

## Plants and Animals

### Lesson 2b: What Animals Need

<b>Grade:</b> Kindergarten	<b>Length of lesson:</b> 48–53 minutes	<b>Placement of lesson in unit:</b> 2b of 6 lessons on plants and animals
<b>Unit central question:</b> Do plants and animals need the same things to live and grow? Explain your thinking.		<b>Lesson focus question:</b> To live and grow, what do <i>all</i> animals need to get from their environment?
<b>Main learning goal:</b> To live and grow, all animals need to get food, water, and air from their environment.		
<b>Science content storyline:</b> All animals, including humans, need food, water, and air to live and grow. They get these things from their environment. Last time, we learned that lions and praying mantises need to get food, water, and air from their environment to live and grow. Today we learned that ladybugs and earthworms need to get the same things from their environment to live and grow.		
<b>Ideal student response to the focus question:</b> Animals, like lions, praying mantises, ladybugs, and earthworms, need to get food, water, and air from their environment to live and grow.		

#### Preparation

##### Materials Needed

- Science notebooks
- Chart paper and markers
- Class terrarium (from lesson 1a)
- **Optional:** additional ladybugs for terrarium
- Lion and praying-mantis circle maps (from lesson 2a)
- 10 large envelopes for booklets of ladybug and earthworm photos (1 envelope per pair)
- Tape

##### Student Handouts and Teacher Masters

- 1.1 Terrarium Instructions and Mantis Care (Teacher Master) (from lesson 1a)
- 2.5 Earthworm Picture Card (Teacher Master), laminated
- 2.6 Ladybug Picture Card (Teacher Master), laminated
- 2.7 Animals and Their Needs: Ladybugs and Earthworms (Teacher Master)
- 2.8 Ladybugs (booklet of laminated photos) (10 booklets, 1 per pair)
- 2.9 Earthworms (booklet of laminated photos) (10 booklets, 1 per pair)

##### Ahead of Time

- Review section 4 of the content background document, focusing on the needs of animals.
- Continue caring for the mantis and maintaining the terrarium according to the instructions in handout 1.1.
- Prepare 10 booklets each of laminated images from handouts 2.8 (Ladybugs) and 2.9 (Earthworms) and place them in the 10 large envelopes. Each envelope should contain a ladybug booklet and an earthworm booklet.
- On chart paper, prepare two new circle maps. In the center circle of one map, paste the earthworm picture (from handout 2.5), and in the center circle of the other map, paste the ladybug picture (from handout 2.6). Leave the outer circle of each map empty.
- Review the science essays about ladybugs and earthworms in handout 2.7 (Animals and Their Needs: Ladybugs and Earthworms). The text and video links also appear in the corresponding PowerPoint notes.
- **Optional:** If time allows, add two or three ladybugs to the terrarium right before the lesson starts so that students can watch the praying mantis eat them. Alternatively, include this as a supplemental activity before lesson 3a.
- **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 and handout 2.7 to review with students in advance, including *prediction, evidence, aphids, destroy, sucking the sap out of, antennae, expand/contract, compost bins, rotting, soak, and dries out*. Give students time to study the photos in handout 2.7 (Animals and Their Needs: Ladybugs) for evidence of ladybugs eating, drinking, and breathing, since these kinds of evidence aren’t always easy to observe. Point out that the green blobs in the second ladybug photo are tiny insects.

