Parental Care As mammals, we are very familiar with the amount of care required for parents to raise their young. Parenting may include sheltering the young from danger and providing food, as the adult lemur is shown doing in **Figure 14.** Not all animals work as hard as humans and other mammals to bring up a family. Animals vary widely in the amount of care that they give their offspring. Nonetheless, raising young takes time and energy. A parent caring for its offspring reduces its own chances of survival and the number of offspring it could have later in life. So, parents trade their future survival and reproduction for the survival of their current offspring.

Parental care is most common in species that have few young or in species in which caring for young increases the offspring's chances for survival. Most fishes do not care for their young, but parents of some fish species keep their young close to protect them from predators. Young amphibians and most reptiles are on their own. In about 90% of bird species, both males and females give care. In mammals, a male cannot provide milk for the young, so the females usually care for offspring.



Figure 14 This adult lemur provides food and comfort to its young.

Cooperative Behavior An animal behaves to maximize its own reproductive success, not to ensure the survival of the species. But animals sometimes work together. Cooperative behavior occurs when two or more animals interact to mutual benefit in spite of the costs of working together. Female lions hunt together to catch large prey. They have to share the meat once it is caught, but without teamwork, they would never be able to catch large prey. Hyenas and wild dogs also cooperate to hunt large prey. Other cooperative acts involve breeding. In some bird and mammal species, mature offspring give up the chance to breed on their own and help their parents raise the next generation of offspring. This behavior indirectly passes some of the offspring's genes on to the next generation.

› **Reading Check** *How can parental care increase reproductive success?*

courtship (KAWRT ship) any behavior that leads to mating and the rearing of young

sexual selection an evolutionary mechanism by which a mate is chosen on the basis of a particular trait

Section 2 Review

KEY IDEAS

1. **Define** the key skills for survival.
2. **Describe** how communication signals influence behavior.
3. **List** the types of behavior that increase reproductive success, and give an example of one type.

CRITICAL THINKING

4. **Predicting Outcomes** A monkey can smell intruders in its territory, but it cannot see them through the dense trees. What mode of communication will the monkey use to communicate its desire for the intruders to leave? Explain.
5. **Forming Reasoned Opinions** Do animals that live alone engage in social behavior? Why or why not?

ALTERNATIVE ASSESSMENT

6. **Poster** Use the Internet or library resources to learn more about how hibernation occurs and why it has developed. Create and present a poster to your class that explains the types of hibernation and the reason that bears are not considered "true" hibernators.

Close

Formative Assessment

How do courtship behaviors increase reproductive success for a species?

A. They ensure an abundant food supply. (Incorrect. Courtship fosters mating and has no relationship to the availability of food.)

B. They help females find food. (Incorrect. Courtship behaviors relate to finding and choosing mates, not finding food.)

C. They help males attract mates. (Correct. Elaborate displays by males are preferred by females as signals of the potential quality of offspring.)

D. They lead to better parental care. (Incorrect. Parenting occurs after mating, while courtship occurs before mating.)

Why It Matters

It's Not Just a Roof Over Her Head

The male bowerbird has a complex courting behavior. The male constructs a bower using leaves, twigs, and other items it finds. The bowerbird decorates the bower with colorful items ranging from feathers, pebbles, berries and shells to coins, spoons, and aluminum foil. When a female arrives and inspects the bower, the male struts in front of the bower and sings. Mating takes place after the female deems the bower acceptable and enters it. The female then leaves the bower and builds a nest nearby. There are 17 species of bowerbirds in Australia and New Guinea, each with its own style of bower. The satin bowerbird paints the walls of its bower with chewed berries or charcoal.

Answers to Section Review

1. finding resources, such as food, and avoiding predators
2. Animals use signals to influence the behavior of other animals. Many kinds of signals can be used for this purpose.
3. Cooperative behaviors, courtship behaviors, parenting behaviors, territorial behavior, and social behavior all contribute to reproductive success. For example, social behaviors protect developing young to increase their chances of reaching reproductive status.
4. The monkey should use sound to communicate because sound travels quickly and a long distance.
5. Yes, they do. Often, they engage in social behavior to reproduce. Also, they may engage in social behavior when defending a resource or territory.
6. Answers may vary but should include an explanation of the different types of hibernation. Bears are not considered true hibernators because their body temperature and metabolic rate do not drop very much and they can be awakened relatively easily from their sleeping state. Some external stimuli that trigger hibernation are decreasing ambient temperatures, a dwindling food supply, and a shortening of daylight hours. An internal response to these external stimuli would be an increased appetite to add weight for the hibernation period. The external response would be eating more.