

**Chapter 18 Classification**

**Section Review 18-1**

**Reviewing Key Concepts**

**Short Answer** *On the lines provided, answer the following questions.*

1. As biologists classify the diversity of life, what two main tasks do they carry out?

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2. On what two languages are scientific names based?

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3. According to the system of binomial nomenclature, how should the scientific name of a species be written?

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4. Which part of the name *Homo erectus* identifies the genus?

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5. List in order from smallest to largest the seven categories in Linnaeus's system of classification.

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**Reviewing Key Skills**

6. **Applying Concepts** Give an example of an animal that has one scientific name but two or more common names. Name the common names.

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7. **Applying Concepts** How did binomial nomenclature avoid the problems of the first attempts at scientific naming?

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8. **Classifying** Describe a classification system that you would use to group various pets. Start with the group with the most individuals, and end with the group with the fewest individuals.

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9. **Classifying** Name the smallest taxon in Linnaeus's system of classification that contains fishes, lions, eagles, snakes, and frogs.

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**Chapter 18 Classification** **Section Review 18-2**

**Reviewing Key Concepts**

**Short Answer** *On the lines provided, answer the following questions.*

- 1. In the system of evolutionary classification, why do scientists classify different species into the same genus?

\_\_\_\_\_  
\_\_\_\_\_

- 2. How is evolutionary classification different from Linnaeus's system of classification?

\_\_\_\_\_  
\_\_\_\_\_

- 3. What type of characteristic is considered in a cladistic analysis?

\_\_\_\_\_  
\_\_\_\_\_

- 4. How are DNA mutations used in molecular clocks?

\_\_\_\_\_  
\_\_\_\_\_

**Completion** *On the lines provided, complete the following sentences.*

- 5. Cladistic analysis focuses on \_\_\_\_\_, unique features that appear in some organisms but not in others.

- 6. Perhaps because of their important role in transmitting genetic information, \_\_\_\_\_ and \_\_\_\_\_ are similar across all forms of life and provide a means of comparing organisms that would otherwise seem to have little in common.

- 7. By examining sequences of DNA, scientists have found that the \_\_\_\_\_ of dissimilar organisms share many important similarities that may be used as criteria for classification.

**Reviewing Key Skills**

- 8. **Applying Concepts** Give an example in which DNA comparisons showed a surprising relationship among particular kinds of organisms.

\_\_\_\_\_  
\_\_\_\_\_

- 9. **Inferring** A scientist analyzes the insulin molecules, which are proteins, of three different species, A, B, and C. The insulin from A is different from B in six ways and from C in three ways. The insulin from B is different from C in two ways. Which two species appear to be most closely related? Explain your answer.

\_\_\_\_\_  
\_\_\_\_\_

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**Chapter 18 Classification** **Section Review 18-3**

**Reviewing Key Concepts**

**Matching** *On the line provided, write the letter of the kingdom that best matches each description.*

- |  |                    |
|--|--------------------|
| _____ 1. heterotrophs whose cell walls contain chitin  | a. Eubacteria      |
| _____ 2. prokaryotes whose cell walls contain peptidoglycan  | b. Archaeobacteria |
| _____ 3. multicellular autotrophs whose cell walls contain cellulose                               | c. Protista        |
| _____ 4. prokaryotes whose cell walls lack peptidoglycan   | d. Plantae         |
| _____ 5. multicellular eukaryotes without cell walls or chloroplasts                               | e. Fungi           |
| _____ 6. unicellular, colonial, or multicellular eukaryotes that show a variety of characteristics | f. Animalia        |

**Short Answer** *On the lines provided, answer the following questions.*

7. In the discipline of taxonomy, what is a domain?  
\_\_\_\_\_
8. What are the three domains into which organisms can be grouped?  
\_\_\_\_\_
9. What characteristic is shared by all members of the domain Eukarya?  
\_\_\_\_\_
10. What must you find out about a prokaryote to know which domain it belongs to?  
\_\_\_\_\_

**Reviewing Key Skills**

**Classifying** *On the line provided, label each organism with the kingdom and domain to which it belongs.*

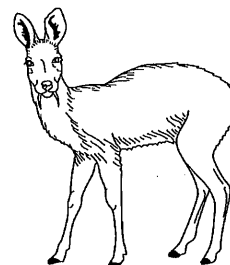
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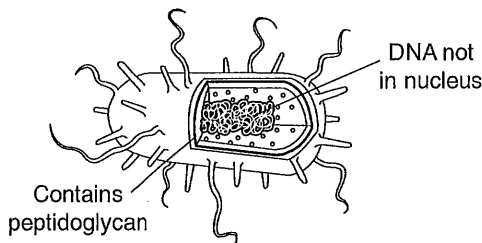
11. \_\_\_\_\_



