

Mollusks, Arthropods, and Echinoderms ▪ *Guided Reading and Study*

Mollusks (pp. 328–333)

This section describes the features of mollusks and identifies three major groups of mollusks.

Use Target Reading Skills

As you read, compare and contrast the three groups of mollusks by completing the table below.

Characteristics of Mollusks

| Type of Mollusk | How They Obtain Food | How They Move |
|-----------------|----------------------|---------------|
| Gastropod | | |
| Bivalve | | |
| Cephalopod | | |

Characteristics of Mollusks (p. 329)

- Circle the letter of each characteristic of a mollusk.
 - vertebrate
 - invertebrate
 - segmented body
 - unsegmented body

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Mollusks *(continued)*

2. Give the function of each of the following parts of a mollusk.

hard outer shell: _____

mantle: _____

foot: _____

3. Is the following sentence true or false? Mollusks are found only in dry places on land. _____

4. Mollusks have _____ symmetry.

Match the body part with its function.

| Body Part | Function |
|-----------------|---|
| _____ 5. gills | a. Organs that remove oxygen from water |
| _____ 6. cilia | b. A flexible ribbon of tiny teeth that scrapes food from a surface |
| _____ 7. radula | c. Tiny, hairlike structures that move water over the gills |

Snails and Slugs (p. 330)

8. List the characteristics that biologists use to classify mollusks.

a. _____

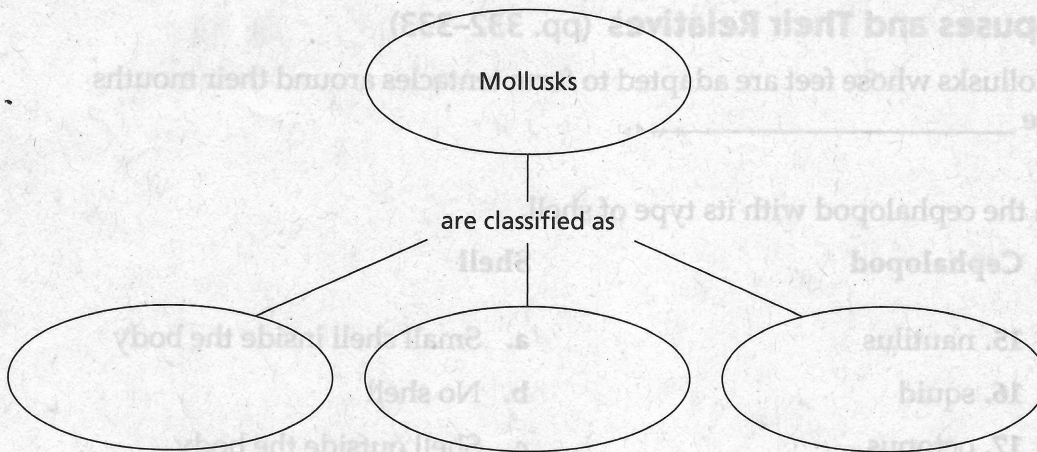
b. _____

c. _____

d. _____

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9. Complete the concept map to show the three major groups of mollusks.



10. Mollusks that have a single shell or no shell at all are called _____.

Two-Shelled Mollusks (p. 331)

11. What are bivalves?

12. How are bivalves different from other mollusks?

13. Circle the letter of each sentence that is true about bivalves.

- a. Bivalves use their gills to capture food.
- b. Bivalves live on land.
- c. Clams burrow in mud.
- d. A pearl forms in an oyster to protect the oyster from predators.

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Mollusks (continued)

Octopuses and Their Relatives (pp. 332–333)

14. Mollusks whose feet are adapted to form tentacles around their mouths are _____.

Match the cephalopod with its type of shell.

| Cephalopod | Shell |
|--------------------|--------------------------------|
| _____ 15. nautilus | a. Small shell inside the body |
| _____ 16. squid | b. No shell |
| _____ 17. octopus | c. Shell outside the body |

18. How do cephalopods find and capture food?

19. Circle the letter of each sentence that is true about cephalopods.

- a. Cephalopods have large eyes and a complex nervous system.
 - b. Cephalopods cannot remember things.
 - c. All cephalopods live in the ocean.
 - d. Cephalopods swim by waving their tentacles.
- _____
- _____
- _____

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Arthropods (pp. 335–342)

This section describes the characteristics of arthropods and tells about the major groups of arthropods.

