

Plants and Animals

Lesson 2a: What Animals Need

Grade: Kindergarten	Length of lesson: 47–50 minutes	Placement of lesson in unit: 2a 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: To live and grow, what do animals need to get from their environment?
Main learning goal: To live and grow, all animals need to get food, water, and air from their environment.		
Science content storyline: Animals, including humans, need food, water, and air to live and grow. They get these things from their environment.		
Ideal student response to the focus question: Animals need food, water, and air to live and grow. They get these things from their environment.		

Preparation

Materials Needed

- Science notebooks
- Chart paper and markers
- Class terrarium (from lesson 1a)
- **Optional:** additional ladybugs for terrarium
- Circle map from lesson 1c (What Plants and Animals Need)
- 10 large envelopes for booklets of praying-mantis photos (1 envelope per pair)
- Tape

Student Handouts and Teacher Masters

- 1.1 Terrarium Instructions and Mantis Care (Teacher Master) (from lesson 1a)
- 2.1 Lion Picture Card (Teacher Master), laminated
- 2.2 Praying-Mantis Picture Card (Teacher Master), laminated
- 2.3 Animals and Their Needs: The Praying Mantis (Teacher Master)
- 2.4 Praying Mantises (booklet of laminated images) (10 booklets, 1 booklet 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 of laminated images from handout 2.4 (Praying Mantises) and place them in the 10 large envelopes.
- On chart paper, prepare two circle maps. In the center circle of one map, paste the lion picture (from handout 2.1), and in the center circle of the other map, paste the praying-mantis picture (from handout 2.2). Leave the outer circle of each map empty for students to fill in.
- Review the science essay about the praying mantis in handout 2.3 (Animals and Their Needs: The Praying Mantis). 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 (hopefully) 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 in the lesson. Identify vocabulary terms in the lesson plan and handout 2.3 to review with students in advance, including *prediction*, *evidence*, *lizard*, *frogs*, *snakes*, *very still*, *patiently*, *capture*, *spiny*, *spiky*, and *tightly*. In particular, you may want to give students time to study the photos from handout 2.4 (Praying Mantises) that they'll be using to find evidence of what the praying mantis needs to get from its environment.

Lesson 2a General Outline

Time	Phase of Lesson	How the Science Content Storyline Develops
1 min	Link to previous lessons: The class reviews key ideas from previous lessons about what an environment is.	<ul style="list-style-type: none"> Plants and animals require an environment where they can get what they need to live and grow.
2 min	Lesson focus question: The teacher introduces the focus question, <i>To live and grow, what do animals need to get from their environment?</i> and elicits student ideas about whether lions and praying mantises are animals.	
10 min	Setup for activity: Students revisit the circle map they created in lesson 1c and review their initial ideas about what animals need. Then they make predictions about what the praying mantis in their terrarium needs from its environment. The teacher then sets up the main activity in which students study pictures of animals to find evidence of what they need from their environment to live and grow. For practice, students look at lion photos together and record their evidence on a circle map.	<ul style="list-style-type: none"> To live and grow, animals, such as lions, need to get food, water, and air from their environment.
8 min	Activity: Working in pairs, students study pictures of praying mantises and look for evidence of what these animals need to get from their environment to live and grow.	<ul style="list-style-type: none"> Animals require an environment where they can get what they need to live and grow. We can find evidence of what they need from their environment by studying pictures.
20 min	Follow-up to activity: Students share the evidence they found of what praying mantises need from their environment. Then the teacher reads a science essay about praying mantises, and the class revises their circle map showing what mantises need to get from their environment to live and grow.	<ul style="list-style-type: none"> To live and grow, a praying mantis needs to get food, water, and air from its environment.
5–8 min	Synthesize/summarize today’s lesson: The teacher reviews the focus question. Then students compare their circle maps for the lion and praying mantis and conclude that both animals need food, water, and air from their environment to live and grow. Afterward, students answer the focus question to summarize what they learned.	<ul style="list-style-type: none"> Animals, such as lions and praying mantises, need food, water, and air to live and grow. They get these things from their environment.
1 min	Link to next lesson: The teacher engages students in summarizing key ideas from the lesson and links to the next lesson.	

