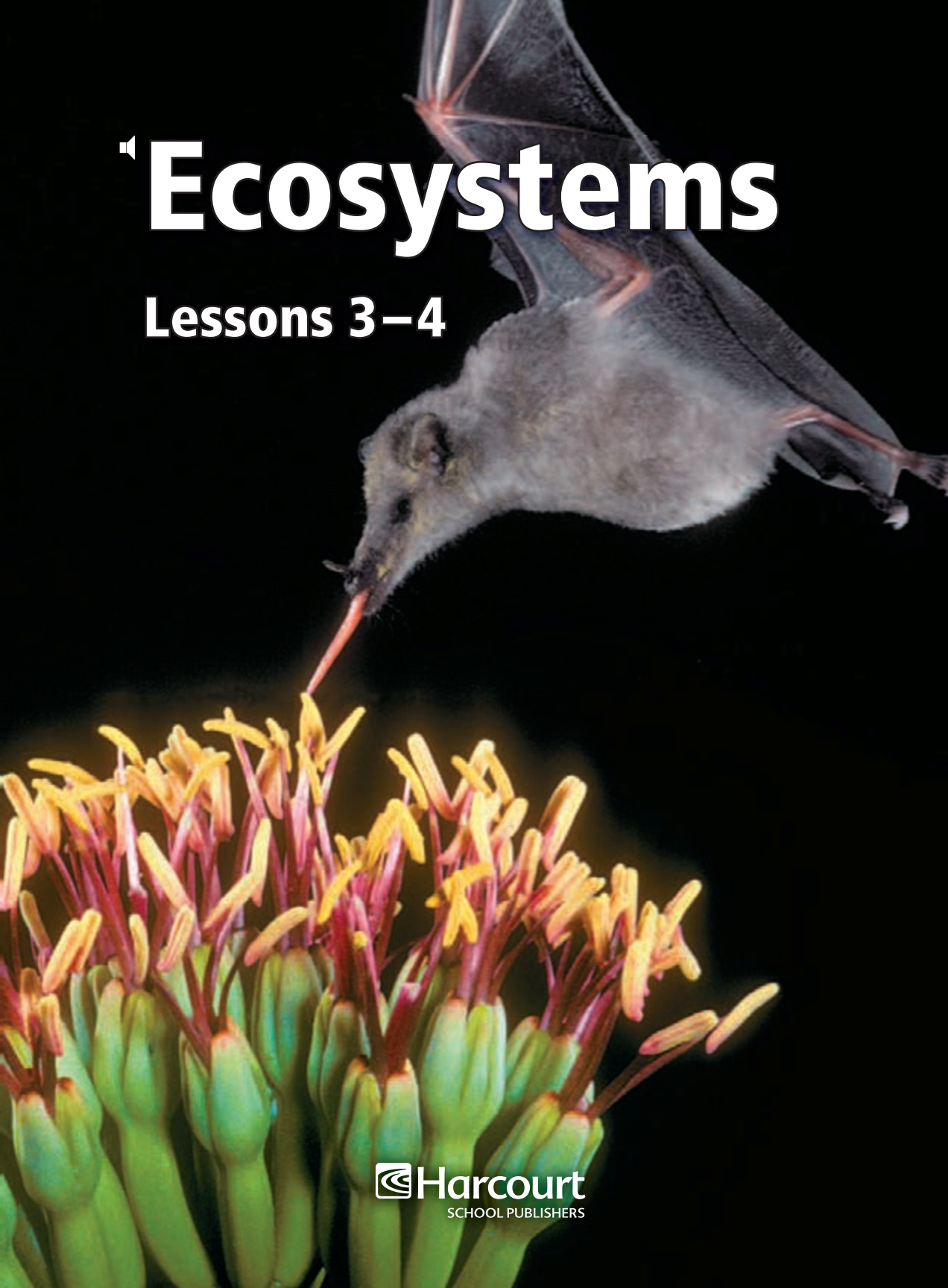


Ecosystems

Lessons 3–4



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Ecosystems

Lessons 3–4

Lesson 3

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What is Interdependence?

VOCABULARY

- interdependence
- pollinate
- relationship



There is **interdependence** between flowers and bees.



When bees eat nectar they also **pollinate** the flowers.



■ Predators have a **relationship** with their prey.



READING FOCUS SKILL

COMPARE AND CONTRAST

You **compare** when you look at how things are alike. You **contrast** when you look at how things are different.

- ▶ **Compare** and **contrast** relationships between plants and animals.

