

# CHAPTER REVIEW

## CONTENT REVIEW

### Multiple Choice

Choose the letter of the answer that best completes each statement.

- Certain whales have teeth modified into huge stiffened plates called
  - rumen.
  - baleen.
  - cecums.
  - monotremes.
- Carnivorous mammals have strong
  - sharp incisors.
  - baleens.
  - flat-edged incisors.
  - flattened molars.
- In humans, the cecum has evolved into the
  - appendix.
  - small intestine.
  - kidney.
  - liver.
- The mammalian circulatory system sends deoxygenated blood to the
  - heart.
  - internal organs.
  - brain.
  - lungs.
- The duckbill platypus and other egg-laying mammals are
  - monotremes.
  - marsupials.
  - placental mammals.
  - extinct.
- Many biologists believe that mammals alive today do not see color well because early mammals
  - lacked eyes.
  - lived in cold regions.
  - were nocturnal.
  - were blind.
- Bacteria in the digestive tracts of grazing animals produce enzymes that
  - speed digestion.
  - break down cellulose.
  - break down fats.
  - digest food for a second time.
- In humans, nutrients, oxygen, carbon dioxide, and wastes are exchanged between embryo and mother through the
  - rumen.
  - uterus.
  - marsupium.
  - placenta.

### True or False

Determine whether each statement is true or false. If it is true, write "true." If it is false, change the underlined word or words to make the statement true.

- Old World monkeys, such as the squirrel monkey, have long prehensile tails used in climbing.
- The odd-toed ungulates belong to the order Perissodactyla.
- Night-flying bats use echolocation to calculate distances from objects.
- The great blue whale and the humpback whale are carnivores.
- Aquatic mammals such as whales and dolphins have a thick layer of skin called blubber.
- The duckbill platypus is an example of a marsupial.
- Elephants can hear sounds of higher frequencies than humans can.
- Cottontail rabbits are in the order Lagomorpha.

### Word Relationships

Replace the underlined definition with the correct vocabulary word.

- Female mammals have structures that produce milk for their young.
- Grazing animals have a chamber in their digestive tract that contains bacteria that break down cellulose.
- Koalas are an example of a pouched mammal.

## CONCEPT MASTERY

Use your understanding of the concepts developed in the chapter to answer each of the following in a brief paragraph.

1. Describe three important characteristics used to classify mammals.
2. Explain how night-flying bats find tiny insect prey in total darkness.
3. How does a four-chambered heart add to the efficiency of the circulatory system of mammals?
4. What are the three parts of a mammal's brain and what functions does each control?
5. Describe the different types of teeth that have evolved in carnivorous and herbivorous mammals. How is each adapted to the animal's particular diet?
6. The digestive system of cows does not produce enzymes that break down cellulose. Explain how cows digest plant tissues that contain large amounts of cellulose.

## CRITICAL AND CREATIVE THINKING

Discuss each of the following in a brief paragraph.

1. **Making comparisons** Compare and contrast the embryos of marsupials with those of placental mammals.
2. **Relating cause and effect** Explain how the change in world climate at the end of the Cretaceous Period led to the great mammalian radiation.
3. **Making inferences** In what ways have well-developed senses contributed to the success of mammals?
4. **Relating facts** Explain the relationship between a human's ability to speak and the movement of the diaphragm.
5. **Classifying organisms** You are given the following descriptions of three placental mammals. A is a flying mammal that has sharp teeth and a liquid diet. B is a mammal that has sharp front teeth and eats plant material. It has a short gestation period and produces many offspring. C is a carnivorous mammal that has a layer of subcutaneous fat. It lacks external ears and hind legs, and it mates and bears its young in water. Using your knowledge of mammals, classify each organism in its proper order. Give your reasoning for each classification.
6. **Identifying relationships** Early humans had a functioning appendix. Describe how the appendix changed over time. What reasons can you give to explain this change?
7. **Using the writing process** You are a writer for a small wildlife magazine. Your boss tells you that he has decided not to feature mammals any longer because he finds them dull. Write a memo to him in order to change his mind. Include the characteristics that separate mammals from organisms in other classes and describe the diversity that exists within the class.

