

## Chapter 28: Arthropods

### Section 28.1: Introduction to Arthropods (p. 607 - 616)

- Arthropods are divided into 4 subphyla:
  - oldest, includes trilobites, now all extinct
  - includes spiders, ticks, mites, scorpions, and horseshoe crabs
  - includes crabs and shrimp
  - includes most arthropods: centipedes, millipedes, and all insects - e.g. bees, moths, grasshoppers, flies and beetles
- Why are there so many different kinds of arthropods? \_\_\_\_\_
- What are the three most important arthropod features? \_\_\_\_\_
- The \_\_\_\_\_ is a system of external supporting structures made primarily of the carbohydrate \_\_\_\_\_.
- What does the term "arthropod" mean \_\_\_\_\_.
- List some of the arthropod appendages: \_\_\_\_\_
- What are the modes of feeding seen in arthropods? \_\_\_\_\_
- What are the three basic types of respiratory structures seen in arthropods?
  - How do gills work: \_\_\_\_\_
  - How do book gills/book lungs work: \_\_\_\_\_
- What relationship exists between a spiracle and a tracheal tube? What is the function of the tracheal tubes? \_\_\_\_\_

- What type of circulatory system do arthropods have? \_\_\_\_\_
- What is the function of the Malpighian tubules? How is their function related to their location? \_\_\_\_\_
- Describe the typical nervous system of an arthropod? \_\_\_\_\_
- What controls an arthropod's muscle systems? \_\_\_\_\_
- Describe reproduction in arthropods? \_\_\_\_\_
- What is molting? \_\_\_\_\_
- Why do they need to shed their exoskeleton? \_\_\_\_\_
- Give a general outline of molting. \_\_\_\_\_
- The process of growth and development involves \_\_\_\_\_
- Metamorphosis means \_\_\_\_\_
- Describe incomplete metamorphosis. \_\_\_\_\_
- Complete metamorphosis involves the following four stages: \_\_\_\_\_

Section 28.2: Spiders and Their Relatives (p. 617 - 620)

- What are the 2 characteristics of subphylum Chelicerates: \_\_\_\_\_

Describe the two body parts of chelicerates:  
 Cephalothorax: \_\_\_\_\_

Abdomen: \_\_\_\_\_

- Chelicerates have two pairs of appendages attached near the mouth that are adapted as mouthparts. The first pair are called \_\_\_\_\_ the second pair are called \_\_\_\_\_

What are the two types of Chelicerates: \_\_\_\_\_ and \_\_\_\_\_

Describe the structure of Horseshoe crabs: \_\_\_\_\_

Describe the general structure of Arachnids: \_\_\_\_\_

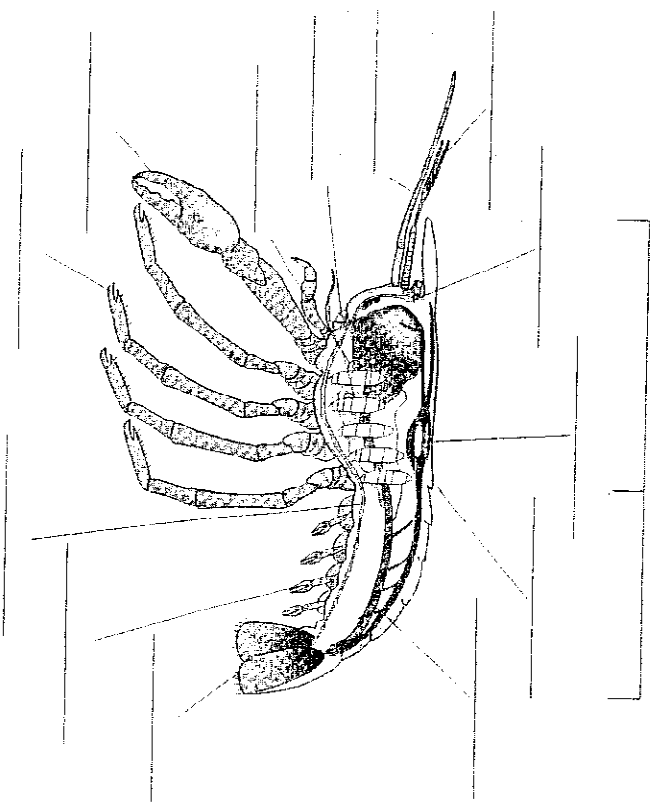
Describe some characteristics of Spiders, Mites and Ticks, and Scorpions: \_\_\_\_\_

Spiders	Mites and Ticks	Scorpions

Section 28.3: Crustaceans (p. 620 - 621)

