

<p><b>Essential Question:</b> How do butterflies survive over time in a changing environment?</p> <p><b>Focus Question:</b> What happens to organism when the environment changes?</p> <p><b>Phenomenon Question:</b> How do long-term changes in an environment affect the organisms that live there?</p>			
<p><b>Objective:</b> Analyze the effects of a long-term change in an environment on the organisms that live there.</p>		<p><b>Materials:</b> Pencil</p>	<p><b>Projected Slides:</b> 340–350</p>
<p><b>Share the following items with families in advance of the lesson.</b></p> <ul style="list-style-type: none"> <li>• Links: Lesson 20a Daily Video, Science Journal Lesson 20a</li> <li>• Materials list</li> <li>• Assignment: After watching the video, students complete a chart that describes the effects that changes in an organism’s habitat may have on the organisms.</li> </ul>			
<p><b>Remote Learning Recommendations</b></p>			
Type	Pacing	Activity	Notes
Hybrid (in-class synchronous and remote asynchronous)  Asynchronous (in Sync)	10–15 minutes	Daily Video	Video description: Students analyze the effects of a long-term change in an environment on the organisms that live there.
	10 minutes	Assignment	The video asks students to complete a chart that describes the effects that changes in an organism’s habitat may have on the organisms.
	15 minutes	Virtual Class Meeting (Optional): Science Discourse	Ideally this meeting occurs after students watch the video and complete the assignment: <ul style="list-style-type: none"> <li>• <i>Model Change in an Environment Remote Alternative</i>                      Facilitate a discussion about some of the changes that may take place in an environment. Guide students to think about the parking lot scenario in the lesson. Review some possible changes in habitat and possible effects on the bird, fish, snake, and grass from the chart. Then invite students to share their ideas for possible effects on the butterfly, deer, and trees.                       As students share, look for evidence that all students describe reasonable effects on organisms from their prior knowledge of environmental changes and that they provide accurate reasoning to support their responses.                       If students struggle to provide reasonable responses, use guiding questions such as these: Will the change cause this organism to stay, move, or die? Why?</li> <li>• Facilitate a discussion about the similarities and differences in the effects of environmental change on each organism. Discuss how to summarize the effects into three categories: Stay, Move Away, and Die. Ask students to sort the forest organisms into the appropriate category based on the possible effects they identified. Encourage students to cite their reasoning for sorting</li> </ul>

**PhD Science in Sync™ Learn Anywhere Plan**

<b>Synchronous</b>			each organism into its category, and emphasize the cause and effect relationship to the organism’s response.
	5 minutes	Launch	Refer to Teacher Edition to conduct the lesson Launch (Projected slides 340–342). Give all students a chance to participate either in-person or virtually.
	23 minutes	Learn	Refer to Teacher Edition to conduct the lesson Learn (Projected slides 343–350). <ul style="list-style-type: none"> <li>• Describe an Environment</li> <li>• Model a Change in an Environment</li> </ul> Give all students a chance to participate either in-person or virtually.

<b>Asynchronous</b>
Remote students using in Sync with optional virtual class meeting

<b>Synchronous</b>
Some students in-class and some remote but all participating live

<b>Hybrid</b>
In-class students are synchronous and remote students asynchronous