

CHAPTER

34

DIRECTED READING

Fishes and Amphibians

► Section 34-1: The Fish Body

Today’s Fishes Share Key Characteristics

Complete each statement by underlining the correct term or phrase in the brackets.

1. Fishes normally get oxygen from [the oxygen in water molecules / oxygen dissolved in water].
2. Single-loop blood circulation means blood is pumped from the heart to the capillaries of the gills, through the body, and then to the [heart / capillaries of the body].
3. All fishes have an internal skeleton made of bone or [silicates / cartilage].

Fishes Breathe with Gills

Complete each statement by writing the correct term or phrase in the space provided.

4. Each gill is made of rows of _____ .
5. At the rear end of the cheek cavity is an opening called a(n) _____ .
6. In _____ , water passing across the gills and the blood circulating in the capillary networks through the gills flow in opposite directions.

Fishes Have a Simple Heart and Single-Loop Circulation

In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|----------------------------|--|
| _____ 7. sinus venosus | a. a chamber that is a thick-walled pump with enough muscle to force blood to flow through the capillaries |
| _____ 8. atrium | b. a collection chamber that reduces the resistance of blood flow into the heart |
| _____ 9. ventricle | c. a chamber that is a second pump; smoothes pulsations and adds more force |
| _____ 10. conus arteriosus | d. a chamber that is filled with blood from the sinus venosus; has thin, muscular walls |

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Kidneys Help Balance Water and Salt

Read each question, and write your answer in the space provided.

11. Why is maintaining water balance a different process for freshwater fish than for marine fish?

12. What are nephrons?

Most Fishes Fertilize Their Eggs Externally

Complete each statement by underlining the correct term or phrase in the brackets.

13. In fishes, fertilization generally takes place [externally / internally].
14. In a process called [spawning / fertilization], male and female gametes are released near one another in the water.
15. The eggs of sharks, skates, and rays are fertilized [inside / outside] the female's body.

► Section 34-2: Today's Fishes

Hagfishes and Lampreys Are Jawless

Mark each statement below T if it is true or F if it is false.

- _____ 1. Hagfish live deep on the ocean floor.
- _____ 2. Lampreys live in both fresh water and salt water.
- _____ 3. The skeletons of lampreys and hagfish are made of cartilage.
- _____ 4. When threatened, hagfish defend themselves by producing huge quantities of slime.
- _____ 5. Lampreys live on plankton and krill.

Sharks, Skates, and Rays Have Flexible Skeletons

Read each question, and write your answer in the space provided.

6. Why are a shark's teeth always sharp?

7. Why is the shark such a fast swimmer?

8. What are the distinguishing characteristics of rays and skates?

Bony Fishes Have Three Structural Adaptations

Complete each statement by writing the correct term or phrase in the space provided.

9. Most bony fishes have a hard plate, called a(n) _____, that covers the gills on each side of the head.
10. The _____ is a specialized sensory system that extends along each side of a bony fish's body.
11. By adjusting the gas content of the _____, bony fishes can regulate their buoyancy.

Read each question, and write your answer in the space provided.

12. How do bony fishes benefit from having operculums?

13. How do bony fishes benefit from the lateral line?

14. Where does the gas in the swim bladder come from?

15. What are teleosts?

16. What are lobe-finned bony fishes?

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