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		<p>Ask questions to elicit student ideas and predictions.</p> <p>Ask questions to probe student ideas and predictions.</p> <p>Ask questions to challenge student thinking.</p>	<p>Let's read our definition of an environment together: <i>An environment 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.</i></p> <p>NOTE TO TEACHER: <i>Point to the words on the board (or word wall) as you read the definition with students.</i></p> <p>Who can give me an example of an environment?</p>	<p>Our terrarium.</p> <p>A forest.</p> <p>Because a forest has leaves and berries for animals to eat.</p> <p>Because a forest has water in streams that animals can drink from.</p> <p>A desert.</p> <p>It has food for</p>	<p>Why do you think a forest is an environment?</p> <p>What does a desert have that makes it an environment?</p>

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				<p>animals to eat.</p> <p>There might be small streams or puddles of water for animals to drink.</p>	<p>Does it have water?</p>
2 min	<p>Lesson Focus Question</p> <p>Synopsis: The teacher introduces the focus question, <i>To live and grow, what do animals need to get from their environment?</i> Then the teacher elicits student ideas about whether lions and praying mantises are animals.</p>	<p>Set the purpose with a <u>focus question</u> or goal statement.</p> <p>Ask questions to elicit student ideas and predictions.</p> <p>Ask questions to probe student ideas and predictions.</p>	<p>Show slide 4.</p> <p>Today we're going to talk more about environments and the animals that live there.</p> <p>Our new focus question is <i>To live and grow, what do animals need to get from their environment?</i></p> <p>NOTE TO TEACHER: <i>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.</i></p> <p>To help us answer this question, we're going to learn about two different animals: a lion and the praying mantis in our terrarium.</p> <p>Do you think a lion is an animal? Why or why not?</p>	<p>Yes, a lion is an animal!</p> <p>Because it has fur and four legs.</p>	<p>Why do you think that?</p> <p>Any other reasons why you think a lion is an animal?</p>

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		<p>Ask questions to challenge student thinking.</p> <p>Engage students in communicating in scientific ways.</p>	<p>Do you think that the praying mantis in our terrarium is an animal? Why or why not?</p> <p>NOTE TO TEACHER: <i>Younger students typically think of mammals as the only kind of animals. So they tend to think that all animals must have legs, two eyes, two ears, a nose, a mouth, teeth, and fur (like dogs, cats, and humans). The key distinction between plants and animals that these lessons are building toward is that animals must catch their food (and do this in many different ways!), while plants make their own food internally. As you guide students toward more-scientific understandings, it would be helpful to remind them that some animals, such as worms, fish, spiders, and snails, aren't mammals. As they consider the lion and the praying mantis in this lesson, as well as the ladybug and the earthworm in the next lesson, they'll begin to understand that a broader variety of organisms are animals.</i></p>	<p>Because it has two eyes and a mouth.</p> <p>Yes, I think the praying mantis is an animal.</p> <p>Because it has legs.</p> <p>Because it has eyes and a mouth.</p> <p>I don't think the praying mantis is an animal.</p> <p>Because it doesn't have fur.</p> <p>Yes!</p>	<p>Does anyone disagree?</p> <p>Why do you think that?</p> <p>Any other reasons?</p> <p>Does anyone disagree about the praying mantis being an animal?</p> <p>Why do you think it isn't an animal?</p> <p>Do you think all animals have fur?</p> <p>Does anyone disagree or have an idea to add?</p>

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				<p>Birds are animals, but they have feathers, not fur.</p> <p>A worm is an animal, but it doesn't have fur.</p> <p>No! Some have fur, and some don't.</p>	<p>Can you think of any other animals that don't have fur?</p> <p>So what does this tell us? Do all animals have fur?</p>
10 min	<p>Setup for Activity</p> <p>Synopsis: Students revisit the circle map they created in lesson 1c and review their initial ideas about what animals need. Then they make predictions about what the praying mantis in their terrarium needs from its environment. The teacher then sets up the main activity in which students study pictures of animals</p>	<p>Make explicit links between science ideas and activities before the activity.</p>	<p>Today we're going to investigate what a lion and a praying mantis need to get from their environment to live and grow. We'll also find out what scientists have learned about the things animals need from their environment.</p> <p>Show slide 5.</p> <p>In an earlier lesson, we shared some ideas about what plants and animals need, and we recorded these ideas on a circle map. In today's lesson, we'll find out whether our ideas are like the ones scientists have.</p> <p>NOTE TO TEACHER: <i>Display the circle map</i></p>		

