

Ecosystems in Action

Student Edition,
pp. 46-51

How do organisms interact?

Answer: They compete and interact in ways that help them survive.

1 FOCUS

Lesson Prep

Key Objectives

- Describe competition in ecosystems.
- Give examples of interactions between organisms that help them survive.
- Explain why some animals migrate.

Video Time

Total
Running
Time

▶ 9:54

VIDEO **A** ▶ 2:10

VIDEO **B** ▶ 2:07

VIDEO **C** ▶ 2:00

VIDEO PREVIEW

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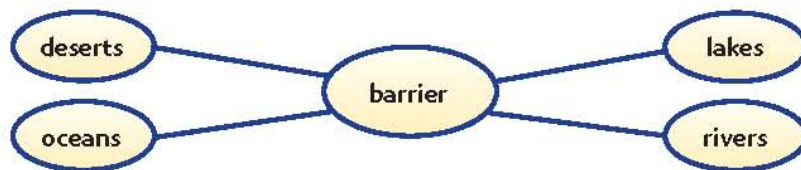
VIDEO A **Competition Main Idea** Organisms compete for resources. Avoiding competition can help an organism survive.

VIDEO B **Interactions Main Idea** Some interactions between organisms help them survive.

VIDEO C **Migration Main Idea** Migration helps some organisms survive.

VOCABULARY PREVIEW

Graphic Organizer Use a word web to introduce new vocabulary by asking, for example, “What things form barriers to migration?”



VIDEO Scavenger Hunt!

Ask students to locate the animals that act like farmers and grow their own food. [Answer: leaf-cutter ants.]

2 TEACH

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VIDEO A Competition ▶ 2:10

- **Explain** why competition occurs in ecosystems. Every ecosystem contains a limited supply of the resources needed by living things. Because resources are limited, living things must compete to get the things they need.
- **Discuss** strategies used for competition. Organisms compete for resources in many ways. Sometimes the best competitor is the strongest or fastest animal. Some animals hide the food they obtain or hunt at different times from their competitors.
- **Define** the term *niche* and relate niches to competition. A niche is an organism's role in a community. Animals with different niches do not directly compete for resources. For example, two bird species that build nests in different kinds of trees have different niches. These birds do not compete for shelter.

Lesson 1 Video A: Competition
Understanding Key Concepts

Name: _____ Date: _____

Skill Focus Finding the Main Idea
The main idea is what something is all about. Details help to explain the main idea. Details can be examples, explanations, or more information.

After Watching the Video
Write the main idea from the video on competition in the top box. Then list details that explain or support the main idea.

Main Idea: _____

Detail: _____

Detail: _____

Detail: _____

Detail: _____

29 Chapter 3 • Lesson 1 • Competition 29 Supplemental Activities

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VIDEO B Interactions ▶ 2:07

- **Define** behavior. Animals behave in a variety of ways as they interact with the living and nonliving parts of their ecosystems. Competitive behaviors, described in the previous section, involve a struggle between animals for limited resources. Animals can also behave in ways that benefit not only themselves, but other organisms as well.
- **Describe** some examples of helpful interactions. In some interactions between organisms, the behavior of one organism helps another organism survive. For example, when a bee drinks nectar from a flower, the bee not only gets the food it needs for survival, but it also pollinates the flower. Both living things benefit from this interaction.

Lesson 1 Video B: Interactions
Understanding Key Concepts

Name: _____ Date: _____

Skill Focus Determining Cause and Effect
The cause is the reason something happens. What happens is the effect. Finding cause and effect relationships can help you understand more about a topic.

After Watching the Video
Complete the cause of each event below. Remember that the effect of one event can be the cause of the next. Some bees have been fed in for years.

Cause	Cause
Effect/Cause	Effect/Cause
Effect:	Effect:

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VIDEO  **Migration** ▶  2:00

- **Explain** that some living things migrate to get the resources they need for survival. Migration is moving to another place where there are more resources. Many living things migrate. Some birds fly south for the winter. Some butterflies also migrate.
- **Discuss** barriers that can stop migration. There are many natural features that can act as barriers to migration. Rivers and lakes can be barriers, as can mountains and deserts.
- **Identify** ways that humans can impact migration. Humans create many barriers that can prevent migration. A dam across a river can prevent fish migration. Human barriers can prevent organisms from getting what they need to survive.

