

## Unit 7 Review

### Summary

- A chordate is an animal that has a thin, flexible rod that supports three features: body, gill slits, and nerve chord. All chordates have these three features at some time during their life. A vertebrate is one kind of chordate.
- A vertebrate has a backbone, a complex body plan with well-developed organ systems, sense organs located on the head, a large central body, and an endoskeleton.
- Fishes are ectothermic vertebrates that live in water and breathe with gills. Fishes are classified into three groups: jawless fishes, cartilaginous fishes, and bony fishes.
- Life on land offered vertebrates many advantages. These advantages included new sources of food, more oxygen to breathe, and more places for shelter.
- Life on land involved many adaptations. Lungs replaced gills as the main organs of the respiratory system. Some land vertebrates have mucus glands or hard scales covering their skin. These structures prevent their skin from drying out. Land vertebrates reproduce by internal fertilization. Their eggs have hard or leathery shells that prevent drying.
- Amphibians are ectothermic vertebrates that usually have gills and live in water when they are young, and have lungs and live on land as adults. Amphibians reproduce in the water by external fertilization.
- Reptiles are ectothermic vertebrates that have scaly skin and lay their eggs on land. Reptiles have internal lungs, an amniotic egg, and scales that prevent water loss.
- Birds are endothermic vertebrates. Most birds can fly. Their adaptations for flight include wings, feathers, lightweight bones, and air sacs in the body.
- Mammals are the most complex vertebrates. They give birth and have mammary glands and hair. Mammals are classified into three groups: egg-laying mammals, pouched mammals, and placental mammals. The placenta is a special organ that connects the unborn young to the mother inside the mother's body.





## For Your Portfolio

1. Make a list of some of the vertebrates you see living near your school. After you have completed the list, classify the animals as fishes, reptiles, amphibians, birds, or mammals. Make a chart of all the vertebrates you identified. Include their names, classification, and where they live.
2. Go to the library and do research on fish that are commonly eaten by people. How important is fish in the diets of people of different cultures? For example, how much and what kinds of fish are eaten by the Japanese, Chinese, Greenlanders, people of the United States, and other cultures? What is the nutritional value of fish in the human diet? Report your findings to your classmates. If possible, you may want to sample some different kinds of fish eaten by different cultures.
3. Go to the library and borrow a field guide of birds in your area. For several days, observe the birds around you. If possible, use a pair of binoculars. Except in the coldest part of winter, you should see many different kinds of birds. Try to identify all the birds you see. Make a list of the birds you see. Keep a journal that tells when and where you saw the bird, what the weather was like, and what the bird was doing. You may even want to include a drawing of the bird.
4. Use library resources to find out about John James Audubon. What is Audubon famous for? You might also want to find out about the National Audubon Society. What are the society's functions and goals? Share your findings with your class. If possible, invite a member of your local Audubon Society to speak to your class.
5. Visit a local aquarium or tropical fish store. Look at as many fishes as you can. How are the fishes different? How are they the same? What do they eat? How big are they? Make drawings of five of your favorite fishes and label the main parts. Share your drawings with your classmates.
6. Visit a natural history museum in your area. Look at the dinosaur skeletons and fossil dinosaur bones. If possible, talk to a paleontologist—a scientist who studies ancient animals—at the museum. You may want to call ahead and make an appointment. Ask the paleontologist where the dinosaurs came from, what they ate, and when they lived. Share your findings with your class.



## Unit 7

## PRACTICE TEST

Complete the following statements.

1. A chordate with a strong, flexible backbone is called a \_\_\_\_\_.
2. \_\_\_\_\_ are ectothermic vertebrates that live in the water.
3. The three kinds of fishes are \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
4. An animal whose body temperature changes with the environment is \_\_\_\_\_.
5. A vertebrate with scaly skin that lays eggs on land is a \_\_\_\_\_.
6. Reptiles have a kind of egg called an \_\_\_\_\_ egg that protects the offspring from drying out.
7. Before birth, the organ that connects a young mammal to the inside of its mother's body is the \_\_\_\_\_.

Answer the following questions.

8. Describe three characteristics of all vertebrates. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
9. Describe three differences between fishes and birds. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
10. Describe three differences between amphibians and reptiles. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Answer one of the following questions.

11. Mammals have many traits that help them survive and reproduce in their environment. Describe three traits of mammals that help them survive and explain the role of each.
12. Make a chart comparing the characteristics of fishes, reptiles, amphibians, birds, and mammals. Include information about body temperature, type of heart, type of fertilization, type of skeleton, type of breathing organ, and habitat.