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	<p>to find evidence of what they need from their environment to live and grow. For practice, students look at lion photos together and record their evidence on a circle map.</p> <p>Main science idea(s):</p> <ul style="list-style-type: none"> To live and grow, animals, such as lions, need to get food, water, and air from their environment. 	<p>Ask questions to elicit student</p>	<p><i>(What Plants and Animals Need) from lessons 1c and 1d. Throughout this discussion, use the word environment as much as possible and encourage students to use it as well. This will help solidify their understandings of what an environment is and why it's important for living things. It will also help them connect an environment to what living things need to live and grow.</i></p> <p>Look at our circle map. What things on our map do you think <i>animals</i> need to get from their environment to live and grow? Tell me what things you think I should circle. Remember, we're looking at things animals need from their environment, not things plants need.</p> <p>NOTE TO TEACHER: <i>As students identify things on the circle map that animals need from their environment, use a marker to circle them.</i></p> <p>Now let's look at our terrarium. What animals did we find there?</p> <p>Show slide 6.</p> <p>Next, I want each of you to think of, or predict, what the praying mantis in our terrarium might</p>	<p>A praying mantis.</p> <p>Earthworms.</p> <p>Ladybugs.</p>	

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		ideas and predictions.	<p>need to get from its environment to live and grow.</p> <p>Then think of a sentence that describes your ideas. Begin with the sentence starter on the slide:</p> <p><i>I think the praying mantis needs to get _____ from its environment to live and grow.</i></p> <p>NOTE TO TEACHER: Display the new circle map you created with the picture of the praying mantis in the center and point to the picture. Have students think of a sentence that describes their ideas (predictions) about what a praying mantis needs to get from its environment. Don't have students write down their sentences.</p> <p>Let me give you an example: <i>I think the praying mantis needs to get <u>water</u> from its environment to live and grow.</i></p> <p>Don't write your sentence down. Just think quietly about it. In a minute, 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>ELL support: 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>		

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		<p>Ask questions to probe student ideas and predictions.</p> <p>Ask questions to challenge student thinking.</p> <p>Engage students in communicating in scientific ways.</p>	<p>NOTE TO TEACHER: 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.</p> <p>Individual think time.</p> <p>Whole-class share-out: Let’s hear your ideas about what the praying mantis needs from its environment to live and grow. Make sure to use the sentence starter when you share.</p> <p>NOTE TO TEACHER: Elicit a variety of ideas and predictions from students. As students share their predictions, record them on the circle map. Encourage students to use the word environment in their descriptions.</p>	<p>I think the praying mantis needs to get ladybugs from its environment to live and grow.</p> <p>Because the ladybugs we put in the terrarium disappeared, and I think the praying mantis ate them.</p> <p>I think the praying mantis needs to get</p>	<p>Why do you think the praying mantis needs ladybugs?</p>

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			<p>Our ideas are what we <i>think</i> or <i>predict</i> the praying mantis might need from its environment to live and grow.</p>	<p><i>water</i> from its environment to live and grow.</p> <p>Because we put water in the terrarium for the praying mantis to drink.</p> <p>I think the praying mantis needs to get <i>heat</i> from its environment.</p> <p>To stay warm.</p> <p>Yes, because if it gets too cold, it'll die!</p>	<p>How do you know the mantis needs water?</p> <p>Why do you think it needs heat?</p> <p>Does the mantis need heat to live and grow?</p> <p>Does anyone disagree or have another idea?</p>

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		<p>Highlight key science ideas and focus question throughout.</p> <p>Select content representations and models matched to the learning goal and engage students in</p>	<p>Show slide 7.</p> <p>Next, we'll act like scientists and do some investigating to see whether our predictions are correct. As scientists, we need to find clues to support our ideas. These clues are called <i>evidence</i>.</p> <p>Scientists are like detectives looking for clues or evidence to help them understand how things work in the world around them.</p> <p>ELL support: Since ELL students are likely to be unfamiliar with the words <i>predictions</i> and <i>evidence</i>, make sure to introduce and explain them during the lesson preview. Have students write these terms in their science notebooks, along with their definitions, and add them to a picture dictionary. Post these words and their definitions on the board or a word wall for students to refer to as needed. Students might also find it helpful if you review them throughout the lesson series.</p> <p>Some scientists watch animals very closely to understand what they need. So we're going to be scientists and study some pictures of animals in their environments.</p> <p>You'll need to look carefully at these pictures to find clues, or evidence, about what the animals</p>		