## Lesson 2b General Outline

Time	Phase of Lesson	How the Science Content Storyline Develops
3 min	<b>Link to previous lesson:</b> The teacher engages students in reviewing key findings from their investigations of what lions and praying mantises need to get from their environments to live and grow.	<ul style="list-style-type: none"> <li>Plants and animals, like lions and praying mantises, require an environment where they can get what they need to live and grow.</li> </ul>
1 min	<b>Lesson focus question:</b> The teacher introduces the focus question, <i>To live and grow, what do all animals need to get from their environment?</i>	
8 min	<b>Setup for activity:</b> Students predict what ladybugs and earthworms in their terrarium need from their environment to live and grow. Then the teacher sets up the main activity in which students study pictures of ladybugs and earthworms to find evidence of what they need from their environment.	<ul style="list-style-type: none"> <li>To live and grow, animals, such as lions and praying mantises, need to get food, water, and air from their environment.</li> </ul>
10 min	<b>Activity:</b> Working in pairs, students study pictures of ladybugs and earthworms and look for evidence of what these animals need to get from their environment to live and grow.	<ul style="list-style-type: none"> <li>Animals require an environment where they can get what they need to live and grow. We can find evidence of what they need from the environment by studying pictures.</li> </ul>
20 min	<b>Follow-up to activity:</b> Students share the evidence they found from the pictures of what ladybugs and earthworms need from their environment. Then the teacher reads science essays about ladybugs and earthworms, and the class revises their circle maps showing what these animals need to get from their environment to live and grow.	<ul style="list-style-type: none"> <li>To live and grow, ladybugs and earthworms need to get food, water, and air from their environment.</li> </ul>
5–10 min	<b>Synthesize/summarize today’s lesson:</b> The teacher reviews the focus question. Then students compare the circles maps of the four animals—the lion, the praying mantis, the ladybugs, and the earthworms—and decide that all of them need the same things from their environments to live and grow: food, water, and air. Afterward, they use evidence from their investigations to answer the focus question and conclude that all animals need to get food, water, and air from their environments to live and grow.	<ul style="list-style-type: none"> <li>All animals need food, water, and air to live and grow. They get these things from their environment.</li> <li>Even though different kinds of animals live in different environments, they all need the same things from their environments (food, water, and air) to live and grow.</li> </ul>
1 min	<b>Link to next lesson:</b> The teacher announces that in the next lesson, students will investigate what plants need to get from their environment to live and grow.	



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			<p><b>NOTE TO TEACHER:</b> <i>Display the circle maps for the lion and the praying mantis side by side so that everyone can see them.</i></p> <p>Who can tell me one thing that both lions and praying mantises need to get from their environments to live and grow?</p>	<p>They both need food.</p> <p>We saw pictures of a lion catching an animal to eat and praying mantises eating bugs.</p> <p>They both need water.</p> <p>We saw pictures of a lion and a praying mantis drinking water.</p>	<p>What clues or evidence did we find that both animals need food?</p> <p>What else do both animals need to get from their environments?</p> <p>What evidence did we find that they both need water?</p> <p>Is there anything else both animals</p>

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			<p><b>Show slide 3.</b></p> <p>So what three things do lions and praying mantises both need to get from their environments to live and grow?</p> <p>Great review, everyone!</p>	<p>They both need air.</p> <p>We saw pictures.</p> <p>No. The lion breathes in air with its nose, and the praying mantis takes in air through tiny holes in its body.</p> <p>Food, water, and air.</p>	<p>need from their environments to live and grow?</p> <p>What evidence did we find that both animals need air?</p> <p>Do they both get air the same way?</p>
1 min	<p><b>Lesson Focus Question</b></p> <p><b>Synopsis:</b> The teacher introduces the focus question, <i>To live and grow, what do <b>all</b> animals need to get from their environment?</i></p>	Set the purpose with a <u>focus question</u> or goal statement.	<p><b>Show slide 4.</b></p> <p>Now let’s talk about today’s focus question. Follow the words on the slide as I read them aloud:</p> <p><i>To live and grow, what do <b>all</b> animals need to get from their environment?</i></p>		

