

## Populations and Communities ▪ Section Summary

## Interactions Among Living Things

### Guide for Reading

- How do an organism's adaptations help it to survive?
- What are the major ways in which organisms in an ecosystem interact?
- What are the three types of symbiotic relationships?

Every organism has some unique characteristics that enable it to live in its environment. In response to their environment, species evolve, or change over time. The changes that make organisms better suited to their environment become common in that species by a process called **natural selection**. Individuals whose characteristics are best suited for their environment tend to survive and produce offspring. The offspring inherit those characteristics and also live to reproduce. Individuals that are poorly suited to the environment are less likely to survive and reproduce. The poorly suited characteristics may disappear from the population over time. The results of natural selection are **adaptations**, the behaviors and physical characteristics of species that allow them to live successfully in their environment.

**Every organism has a variety of adaptations that are suited to its specific living conditions.** These adaptations create a unique role for the organism in its ecosystem. An organism's particular role in its habitat, or how it makes its living, is called its **niche**. A niche includes the type of food the organism eats, how it obtains this food, which other species use it as food, when and how the organism reproduces, and the physical conditions it requires to survive.

Some adaptations involve how organisms interact. **There are three major types of interactions among organisms: competition, predation, and symbiosis.** **Competition** is the struggle between organisms to survive as they attempt to use the same limited resource. **Predation** is an interaction in which one organism kills and eats another organism. The organism that does the killing is the **predator**. The organism that is killed is the **prey**. Predators have adaptations that help them catch and kill their prey. Prey organisms have adaptations that help them avoid being caught and eaten. Predation can have a major effect on the size of a population.

**Symbiosis** is a close relationship between two species that benefits at least one of the species. **The three types of symbiotic relationships are mutualism, commensalism, and parasitism.** **Mutualism** is a relationship in which both species benefit. **Commensalism** is a relationship in which one species benefits and the other species is neither helped nor harmed. **Parasitism** involves one organism living on or inside another organism and harming it. The organism that benefits is called a **parasite**, and the organism it lives on or in is called a **host**.