> <p><i>Do plants and animals need the same things to live and grow? Explain your thinking.</i></p> <p>NOTE TO TEACHER: <i>Point to the words on the board as you read the unit central question aloud together.</i></p> <p>In our last lesson, we started exploring what living things need to live and grow. We’ll talk about this some more in coming lessons, and by the end of our unit on plants and animals, we’ll use everything we’ve learned to answer this question.</p> <p>Last time, we also learned a new word that describes where plants and animals live. Who can tell me what that word is? It’s a tricky word to say.</p> <p>That’s right! Our new word is <i>environment</i>. What is an environment?</p> <p>Show slide 3.</p> <p>Let’s read our definition of an environment together:</p>	<p>Environment.</p> <p>It’s a place where living things get what they need to live and grow.</p>	

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
		<p>Highlight key science ideas and focus question throughout.</p> <p>Engage students in constructing explanations and arguments.</p> <p>Engages students in analyzing and interpreting data and observations.</p>	<p>An <i>environment</i> is a place where living things can get what they need to live and grow. There are both living and nonliving things in an environment.</p> <p>NOTE TO TEACHER: <i>Point to the definition on the board (or word wall) as you read it aloud with students.</i></p> <p>What did we decide about our terrarium? Is it an environment or not?</p> <p>What did we decide about our own human environment? Does it have what we need to live and grow?</p>	<p>It's an environment.</p> <p>Because it has living and nonliving things in it.</p> <p>Because it has what plants and animals need to live and grow.</p> <p>Yes, because we can get the food we need at home, at school, at restaurants, and at grocery stores.</p>	<p>And why do we think it's an environment?</p> <p>Any other reasons?</p> <p>Does our environment have</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			<p>Does our environment have anything else that helps us live and grow?</p> <p>Besides people, what are some of the other <i>living</i> things in our environment?</p> <p>What are some of the <i>nonliving</i> things in our environment?</p>	<p>Yes, it has water and other drinks we can get at home, at school, and at restaurants and grocery stores.</p> <p>We have homes so we don't get too cold or wet.</p> <p>Bugs!</p> <p>Birds.</p> <p>Dogs and cats.</p> <p>Trees and flowers.</p> <p>Houses.</p> <p>Cars.</p> <p>Furniture.</p> <p>Roads and</p>	<p>anything else we need?</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			<p>You've done a great job summarizing what we learned yesterday!</p>	<p>sidewalks.</p> <p>Buildings.</p>	
1 min	<p>Lesson Focus Question</p> <p>Synopsis: The teacher introduces the focus question, <i>Where do plants and animals in other places around the world get what they need to live and grow?</i></p>	<p>Set the purpose with a <u>focus question</u> or goal statement.</p>	<p>Show slide 4.</p> <p>So last time, we explored two environments. Our terrarium is an environment because plants and animals can get what they need to live and grow there. We also talked about our own human environment and how we can get what we need to live and grow.</p> <p>Today we'll explore other kinds of environments where plants and animals can get what they need to live and grow.</p> <p>The focus question we'll think about is <i>Where do plants and animals in other places around the world get what they need to live and grow?</i></p> <p>NOTE TO TEACHER: Write the focus question on the board for students to refer to throughout the lesson and draw a box around it. Then point to the words as you repeat the question aloud.</p>		
5 min	<p>Setup for Activity</p> <p>Synopsis: Students revisit the picture of a deer in a</p>	<p>Make explicit</p>	<p>Show slide 5.</p> <p>Who remembers this picture of a deer in a meadow that we looked at in our last lesson? Is this an</p>		