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			<p><b>NOTE TO TEACHER:</b> Write the question on the board for students to refer to throughout the lesson and draw a box around it. Point to each word as you repeat the questions aloud.</p> <p>In our last lesson, we learned that lions and praying mantises need to get food, water, and air from their environments to live and grow. But what do other animals need from their environments? That’s what we’ll investigate today to help us answer our focus question.</p>		
8 min	<p><b>Setup for Activity</b></p> <p><b>Synopsis:</b> Students predict what ladybugs and earthworms in their terrarium need from their environment to live and grow. Then the teacher sets up the main activity in which students study pictures of ladybugs and earthworms to find evidence of what they need from their environment.</p> <p><b>Main science idea(s):</b></p> <ul style="list-style-type: none"> <li>To live and grow, animals, such as lions and praying mantises, need to get food, water,</li> </ul>	<p>Make explicit links between science ideas and activities <b>before</b> the activity.</p> <p>Ask questions to elicit student ideas and predictions.</p>	<p><b>Show slide 5.</b></p> <p>Let’s think about the ladybugs and earthworms in our terrarium. I want you to predict what ladybugs or earthworms might need from their environment. Like last time, come up with a sentence that describes your ideas or predictions. Use this sentence starter on the slide:</p> <p><i>I think that [ladybugs or earthworms] need to get ____ from their environment to live and grow.</i></p> <p><b>NOTE TO TEACHER:</b> Display the two circle maps you created with pictures of a ladybug and an earthworm in the center. Have students think of a sentence that describes their ideas (predictions) about what either ladybugs or earthworms need to get from their environment. <b>Don’t have students write down their sentences.</b></p>		

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	and air from their environment.	<p>Ask questions to probe student ideas and predictions.</p> <p>Ask questions to challenge student</p>	<p>Let me give you an example: <i>I think that ladybugs need to get <u>water</u> from their environment to live and grow.</i></p> <p>Don't write your sentence down. Just think quietly about it. In a minute or two, I'll call on you to share your sentences, or predictions. Be ready to share why you think the mantis needs the thing you thought of.</p> <p><b>ELL support:</b> ELL students might find it helpful to share their sentences (predictions) with a partner in their home language before sharing them with the class.</p> <p><b>NOTE TO TEACHER:</b> <i>Give students a minute to mentally construct their sentences. Then have a class share-out and elicit a variety of ideas from students. This would be a good time to use equity sticks and call on students who may be reluctant to volunteer.</i></p> <p><b>Individual think time.</b></p> <p><b>Whole-class share-out:</b> Let's hear your ideas about what ladybugs or earthworms need from their environment to live and grow. Make sure to use the sentence starter when you share.</p> <p><b>NOTE TO TEACHER:</b> <i>Elicit a variety of ideas and predictions from students. As students share their predictions, record them on the circle maps. Encourage students to use the word environment</i></p>	I think that both earthworms and ladybugs need to get food from their environment to live and grow.	

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		<p>thinking.</p> <p>Engage students in communicating in scientific ways.</p>	<p><i>in their descriptions. This will help solidify their understandings of what an environment is, why it's important for living things, and how it relates to what living things need to live and grow.</i></p>	<p>Because if they don't have food, they'll die.</p> <p>I think that earthworms need to get <i>water</i> from their environment because they live down in the dirt, and there's water in the dirt.</p> <p>I disagree! I don't think earthworms like water, because after a big rainstorm, we always see dead earthworms on the sidewalk.</p> <p>I think ladybugs need to get air from their environment.</p>	<p>What makes you think that?</p> <p>Let's hear some other sentences.</p> <p>Does anyone agree or disagree?</p> <p>What else do you think ladybugs or earthworms need from their environment?</p> <p>Why do you think</p>



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		<p>Highlight key science ideas and focus question throughout.</p> <p>Select content</p>	<p>Remember, our ideas are what we <i>think</i> or <i>predict</i> the ladybugs and earthworms might need from their environment to live and grow.</p> <p><b>Show slide 6.</b></p> <p>Next, we'll act like scientists and do some investigating to see whether our predictions are correct. Remember that scientists are like detectives because they look for clues, or evidence, to help understand how things work in the world around them.</p> <p>You know from our investigations last time that some scientists watch animals very closely to understand what they need from their environments.</p> <p>So like scientists, we're going to study some</p>	<p>Because ladybugs need air to fly.</p> <p>I'm not sure, because earthworms live in the ground, so maybe they don't need air.</p> <p>I think ladybugs and earthworms need air because all living things need air or they'll die.</p>	<p>that?</p> <p>Do you think earthworms need air too?</p> <p>Any other ideas?</p>

