

**Master  
41****Structures of a Spider  
and a Grasshopper****Reteaching Skills***Use with Chapter 28, Sections 28.1, 28.2***Arthropod Characteristics**

Jointed appendages

Brain

Eyes, simple

Eyes, compound

Specialized mouth parts

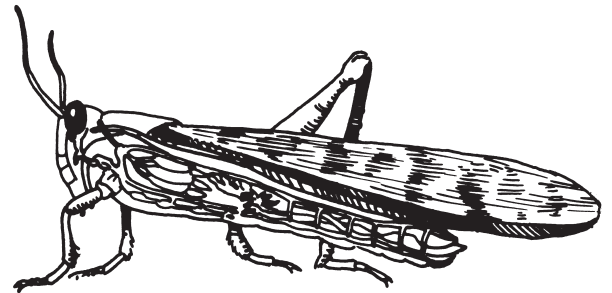
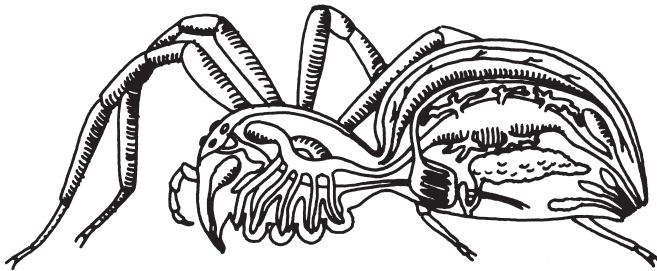
Exoskeleton

Heart

Fused body segments

Nerve cord

Malpighian tubules

**Special Adaptations****Spider**

- Eyes—6 or 8 simple, no compound
- Poison glands
- Appendages
  - Chelicerae for biting
  - Pedipalps—for holding food  
for sense organs
  - 4 pairs of walking legs (8 legs)
- Book lungs
- Silk glands
- Spinnerets

**Grasshopper**

- Eyes—3 simple  
2 compound
- Tympanum—for hearing
- Appendages
  - Antennae—for sense organs
  - 6 walking legs, two of these  
adapted for jumping
  - 2 pairs of wings

**Worksheet**  
**41****Structures of a Spider  
and a Grasshopper****Reteaching Skills***Use with Chapter 28, Sections 28.1, 28.2*

1. Define *appendage* and discuss the various functions of arthropod appendages.

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2. What is the evolutionary advantage that jointed appendages gave to arthropods?

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3. Define *exoskeleton* and discuss the evolutionary advantage that it gave to arthropods.

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4. Describe the three types of respiratory systems found in arthropods. Why are these systems so valuable an adaptation?

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5. What is the difference between a simple eye and a compound eye?

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6. What special appendages are seen in spiders? In grasshoppers?

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7. Spiders have six or eight simple eyes. Grasshoppers have two compound eyes and three simple eyes. What can you infer about the activities of these two arthropods from this information? Explain your reasoning.

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