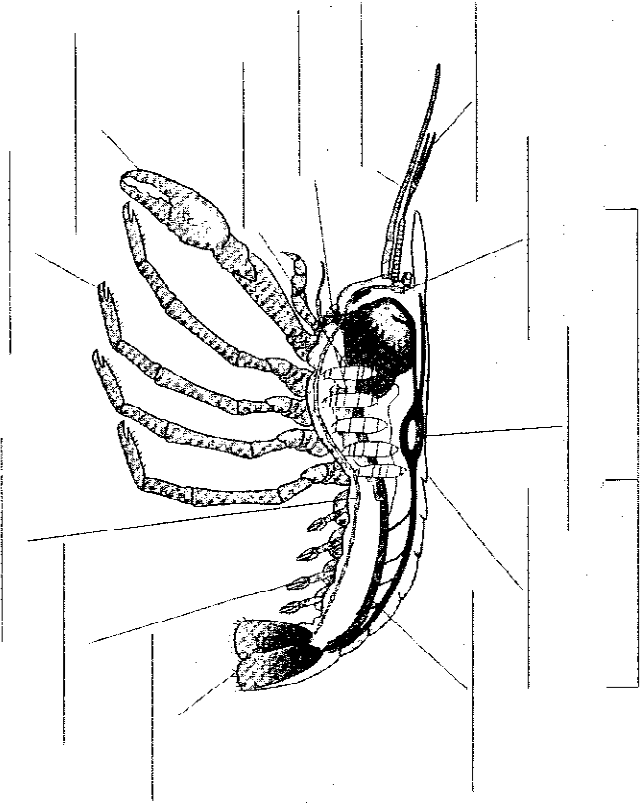
- What are the three characteristics of Crustaceans: \_\_\_\_\_ and \_\_\_\_\_

Identify and label the following structures on the diagram of a crayfish:  
*abdomen, brain, carapace, cephalothorax, claw, first antenna, gills, heart, intestine, mandible, nerve cord, second antenna, swimmeret, tail, walking leg.*



Section 28.3: Crustaceans (p. 620 - 621)

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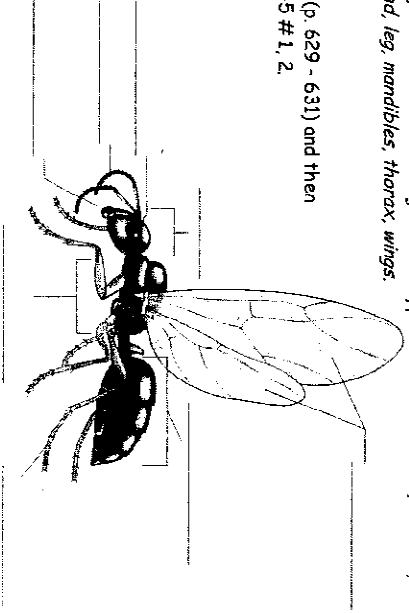
Section 28.2: Spiders and Their Relatives (p. 617 - 620)

- What are the 2 characteristics of subphylum Chelicerates: \_\_\_\_\_
- Describe the two body parts of chelicerates: *Cephalothorax:* \_\_\_\_\_
- Abdomen: \_\_\_\_\_
- Chelicerates have two pairs of appendages attached near the mouth that are adapted as mouthparts. The first pair are called \_\_\_\_\_ the second pair are called \_\_\_\_\_
- What are the two types of Chelicerates: \_\_\_\_\_ and \_\_\_\_\_

- Describe the structure of Horseshoe crabs: \_\_\_\_\_
- Describe the general structure of Arachnids: \_\_\_\_\_
- Describe some characteristics of Spiders, Mites and Ticks, and Scorpions:

Spiders	Mites and Ticks	Scorpions

- **Millipedes**  
body shape: \_\_\_\_\_  
Why do they live in moist areas: \_\_\_\_\_  
Mode of nutrition: \_\_\_\_\_
- **Insects**  
What are the three parts of the body: \_\_\_\_\_  
Number of pairs of legs on thorax: \_\_\_\_\_  
Number of antennae: \_\_\_\_\_  
Number of compound eyes: \_\_\_\_\_  
Number of wings: \_\_\_\_\_  
Respiration: \_\_\_\_\_  
Feeding: \_\_\_\_\_  
Movement: \_\_\_\_\_
- Describe the division of labour in insect societies: \_\_\_\_\_  
\_\_\_\_\_
- Describe the various ways that insects communicate: \_\_\_\_\_  
\_\_\_\_\_
- Label the following structures on the diagram of a typical insect: *abdomen, antenna, compound eye, head, leg, mandibles, thorax, wings.*
- Read section 28.5 (p. 629 - 631) and then answer Review 28-5 # 1, 2



- Complete the table as follows: (1) List each type of major appendage on a crayfish; (2) tell whether each type of appendage is attached to the head, thorax, or abdomen; (3) briefly describe the function of each type of appendage.

Major Appendages on a Crayfish		
Appendage	Location	Function

**Section 28.4: Insects and Their Relatives (p. 622 - 627)**

- **Uniramians** are characterized by \_\_\_\_\_ and \_\_\_\_\_
- **Centipedes**  
Body shape: \_\_\_\_\_  
Why do they live in moist areas: \_\_\_\_\_  
Mode of nutrition: \_\_\_\_\_  
Pair of poison claws in \_\_\_\_\_ of legs per body segment