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		<p>representations and models matched to the learning goal and engage students in their use.</p> <p>Highlight key science ideas and focus question throughout.</p>	<p>pictures of ladybugs and earthworms in their environments. Like last time, you'll work with a partner to find clues, or evidence, about what these animals need to get from their environment. So you'll need to look at these pictures very carefully.</p> <p>The evidence we find will help us answer today's focus question, <i>To live and grow, what do <b>all</b> animals need to get from their environment?</i></p> <p><b>NOTE TO TEACHER:</b> <i>Point to the focus question on the board as you read it aloud.</i></p> <p>Now I'd like you to pair up with an elbow partner, and I'll give you some photos of ladybugs and earthworms to study.</p> <p><b>NOTE TO TEACHER:</b> <i>After students pair up, give each pair an envelope containing booklets of ladybug images from handout 2.8 and earthworm images from handout 2.9.</i></p> <p><b>Show slide 7.</b></p> <p>In your envelopes, you'll find two booklets. What does each booklet say on the front page?</p> <p>Inside the booklets are some pictures of ladybugs and earthworms. I want you and your partner to</p>	<p>One says "Ladybugs," and the other says "Earthworms."</p>	

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			<p>study the pictures in each booklet carefully and see if you can find evidence or clues of what ladybugs and earthworms need to get from their environment to live and grow.</p> <p>What are the ladybugs doing in each picture? What are the earthworms doing? What is each animal getting from its environment that it needs to live and grow?</p> <p>Remember to be good scientists and observe the pictures carefully! Finding evidence of what the earthworm need might be a little tricky.</p> <p>Work through one booklet at a time to find evidence of what each animal needs.</p> <p><b>ELL support:</b> Give ELL students an opportunity to study the photos in each booklet and practice identifying evidence during the lesson preview. This will facilitate their understandings and participation during the actual lesson. Evidence of ladybugs and earthworms eating, drinking, or breathing isn't always easy to observe in these photos.</p> <p>So who can tell me what you're supposed to do with the pictures?</p> <p><b>NOTE TO TEACHER:</b> <i>The purpose of this activity is to see how much students can figure out on their own just by examining the pictures. If they don't figure everything out, that's OK.</i></p>		

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			<i>They'll learn more about ladybugs and earthworms from the science readings during the activity follow-up.</i>		
10 min	<p><b>Activity</b></p> <p><b>Synopsis:</b> Working in pairs, students study pictures of ladybugs and earthworms and look for evidence of what these animals need to get from their environment to live and grow.</p> <p><b>Main science idea(s):</b></p> <ul style="list-style-type: none"> <li>Animals require an environment where they can get what they need to live and grow. We can find evidence of what they need from the environment by studying pictures.</li> </ul>	<p>Make explicit links between science ideas and activity <b>during</b> the activity.</p> <p>Ask questions to elicit student ideas and predictions.</p> <p>Ask questions to probe student ideas and predictions.</p>	<p>Now you and your partner can begin your detective work. Open your ladybug booklets and turn to the first picture. Study the picture and talk about what the ladybug is doing. Then look for clues or evidence of what the ladybug needs to get from its environment.</p> <p>When you find evidence, write one or two words in your science notebooks and include the page number from the booklet so you know which picture the evidence goes with.</p> <p>After you study all of the ladybug pictures and find clues or evidence about what they need from their environment, work through the pictures in your earthworm booklet.</p> <p><b>NOTE TO TEACHER:</b> <i>As pairs work together, circulate around the room and ask students what clues or evidence they're finding about what the ladybugs and earthworms need to get from their environment to live and grow. Use the words evidence and environment and encourage students to use them as well. Also remind students to speak in complete sentences (see sample dialogue in columns 5 and 6).</i></p> <p><i>Have students write their evidence for each picture in their science notebooks. Make sure they</i></p>	It needs to get food.	<p><i>Sample dialogue:</i></p> <p>What clues or evidence do you see in this picture about what the ladybug needs to get from its environment?</p> <p>Good! So you</p>

