

SECTION 28-1 REVIEW

INTRODUCTION TO THE ARTHROPODS

VOCABULARY REVIEW Define the following terms.

1. **arthropod** _____

2. **exoskeleton** _____

3. **chitin** _____

4. **molting** _____

5. **Malpighian tubule** _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. An arthropod's exoskeleton performs all of the following functions except
 - a. producing gametes.
 - b. protecting internal organs.
 - c. supporting the animal's weight.
 - d. helping prevent dehydration.
- _____ 2. One feature that arthropods share with annelids is
 - a. a closed circulatory system.
 - b. jointed appendages.
 - c. a segmented body.
 - d. a lack of cephalization.
- _____ 3. Most terrestrial arthropods breathe using branched, air-filled structures called
 - a. gills.
 - b. tracheal tubes.
 - c. book gills.
 - d. book lungs.
- _____ 4. An arthropod is vulnerable to predators during the molting period because
 - a. it must come out of hiding to molt.
 - b. its new exoskeleton is soft.
 - c. molting requires the help of predators.
 - d. predators are more numerous during this time.
- _____ 5. The most distinctive feature of all arthropods is their diverse
 - a. eyes.
 - b. wings.
 - c. muscles.
 - d. appendages.

SHORT ANSWER Answer the questions in the space provided.

1. What substance makes an arthropod's exoskeleton repel water, and where is this substance located? (p.715)

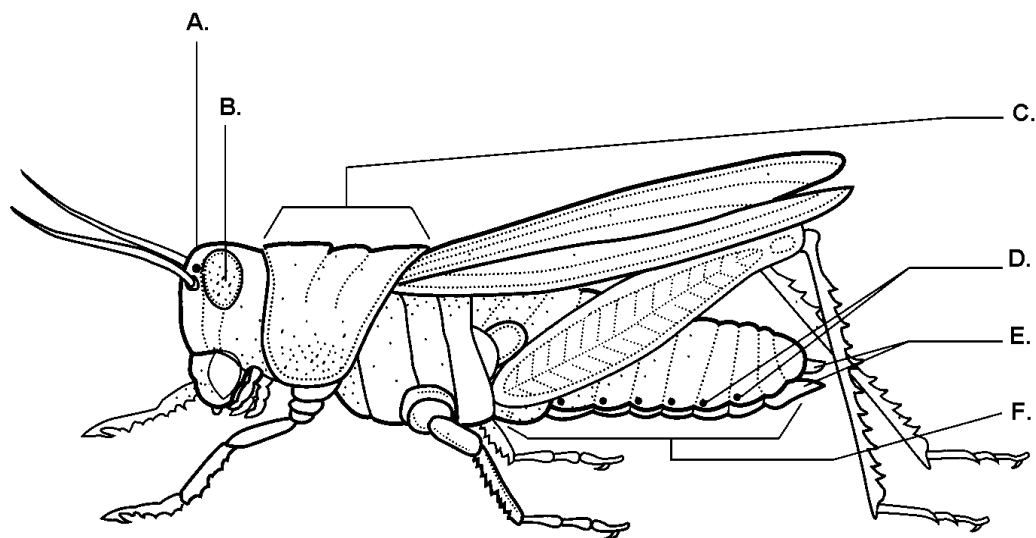
2. What substance makes some arthropod's exoskeletons hard? (p.715)

3. List two examples of arthropod appendages. (p.716)

4. What are two ways that arthropods have changed since they first appeared around 600 million years ago? (p.716)

5. Describe the function and process of molting in arthropods. (p.719)

STRUCTURES AND FUNCTIONS The grasshopper shown is one example of an arthropod. The organs and body structures shown are common to many arthropods. Use the following words to label the drawing below: spiracles, compound eye, thorax, head, abdomen, and anus. (p.717 and p.727)



SECTION 28-2 REVIEW

GROUPS OF ARTHROPODS

VOCABULARY REVIEW Define the following terms.

