

TEKS

4A Compare and contrast prokaryotic and eukaryotic cells

instructional content:

- ✦ Cell theory and microscopy
 - History of compound microscope
 - Scientists contributing to the development of the cell theory
 - Optical versus electron microscopes
- ✦ Prokaryotic cells
 - Structure
 - Types of cell walls
- ✦ Eukaryotic cells
 - Organelle function
 - Structural differences between plant and animal cells

learning outcomes students will:

- Use all content and scientific process skills learned earlier in the course
- Know the components of the cell theory
- Recognize the contribution of microscopy to the development of the cell theory
- Demonstrate an ability to correctly use a compound microscope to locate material and focus images
- Demonstrate the ability to make a wet mount slide and the ability to use simple staining techniques
- Compare optical microscopes with electron microscopes
- Distinguish between transmission electron microscopes and scanning electron microscopes
- Recognize the importance of the cell as the basic unit of life
- Describe the structure of a prokaryotic cell
- Identify the cellular structures and state the functions of prokaryotic cells including: cell wall, flagella, plasma membrane, cytoplasm, ribosome and plasmids
- Identify the cellular structures and state the functions of eukaryotic cells including: cell wall, plasma membrane, cytoplasm, nucleus, ribosome mitochondria, endoplasmic reticulum, Golgi body, lysosome, chloroplast, vacuole
- Explain the differences between prokaryotic and eukaryotic cells
- List the differences between plant and animal cells



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:

Boreal 2 Microscopes - EM Series **242631**
Boreal Inclined Student Compound
Microscope **242106**
Boreal 2 HM Advanced Binocular Microscope **242665**
Boreal 2 Digital Microscope -HM Series **242649**
Ward's Digital Slides: High School Life Science
Set **3990007**
Ward's Digital Slides: Advanced Placement Biology
Set **3990010**
Comprehensive Plant Cell Model **814735**
3B® Plant Cell Model **814748**

Motic Ecoline Digital Microscope with Screen **242664**
Ken-a-Vision PupilCAM® **253630**
Moticam 353 Digital Gooseneck Presentation
Camera **253694**
Comprehensive Animal Cell Model **814734**
3B® Animal Cell Model **814749**
Prokaryotic Cell Model **811050**
Cell Biology Slide Set **950014**
Biological Diversity - Three Domains Slide Set **950040**

instructional resources:

Microscope Poster **4652200**
Elements of Biology: Cells DVD **1959510**
The Cell Theory: A Microscopic Journey Lab Activity **366296**
Cell Manipulative Models **148338**
Ward's Cell Assembly Required Lab Activity **366214**
Magna-Cell Magnetic Chalkboard Model **815200**
Probing Cells Card Game **6730850**