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			<p><i>note the page number or specific photo the evidence relates to.</i></p> <p><b>ELL support:</b> Let ELL students know in an explicit way that you expect them to be able to tell you about the evidence they find. You may want to post key terms on the board and have students use these terms to help them describe their evidence (different needs) verbally and in writing.</p>	<p>Our evidence is that the ladybug is eating bugs.</p>	<p>think that the ladybug needs to get food from its environment. What clues or evidence did you find in the picture? Tell me by saying, “Our evidence is ....”</p>
20 min	<p><b>Follow-Up to Activity</b></p> <p><b>Synopsis:</b> Students share the evidence they found from the pictures of what ladybugs and earthworms need from their environment. Then the teacher reads science essays about ladybugs and earthworms, and the class revises their circle maps showing what these animals need to get from their environment to live and grow.</p> <p><b>Main science idea(s):</b></p> <ul style="list-style-type: none"> <li>To live and grow, ladybugs and</li> </ul>	<p>Make explicit links between science ideas and activities <b>after</b> the activity.</p> <p>Engage students in analyzing and interpreting data and</p>	<p><b>NOTE TO TEACHER:</b> <i>Allow about 6 minutes for students to share their evidence, 8 minutes for reading the science essays about ladybugs and earthworms, and 6 minutes for revising the circle maps.</i></p> <p>Let’s see how good you were at finding clues or evidence of what praying mantises need to get from their environment to live and grow.</p> <p><b>Show slide 8.</b></p> <p>We’ll start with our ladybug booklet. I’ll call on one pair to share one picture and tell us about the evidence you found of what ladybugs need to get from their environment. Use the sentence starter on the slide:</p> <p><i>Ladybugs need to get _____ from their</i></p>		

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	<p>earthworms need to get food, water, and air from their environment.</p>	<p>observations.</p> <p>Engage students in communicating in scientific ways.</p> <p>Engage students in constructing explanations and arguments.</p> <p>Ask questions to probe student ideas and predictions.</p> <p>Ask questions to challenge</p>	<p><i>environment. Our evidence is _____.</i></p> <p>As you share your ideas and evidence, I'll add them to the ladybug circle map we used earlier. Listen carefully as your classmates share their ideas, and be ready to agree or disagree, ask questions, or add ideas.</p> <p><b>NOTE TO TEACHER:</b> <i>During this share-out, ask questions that challenge students to support their ideas with evidence from the pictures. Also encourage them to use the words environment and evidence. Be sure to challenge students who seem to be misinterpreting a picture. As students share their ideas and evidence, record them on the ladybug circle map you created earlier.</i></p> <p>Now let's have another pair share the next picture in the booklet and tell us about the evidence you found of what ladybugs need to get from their environment.</p> <p><b>NOTE TO TEACHER:</b> <i>Ask different pairs to share their ideas and evidence for the remaining three pictures. Ask probe and challenge questions to make student thinking visible.</i></p> <p><i>Continue this pattern with the earthworm booklet. Challenge students to support their ideas with evidence from the pictures and to use the words environment and evidence. Also make sure to challenge students who seem to be misinterpreting a picture. As students share their ideas and</i></p>	<p>Ladybugs need to get food from their environment. Our evidence is this picture that shows a ladybug putting little bugs in its mouth.</p> <p>We think that ladybugs need water.</p> <p>We think that ladybugs need to get water from their environment.</p>	<p>Can you use the word <i>environment</i> in your sentence?</p> <p>What is your evidence to support that idea? What does the picture show?</p>