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
	<p>meadow from the previous lesson and explain why they think it shows an environment. Then the teacher sets up a new activity in which students look at picture cards from different parts of the world and decide whether they show an environment.</p> <p>Main science idea(s):</p> <ul style="list-style-type: none"> All living things need an environment where they can get what they need to live and grow. An environment includes both living and nonliving things. There are many different kinds of environments around the world that have a variety of plants and animals. 	links between science ideas and activities before the activity.	environment? What did we decide?	<p>We decided that it's an environment.</p> <p>Because it has plants and animals in it that can get what they need to live and grow.</p> <p>The deer is an animal, and the bushes and trees are plants.</p> <p>The deer eats the leaves on the bushes, so it's getting what it needs to live and grow.</p> <p>I disagree because the deer can't get everything it needs to live and grow</p>	<p>Why did we decide that?</p> <p>Say more about that.</p> <p>How is this an environment for the deer?</p> <p>Any other ideas? Does anyone disagree that this is an environment for the deer?</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
				<p>there. There isn't any water.</p> <p>Yes, because then the deer could get food and water to live and grow.</p> <p>Yes, because plants can get the sunlight they need.</p> <p>No, because there isn't any water.</p> <p>Yes, because the plants would have what they need to live and grow.</p>	<p>So the deer needs an environment that has both food and water. Could this be an environment for the deer if there's water nearby?</p> <p>Could this be an environment for the plants, too?</p> <p>Could this be an environment for the plants if there's water under the ground and when it rains?</p> <p>Would plants have</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			<p>Besides living things like plants and animals, what else does our definition say that an environment must have?</p> <p>So do we all agree that this picture of a deer in a meadow is an environment because it has living and nonliving things in it, and the plants and animals can get what they need to live and grow?</p> <p>Next, you and a partner will look at some pictures of places in other parts of the world and decide whether each picture shows an environment. You'll need to look at our definition of an environment to help you decide. For each picture, ask yourself, <i>Does this show a place where plants and animals can get what they need to live and grow? Does it have both living and nonliving things?</i></p> <p>NOTE TO TEACHER: <i>Point to the definition of an environment posted on the board (or word wall) and</i></p>	<p>Yes, because they need sunlight and air, too.</p> <p>Nonliving things.</p> <p>The ground.</p> <p>Dirt.</p> <p>Yes!</p>	<p>everything they need?</p> <p>What nonliving things do you see in this picture?</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			<i>encourage students to refer to it during the activity.</i>		
8 min	<p>Activity</p> <p>Synopsis: Working in pairs, students examine picture cards from different parts of the world and determine whether each picture shows an environment based on the definition they learned.</p> <p>Main science idea(s):</p> <ul style="list-style-type: none"> All living things need an environment where they can get what they need to live and grow. An environment includes both living and nonliving things. There are many different kinds of environments around the world that have a variety of plants and animals. 	<p>Make explicit links between science ideas and activities during the activity.</p> <p>Engage students in using and applying new science ideas in a variety of contexts.</p>	<p>NOTE TO TEACHER: <i>Have students pair up with an elbow partner. Then give each pair a set of laminated picture cards from handout 1.4 (Environment Picture Cards).</i></p> <p>ELL support: If possible, have ELL students pair up with a shared-language partner for this activity. This will give them an opportunity to practice describing the environments in their home languages as well as English.</p> <p>Show slide 6.</p> <p>Look carefully at each picture and talk with your partner about whether it shows an environment. Think about our definition and ask yourself, <i>Is this a place where plants and animals can get what they need to live and grow? Does it have both living and nonliving things?</i></p> <p>Decide together whether or not the picture shows an environment before you move on to the next picture.</p> <p>NOTE TO TEACHER: <i>As pairs work together, circulate around the room, listen carefully to their conversations and ask questions to reveal the reasons for their decisions. Assess whether students are using all parts of the definition of an environment appropriately. Jot down any common mistakes to</i></p>		<p><i>Challenge questions to ask as pairs work on the task:</i></p> <ul style="list-style-type: none"> How did you

