

Chapter 10 Sponges, Cnidarians, and Worms

Study Guide

1. What is an Animal?
 - a. Characteristics of Animals
 - i. How Animal Cells Are Organized
 1. **Organ**
 - ii. How Animals Obtain Food
 - iii. How Animals Reproduce
 - iv. How Animals Move
 - b. How Animals Meet Their Needs
 - i. **Adaptation**
 - c. Adaptations for Getting Food
 - i. **Herbivores**
 - ii. **Carnivores**
 1. **Predators**
 2. **Prey**
 - iii. **Omnivores**
 - d. Adaptations for Escaping Predators
 - e. Classification of Animals
 - i. **Invertebrate**
 - ii. **Vertebrate**
2. Symmetry
 - a. The Mathematics of Symmetry
 - i. **Bilateral Symmetry**
 - ii. **Radial Symmetry**
 - b. Symmetry in Animals
 - i. Animals with Radial Symmetry
 - ii. Animals with Bilateral Symmetry
3. Sponges and Cnidarians
 - a. Sponges
 - i. The Structure of a Sponge
 - ii. Getting Food and Oxygen from Water

- iii. Spikes
- iv. Sponge Reproduction
 - 1. Larva

b. Cnidarians

- i. Cnidarians Body Plans
 - 1. Polyp
 - 2. Medusa
- ii. How Cnidarians Feed
- iii. Cnidarian Reproduction

c. Life on a Coral Reef

4. Worms

a. What Worms Have in Common

- i. Response to the Environment
- ii. Reproduction
 - 1. Regeneration

b. Flatworms

- i. Tapeworms
- ii. Planarians

c. Roundworms

- i. Anus

d. Segmented Worms

- i. Segmentation
- ii. A Closed Circulatory System
- iii. How Earthworms Live
- iv. Earthworms and Soil

SECTION 10-1

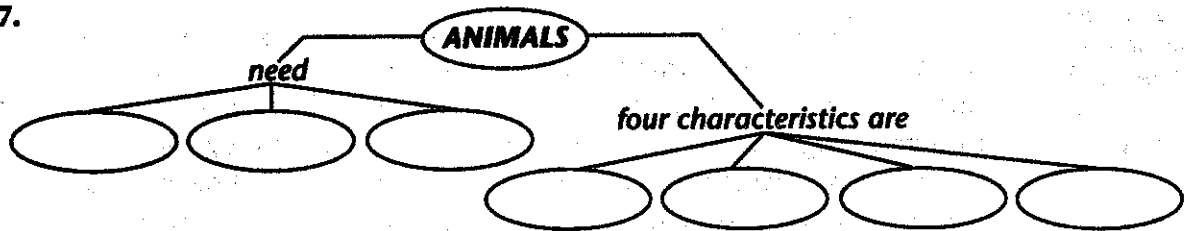
REVIEW AND REINFORCE

What Is an Animal?

◆ Understanding Main Ideas

Fill in the blank ovals to complete this concept map.

1-7.



◆ Building Vocabulary

From the list below, choose the term that best completes each sentence.

- | | | |
|--------------|------------|----------|
| organ | adaptation | prey |
| predator | herbivore | omnivore |
| invertebrate | | |

8. Tissues that work together to perform a specific job form a(n) _____.
9. A(n) _____ is an animal that eats both plants and animals.
10. If a coyote catches and eats a rabbit, the coyote is the _____, and the rabbit is the _____.
11. A characteristic that helps an organism survive is a(n) _____.
12. An animal without a backbone is called a(n) _____.
13. An animal that eats only plants is a(n) _____.

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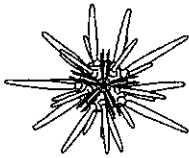
SECTION 10-2

REVIEW AND REINFORCE

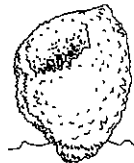
Symmetry

◆ Understanding Main Ideas

Classify the following animals as asymmetrical, bilaterally symmetrical, or radially symmetrical. If the animal has only one line of symmetry, draw the line. Write your responses on the lines below the animals.