Use Target Reading Skills

Before you read, preview the red headings. In the graphic organizer below, ask a what or a how question for each heading. As you read, write the answers to your questions.

Characteristics of Arthropods

| Question | Answer |
|-----------------------|--------|
| What is an arthropod? | |
| | |
| | |
| | |

Characteristics of Arthropods (pp. 336–337)

1. List four major groups of arthropods.

- a. _____
- b. _____
- c. _____
- d. _____

2. What are the characteristics of an arthropod?

3. Circle the letter of each example of an appendage found in arthropods.

- a. wings
- b. closed circulatory system
- c. digestive system with one opening
- d. legs

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Arthropods (continued)

4. How does an exoskeleton help arthropods live on land?

5. What happens to the exoskeleton when an arthropod grows?

6. Look at the table in your textbook showing the largest arthropod groups. Crustaceans have _____ pairs of antennae. Arachnids have _____ body sections. Insects have _____ pairs of legs.

7. Is the following sentence true or false? Joints in their appendages give arthropods flexibility and the ability to move.

Match the type of appendage with its function.

| Appendage | Function |
|-------------------|--|
| _____ 8. antennae | a. Walking, catching prey, defending against predators |
| _____ 9. legs | b. Have sense organs for smelling, tasting, and touching |

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Crustaceans (pp. 338–339)

10. What is a crustacean?

11. Circle the letter of each sentence that is true about crustaceans.

- a. Crustaceans get oxygen through gills.
- b. Crustaceans live only in dry areas on land.
- c. The pistol shrimp eats dead plants and animals.
- d. Krill are herbivores.

12. Crustacean larvae develop into adults by _____,
a process in which an animal's body changes dramatically in a short time.

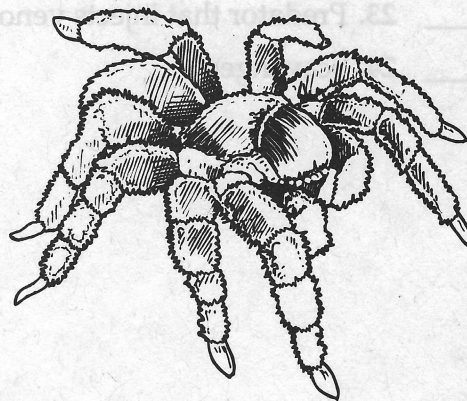
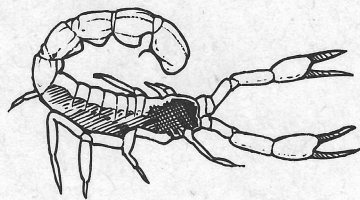
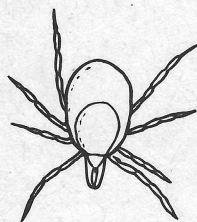
Arachnids (pp. 340–341)

13. An arthropod with only two body sections and four pairs of legs is a(n)

14. Circle the letter of each characteristic of arachnids.

- a. Abdomen containing reproductive organs
- b. Four pairs of legs
- c. Four antennae
- d. Parasitic

15. Write the name of the arachnid in each drawing.



16. Circle the letter of each sentence that is true about spiders.

- a. All spiders are herbivores.
- b. All spiders build webs to catch their prey.
- c. Spiders have hollow fangs that inject venom into prey.
- d. Spiders rarely bite people.

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Arthropods (continued)

17. Circle the letter of the name of a mite.

- a. black widow
- b. chigger
- c. brown recluse
- d. tarantula

18. When are scorpions most active?

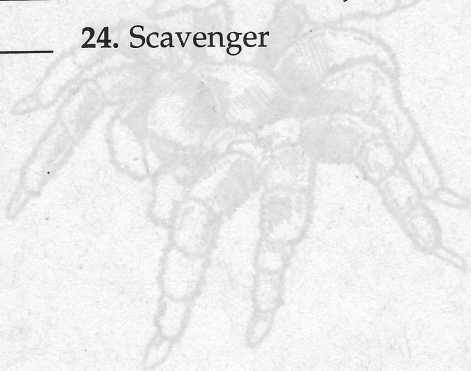
19. A scorpion has a(n) _____ at the end of its abdomen to inject venom into prey.

