

# Adapting to Change

## Unit Overview



### DESIGN CHALLENGE:

*How can we choose the best solution to reduce the impact of a problem created by a change in an ecosystem?*

### ANCHORING PHENOMENON:

*Some types of bees are disappearing in Missouri.*

### STORYLINE

In this unit, students explore interactions in ecosystems, how organisms adapt to environments, and how ecosystems change over both long and short time scales. Students consider an anchoring phenomenon of disappearing bumblebees in the Midwest. The Crosscutting Concepts of Cause and Effect, Systems and System Models, and Scale, Proportion, and Quantity are utilized as students describe ecological relationships and evaluate ways to remedy ecological disruptions. Students consider three common Midwestern ecosystems- prairies, forests, and ponds. Throughout the unit, the prairie is a key focus.

The unit concludes with the students exploring what happens when components of an ecosystem change. They compare and debate different solutions to a real-life complex scenario involving the endangered prairie chicken. Students then apply this experience to the original phenomenon of disappearing bees- how might students choose a solution that addresses this problem within their own neighborhood or school?

### UNIT OVERVIEW

<b>Section 1</b> <i>How can we apply systems thinking to our environment?</i>	<b>Section 2</b> <i>How do living things interact in an ecosystem?</i>	<b>Section 3</b> <i>How do ecosystems change over time?</i>
<i>Total Time: 9 days</i> LESSON 1 What are the living parts of our environment? LESSON 2 What are the nonliving parts of our environment? LESSON 3 What is a system? LESSON 4 What is an ecosystem?	<i>Total Time: 10 days</i> LESSON 5 How do living things get what they need to survive? LESSON 6 How are living things interconnected? LESSON 7 How do animals of the same kind help each other survive?	<i>Total Time: 9 days</i> LESSON 8 What do fossils tell us about ecosystems from long ago? LESSON 9 What kinds of adaptations do plants and animals have that allow them to survive in their particular ecosystem? LESSON 10 How can we choose the best solution to reduce the impact of a problem created by a change in an ecosystem?

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