1. **cephalothorax** _____

2. **carapace** _____

3. **cheliped** _____

4. **chelicera** _____

5. **spinneret** _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. Millipedes have
 - a. two pairs of legs on most body segments.
 - b. one pair of legs on most body segments.
 - c. a nonsegmented body.
 - d. an aggressive attitude or behavior.
- _____ 2. Crustaceans are arthropods with
 - a. three pairs of legs.
 - b. chelicerae.
 - c. no exoskeleton.
 - d. two pairs of antennae on their head.
- _____ 3. How many pairs of walking legs are on the cephalothorax of spiders?
 - a. two
 - b. four
 - c. six
 - d. eight
- _____ 4. A spider's respiratory system may include
 - a. book lungs.
 - b. spinnerets.
 - c. pedipalps.
 - d. chelicerae.
- _____ 5. One difference between scorpions and spiders is that scorpions
 - a. are herbivores.
 - b. have large pincer-like pedipalps.
 - c. are not venomous.
 - d. do not have an abdomen.

SHORT ANSWER Answer the questions in the space provided.

1. On the lines provided, write the letter of the group of arthropods that best matches each description. (pp.720-725)

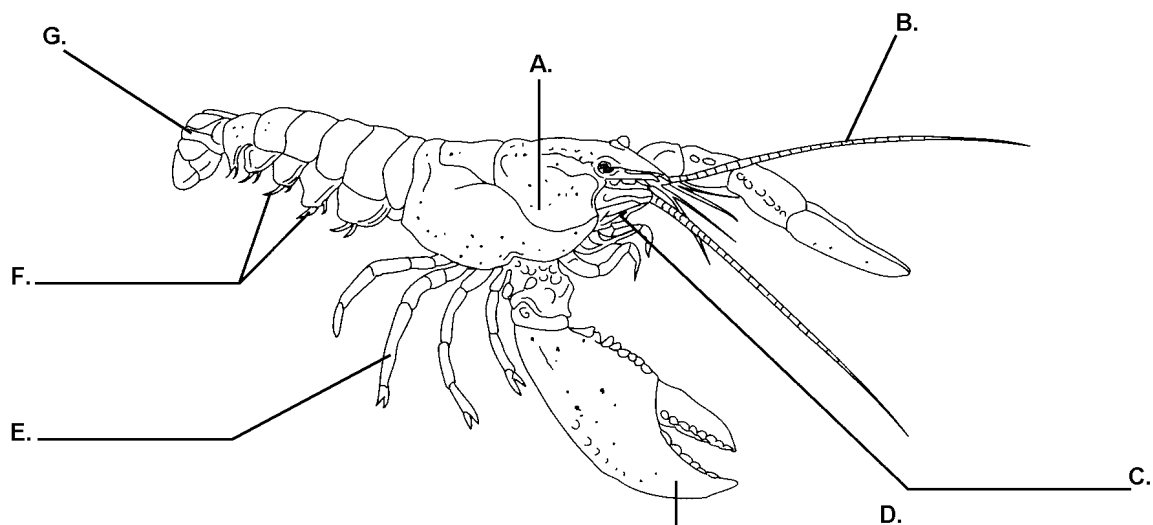
- | | |
|-------------------------------------------------------|-----------------|
| a. _____ have two pairs of branched antennae | A. crustaceans |
| b. _____ have one pair of antennae | B. uniramians |
| c. _____ include crabs, shrimp, and lobsters | C. chelicerates |
| d. _____ have mouthparts forming fangs | |
| e. _____ include spiders and ticks | |
| f. _____ usually have four pairs of walking legs | |
| h. _____ includes centipedes, millipedes, and insects | |
| i. _____ mostly aquatic, breath with gills | |

2. Name three ways that spiders use silk. (p.723) _____

3. After capturing its prey, why does a spider wait before eating it? (p.723) _____

4. Why are centipedes restricted to moist or humid areas? (p.725) _____

STRUCTURES AND FUNCTIONS The crayfish shown is one example of a crustacean. Most crustaceans have similar body organization and structures. Color the tail section red. Color the abdomen blue. Color the cephalothorax yellow. Use the following terms to label the diagram: carapace, cheliped, mandible, swimmerets, walking legs, tail, and second antenna. (p.721)



SECTION 28-3 REVIEW

INSECTS

VOCABULARY REVIEW Define the following terms.

