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5-1 What is classification?

Lesson Review

Complete the following.

1. What is classification? _____
2. What is taxonomy? _____
3. What are scientists who classify living things called? _____
4. List four characteristics that scientists use to classify things. _____

5. About how many different kinds of organisms have scientists discovered so far? _____
6. How did Aristotle classify organisms? _____

7. How did Carolus Linnaeus classify organisms? _____

Skill Challenge

Skills: *classifying, identifying relationships*

Classification is not only used in science. Read the items listed in the left column of the table below. Then, identify some ways in which these items might be classified. Write your responses in the right column.

CLASSIFYING EVERYDAY OBJECTS	
Objects	How to Classify
1. CDs	
2. Clothes in a store	
3. Food in a supermarket	
4. Laundry	
5. Books in a library	

Another Classification System

Enrichment Activity for Lesson 5-1

Skills: *interpreting a table, classifying*

Read the following passage. Then, use the table to answer the questions that follow.

Dewey Decimal Classification System

Many libraries classify their books by the Dewey Decimal Classification System. This is a system of classifying books according to subject. There are ten main groups in the Dewey Decimal system. The table below lists these main groups and their numbers.

DEWEY DECIMAL CLASSIFICATION GROUPS	
Numbers	Subject
000–099	Encyclopedias, periodicals, reference books
100–199	Sports, exercise, health
200–299	Food, nutrition, cooking
300–399	Architecture, sculpture, design
400–499	Language, dictionaries, grammar
500–599	Pure science, mathematics
600–699	Music
700–799	Arts, photography
800–899	Literature, poetry, drama
900–999	Geography, history

- Where would you look to find a book about the history of the United States? _____
- What range of numbers would appear on a book that describes different kinds of musical instruments? _____
- Where would you look to learn more about planning a diet? _____
- Suppose you were writing a report about the U. S. space program. Where would you look for information? _____
- What kind of books are found in the section numbered 300–399? _____
- Suppose you were preparing a report about athletes throughout history. Where would you look for information? _____
- How is the Dewey Decimal Classification system helpful? _____

5-2 How are living things classified?

Lesson Review

Complete the following.

- List the classification levels in order from largest to smallest.
 - _____
 - _____
 - _____
 - _____
 - _____
 - _____
 - _____
- What is a species? _____
- What two parts make up the scientific name of an organism? _____
- What happens to the number of organisms in each classification level as you move from the kingdom level to each of the next levels? _____

Skill Challenge

Skills: analyzing, relating to concepts

Use the table of the classification of four organisms to answer the questions.

THE CLASSIFICATION OF FOUR ORGANISMS							
Organism	Kingdom	Phylum	Class	Order	Family	Genus	Species
Dog	Animal	Chordata	Mammalia	Carnivora	Canidae	<i>Canis</i>	<i>familiaris</i>
Wolf	Animal	Chordata	Mammalia	Carnivora	Canidae	<i>Canis</i>	<i>lupus</i>
Orangutan	Animal	Chordata	Mammalia	Primates	Hominidae	<i>Pongo</i>	<i>pygmaeus</i>
Chimpanzee	Animal	Chordata	Mammalia	Primates	Pongidae	<i>Pan</i>	<i>troglodytes</i>

- What three classification groups are shared by all four organisms? _____

- Which organism is more similar to a chimpanzee—an orangutan or a dog? Explain. _____

- Which organism is more similar to a wolf—a dog or a chimpanzee? Explain. _____

5-3 What are the kingdoms?

Lesson Review

PART A Match each organism described in **Column A** with its kingdom in **Column B**. Write the correct letter in the space provided.

Column A

- _____ 1. single-celled organism without a nucleus
- _____ 2. plantlike organism that lacks chlorophyll
- _____ 3. microscopic organism that has a nucleus
- _____ 4. many-celled organism that cannot make its own food
- _____ 5. many-celled organism that makes its own food

Column B

- a. Fungi
- b. Protista
- c. Animalia
- d. Plantae
- e. Monera

PART B Answer the following questions.

- 1. How have microscopes had an effect on classification? _____

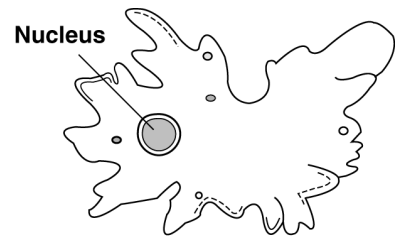
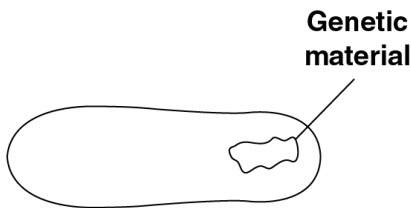
- 2. How do monerans differ from organisms in the other four main kingdoms? _____

- 3. How are the cells of fungi similar to the cells of plants? _____

Skill Challenge

Skills: analyzing, relating concepts

Study the pictures below. Then, in the spaces provided, identify each as a protist, a moneran, or a fungus.



- 1. _____
- 2. _____
- 3. _____

THE **Big** IDEA

Integrating Language Arts

Chapter 5 How are organisms named?

Lesson Review

Refer to the article, call outs, and Figure 5-10 on pages 126 and 127 of your text to answer the following questions.

1. What does the first part of the word *archaebacteria* mean? _____
2. In which kingdom would you find bryophytes? _____
3. Based on their name, what kind of legs do arthropods have? _____

4. What types of worms are called *platyhelminthes*? _____

Skill Challenge

Skills: *inferring, synthesizing*

Complete the following.