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		students in constructing explanations and arguments.	<p>environment?</p> <p>Does everyone agree that we have evidence from this picture that lions need to get food from their environment to live and grow?</p> <p>Show slide 10.</p> <p>Let's put food on a new circle map.</p> <p>Show slides 11 and 12 (one at a time).</p> <p>NOTE TO TEACHER: <i>Display the new circle map you created with the picture of the lion in the center. Then add the word food to the outer circle. Display the remaining lion pictures (slides 11 and 12) and ask students to look for evidence of other things the lion needs from its environment. Students should easily identify water from the picture of the lion drinking, but they may have a harder time identifying air from the picture of the lion breathing. As they share this evidence, add water and air to the circle map.</i></p>	<p>Lions need food.</p> <p>Yes!</p>	<p>Can you use the word <i>environment</i> in your answer?</p> <p>Can you use the word <i>evidence</i> in your answer?</p>

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			<p>Show slide 13.</p> <p>Now I'd like you to pair up with an elbow partner, and I'll give you some photos of our praying mantis to study.</p> <p>NOTE TO TEACHER: <i>After students pair up, give each pair an envelope containing the booklet of praying-mantis images from handout 2.4 (Praying Mantises).</i></p> <p>ELL support: Give ELL students an opportunity to study the photos in the booklet and practice identifying evidence during the lesson preview. This will facilitate their understandings and participation during the actual lesson. Evidence isn't always easy to observe in these photos, such as evidence of the praying mantis breathing.</p> <p>In your envelopes, you'll find a booklet. Look at the front page of the booklet. What do you think this booklet is about?</p> <p>Show slide 14.</p> <p>Inside the booklet are some pictures of praying mantises. I want you and your partner to study these pictures carefully and see if you can find evidence of what praying mantises need to get</p>	<p>It's about praying mantises.</p>	

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			<p>from their environment to live and grow.</p> <p>What are the praying mantises doing in each picture? What are they getting from their environment that they need to live and grow?</p> <p>Remember to be good scientists and observe the pictures carefully!</p> <p>Who can tell me what you're supposed to do with the pictures?</p> <p>NOTE TO TEACHER: <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. They'll learn more about praying mantises from the science reading during the activity follow-up.</i></p>		
8 min	<p>Activity</p> <p>Synopsis: Working in pairs, students study pictures of praying mantises and look for evidence of what these animals need to get from their environment to live and grow.</p> <p>Main science idea(s):</p>	<p>Make explicit links between science ideas and activity during the activity.</p> <p>Ask questions to elicit student ideas and predictions.</p>	<p>Now you and your partner can begin your detective work. Open your booklets and turn to the first picture. Study the picture and talk about what the praying mantis is doing. Then look for clues or evidence of what the praying mantis 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>		

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	<ul style="list-style-type: none"> Animals require an environment where they can get what they need to live and grow. We can find evidence of what they need from their environment by studying pictures. 	Ask questions to probe student ideas and predictions.	<p>NOTE TO TEACHER: <i>As pairs work together, circulate around the room and ask students what clues or evidence they're finding about what the praying mantis needs to get from its 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 note the page number or specific photo the evidence relates to.</i></p> <p>ELL support: 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>It needs to get food.</p> <p>Our evidence is that the praying mantis is eating bugs.</p>	<p><i>Sample dialogue:</i> What clues or evidence do you see in this picture about what the praying mantis needs to get from its environment?</p> <p>Good! So you think the praying mantis 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>Follow-Up to Activity</p> <p>Synopsis: Students share</p>		<p>NOTE TO TEACHER: <i>Allow about 10 minutes for students to share their evidence and 10 minutes for reading the science essay.</i></p>		

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	<p>the evidence they found of what praying mantises need from their environment. Then the teacher reads a science essay about praying mantises, and the class revises their circle map showing what mantises need to get from their environment to live and grow.</p> <p>Main science idea(s):</p> <ul style="list-style-type: none"> To live and grow, a praying mantis needs to get food, water, and air from its environment. 	<p>Make explicit links between science ideas and activities after the activity.</p> <p>Engage students in analyzing and interpreting data and observations.</p> <p>Engage students in communicating in scientific ways.</p> <p>Engage students in constructing explanations and arguments.</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>Show slide 15.</p> <p>I’ll call on one pair to share the first picture in our booklet and tell us about the evidence you found of what the praying mantis needs to get from its environment. Use the sentence starter on the slide:</p> <p><i>The praying mantis needs to get _____ from its environment. Our evidence is _____.</i></p> <p>As you share your ideas and evidence, I’ll add them to the 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>NOTE TO TEACHER: <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 circle map of the praying mantis that you created earlier.</i></p>	<p>We think the praying mantis needs to get air or sunlight from its environment because it’s just sitting on a plant in this picture but isn’t really doing anything.</p> <p>No.</p>	<p>Do you think the praying mantis needs sunlight to live and grow?</p> <p>So what is the praying mantis in</p>