Lesson 1: Migration
Understanding Key Concepts

Name _____ Date _____

Skill Focus: Making a Prediction
When you make a prediction, you use what you observe and what you already know to tell what might happen.

After Watching the Video
Use the observations below and what you know from the video to predict what will happen.

Observation: The river where fish migrate gets narrower.	What You Know: _____	Prediction: _____
Observation: Food supplies for a group of whales are running low.	What You Know: _____	Prediction: _____
Observation: A fence has been built across the migration path of birds.	What You Know: _____	Prediction: _____

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Teacher's Resource Book, p. 41

Differentiated Instruction Options

Enrichment

Migration Posters

Have pairs of students research an animal that migrates. Make sure to include examples of land, sea, and air migrations. Have them make a poster that shows the animal, where it lives in the summer, and where it lives in the winter. Have students present their posters to the class. Examples of animals to research include lobsters, albatrosses, arctic terns, caribou, and wildebeests.

Materials:

- research materials
- poster board
- crayons, markers, colored pencils

ELL

Cloze Activity

Ask students to write fill-in-the-blank sentences using the five vocabulary words. **Low Level** Create sentences as a group and have students complete them individually. **Intermediate Level** Have pairs of students create sentences and then complete the sentences as a class. **Advanced Level** Have students create science-related sentences with the vocabulary words. Then have them use three of the words in sentences that are not related to science.

Materials:

- paper
- pencils

Activities for All

Puppet Show

Organize students into small groups. Ask each group to write a short skit that illustrates one of the main ideas from the lesson. Tell the groups to include at least one vocabulary word in their skits. Have students create puppets of the plants and animals that appear in their skits. Have the groups practice performing their puppet shows, and then give students an opportunity to share their shows with a younger class.

Materials:

- materials needed to make puppets (socks, cloth, yarn, glue, and so on.)

3 ASSESS

Wrap Up

Informal Assessment  How might a new species of fish introduced into a pond affect the existing species of fish?

Answer: These species will compete for resources if they have the same niche. There may not be enough resources for both species.



Play *MindJogger Interactive Lesson Review Game*

Vocabulary Review

Lesson 1: Ecosystems and Communities
Building Your Science Vocabulary

Name _____ Date _____

New Vocabulary


isolate something that stops migration from one area to another

behavior the way an organism acts toward its ecosystem

competition the process of one organism working against another to get something it needs to live

migration the moving of organisms from one place to another where there is more room and resources

niche the role of an organism in a community

barrier  what a place of ground or water

process an action or group of actions that gets a certain result

What Do You Think?
Read each sentence. Write Yes or No in the blank.

1. Are animals likely to migrate if they have everything they need where they are? _____
2. Does an animal's niche include what it eats? _____
3. Can an ecosystem be small, such as a backyard or a pond? _____
4. Do desert plants compete for available water? _____
5. Can a barrier made by humans, such as a dam or fence, stop animals from migrating? _____

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Chapter 3, Lesson 1 • Vocabulary 10

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Answers

Answers to Student Edition questions on pages 50-51.

Vocabulary Review

1. behavior
2. competition
3. barrier
4. niche
5. migration

Word Study: Synonyms

1. c. fence
2. a. job
3. b. action
4. e. relocation
5. d. conflict

Show What You Know

1. Organisms try to avoid competition so they can get the resources they need to survive.
2. Some bees pollinate flowers when they get nectar from them. This helps both species survive.
3. Animals migrate to get what they need to survive. Barriers stop migration and prevent them from getting those things.

Critical Thinking

1. Plants would compete for limited space, water, air, and sunlight.
2. Accept any reasonable answer. Examples include: go to the store to get more, grow more food, or move to a different place.

Words

in Science

Accept any words that use the prefix *inter-*. Make sure students explain how the word means "between." Examples: interstate, interfere, interrogate, and intercept.

Process Skill

Quick Activity

Accept any reasonable predictions. Students could say that because these species depend on one another, the removal of either would harm the one left behind.