1. Sea Urchin



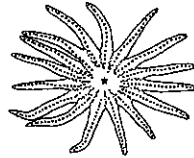
2. Sponge



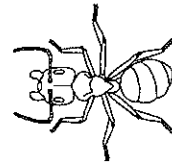
3. Beaver



4. Frog



5. Sea Star



6. Ant

◆ Building Vocabulary

From the list below, choose the term that best completes each sentence.

- | | |
|-----------------|--------------------|
| many | bilateral symmetry |
| radial symmetry | one |

7. If an animal has a head end and a tail end, it has _____.
8. All animals with _____ live in water.
9. Animals with radial symmetry have _____ line(s) of symmetry that go(es) through a central point.
10. Animals with bilateral symmetry have _____ line(s) of symmetry that divide(s) them into two parts. Each part is a mirror image of the other.

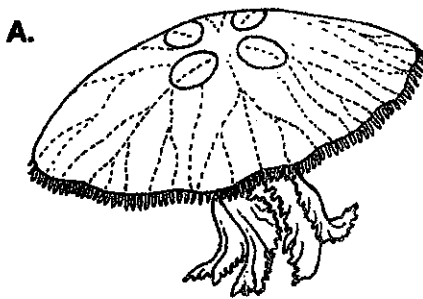
SECTION 10-3 REVIEW AND REINFORCE

Sponges and Cnidarians

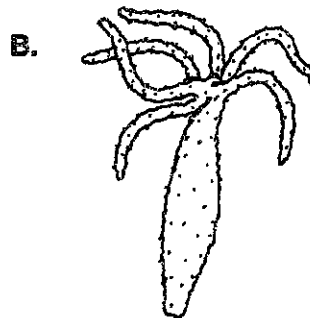
◆ Understanding Main Ideas

Answer the following questions on the back of this sheet or on a separate sheet of paper.

1. What function does water perform for sponges?
2. How does a sponge defend itself?
3. Describe two methods of sponge reproduction.
4. Describe how a coral reef is formed.
5. How do cnidarians reproduce?
6. In the diagram, identify the two different body plans of cnidarians. Label the mouth on each. Which animal is probably free swimming? Explain your answer.



Body Plan: _____



Body Plan: _____

◆ Building Vocabulary

Answer the following questions in the spaces provided.

7. Explain what cnidarians are by describing how they feed, what kind of environments they live in, and by giving three examples.

8. What is a larva?

SECTION 10-4

REVIEW AND REINFORCE

Worms

◆ Understanding Main Ideas

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

- _____ 1. Three major phyla of worms are flatworms, roundworms, and tube worms.
- _____ 2. Worms reproduce only through sexual reproduction.
- _____ 3. Worms are the simplest organism with a brain.
- _____ 4. Planarians are nonparasitic flatworms.
- _____ 5. Tapeworms are parasitic segmented worms.
- _____ 6. Planarians have one opening in their digestive system.
- _____ 7. Roundworms have a two-way digestive system.
- _____ 8. Worms are bilaterally symmetrical.
- _____ 9. Earthworms are segmented worms.
- _____ 10. Earthworms have an open circulatory system.
- _____ 11. Eyespots help an earthworm move around.

◆ Building Vocabulary

Match each term to its definition by writing the letter of the correct definition on the line beside the term.

- | | |
|------------------------|--|
| _____ 12. regeneration | a. Organism that gets its food from living in or on another organism |
| _____ 13. anus | b. Ability to regrow body parts |
| _____ 14. parasite | c. Organism which another organism lives in or on and gets its food from |
| _____ 15. segment | d. One of the linked sections that make up the bodies of earthworms |
| _____ 16. host | e. Opening through which wastes exit in a one-way digestive system |

Name: _____

Class: Ch. 10 Review
Life Science

Choose the letter of the correct answer.