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			<p>Now let's have another pair share the next picture in the booklet and tell us about the evidence you found of what the praying mantis needs to get from its environment.</p> <p>NOTE TO TEACHER: <i>Ask different pairs to share their ideas and evidence for the remaining three pictures. Continue asking probe and challenge questions to make student thinking visible.</i></p>	<p>It's probably getting the air it needs.</p> <p>The praying mantis needs to get <i>food</i> from its environment to live and grow.</p> <p>Our evidence is that the praying mantis is eating something, maybe a ladybug.</p>	<p>the picture probably getting from its environment?</p> <p>Can you add the word <i>environment</i> to your answer?</p> <p>What is your evidence? What does the picture show?</p> <p>Does anyone agree or disagree?</p> <p>What does the next picture on</p>

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				<p>The praying mantis needs to get <i>food</i> from its environment.</p> <p>Our evidence is that the praying mantis has a fly in its mouth.</p> <p>The praying mantis needs to get <i>water</i> from its environment.</p> <p>Our evidence is that the praying mantis is licking at drops of water on the wall.</p>	<p>the same page tell you about what praying mantises need from their environment?</p> <p>What's your evidence?</p> <p>What does the next picture show?</p> <p>What evidence do you see in the picture?</p> <p>And what about the drawing of a praying mantis on the last page?</p>

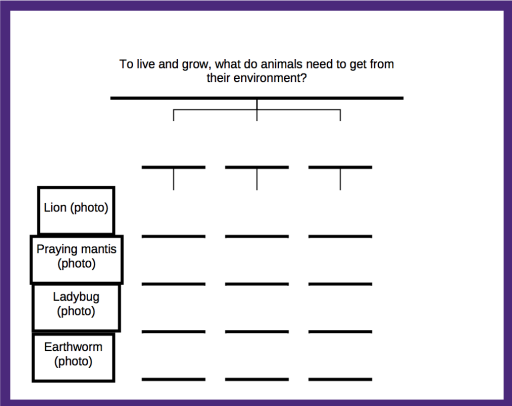
Time	Phase of Lesson and How the Science Content Storyline Develops	STeLLA Strategy	Teacher Talk and Questions	Anticipated Student Responses	Possible Probe/Challenge Questions
		<p>Engage students in using and applying new science ideas in a variety of ways and contexts.</p> <p>Highlight key</p>	<p>You found some good evidence from these pictures about what praying mantises need to get from their environment to live and grow!</p> <p>Show slide 16.</p> <p>Now I'm going to read what scientists have discovered about praying mantises and how they get what they need from their environment. Listen carefully, and when you hear something about what a praying mantis needs to get from its environment, quietly show me a thumbs-up.</p> <p>Show slide 17.</p>	<p>The drawing shows that the praying mantis needs to get <i>air</i> from its environment.</p> <p>The picture says that the praying mantis has air holes on its body. So they must be for breathing.</p>	<p>What does it show?</p> <p>How do you know? What's your evidence?</p>

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		<p>science ideas and focus question throughout.</p>	<p>What we learn from this reading will help us answer our focus question, <i>To live and grow, what do animals need from their environment?</i></p> <p>Show slides 18–23 (in conjunction with the reading in handout 2.3).</p> <p>Let’s learn more about the praying mantis!</p> <p>NOTE TO TEACHER: <i>Read the text from handout 2.3 (Animals and Their Needs: The Praying Mantis) in conjunction with PowerPoint slides 18–23. Follow the slide cues in the reading. When you encounter questions in the reading, pause and discuss them with students before continuing. The handout also includes links to some YouTube videos you can show of the praying mantis 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 a praying mantis needs from its environment.</i></p> <p>Optional activity: 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>		

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			<p>Show slide 24.</p> <p>Now let’s revisit our circle map and summarize three things that the praying mantis needs to get from its 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 the praying mantis needs to get from its environment?</p> <p>NOTE TO TEACHER: <i>At the end of the discussion, display the praying-mantis circle map next to the lion circle map for comparison during the synthesize/summarize activity.</i></p>	<p>The praying mantis needs to get <i>food</i> from its environment.</p> <p>We saw the praying mantis eat a cricket.</p> <p>The praying mantis needs <i>water</i> from its environment.</p> <p>We saw a picture and a video clip of a praying mantis</p>	<p>What evidence did we find in the pictures, the videos, or the reading?</p> <p>What’s our evidence?</p>

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				<p>drinking water.</p> <p>The praying mantis needs <i>air</i>.</p> <p>The praying mantis needs plants.</p> <p>It's sitting on a plant in this picture.</p> <p>The praying mantis is just sitting on the plant. It's not eating it or anything.</p> <p>No.</p>	<p>How do we know?</p> <p>What evidence do we have that the praying mantis needs plants?</p> <p>Does anyone disagree or have an idea to add?</p> <p>So do we have evidence that the praying mantis needs the plant to live and grow?</p>
5–8 min	Synthesize/Summarize		Show slide 25.		

