

TEKS

- 4A** Compare and contrast prokaryotic and eukaryotic cells
- 8B** Categorize organisms using a hierarchical classification system based on similarities and differences shared among groups
- 8C** Compare characteristics of taxonomic groups, including archaea, bacteria, protists, fungi, plants, and animals
- 11A** Describe the role of internal feedback mechanisms in the maintenance of homeostasis
- 11C** Summarize the role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems

instructional content:

- ✦ Prokaryotic Cell Structure
 - Structure and function
 - Types of cell walls
 - Shapes and names
 - Obtaining energy
 - Reproduction
- ✦ Diseases Caused by Bacteria
 - Toxins
 - Antibiotics
- ✦ Benefits of Bacteria
 - Food and chemical production
 - Mutualistic bacteria and humans
 - Photosynthesizing bacteria
 - Decomposers
 - Nitrogen fixation
 - Bioremediation

learning outcomes students will:

- Use all content and scientific process skills learned earlier in the course
- Identify the cellular structures and state the functions of prokaryotic cells including: cell wall, flagella, plasma membrane, cytoplasm, ribosome and plasmids
- Explain how prokaryotes differ from eukaryotes
- Differentiate between gram-positive and gram-negative bacteria
- Identify the three basic shapes of bacteria
- Describe three different ways bacteria obtain energy
- Describe methods of reproduction in bacteria
- Explain the purpose of an endospore
- Understand the role of toxins in bacterial infection
- Explain what antibiotic resistance is and how it occurs
- List at least three ways that bacteria are helpful to organisms and the environment
- Describe the importance of bacteria in the guts of humans



Incorporate scientific process skills during the instruction of all Biology concepts.
Look for this icon at wardsci.com/TEKS for more information on scientific process skills.

Recommended Ward's Science products with item numbers for easy online searching:

science tools:

Prokaryotic Cell Model **811050**
Bacteria Survey Slide Set **950118**
Introductory Bacteria Set **6926800**
Bacteria Forms, Separate Smears (sm) g (+/-) **900151**
Prokaryote Survey Slide Set **950122**
Yogurt Smear **900156**
Electric Autoclave **149002**

Polymethylpentene Petri Dish **187111**
Sterile Disposable Petri Dishes **187102**
VWR™ Petri Dishes **173577**
Square Polystyrene, Disposable Petri Dishes **6431001**
Tryptic Soy Easygel **880968**
Tryptic Soy Agar **880002**

instructional resources:

Ward's Oil-Degrading Microbes Set **857000**
Ward's Bacteria in Food Kit **888200**
Ward's Antibiotic Sensitivity Kit **888105**
Boreal Ecology of Milk Lab **4542800**
Boreal 2 Microscopes - HM Series **242636**