1. Which group of organisms do you think use small, hairlike structures to move? Explain. _____

2. Which kingdom would mycologists study? _____
3. Flowering plants are known as *angiosperms*. Explain why. _____

4. Explain why a knowledge of Greek or Latin word parts is helpful when studying science. _____

Science Log Writing Activity

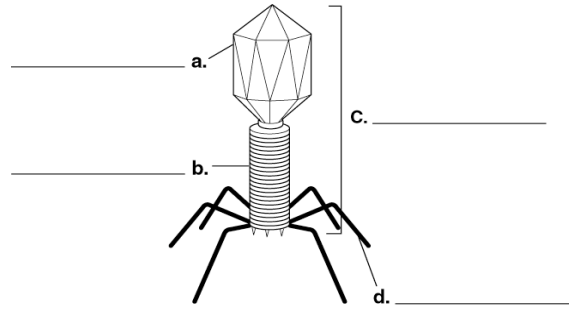
Complete the Science Log on a separate sheet of paper. To complete the Big Idea Online, go to www.conceptsandchallenges.com. Follow the online instructions.

5-4 What are viruses?

Lesson Review

Part A Complete the following.

1. Label the parts of the virus shown in the diagram at right.
2. What kind of virus is shown in the diagram?



3. What material makes up the outer covering of the virus? _____
4. What structure gives a virus its shape? _____

PART B Answer the following questions.

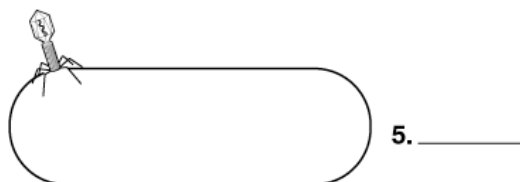
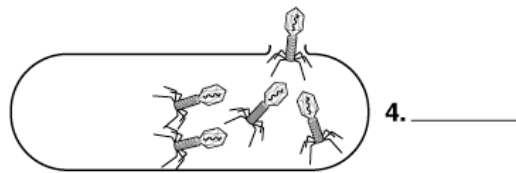
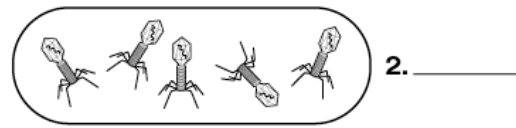
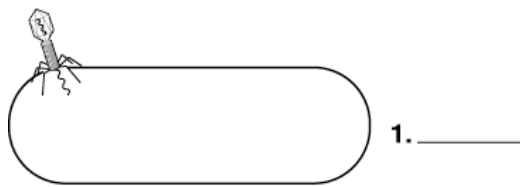
1. What is a virus? _____
2. What is a bacteriophage? _____
3. How are viruses classified? _____

4. How do viruses differ from living cells? _____

Skill Challenge

Skills: analyzing, sequencing

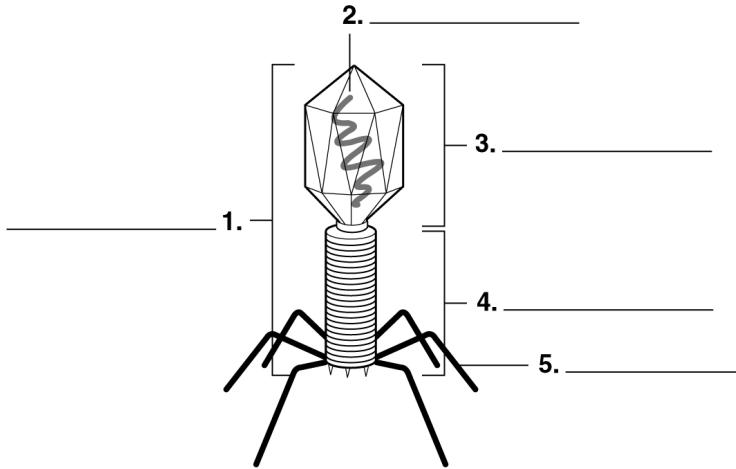
Study the illustrations of viral reproduction shown below. Then, place the illustrations in the correct order by writing the letter *A* (for first) through *E* (for last) in the spaces provided.



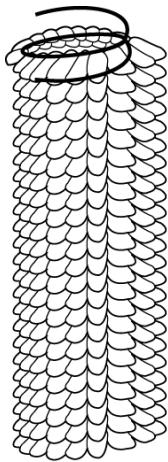
Viral Shapes

Enrichment Activity for Lesson 5-4

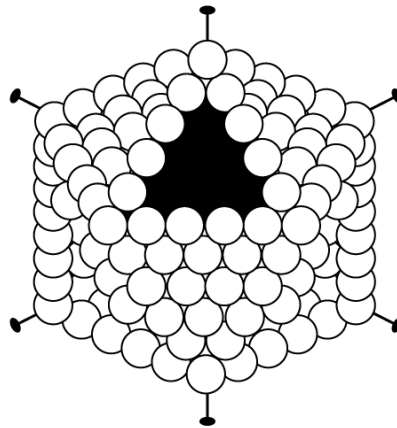
PART A A bacteriophage is a virus that infects only bacteria. The structure of a bacteriophage allows the virus to attach itself to a bacterium. Use reference materials to identify the parts of the bacteriophage shown below.



PART B Viruses have two basic shapes. Some viruses are shaped like a rod. Other viruses are shaped like a sphere. Use reference materials to identify the shape of each virus listed below.



Rod-shaped



Spherical

1. Polio virus _____
2. Tobacco mosaic virus _____
3. Influenza virus _____
4. AIDS virus _____
5. Rabies virus _____