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			<i>address in the follow-up discussion.</i>		decide that this picture shows an environment? <ul style="list-style-type: none"> • Why isn't this an environment?
10 min	<p>Follow-Up to Activity</p> <p>Synopsis: Pairs share their decisions about which picture cards represent an environment and why they think so. Then pairs discuss whether all environments are alike based on the evidence they gathered.</p> <p>Main science idea(s):</p> <ul style="list-style-type: none"> • All living things need an environment where they can get what they need to live and grow. An environment includes both living and nonliving things. • There are many different kinds of environments around the world that have a variety of plants and animals. 	<p>Make explicit links between science ideas and activities after the activity.</p> <p>Engage students in constructing explanations and arguments.</p> <p>Engage students in</p>	<p>Show slides 7–12 (one at a time).</p> <p>NOTE TO TEACHER: <i>During the discussion, emphasize to students the importance of providing reasons for their decisions based on the definition of an environment. Also make sure to address any common mistakes students made during the activity. If time is short, select several environment picture cards to discuss based on your assessment of the pairs work.</i></p> <p>So what did you and your partner decide about each picture card? Which ones show an environment and why?</p> <p>I want everyone listening carefully as your classmates share their decisions and think about whether you agree or disagree with their ideas. Let's help each other give reasons for our choices using ideas from our definition of an environment.</p> <p>NOTE TO TEACHER: <i>Point to the definition on the board (or word wall) and review it as needed during this discussion.</i></p>		

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
		<p>communicating in scientific ways.</p> <p>Ask questions to probe student ideas and predictions.</p> <p>Ask questions to challenge student thinking.</p>	<p>Let's start with the picture of the giraffes. What did you decide and why? When you share your ideas, start your sentence with the words "This is an environment because ..." or "This isn't an environment because"</p> <p>NOTE TO TEACHER: <i>As students share their ideas, record them on chart paper. During this discussion, look for good reasoning and evidence that students are using the definition of an environment to support their choices. As long as students are using the definition appropriately, it doesn't matter if they disagree on how to classify a place, such as a desert. Ask probe and challenge questions to clarify student thinking and guide them toward more-scientific understandings.</i></p> <p>ELL support: Be prepared to provide language support for ELL students who are struggling to explain their reasoning in English. You might remind them of what they said earlier during the pairs work or let them respond in their home language and then ask another student to translate.</p> <p>What about the picture of the penguin? What did you</p>	<p>This is an environment because it's a place where animals and plants live.</p> <p>The giraffes can get their food by eating leaves on the trees.</p> <p>There's dirt for the trees to grow in and to get their water from.</p> <p>This is an environment because it's a place where giraffes and trees can get what they need to live and grow.</p>	<p>What else tells you that this is an environment? Look at our definition.</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			<p>decide and why? Remember our definition of an environment.</p> <p>NOTE TO TEACHER: <i>Discuss as many of the photos as time allows. Remind students to use the definition of an environment to support their decisions. Encourage listeners to agree or disagree, ask questions, or add new ideas to the discussion. Emphasize that all environments have nonliving and living things and ways for living things to get what they need to live and grow.</i></p> <p>Did you think any of the pictures <i>didn't</i> show an environment?</p>	<p>We think this is an environment because it had plants for the penguins to eat and water for them to drink.</p> <p>We agree, but we think the penguins eat fish, and there are fish in the water.</p> <p>The plants are close to the water, so they can get what they need to live and grow.</p> <p>We didn't think the picture with the turtle showed an environment.</p> <p>Because there isn't</p>	<p>Does anyone agree or disagree with that idea?</p> <p>Any other ideas?</p> <p>Why didn't you think it was an environment?</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			<p>Show slide 13.</p> <p>Turn and Talk: Now I'd like you to pair up again and use your picture cards to help you answer the questions on the slide: <i>Do you think all environments are alike? How do you know?</i></p> <p>NOTE TO TEACHER: <i>Some students may not understand what you're asking them to do, so you may want to work through one example together before the Turn and Talk.</i></p>	<p>any water for the turtle to drink.</p> <p>Maybe this is a desert turtle, and it gets water from sucking it out of the plants.</p> <p>Or maybe it doesn't need much water.</p> <p>Or maybe it can store water under its shell when it rains and drink it later on when it's not raining.</p>	<p>Does anyone else agree or disagree?</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			<p>Whole-class share-out: Let’s hear what you think. Are all environments alike? How do you know? What do the pictures show you?</p>	<p>We decided that all environments aren’t the alike because the environments on the picture cards don’t look the same. They’re all different.</p>	<p>Give me some examples to support your answer.</p>
10 min	<p>Synthesize/Summarize Today’s Lesson</p> <p>Synopsis: The teacher revisits the focus question. Then students draw pictures of an environment where plants and animal can get what they need to live and grow. Afterward, they share their drawings and discuss ways to improve them based on the definition of an</p>	<p>Highlight key science ideas and focus question throughout.</p> <p>Engage students in making connections by synthesizing and summarizing</p>	<p>Show slide 14.</p> <p>Today’s focus question is <i>Where do plants and animals in other places around the world get what they need to live and grow?</i></p> <p>Turn and Talk: Talk about this question with an elbow partner and come up with an answer to share with the class. Think about our picture cards and what you learned from today’s investigation.</p> <p>ELL support: If possible, have ELL students pair up with a shared-language partner for this activity.</p> <p>Whole-class discussion: How did you and your</p>		

