

**Note-taking  
Worksheet****Bacteria****Section 1 What are bacteria?**

- A. \_\_\_\_\_ are microscopic, living cells.
1. Bacteria live almost \_\_\_\_\_, even in extreme environments like thousands of meters underground, hot springs with temperatures over 100°C, and very acidic water.
  2. Bacteria can be sphere-shaped (cocci), rod-shaped (bacilli), or spiral-shaped (spirilla).
    - a. They are \_\_\_\_\_ than plant or animal cells.
    - b. They are \_\_\_\_\_ since they do not have membrane-bound internal structures.
  3. Some bacteria have a capsule around the cell wall while others have an outer slime layer.
  4. Many have whiplike tails called \_\_\_\_\_ to help them move.
  5. Most bacteria reproduce by \_\_\_\_\_, creating two new identical cells; some bacteria exchange genetic material before dividing.
  6. Bacteria can be \_\_\_\_\_ that make their own food, \_\_\_\_\_ that break down dead organisms, or parasites in living organisms that absorb nutrients from their host.
    - a. Most bacteria are \_\_\_\_\_ which use oxygen during respiration.
    - b. Some bacteria are \_\_\_\_\_ which do not need oxygen; some anaerobes cannot survive in the presence of oxygen.
- B. Bacteria are classified into two \_\_\_\_\_.
1. \_\_\_\_\_, a diverse group, is the larger of the two bacteria kingdoms.
    - a. \_\_\_\_\_ produce their own food and are commonly called blue-green bacteria; some, however, may be yellow, black, or \_\_\_\_\_ in color.
    - b. Cyanobacteria provide food and oxygen for aquatic life; however, an overabundance of cyanobacteria produces a \_\_\_\_\_, which can be harmful to aquatic life.
    - c. \_\_\_\_\_ eubacteria are grouped by cell wall thickness or thinness.
  2. \_\_\_\_\_
    - a. Kingdom bacteria are often found in extreme locations and are divided into groups based on where they live or how they get energy.
    - b. Some live in salty, acidic, or very \_\_\_\_\_ environments.
    - c. One anaerobic group produces \_\_\_\_\_ gas.

**Note-taking Worksheet** (continued)**Section 2 Bacteria in Your Life**

- A. Most bacteria are \_\_\_\_\_ rather than harmful.
1. Bacteria are necessary for human \_\_\_\_\_.
    - a. Many bacteria aid digestion and some produce vitamins.
    - b. Some bacteria produce \_\_\_\_\_, which are used to treat diseases.
  2. Bacteria help keep nature in \_\_\_\_\_.
    - a. Bacterial \_\_\_\_\_ use dead organisms as food and energy sources, thus recycling nutrients for use by other organisms.
    - b. \_\_\_\_\_ in the soil and plant roots change nitrogen from the air to a form that plants and animals can use.
  3. Bacteria can be used to clean up environmental pollution through \_\_\_\_\_.
    - a. Some bacteria break waste down into \_\_\_\_\_ compounds.
    - b. Certain bacteria can \_\_\_\_\_ pollutants.
  4. Many \_\_\_\_\_ are made using bacteria.
    - a. Bacteria are used in \_\_\_\_\_ products such as yogurt and cheese.
    - b. Sauerkraut and pickles are also among foods made with \_\_\_\_\_ help.
  5. Bacteria are used in \_\_\_\_\_.
    - a. Bacteria grown in large, carefully controlled containers called \_\_\_\_\_ are used to make medicines and many other products.
    - b. \_\_\_\_\_ bacteria can digest wastes and provide a source of fuel.
- B. Bacteria that cause disease are called bacterial \_\_\_\_\_.
1. \_\_\_\_\_, or poisons, are made by some bacterial pathogens
  2. Some pathogens form thick walled structures called \_\_\_\_\_ when environmental conditions are unfavorable; thus, they can survive for very long time periods.
  3. \_\_\_\_\_, a process of limited heating, can kill most harmful bacteria in food.
  4. \_\_\_\_\_ can prevent some bacterial infections.
    - a. Vaccines are made from damaged or \_\_\_\_\_ bacterial cells.
    - b. Once injected, they enable \_\_\_\_\_ blood cells in the body to recognize a particular type of bacteria and attack it if it appears at a later time.