1. **incomplete metamorphosis** _____

2. **complete metamorphosis** _____

3. **pheromone** _____

4. **waggle dance** _____

5. **society** _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. One of the most important factors responsible for the success of insects is their
a. large size. c. long life span.
b. heavy exoskeleton. d. ability to fly.
- _____ 2. Which of the following is a structure that insects do not share with spiders?
a. six walking legs b. spiracles c. Malpighian tubule d. abdomen
- _____ 3. The life cycle of an insect that undergoes complete metamorphosis may include all of the following stages except a(n)
a. adult. b. pupa. c. nymph. d. larva.
- _____ 4. Insects that communicate at a distance by producing sounds include
a. ants. b. mosquitoes. c. silkworm moths. d. fireflies.
- _____ 5. Which body part does a scout bee move from side to side when the bee performs a waggle dance?
a. abdomen b. labrum c. thorax d. antenna

SHORT ANSWER Answer the questions in the space provided.

1. List three characteristics that insects share with all other arthropods. (p.727)_____

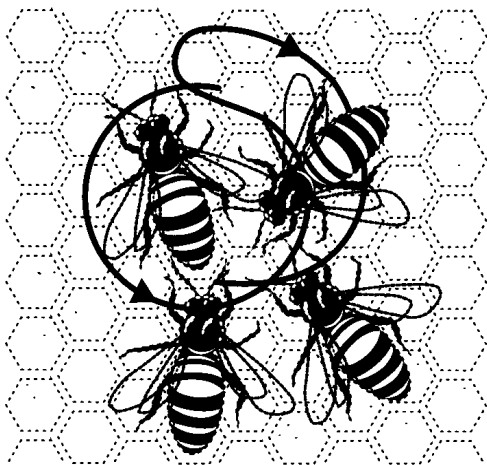
List the two main characteristics of all insects. (p.727)_____

2. What is the danger of using visual clues to attract a mate? (p.731)_____

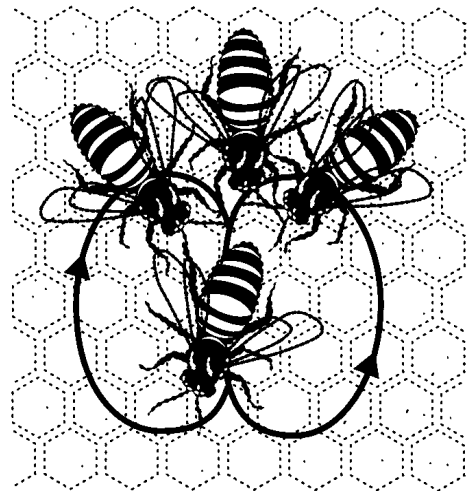
3. What are the three different castes in the bee society? (p.732)_____

4. How does the round dance differ from the waggle dance? (p.733)_____

STRUCTURES AND FUNCTIONS The diagrams below show two types of dances performed by honeybees. In the space below each diagram, identify the dance. (p.733)



a. _____



b. _____

SECTION 28-4 REVIEW

ECHINODERMS

VOCABULARY REVIEW Define the following terms.

1. **endoskeleton** _____

2. **water vascular system** _____

3. **madreporite** _____

4. **tube foot** _____

5. **aboral surface** _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. Both echinoderms and chordates
 - a. lack a coelom.
 - b. have radially symmetrical larvae.
 - c. have bilateral symmetry as adults.
 - d. are deuterostomes.
- _____ 2. One characteristic that is found only in echinoderms is
 - a. radial symmetry.
 - b. bilateral symmetry.
 - c. a water-vascular system.
 - d. an endoskeleton.
- _____ 3. The surface that is opposite the mouth in a sea star is called the
 - a. oral surface.
 - b. aboral surface.
 - c. posterior surface.
 - d. dorsal surface.
- _____ 4. Sexual reproduction among sea stars is _____ and the developing larvae show _____ symmetry.
 - a. internal fertilization; radial
 - b. external fertilization; radial
 - c. internal fertilization; bilateral
 - d. external fertilization; bilateral
- _____ 5. The echinoderms that look like warty, moving pickles are
 - a. sea stars.
 - b. sea cucumbers.
 - c. sea urchins.
 - d. sand dollars.