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		student thinking.	<p><i>evidence, record them on the earthworm circle map you created earlier.</i></p> <p><b>Show slide 9.</b></p> <p>Now let's have one pair share the evidence you found in one picture about what earthworms need from their environment.</p>	<p>Our evidence is that the ladybug is drinking from a drop of water.</p> <p>We think that earthworms need to get soil from their environment.</p> <p>I see soil in the picture.</p> <p>I disagree because the earthworm isn't eating the soil or anything like that.</p>	<p>Start your sentence, "Our evidence is ...."</p> <p>What's your evidence? How does the picture show that earthworms need soil?</p> <p>Does anyone agree or disagree?</p> <p>Is there any evidence that earthworms take in or eat soil from the environment?</p>

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		Engage students in using and applying new science ideas in	<p>You found some good evidence from these pictures about what ladybugs and earthworms need to get from their environment to live and grow!</p> <p><b>Show slide 10.</b></p> <p>Next, I'm going to read some things that scientists have discovered about ladybugs and earthworms and how these animals get what they need from their environment. Listen carefully, and when you hear something about what either a ladybug or an earthworm needs to get from its environment, quietly show me a thumbs-up.</p> <p><b>Show slide 11.</b></p> <p>What we learn from these readings will help us answer our focus question, <i>To live and grow, what do animals need from their environment?</i></p> <p><b>Show slides 12–19 (in conjunction with the reading in handout 2.7).</b></p> <p>First, let's learn what scientists have discovered about ladybugs!</p> <p><b>NOTE TO TEACHER:</b> <i>Read the information about ladybugs from handout 2.7 (Animals and Their Needs: Ladybugs and Earthworms) in conjunction with PowerPoint slides 12–19. Follow the slide cues in the readings. When you encounter questions, pause and discuss them with</i></p>		




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		<p>a variety of ways and contexts.</p> <p>Highlight key science ideas and focus question throughout.</p>	<p><i>students before continuing. The handout also includes links to some YouTube videos you can show of ladybugs in action. (Note: The text and video links also appear in the PowerPoint notes if you prefer using this script instead of the handout.)</i></p> <p><i>Remind students to give you a thumbs-up signal when they hear something in the reading about what ladybugs need from their environment.</i></p> <p><b>Optional activity:</b> If time allows, add ladybugs to the terrarium and let students watch the praying mantis eat them. Alternatively, include this as a supplemental activity before lesson 3.</p> <p><b>Show slide 20.</b></p> <p>Now let's learn more revisit our ladybug circle map and summarize three things ladybugs need to get from their environment.</p> <p>We're only going to add <i>new</i> things to our map that we saw in the pictures or videos or heard in the reading.</p> <p>Who can tell me one thing that ladybugs need to get from their environment?</p>	<p>Ladybugs need to get <i>food</i> from their environment.</p>	<p>What evidence did we find in the pictures, the videos, or the</p>

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			<p>Show slides 21–28 (in conjunction with the reading in handout 2.7).</p> <p>Next, we'll learn what scientists have discovered about earthworms!</p> <p><b>NOTE TO TEACHER:</b> <i>Read the information about earthworms from handout 2.7 (Animals and Their Needs: Ladybugs and Earthworms) in</i></p>	<p>We saw a picture of the ladybug eating aphids.</p> <p>Ladybugs need to get <i>air</i> from their environment.</p> <p>The story said that ladybugs have tiny holes on the sides of their bodies like the praying mantis does.</p> <p>Water.</p> <p>We saw a picture of a ladybug drinking from a water drop.</p>	<p>reading?</p> <p>How do we know? What's our evidence?</p> <p>What else do ladybugs need?</p> <p>What's our evidence?</p>