1. The ability of an organism to regrow lost parts is called
[A] autotrophism. [B] regeneration. [C] budding. [D] parasitism.
2. An animal that has a backbone is called a(n)
[A] cnidarian. [B] predator. [C] vertebrate. [D] invertebrate.
3. Which of the following describes a roundworm's digestive system?
[A] Food enters the body and wastes leave the body through the same opening.
[B] Food enters through a feeding tube.
[C] Food travels through the digestive system in two directions.
[D] The digestive system is like a tube that is open at both ends.
4. Which of the following describes the feeding behavior of cnidarians?
[A] They are herbivores. [B] They are autotrophs.
[C] They are carnivores. [D] They are omnivores.
5. Which of these animals has radial symmetry?
[A] a snail [B] a sea anemone [C] a rabbit [D] a butterfly
6. Which of these characteristics is shared by all worms?
[A] They have a brain. [B] They live in soil.
[C] They are parasites. [D] They have a digestive system that is a tube.
7. An animal has bilateral symmetry if
[A] any line through the center of the animal divides it into halves that are mirror images.
[B] many lines can be drawn to divide the animal into halves that are mirror images.
[C] one line can be drawn to divide the animal into halves that are mirror images.
[D] no lines can be drawn to divide the animal into halves that are mirror images.

Choose the letter of the correct answer.

8. What do earthworms do to soil?
- [A] They poison it with their wastes.
 - [B] They make it more fertile with their wastes.
 - [C] They damage it by tunneling.
 - [D] They add moisture to it.
9. How do sponges reproduce sexually?
- [A] Sperm from a sponge fertilize eggs in the same sponge.
 - [B] Water carries sperm from one sponge to eggs in another sponge.
 - [C] Eggs are fertilized by sperm within the sponge's collar cells.
 - [D] Water carries eggs from one sponge to sperm in another sponge.
10. How are coral reefs created?
- [A] from the skeletons of dead corals
 - [B] from the skeletons of prey caught by corals
 - [C] from the expelled waste of corals
 - [D] from the jelly produced by living corals
11. Which of these is NOT a major kind of worm?
- [A] roundworms [B] silkworms [C] segmented worms [D] flatworms
12. Which of the following is a characteristic of animals with radial symmetry?
- [A] They must move quickly to catch prey.
 - [B] They have sense organs at the front of their bodies.
 - [C] They have no head or tail.
 - [D] They move faster on land than in water.
13. Which of the following is a characteristic shared by all animals?
- [A] They have skeletons.
 - [B] Their bodies have many cells.
 - [C] They reproduce asexually.
 - [D] They eat autotrophs.

Fill in the word or phrase that best completes the statement(s).

14. Some sponges have _____, which are sharp needles that form a frame that helps support the sponge's body.

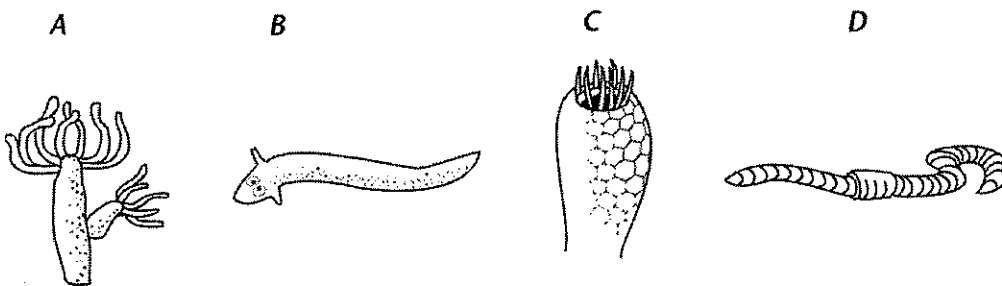
Fill in the word or phrase that best completes the statement(s).

15. A hydra is an example of a cnidarian with the _____ body plan.
16. Muscle tissue enables an animal to _____.
17. Animals without backbones are known as _____.
18. A cnidarian expels undigested food through its _____.
19. A hydra reproduces asexually by forming _____ that eventually break off.
20. Different kinds of tissues combine to form a(n) _____ that performs a specific job.
21. Cnidarians that have the _____ body plan can swim freely.
22. Animals that eat both plants and other animals are called _____.
23. The rocklike part of a coral reef is built up from the hard _____ of corals that have died.