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
		<p>science ideas in a variety of ways and contexts.</p>	<p>Make sure your picture fits our definition of an environment. That means it should include living and nonliving things, and it should show how a plant or an animal gets what it needs to live and grow.</p> <p>You could draw an environment you're familiar with, like someplace near your home. Or you could draw an environment you know about from a book or a movie or from someplace you've visited. Be ready to share your picture and tell us about your environment.</p> <p>Individual drawing time.</p> <p>Show slide 16.</p> <p>Whole-class share-out: Before you share drawings, let's run through the questions on the slide and make sure your drawings have everything on the checklist. If you need to add or change anything, I'll give you a minute or two to do this.</p> <p>NOTE TO TEACHER: <i>Give students 1 or 2 minutes to revise their drawings after going over the checklist.</i></p> <p>Now let's have several of you come up one at a time and share your drawings. When it's your turn to share, bring me your drawing, and I'll display it on the document reader.</p> <p>As your classmates tell us about their environments, listen carefully and be prepared to ask questions and</p>		

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
		Engage students in communicating in scientific ways.	<p>suggest ways they might improve their drawings. For example, do you think they could add something to their pictures or maybe add more details?</p> <p>NOTE TO TEACHER: <i>As time allows, invite as many students as possible to share their drawings with the class.</i></p>	<p>My picture shows a praying mantis, and it's on a plant, and there are little bugs for the praying mantis to eat. There's a plant, too, and bowl of water and dirt.</p> <p>It has living and nonliving things in it. And it has what living things need to live and grow, like the bugs for the praying mantis to eat.</p> <p>The praying mantis needs water to live</p>	<p>Tell me how your drawing shows an environment. How does it fit our definition?</p> <p>Who has a question or a new idea to add? Do you think something could be added to this picture?</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			Do you notice that we've all drawn different kinds of	<p>too. I think you should add some water.</p> <p>My picture shows a giraffe eating leaves on a tree.</p> <p>There are living and nonliving things in my environment. The dirt or the ground is a nonliving thing, and the giraffe needs it to stand on.</p> <p>The dirt is also good for the tree because that's where it gets its water from.</p>	<p>Look at our definition of an environment. Can you add more to your description of this environment?</p> <p>Who has a question or a new idea to add? Do you think something could be added to this picture?</p>

Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
		Highlight key science ideas and focus question throughout.	environments? That's because environments are different all over the world! But environments also have some important things in common: They all have living and nonliving things in them, and the plants and animals in each environment can get what they need to live and grow.		
1 min	<p>Link to Next Lesson</p> <p>Synopsis: The teacher foreshadows the focus of the next lesson.</p>	<p>Summarize key science ideas.</p> <p>Link science ideas to other science ideas.</p>	<p>Show slide 17.</p> <p>So today we learned that there are many different kinds of environments around the world that have different kinds of plants and animals. But no matter where they live, all plants and animals need an environment where they can get the things they need to live and grow.</p> <p>Next time, we'll talk some more about what animals need from their environment to live and grow. Let's see if we can add some new ideas to the ideas we already have!</p>		