2 Veiwing Cells

What You'll Learn:

Compare the differences between compound light and electron microscopes.

Summarize the discoveries that lead to the development of the cell theory .

Relate the cell theory to modern biology.

Magnifying Cells

•To see most cells, you need to use a microscope.

A microscope has one or more lenses that enlarge the image of an object as though you are walking closer to it.

Early Microscopes

In the late 1500s, the first microscope was made.

Modern Microscopes

•A simple microscope is similar to a magnifying lens. It has only one lens.

Magnification is the change in apparent size produced by a microscope

The compound light microscope has two sets of lenses—eyepiece lenses and objective lenses.

Magnification

•The powers of the eyepiece and objective lenses (multiply) determine the total magnifications of a microscope.

•If the eyepiece lens has a power of 10× and the objective lens has a power of 43×, then the total magnification is 430× (10× times 43×).

Electron Microscopes

•Instead of using lenses to direct beams of light, an electron microscope used a magnetic field in a vacuum to direct beams of electrons. The images can only be seen with pictures or monitors.

Cell Theory

•Cells weren't discovered by Robert Hooke until the microscope was improved.

The Cell Theory	
All organisms are made up of one or more cells.	An organism can be one cell or many cells like most plants and animals.
The cell is the basic unit of organization in organisms.	Even in complex organisms, the cell is the basic unit of structure and function.
All cells come from cells.	Most cells can divide to form two new, identical cells.