

Principles of Ecology

Before You Read

Use the “What I Know” column to list the things you know about ecology. Then list the questions you have about ecology in the “What I Want to Find Out” column. **Accept all reasonable responses.**

K What I Know	W What I Want to Find Out	L What I Learned

Science Journal

Organisms such as birds get what they need to survive from their environment. Hypothesize why is it important for birds to be able to fly long distances.

Some birds have adaptations that enable them to fly long distances. By flying a long range or distance, the bird is more likely to find the food on which it survives.

Principles of Ecology

Section 1 Organisms and Their Relationships

Main Idea _____

Details _____

Skim Section 1 of the chapter. Write two questions that come to mind from the headings and illustration captions.

Accept all reasonable responses.

New Vocabulary

Use the vocabulary words in the left margin to complete the graphic organizer below. List the biological levels from largest to smallest.

- abiotic factor*
- biological community*
- biome*
- biosphere*
- biotic factor*
- commensalism*
- ecology*
- ecosystem*
- habitat*
- mutualism*
- niche*
- parasitism*
- population*
- predation*
- symbiosis*

Levels of Organization
biosphere
biome
ecosystem
biological community
population

Compare the terms in the tables by defining them side by side.

habitat area where the organism lives out its life	niche the role or position that an organism has in its environment; how it meets its needs for food, shelter, and reproduction
abiotic factor nonliving part of an organism's environment, such as soil, wind, moisture, light, temperature, and available nutrients	biotic factor living organisms that inhabit an environment

symbiosis permanent, close association between two or more organisms of different species		
commensalism one species benefits and the other species is neither harmed nor does it benefit	mutualism both species benefit	parasitism one species benefits and one is harmed
predation the act of one organism consuming another for food		

Section 1 Organisms and Their Relationship (continued)

Main Idea _____

Details _____

Ecology

I found this information on page _____.

SE, pp. 32–33
RE, p. 11

Create a journal entry. Imagine that you are an ecologist. Choose one plant or animal in nature and write two relationships of that organism in its environment.

Journal Entry

Date _____

Organism _____

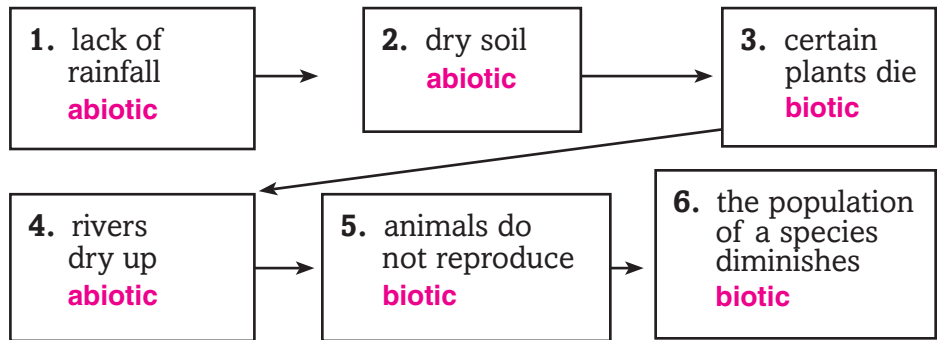
1. Encourage students to demonstrate thoughtfulness and list the organism's relationship with food sources, with predators and prey, and with nonliving parts of the environment.
2. _____

The Biosphere

I found this information on page _____.

SE, pp. 34–35
RE, p. 12

Sequence the abiotic and biotic factors. Write abiotic or biotic in each square.



Levels of Organization

I found this information on page _____.

SE, p. 36
RE, p. 13

Identify each level of organization that is described.

- _____ **population** a group of organisms of the same species in the same geographic location
- _____ **communities** interacting populations
- _____ **organism** an individual living thing made of cells
- _____ **ecosystem** all the different populations in a community
- _____ **biome** a group of ecosystems with the same climate and similar communities

Section 1 Organisms and Their Relationships (continued)

Main Idea

Ecosystem Interactions

I found this information on page _____.

SE, p. 38
RE, p. 14

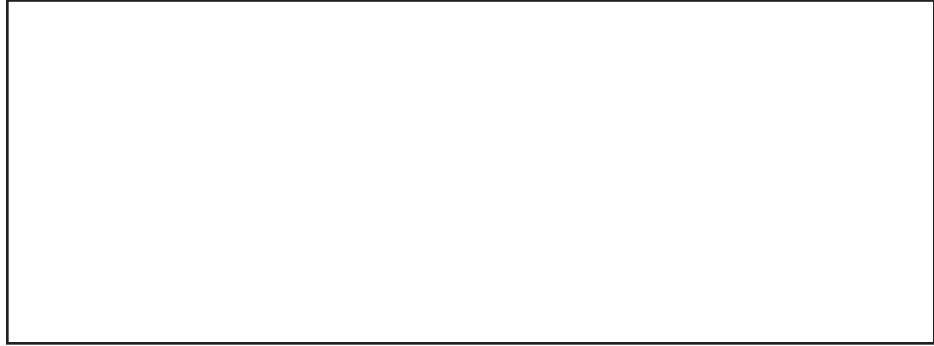
Community Interactions

I found this information on page _____.

SE, pp. 38–40
RE, pp. 14–15

Details

Model a community with several organisms. Show two organisms occupying the same niche. Below your sketch, explain why those two organisms cannot usually occupy the same niche for long.



Two organisms cannot occupy the same niche for long because they compete for the same resources. Eventually, one species will out-compete the other.

Rephrase mutualism, commensalism, and parasitism in your own words. Provide an example of each term.

1. **mutualism:** Certain types of bacteria in our intestines help digest our food.
2. **commensalism:** Lichen grows on tree branches.
3. **parasitism:** A lamprey eel feeds on the blood of another fish.

SUMMARIZE

Bacteria live inside our bodies. Analyze helpful, neutral, and harmful things that bacteria do while living in our bodies. Incorporate the terms *parasitism*, *mutualism*, *habitat*, and *niche* in your discussion.

Accept all reasonable responses. While helpful bacteria use our body as their habitat, they occupy the niche and keep harmful bacteria out. The helpful bacteria can benefit us by keeping invaders at bay or by eating harmful substances, which is a mutualistic relationship. Harmful bacteria can act as parasites by eating food we need, causing infections, or harming our bodily structures.