Lesson Outline for Teaching

Lesson 1: Cells and Life

A. Understanding Cells

1. Microscopes enable us to see the tiny basic units of all living things.

2. Robert Hooke saw the openings in cork and called them cells.

3. Matthias Schleiden and Theodor Schwann realized that plant and animal cells have similar features.

4. The cell theory has three parts: All living things are made of one or more cells. The cell is the smallest unit of life. All new cells come from preexisting cells.

B. Basic Cell Substances

1. Macromolecules form when many small molecules join.

2. The main ingredient of any cell is water.

3. The structure of a water molecule makes it ideal for dissolving many other substances.

4. The four types of macromolecules in cells are nucleic acids, proteins, lipids, and carbohydrates.

5. Nucleic acids form when long chains of molecules called nucleotides join.

6. Nucleic acids are important in cells because they contain genetic information.

7. The macromolecules that are necessary for nearly everything cells do are proteins.

8. Proteins are long chains of amino acid molecules. Some proteins help break down nutrients in food.

9. A(n) lipid is a large macromolecule that does not dissolve in water.

10. Macromolecules that do not mix with water play an important role as protective barriers in cells.

11. One sugar molecule, two sugar molecules, or long chains of sugar molecules make up carbohydrates.

12. Carbohydrates store energy and provide structural support. They also are used for communication between cells.

Discussion Question

What are cells?

Cells are the basic units of all living things.