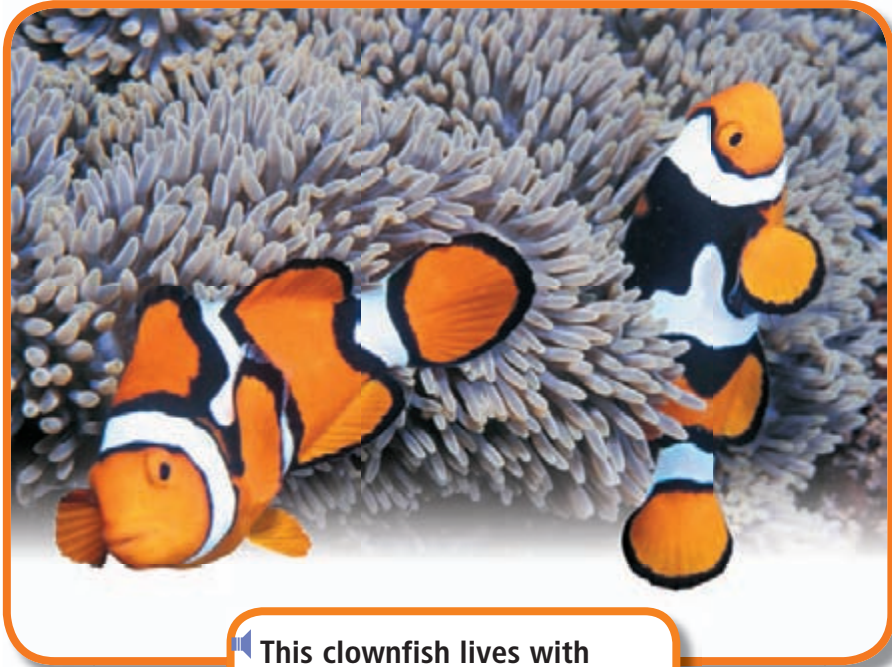
▶ Interdependence

Interdependence means that things depend on each other. Two living things may depend on each other for survival.

- ▶ Groups of living things may be interdependent. Elephants live in herds. They help protect each other. They survive better in groups.
- ▶ Sometimes different kinds of animals help each other. They do not compete for food. They have a special connection. They have a **relationship**.



- ▶ Ants help aphids by taking them to their nest at night. This keeps the aphids safe. Aphids give food to the ants.



▶ This clownfish lives with anemones in a coral reef. The two are interdependent.

▶ Cleaner shrimp have a relationship with fish. The fish have harmful organisms living on them. These *parasites* can hurt the fish. But cleaner shrimp eat the parasites. This helps the fish. It also gives food to the shrimp.

▶ The shrimp and fish are *interdependent*. They help each other survive.



▶ **Compare the relationships between shrimp and fish and groups of elephants.**

Animals Help Plants

Animals help plants in two ways. Some **pollinate** the flowers of plants. They carry pollen from one flower to another. Birds and other small animals do this as they feed themselves.

Seeds are also eaten by birds and other animals. Then later these animals drop the seeds as waste. New plants can grow in new places. Dogs, cats, and bears may carry seeds from one place to the next. They carry the seeds on their fur.



Compare and contrast how different animals take seeds to new places.

Fruit bats carry pollen between flowers. ►



◀ Dogs carry seeds that get stuck in their fur.

Plants Help Animals

All animals need plants. Herbivores eat plants. Then carnivores eat herbivores. Plants also protect animals from predators.

Plants help people, too. People use wood from trees to make paper and fuel. Coal that comes from decayed plants can be used to make electricity. Cotton for clothes comes from plants. People use some plants for medicines.



Compare and contrast ways that plants help people and other animals.

Thorns help keep predators from eating these plants.



Review



Complete these **compare** and **contrast** statements.

1. Plants and animals are alike because they both need each other to _____.
2. Fish give some shrimp protection. Fish also give shrimp _____.
3. Pollen and seeds both get carried away by _____.
4. Both dogs and birds take seeds away. This helps _____ grow in new places.

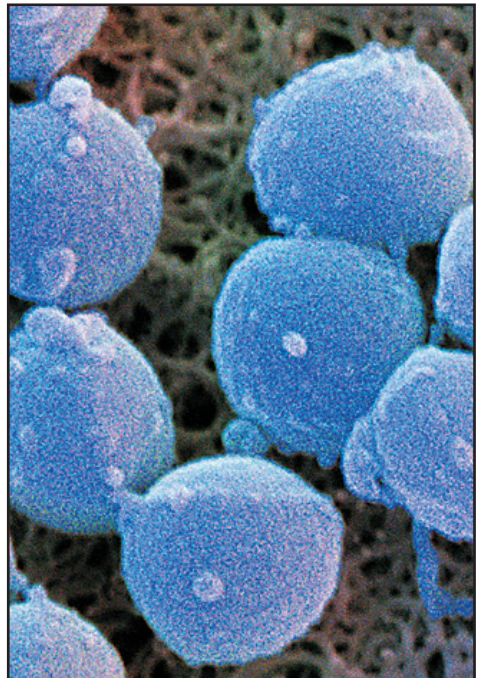
What are Microorganisms?

