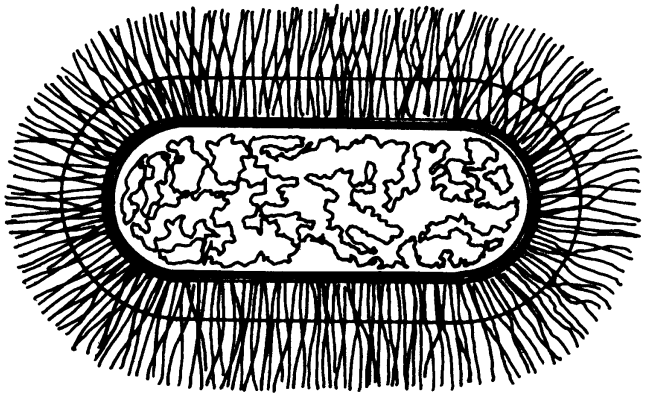
Name _____ Date _____

Science/ Technology/Society

Use with Lesson 2.

Antibacterial Drugs



This is what a typical bacterial cell would look like under a microscope.

Making the Connection: You know that bacteria are tiny organisms that can sometimes make you sick, but how do you get better? To cure a sickness caused by bacteria you need a kind of medicine known as an *antibiotic*. The word *antibiotic* is made from the prefix, *anti*, meaning *against*, and the root word, *bio*, meaning *living thing*. Antibiotics are used to fight living bacteria.

There are many different kinds of bacteria. Some bacteria harm people, while others can help people. If the disease-causing bacteria in your body become stronger than the helpful bacteria, you become sick. The disease infects, or gets into, your body. Pneumonia, ear infections, and meningitis are all diseases caused by bacteria.

Doctors prescribe antibiotics to fight a bacterial infection. Before the discovery of antibiotics, people regularly died from common infections. Some people think that antibiotics are wonder drugs that can cure anything. The truth is that illnesses such as the common cold are not caused by bacteria. Colds are caused by viral infections. Viral infections cannot be cured with antibiotics. However, patients expect a doctor to give them medicine and doctors used to think there could be no harm in prescribing antibiotics for viral infections. Antibiotics were sometimes used too much. The overuse of antibiotics has created a problem for society. Many disease-causing bacteria are now becoming resistant to antibiotics. This means that the bacteria's genes have mutated, and the antibacterial drug no longer works against the bacteria's mutated genes. Drug manufacturers must constantly change or find new antibiotics to fight bacterial diseases. If new antibiotics aren't found, doctors fear, society may face bacterial infections for which we will no longer have cures.

Name _____ Date _____

Answer the following questions.

1. How do you become sick from bacteria?

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2. How do antibiotics affect bacteria and viruses?

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3. What are some diseases that are caused by bacterial infections?

_____

4. Explain how antibiotics became overused.

_____

5. How do bacteria become resistant to antibacterial drugs?

_____

6. How does the rise of bacteria that have become resistant to antibacterial drugs affect drug companies?

_____

_____

7. How did the discovery of antibiotics help society?

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_____

8. How might the overuse of antibiotics harm society?

_____

_____

9. Why do you think doctors may have let their guard down against bacterial infections?

_____

_____

10. What do you think society should do to prevent diseases from becoming resistant to antibiotics?

_____

_____

Research

Research five different kinds of antibiotic drugs. Make a chart that shows which bacterial diseases the drugs are a cure for. Also show on the chart who was responsible for discovery of the drug and when the discovery took place. Include on your chart whether or not the bacteria has become resistant to the antibacterial drug. Share your findings with the class.