20. Ticks are _____ that live on the outside of a host animal's body.

Centipedes and Millipedes (p. 342)

Match the arthropod with its characteristics. Each kind of arthropod may be used more than once.

| Characteristics | Arthropods |
|---|--------------|
| ___ 21. Two pairs of legs on each segment | a. centipede |
| ___ 22. One pair of legs on each segment | b. millipede |
| ___ 23. Predator that injects venom | |
| ___ 24. Scavenger | |



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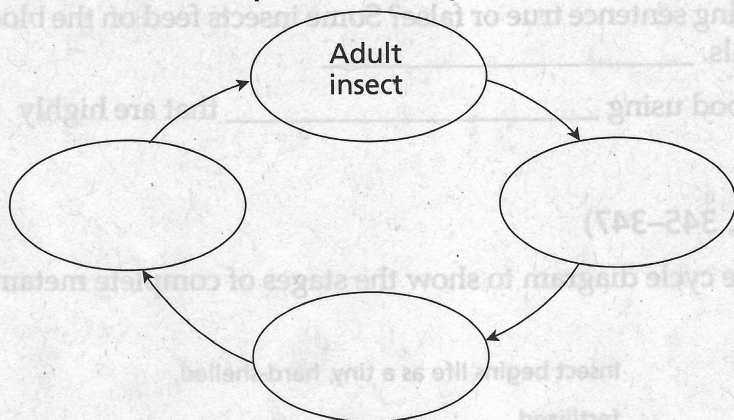
Insects (pp. 343–347)

This section describes the characteristics of insects.

Use Target Reading Skills

As you read, complete the cycle diagram below to show the steps in the complete metamorphosis of an insect. Write each step in a separate circle.

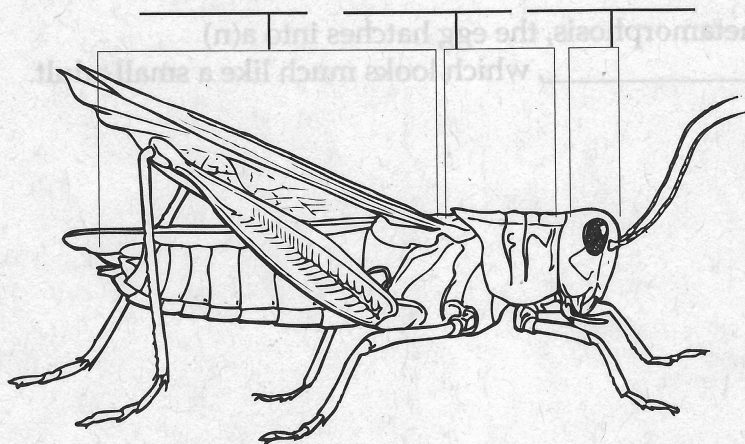
Complete Metamorphosis



Body Structure (p. 344)

1. What is an insect?

2. Circle the letter of the body section to which wings and legs are attached.
 - a. head
 - b. thorax
 - c. abdomen
 - d. exoskeleton
3. Identify the body sections of the grasshopper below.



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Insects (continued)

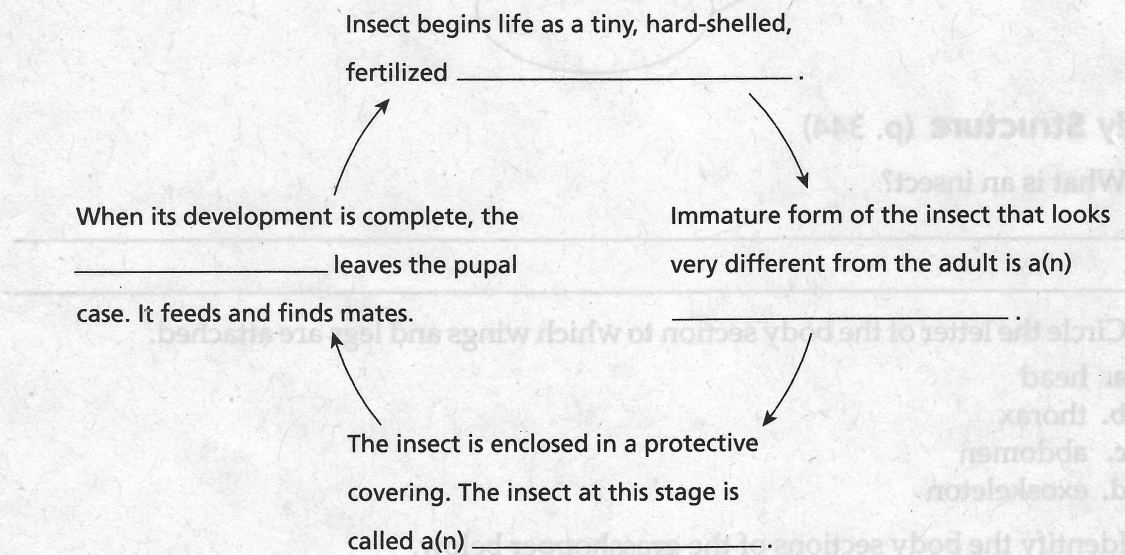
- 4. Insects have two _____ eyes, which contain many lenses.
- 5. Insects get oxygen into their bodies through a system of _____.