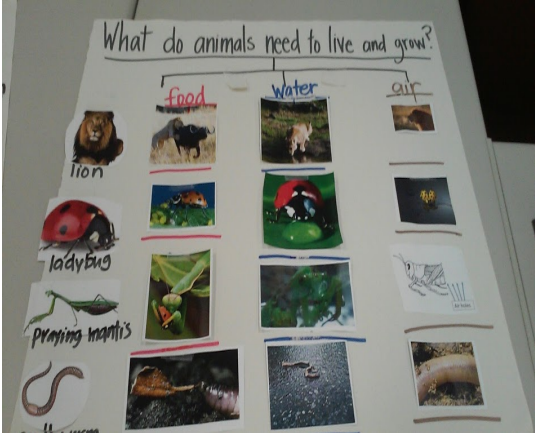
Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
			<p><i>conjunction with PowerPoint slides 21–28 Follow the slide cues in the readings. When you encounter questions, pause and discuss them with students before continuing. The handout also includes links to a YouTube video you can show of earthworms in action. (Note: The text and video link also appear in the PowerPoint notes if you prefer using this script instead of the handout.)</i></p> <p><i>Remind students to give you a thumbs-up signal when they hear something in the reading about what earthworms need from their environment.</i></p> <p><b>Show slide 29.</b></p> <p>Now let’s learn more revisit our earthworm circle map and summarize three things earthworms need to get from their environment.</p> <p>We’re only going to add <i>new</i> things to our map that we saw in the pictures or videos or heard in the reading.</p> <p>Who can tell me one thing that earthworms need to get from their environment?</p>	<p>Earthworms need to get <i>food</i> from their environment.</p> <p>The reading said that earthworms eat</p>	<p>What evidence did we find in the pictures, the videos, or the reading?</p>

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				<p>dead leaves and grass and things that live in the dirt.</p> <p>They need <i>air</i>.</p> <p>The story said that earthworms need air to survive, and they take the air in through their skin.</p> <p>They need <i>water</i> so they can breathe.</p> <p>I disagree! They need to get air, not water. They drown if there's too much water.</p> <p>The story said that earthworms take in air through their skin, and they need water to keep their skin wet. If their</p>	<p>What else do earthworms need?</p> <p>How do you know? What's your evidence?</p> <p>What else do earthworms need to get from their environment?</p> <p>Does anyone agree or disagree?</p>

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			<p><b>NOTE TO TEACHER:</b> <i>At the end of the discussion, place the lion and praying-mantis circle maps from the previous lesson next to the ladybug and earthworm circle maps so that students can compare them during the synthesize/summarize activity.</i></p> <p><i>Your circle maps might look like this by the end of the lesson:</i></p> 	skin dries out, the air can't get in.	
5–10 min	Synthesize/Summarize		Show slide 30.		

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	<p><b>Today's Lesson</b></p> <p><b>Synopsis:</b> The teacher reviews the focus question. Then students compare the circles maps of the four animals—the lion, the praying mantis, the ladybugs, and the earthworms—and decide that all of them need the same things from their environments to live and grow: food, water, and air. Afterward, they use evidence from their investigations to answer the focus question and conclude that all animals need to get food, water, and air from their environments to live and grow.</p> <p><b>Main science idea(s):</b></p> <ul style="list-style-type: none"> <li>• All animals need food, water, and air to live and grow. They get these things from their environment.</li> <li>• Even though different kinds of animals live in different environments, they all need the same</li> </ul>	<p>Highlight key science ideas and focus question throughout.</p> <p>Engage students in making connections by synthesizing and summarizing key science ideas.</p>	<p>Let's revisit today's focus question: <i>To live and grow, what do <b>all</b> animals need to get from their environment?</i></p> <p><b>NOTE TO TEACHER:</b> <i>For the following synthesize/summarize activity, we recommend using Option 2, if possible. Use Option 1 only if time is running short. If there isn't enough time for Option 1 either, skip the Turn and Talk. You could also skip the writing and drawing activities for answering the focus question and have students answer it in a summary statement instead.</i></p> <p><b>Show slide 31.</b></p> <p><b>Option 1 (if time is running short):</b> So we now have four circle maps of different animals. We have a one circle map for lions, one for praying mantises, one for ladybugs, and one for earthworms.</p> <p><b>NOTE TO TEACHER:</b> <i>Point to each circle map as you mention it.</i></p> <p>Let's compare all four of our circle maps. Do you see something that appears on all four maps? What do all of these animals need to get from their environments?</p> <p><b>Turn and Talk:</b> Talk about these questions with an elbow partner and see if you can find anything</p>		