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>Today's Lesson</p> <p>Synopsis: The teacher reviews the focus question. Then students compare their circle maps for the lion and praying mantis and conclude that both animals need food, water, and air from their environment to live and grow. Afterward, students answer the focus question to summarize what they learned.</p> <p>Main science idea(s):</p> <ul style="list-style-type: none"> Animals, such as lions and praying mantises, need food, water, and air to live and grow. They get these things from their environment. 	<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 animals need to get from their environment?</i></p> <p>NOTE TO TEACHER: <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>Show slide 26.</p> <p>Option 1 (if time is running short): Now let's look at our two circle maps of the lion and the praying mantis. Can you find three things that both animals need to get from their environment?</p> <p>Turn and Talk: Talk about this with an elbow partner and see if you can find three things on the circle maps that both animals need from their environment.</p> <p>Whole-class discussion: What did you find on the circle maps that both animals need from their environments to live and grow?</p>	<p>Both the lion and the praying mantis need to get <i>food</i> from their environments.</p>	<p>Yes, they both</p>

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			<p>Option 2 (preferred, if time allows): Work with students to create a tree map on chart paper as you compare the needs of both animals on the circle maps. At the top of the tree map, write the question “To live and grow, what do animals need to get from their environment?” Then add three branches to the map with lines for headings that students will supply during the discussion (Food, Water, Air). Paste the pictures of the lion and the praying mantis (from handouts 2.1 and 2.2) in the left-hand margin in rows. You’ll fill in the tree map as students share their ideas about what the lion and the praying mantis need from their environment. This chart will also be used in lesson 2b, so leave space to add pictures of two more animals in the left margin. (See the sample tree map below.)</p> 	<p>No. They eat different foods. The praying mantis eats ladybugs and flies, and the lion eats meat from other animals.</p> <p>They both need <i>water</i>.</p> <p>Our evidence is that we saw the praying mantis and the lion drinking water.</p> <p>They both need <i>air</i>.</p> <p>We saw the lion breathe in the air, and we saw the holes that the</p>	<p>need food. Do they both eat the same food? What is your evidence?</p> <p>Did you see anything else on the map that both animals need to get from their environments?</p> <p>What’s your evidence?</p> <p>Say more about that.</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>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>Show slide 27.</p> <p>So we learned that both the lion and the praying mantis need to get three things from their environments to live and grow. Who can tell me what those three things are?</p> <p>That’s why it’s important for animals to live in an environment. An environment helps them get the things they need. Lions and praying mantises get the things they need in different ways, but they both need the same things to live and grow.</p> <p>Show slide 28.</p> <p>Now let’s think about our focus question again: <i>To live and grow, what do animals need to get 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, animals need to get _____, _____, and _____ from their environment.</i></p> <p>Then draw a picture showing the three things that animals need.</p> <p>Whole-class share-out: Who can tell us in a</p>	<p>praying mantis uses to breathe.</p> <p>Food, water, and air.</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
			complete sentence what three things animals need to get from their environment? Show us these things in your drawing.	Animals need to get food, water, and air from their environment.	
1 min	<p>Link to Next Lesson</p> <p>Synopsis: The teacher engages students in summarizing key ideas from the lesson and links to the next lesson.</p>	Link science ideas to other science ideas.	<p>Show slide 29.</p> <p>Do <i>we</i> need to get food, water, and air from our environment to live and grow?</p> <p>How do we do that?</p> <p>So just like the lion and the praying mantis, we need to get food, water, and air from our environment to live and grow.</p> <p>Show slide 30.</p> <p>What about other animals in our terrarium?</p>	<p>Yes!</p> <p>We eat food with our mouths.</p> <p>We breathe in air through our noses and mouths.</p> <p>We drink water with our mouths.</p>	

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			<p>What do the earthworms and the ladybugs need from their environment to live and grow?</p> <p>Do you think they need the same things the lion and the praying mantis need?</p> <p>That's what we'll investigate as scientists in our next lesson.</p>		