

**SECTION 4-1 REVIEW**

# THE HISTORY OF CELL BIOLOGY

**VOCABULARY REVIEW** Define the following terms.

1. cell \_\_\_\_\_  
\_\_\_\_\_
2. cell theory \_\_\_\_\_  
\_\_\_\_\_

**MULTIPLE CHOICE** Write the correct letter in the blank.

- \_\_\_\_\_ 1. One early piece of evidence supporting the cell theory was the observation that
 

a. only plants are composed of cells.	c. cells come from other cells.
b. only animals are composed of cells.	d. animal cells come from plant cells.
  
- \_\_\_\_\_ 2. The scientist who described cells as “many little boxes” was
 

a. Robert Hooke.	c. Theodor Schwann.
b. Anton van Leeuwenhoek.	d. Rudolf Virchow.
  
- \_\_\_\_\_ 3. Living and nonliving things are different in that only
 

a. nonliving things are made of cells.	c. living things are made of cells.
b. nonliving things are made of atoms.	d. living things are made of atoms.
  
- \_\_\_\_\_ 4. Microscopes were used to study cells beginning in the
 

a. 16th century.	c. 18th century.
b. 17th century.	d. 19th century.
  
- \_\_\_\_\_ 5. The advantage of van Leeuwenhoek’s microscopes was that
 

a. they were simple.	c. the lenses could be moved.
b. they had two lenses.	d. the lenses were ground very precisely.
  
- \_\_\_\_\_ 6. Which of the following was a major event in the history of cell biology?
 

a. cloning animals	c. discovery of cell parts
b. growing bone tissue for transplant	d. All of the above
  
- \_\_\_\_\_ 7. A light microscope uses optical lenses to magnify objects by
 

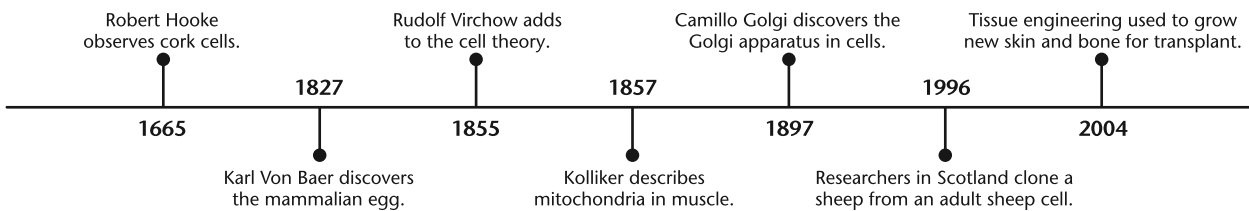
a. bending light rays.	c. reflecting beams of light.
b. bending electron beams.	d. reflecting beams of electrons.

**SHORT ANSWER** Answer the questions in the space provided.

1. State the three parts of the cell theory. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Why did it take 150 years for the cell theory to be developed after microscopes were invented?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Why did Hooke's cork cells appear to be empty? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. **Critical Thinking** If you read that a new organism had been discovered, what would you know about the organism without examining it in terms of cells?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**STRUCTURES AND FUNCTIONS** Use the figure to answer the following questions.

**Timeline—History of Cell Biology**



1. Approximately how many years elapsed between the time cells were discovered and the observation of cell parts in muscle cells?  
\_\_\_\_\_
2. When was the third part of the cell theory added? What was the time interval between this event and the discovery of cells?  
\_\_\_\_\_

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