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	<p>things from their environments (food, water, and air) to live and grow.</p>		<p>that appears on all four maps. What do all four animals need to get from their environments to live and grow?</p> <p><b>Whole-class discussion:</b> What did you find on the circle maps that all four animals need from their environments to live and grow?</p> <p><b>Option 2 (preferred, if time allows):</b> Display the tree map you created in lesson 2a. Paste the pictures of the ladybug and the earthworm (from handouts 2.5 and 2.6) in the left-hand margin below the lion and praying-mantis pictures. You'll complete the tree map as students share their ideas about what ladybugs and earthworms need from their environment. (See the sample tree map below.)</p> <div data-bbox="905 922 1383 1305" data-label="Diagram"> </div> <p>Your completed tree map, showing all four animals, might look like this:</p>	<p>They all need to get <i>food</i> from their environments.</p> <p>No. They eat different foods. The lion eats other animals. The praying mantis eats ladybugs and flies. The ladybug eats those tiny green bugs, and the worm eats leaves and garbage and tiny bugs we can't see.</p> <p>They all need water.</p>	<p>Yes! All four animals need food. Do they all eat the same food? What is your evidence?</p> <p>Is there anything else that all four animals need to get from their environments?</p> <p>What's your</p>

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			 <p>The image shows a student's science project on a white sheet of paper. At the top, it is titled "What do animals need to live and grow?". Below the title, there are three columns of photos, each with a handwritten label above them: "food", "water", and "air". Under "food", there are photos of a lion, a cow, and a ladybug. Under "water", there are photos of a praying mantis, a frog, and a bird. Under "air", there are photos of an earthworm, a praying mantis, and a bird. The student has also written the names of the animals: "lion", "ladybug", "praying mantis", and "earthworm".</p>	<p>Our evidence is that we saw the praying mantis and the lion and the ladybug drinking water.</p> <p>The earthworm needs water too, because the story said that it can't get the air it needs unless it has water on its skin.</p> <p>They all need air.</p> <p>They get air in different ways but not with noses. Earthworms take in air through their skin, and ladybugs and praying mantises take in air through tiny holes in their bodies.</p>	<p>evidence?</p> <p>What about the earthworm?</p> <p>What else do all four animals need?</p> <p>Say more about that. If they don't have noses, how do they get the air they need?</p>



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		<p>Summarize key science ideas.</p> <p>Highlight key science ideas and focus question throughout.</p> <p>Engage students in constructing explanations and arguments.</p>	<p>Based on our evidence, what do all four animals need to get from their environment to live and grow?</p> <p><b>Show slide 32.</b></p> <p>So we've learned from our investigations that animals like lions, praying mantises, ladybugs, and earthworms all need food, water, and air to live and grow. We've also learned that animals need an environment to help them get the things they need. They may get these things in different ways, but they all need the same things from their environment to live and grow.</p> <p><b>Show slide 33.</b></p> <p>Now let's revisit our focus question, <i>To live and grow, what do <b>all</b> animals need to take in from their environment?</i></p> <p>In your science notebooks, write an answer to this question using the sentence starter on the slide:</p> <p><i>To live and grow, all animals need to get _____, _____, and _____ from their environment.</i></p> <p>Then draw a picture showing the three things that animals need.</p>	<p>They all need to get food, water, and air from their environment to live and grow.</p>	

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			<p><b>Whole-class share-out:</b> Who can tell us in a complete sentence what three things all animals need to get from their environment? Show us these things in your drawing.</p>	<p>All animals need to get food, water, and air from their environment.</p>	
1 min	<p><b>Link to Next Lesson</b></p> <p><b>Synopsis:</b> The teacher announces that in the next lesson, students will investigate what plants need to get from their environment to live and grow.</p>	<p>Link science ideas to other science ideas.</p>	<p><b>Show slide 34.</b></p> <p>What about plants? In the next lesson, we will think about what plants need to live and grow. Do you think they need to take in the same things as animals? Think about that before the next lesson!</p>		