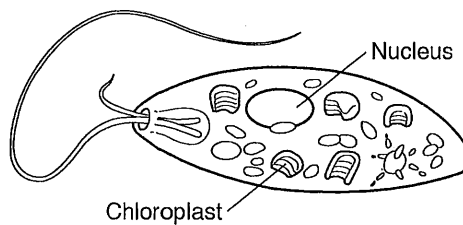
12. \_\_\_\_\_



13. \_\_\_\_\_



14. \_\_\_\_\_



15. \_\_\_\_\_

**Chapter 18 Classification** **Chapter Vocabulary Review**

**Completion** *On the lines provided, complete the following sentences.*

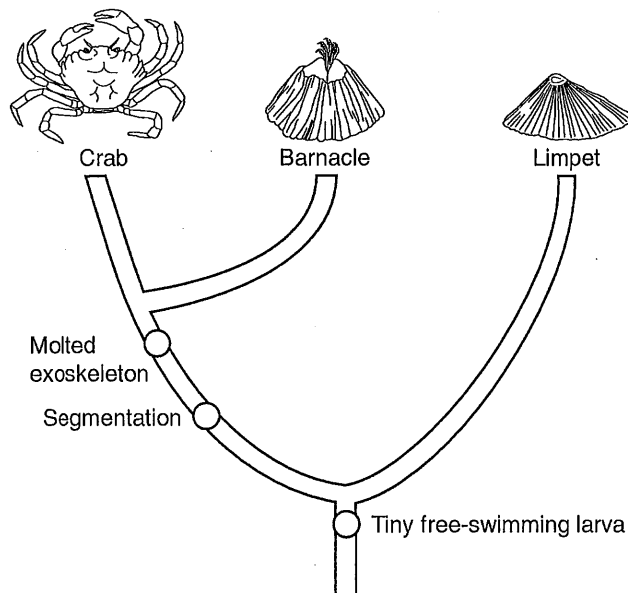
1. In the discipline known as \_\_\_\_\_, biologists assign each kind of organism a universally accepted name.
2. In \_\_\_\_\_, each species is assigned a two-part scientific name.
3. In taxonomy, each level of classification is referred to as a(an) \_\_\_\_\_.
4. The seven taxonomic categories in Linnaeus's system of classification are:

\_\_\_\_\_

\_\_\_\_\_

**Multiple Choice** *On the lines provided, write the letter of the answer that best completes the sentence or answers the question.*

- \_\_\_\_\_ 5. The method of grouping organisms into categories that represent lines of evolutionary descent is called
- |                        |                                 |
|------------------------|---------------------------------|
| a. taxonomy.           | c. binomial nomenclature.       |
| b. cladistic analysis. | d. evolutionary classification. |
- \_\_\_\_\_ 6. Comparison of DNA to determine how long different species have been evolving independently can be done using
- |                      |              |
|----------------------|--------------|
| a. cladograms.       | c. kingdoms. |
| b. molecular clocks. | d. domains.  |
- \_\_\_\_\_ 7. Characteristics that appear in recent parts of a lineage but not in its older members are called
- |                        |                |
|------------------------|----------------|
| a. taxons.             | c. cladograms. |
| b. derived characters. | d. genes.      |
- \_\_\_\_\_ 8. What type of model is shown below?
- |                          |              |
|--------------------------|--------------|
| a. binomial nomenclature | c. cladogram |
| b. molecular clock       | d. domain    |



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- \_\_\_\_\_ 9. Which phylum includes humans, snakes, and sharks?  
 a. Ursidae c. Mammalia  
 b. Carnivora d. Chordata
- \_\_\_\_\_ 10. The group of organisms that can be larger than a kingdom is called a  
 a. domain. c. phylum.  
 b. species. d. class.
- \_\_\_\_\_ 11. A prokaryote whose cell walls contain peptidoglycan belongs to the domain  
 a. Eukarya. c. Bacteria.  
 b. Protista. d. Archaea.
- \_\_\_\_\_ 12. Unicellular organisms sometimes found in hot springs are part of the domain  
 a. Eubacteria. c. Protista.  
 b. Archaea. d. Eukarya.
- \_\_\_\_\_ 13. The domain Eukarya includes the kingdom(s)  
 a. Protista, Plantae, Fungi, Animalia. c. Eubacteria.  
 b. Protista, Plantae, Bacteria. d. Archaea, Bacteria.
- \_\_\_\_\_ 14. The kingdom Protista contains  
 a. only single-celled organisms.  
 b. both single-celled and multi-celled organisms.  
 c. only multi-celled organisms.  
 d. neither single-celled nor multi-celled organisms.
- \_\_\_\_\_ 15. Mushrooms belong to the kingdom  
 a. Protista. c. Plantae.  
 b. Bacteria. d. Fungi.
- \_\_\_\_\_ 16. The kingdom Plantae contains primarily  
 a. photosynthetic autotrophs. c. photosynthetic heterotrophs.  
 b. single-celled autotrophs. d. protists.
- \_\_\_\_\_ 17. The organisms found in the kingdom Animalia are  
 a. photosynthetic heterotrophs. c. multicellular heterotrophs.  
 b. single-celled heterotrophs. d. protists.
- \_\_\_\_\_ 18. Into how many domains are organisms divided?  
 a. three c. four  
 b. five d. six
- \_\_\_\_\_ 19. The unicellular prokaryotes that make up the domain Bacteria are also classified in the kingdom  
 a. Archaeobacteria. c. Fungi.  
 b. Eubacteria. d. Protista.
- \_\_\_\_\_ 20. The prokaryotes that live in extreme environments are classified in the kingdom  
 a. Archaeobacteria. c. Fungi.  
 b. Eubacteria. d. Protista.