SHORT ANSWER Answer the questions in the space provided.

1. What do the larvae of echinoderms indicate about the evolution of echinoderms? (p.734) _____

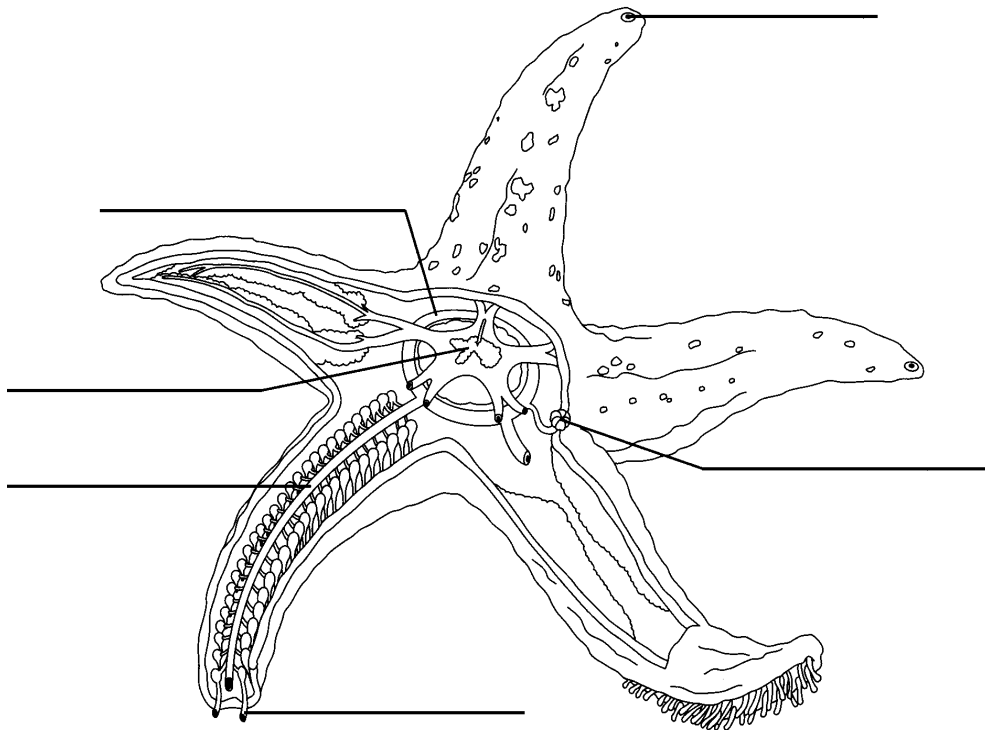
2. Describe the organization of a sea star's nervous system. (p.736) _____

