

Section 29–2 Form and Function in Invertebrates (pages 751–758)

This section describes how different invertebrate phyla carry out their essential functions.

Introduction (page 751)

1. What are seven essential tasks all animals perform to survive? _____

2. Why aren't more complicated systems in living animals necessarily better than simpler systems in other living animals? _____

Feeding and Digestion (pages 751–752)

3. How is the digestion of food different in simple animals compared to that in more complex animals? _____

TYPES OF DIGESTION

Type	Definition
	Digestion of food inside cells
Extracellular digestion	

4. Complete the table about types of digestion.
5. More-complex animals digest food in a tube called a(an) _____.

Respiration (pages 752–753)

6. Why do respiratory organs have large surface areas? _____

7. Why are respiratory surfaces kept moist? _____

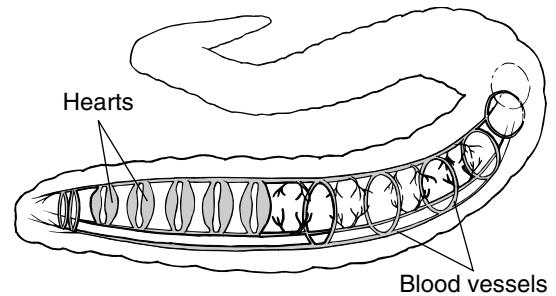
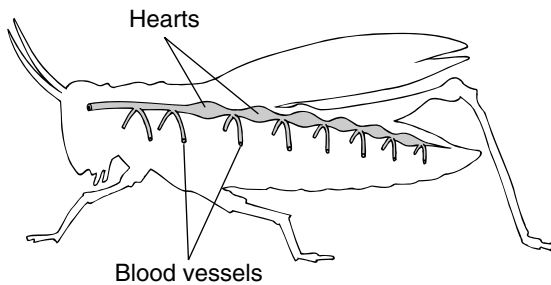
8. What are gills? _____

9. What are book lungs made of? _____

Circulation (page 754)

10. How do the smallest and thinnest animals meet the requirement of supplying oxygen and nutrients to cells and removing metabolic wastes? _____

11. Complex animals move fluid through their bodies using one or more _____.
12. Label each of the organisms below according to which has a closed circulatory system and which has an open circulatory system.



13. Closed circulatory systems are characteristic of what kinds of animals? _____

Excretion (pages 754–755)

14. What does the excretory system of most animals do? _____

15. How do aquatic invertebrates rid their bodies of ammonia? _____

16. Circle the letter of each way that terrestrial invertebrates eliminate nitrogenous wastes from their bodies.
- a. Ammonia diffuses from body tissues into the surrounding water.
 - b. They convert ammonia into urea.
 - c. They convert ammonia into uric acid.
 - d. They form a thick paste that leaves the body through the rectum.

Response (page 756)

17. What three trends do invertebrates show in the evolution of the nervous system?
- a. _____
 - b. _____
 - c. _____
18. Number the following groups of invertebrates according to how centralized their nervous system is. Number the group with the simplest nervous system 1.
- _____ a. Flatworms
 - _____ b. Cnidarians
 - _____ c. Arthropods
19. Is the following sentence true or false? The more complex an animal's nervous system, the more developed its sense organs are. _____

Movement and Support (pages 756–757)

20. What are the three main kinds of skeletal systems among invertebrates?
- a. _____
 - b. _____
 - c. _____
21. What invertebrates have endoskeletons? _____

Sexual and Asexual Reproduction (pages 757–758)

22. What is the difference between external and internal fertilization? _____
- _____
- _____
- _____
23. Circle the letter of each sentence that is true about invertebrate reproduction.
- a. Most invertebrates reproduce sexually in one part of their life cycle.
 - b. Asexual reproduction maintains genetic diversity in a population.
 - c. Asexual reproduction includes budding and division in two.
 - d. Most invertebrates have separate sexes.

WordWise

Match each definition in the left column with the correct term in the right column. Then, write the number of each term in the box below on the line under the appropriate letter. When you have filled in all the boxes, add up the numbers in each column, row, and diagonal. All the sums should be the same.

Definition

- A. Fertilization in which eggs are fertilized inside the female's body
- B. A body cavity completely lined with tissues from mesoderm
- C. A body plan with mirror-image left and right sides
- D. The concentration of sense organs and nerve cells in the front of the body
- E. Skeletal system in which muscles surround and are supported by a water-filled body cavity
- F. Fertilization in which eggs are fertilized outside the female's body
- G. A hard body covering made of chitin
- H. A body plan with body parts extending from the center of the body
- I. A structural support located inside the body

Term

- 1. coelom
- 2. exoskeleton
- 3. external fertilization
- 4. endoskeleton
- 5. hydrostatic skeleton
- 6. internal fertilization
- 7. cephalization
- 8. bilateral symmetry
- 9. radial symmetry

A _____	B _____	C _____	= _____
D _____	E _____	F _____	= _____
G _____	H _____	I _____	= _____
= _____	= _____	= _____	= _____