VOCABULARY

- microscope
- bacteria
- mold
- protist



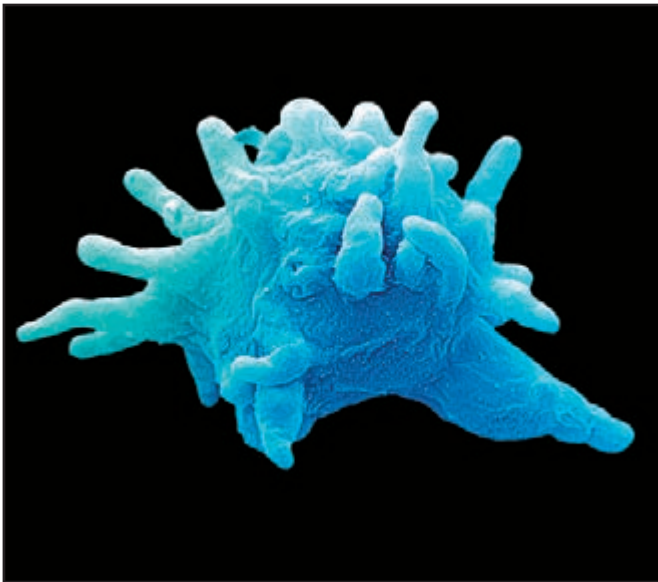
This **microscope** makes very tiny things look larger.



Bacteria can be seen only with a microscope.



▶ **Mold** is growing on this bread.



▶ This **protist** is a kind of microorganism.



READING FOCUS SKILL

COMPARE AND CONTRAST

You **compare** when you look at how things are alike. You **contrast** when you look at how things are different.

🔊 **Compare** and **contrast** different kinds of microorganisms.

🔊 Kinds of Microorganisms

Bacteria are very tiny. They can only be seen under a **microscope**. Bacteria are microorganisms. Yeasts and molds are microorganisms. They are also fungi. They cannot make their own food.

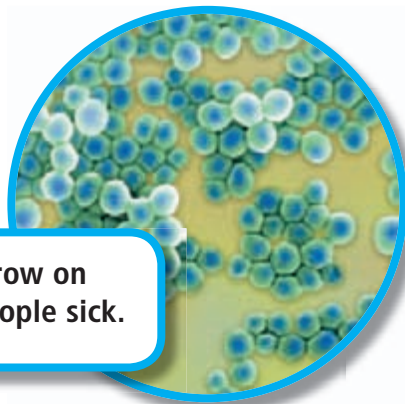
🔊 **Protists** are a special kind of microorganism. Some protists, like *algae*, can make their own food. In this way, algae are like plants. Other protists, like *protozoans*, hunt for food. In this way, protozoans are like animals.

🔊 Some microorganisms are harmful. Some bacteria in raw meat or eggs can make people sick. Cooking kills the bacteria and makes the food safe.



Compare and contrast protists with other microorganisms.

🔊 These staph bacteria grow on skin. They can make people sick.



Helpful Microorganisms

Microorganisms help people more than harm them. *Plankton* in the ocean put oxygen into the air. They are also food for fish.

Other microorganisms are used to clean up waste water. They get rid of harmful bacteria in the water. Microorganisms also help clean up oil spills.

Bacteria turn milk into yogurt. They help make some cheeses. The bacteria, *penicillin*, is made into medicine.



Compare and contrast how microorganisms help and hurt people.

Yeast feeds on sugar in bread dough. It makes bread rise.



Review



Complete these **compare** and **contrast** statements.

1. Bacteria and other microorganisms can only be seen under a _____ .
2. Yeasts and molds are both microorganisms and _____ .
3. _____ can act like plants or animals.
4. More _____ help people than harm them.

GLOSSARY

-  **bacteria** (bak•TEER•ee•uh) A certain type of microorganism.
-  **interdependence** (int•ter•dee•PEN•duhns) The depending of populations of organisms on one another for survival.
-  **microscope** (MY•kruh•skohp) A science tool that makes very tiny things look bigger.
-  **mold** (MOHLD) A kind of fungus.
-  **pollinate** (PAHL•uh•nayt) To transfer pollen from a male part of a flower to a female part of a flower.
-  **protist** (PROH•tist) A one-celled organism that may share traits with plants or animals.
-  **relationship** (rih•LAY•shuhn•ship) A connection between organisms.

Think About the Reading

-  **1.** Do you want to know more about bacteria after reading this unit? Where can you look fo find out more about bacteria?
-  **2.** Where can you go to see pictures of bacteria under a microscope?

Hands-On Activity

You learned about interdependence and relationships of living things. You learned how living things help one another.

-  **1.** Find or draw pictures of plants and animals that help one another.
-  **2.** Place the pictures on a poster or paper. Write the names for each plant and animal.

School-Home Connection

Take your poster or paper home to show your family. Tell them how the plants and animals help one another. Talk to your family members about how each of them helps the others.