

# Shapes of Bacteria

# 35

Thousands of different types of bacteria are known and have been observed, and there are possibly many more that have not yet been observed. How can a scientist tell these organisms apart when they are so small? One way is the bacteria's characteristic shape, or pattern of joining together in groups.

## Strategy

You will identify bacteria by using their shape and other characteristics as clues. A process of elimination or "key" will be used to help in the identification.

## Setting Up

key on page 104

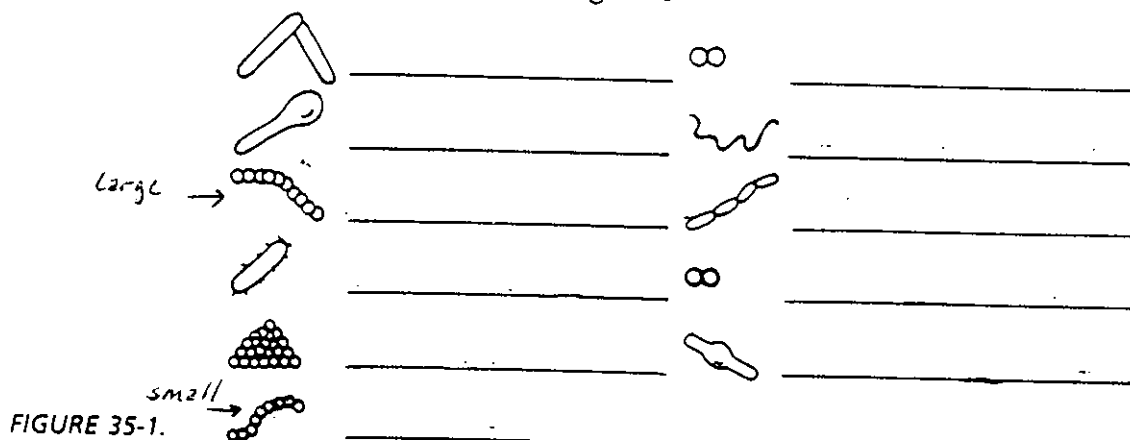
## Getting Started

1. Examine Figure 35-1 in Keeping Track which show bacteria magnified 2000 times their natural size.
2. Use the key to identify each type of bacterium (singular for bacteria). Start at the top, following the directions. The key will allow you to identify each bacterium by name. Each bacterium has a first name which describes its shape in scientific language, and a last name which may also describe some specific characteristic. The key also lists in parentheses the disease caused by the bacterium or type of food in which this bacterium may be found. Label each bacterium in Keeping Track.

## Keeping Track

1. Identify and label each bacterium in Figure 35-1.

Scientific names should be italicized or underlined.



## KEY

If the general shape of a bacterium is round, go to I, skip II and III.

If the general shape of a bacterium is rod (long and straight), go to II, skip I and III.

If the general shape of a bacterium is spiral, go to III, skip II and I.

### Section I

If in pairs, go to a or a' only.

If in chains, go to b or b' only.

If in clumps, go to c only.

a—without a heavy cover—*Diplococcus meningitidis* (Spinal meningitis)

a'—with a heavy cover (capsule)—*Diplococcus pneumoniae* (Pneumonia)

b—large in size—*Streptococcus pyogenes* (Tonsillitis)

b'—small in size—*Streptococcus lactis* (Buttermilk)

c—*Staphylococcus aureus* (Boils)

### Section II

If in chains, go to d only.

If in pairs, go to e only.

If single, go to f or f' or f''.

d—*Bacillus anthracis* (Anthrax)

e—*Bacillus lactis* (Sauerkraut)

f—with hairs (flagella)—*Bacillus typhosa* (Typhoid fever)

f'—with a bulge (spore) in middle—*Bacillus botulinum* (Botulism poisoning)

f''—with a bulge at end—*Bacillus tetani* (Tetanus)

### Section III

*Treponema pallidum* (Syphilis)

## Summing Up

1. What part of the word is the same in the names for all bacteria found in section I of the key? \_\_\_\_\_

This word refers to the shape of a bacterium. The shape is \_\_\_\_\_.

2. The word diplo- when placed in front of a bacterium name must mean \_\_\_\_\_.
3. The word strepto- when placed in front of a bacterium name must mean \_\_\_\_\_.
4. The word staphylo- when placed in front of a bacterium name must mean \_\_\_\_\_.
5. What word is the same for all bacteria found in section II? \_\_\_\_\_

This word refers to the shape of a bacterium. The shape is \_\_\_\_\_.

6. Some bacteria produce chemicals which provide foods with a certain taste. Name two such foods. \_\_\_\_\_

## Strategy Check

- \_\_\_\_\_ Can you use the key properly to identify bacteria by their shape and other characteristics?
- \_\_\_\_\_ Can you understand how the use of scientific names helps to describe certain features of bacteria?