3. How do sea stars reproduce asexually? (p.737) _____

4. How do brittle stars use their ability to regenerate as a defensive mechanism? (p.737) _____

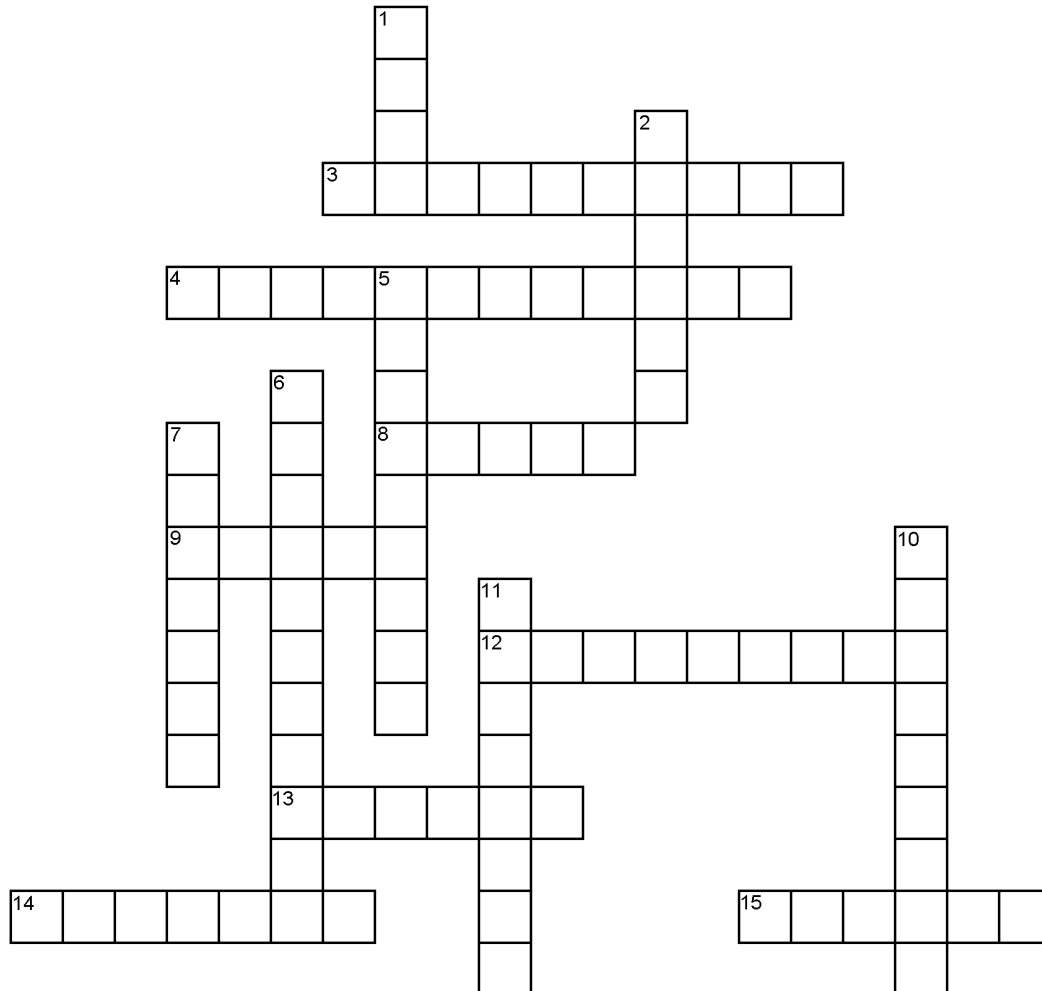
5. Name five features that characterize echinoderms. (p.734) _____

STRUCTURES AND FUNCTIONS Label the diagram of a common sea star. Use the following terms: tube foot, madreporite, stomach, ring canal, eye spot, and radial canal. (p.735)



VOCABULARY - CHAPTER 28

The crossword puzzle is a simple way to master some of the more important vocabulary terms in this chapter.



Across

3. _____ tubules are excretory structures in insects that remove nitrogenous wastes
4. an internal skeleton
8. an immature form that looks very similar to an adult
9. groups of individuals in a society that perform a particular task
12. a chemical messenger that affects other individuals
13. another name for the chest region of an insect
14. a process that allows an arthropod to grow; the shedding of the exoskeleton
15. _____ refers to the top side of a sea star; opposite side of the mouth

Down

1. a cocoon is the _____ stage of a moth
2. the skeleton of arthropods is made of _____
5. silk producing structure in spiders
6. a skeleton found on the outside of arthropods
7. a group of closely related organisms that work together for the good of all
10. the fangs of a spider
11. a hole in a spider or insect that allows air to enter or exit its tracheal tube