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

24. Animals are autotrophs.
25. Water enters a sponge through an opening called an osculum.

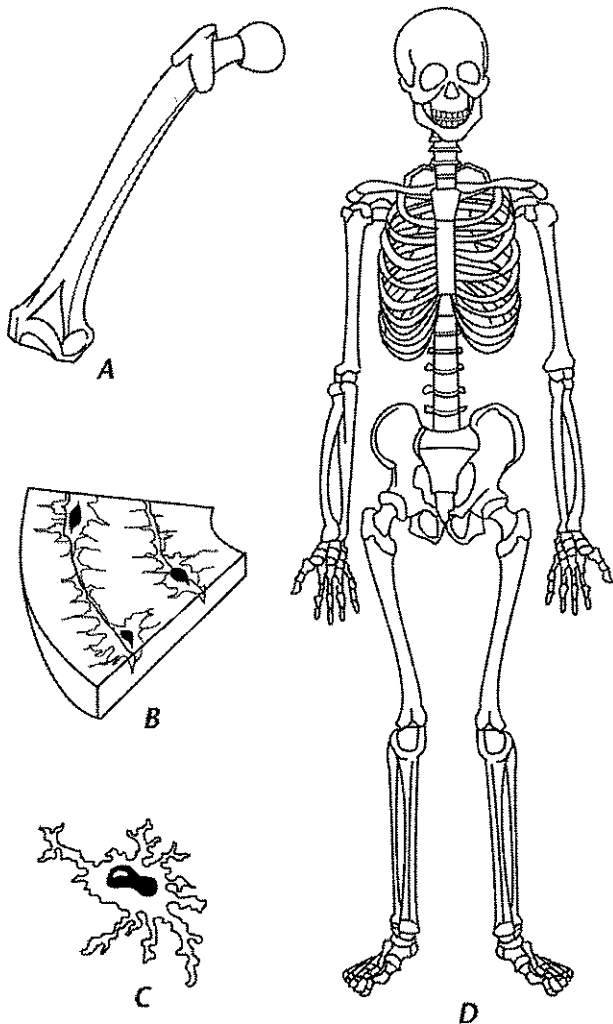
Use the diagram to answer the question(s).



26. Identify animal B and tell whether it is parasitic or free-living.
27. Contrast the digestive systems of animals B and D in the diagram.

Use the diagram to answer the question(s).

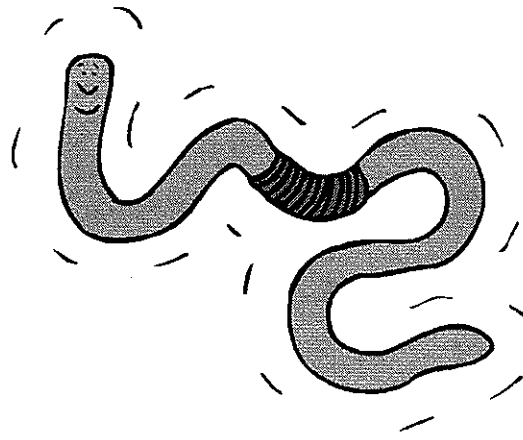
Levels of Organization



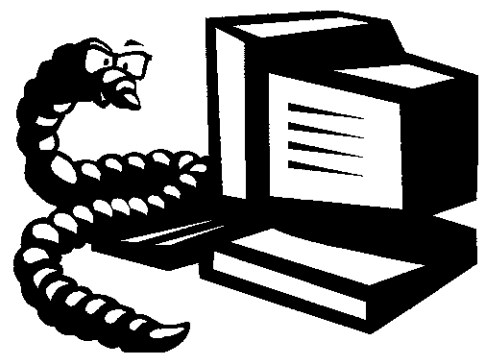
28. Which of the levels of organization shown in the diagram does a segmented worm have?

Write an answer to the following question(s).

29. Explain what an adaptation is. Then describe three adaptations that animals have for escaping predators.
30. What is the most common form of asexual reproduction in cnidarians that have the polyp body plan? Describe how a new polyp is formed in this process.



Dissection of an Earthworm



Name: _____

Partner(s): _____