Obtaining Food (p. 345)

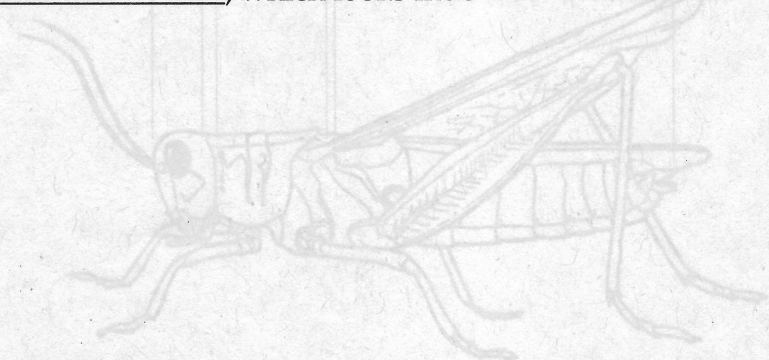
- 6. Is the following sentence true or false? Some insects feed on the blood of living animals. _____
- 7. Insects get food using _____ that are highly specialized.

Life Cycle (pp. 345–347)

- 8. Complete the cycle diagram to show the stages of complete metamorphosis.



- 9. In gradual metamorphosis, the egg hatches into a(n) _____, which looks much like a small adult.



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Insect Ecology (pp. 350–355)

This section describes the role of insects in the food chain. It also tells about the interactions between insects and the environment.

Use Target Reading Skills

After you read the section in your textbook, reread the paragraphs that contain definitions of Key Terms. Use all the information you have learned to write a meaningful sentence.

food chain: _____

ecology: _____

producer: _____

consumer: _____

decomposer: _____

pollinator: _____

pesticide: _____

biological control: _____

Insects and the Food Chain (pp. 350–353)

1. Is the following sentence true or false? About 50 percent of crops grown for human consumption are eaten by insects. _____
2. Is the following sentence true or false? Insects play key roles in food chains. _____

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Insect Ecology *(continued)*

3. An organism that eats wastes and dead organisms is called a _____.

Other Interactions (p. 354)

4. What does a pollinator do?

5. Name two types of insects that spread diseases.

Controlling Pests (p. 355)

6. Is the following sentence true or false? Pesticides used to kill harmful insects can also kill pollinators and can harm other animals.

7. Introducing natural insect predators or natural insect diseases, called _____, is a method of getting rid of harmful insects.

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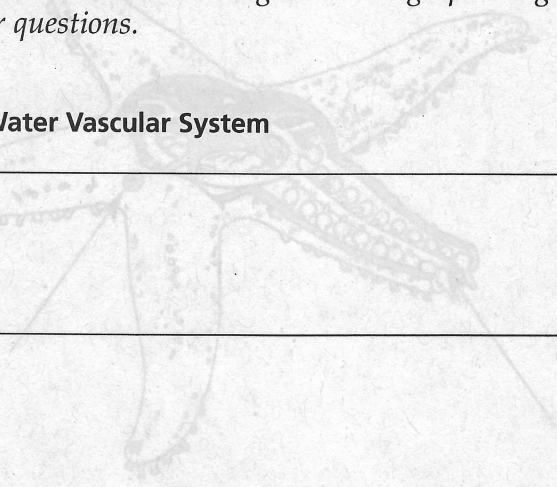
Echinoderms (pp. 358–361)

This section tells about bumpy-skinned animals called echinoderms.

Use Target Reading Skills

Preview the figure in your textbook showing a sea star's water vascular system. Then write two questions that you have about the diagram in the graphic organizer below. As you read, answer your questions.

Water Vascular System



| | |
|-----------|---------------------|
| Q. | What are tube feet? |
| A. | |
| Q. | |
| A. | |

Characteristics of Echinoderms (pp. 358–359)

1. What is an echinoderm?

2. The skin of most echinoderms is stretched over an internal skeleton, called a(n) _____.

3. What is a water vascular system?
