

Study-guide/ 7th grade

Lesson 1: Cell Structure and Function

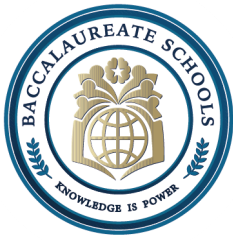
- **Pages: 4-12**
- **Summary:** Introduces the discovery of cells, the invention of the microscope, and the development of cell theory.
- **Focus on:**
 - Scientists (Hooke, Leeuwenhoek, Schleiden, Schwann).
 - The three main points of cell theory.
 - Importance of microscopes in studying cells.
- **Focus questions:**
 - Who were the key scientists in the discovery of cells, and what did each contribute?
 - What are the three main points of the cell theory?
 - Why are microscopes essential in the study of cells?

Lesson 2: Cell Structure (Plant & Animal Cells)

- **Pages: 14-23**
- **Summary:** Compares plant and animal cells and introduces organelles with their roles.
- **Focus on:**
 - Key organelles (nucleus, mitochondria, ribosomes, ER, Golgi, lysosomes, chloroplasts, vacuoles, cell wall, cell membrane).
 - Differences between plant and animal cells.
- **Focus questions:**
 - What are the main organelles in a cell, and what are their functions?
 - How are plant cells different from animal cells?
 - Why are certain organelles found only in plant cells (e.g., chloroplasts, cell wall)?

Lesson 3: Obtaining and Removing Materials

- **Pages: 24-31**
- **Summary:** Explains how cells move materials in and out through membranes.
- **Focus on:**
 - Passive transport (diffusion, osmosis, facilitated diffusion).
 - Active transport (requires energy).
 - Bulk transport (endocytosis, exocytosis).



- **Focus questions:**

- What is the difference between passive and active transport?
- How does diffusion differ from osmosis?
- What role do endocytosis and exocytosis play in moving large materials?

Lesson 4: Cell Division and the Cell Cycle

- **Pages: 32-39**

- **Summary:** Covers the life cycle of a cell and how it divides to grow or repair.

- **Focus on:**

- Stages of the cell cycle (interphase, mitosis, cytokinesis).
- Phases of mitosis (prophase, metaphase, anaphase, telophase).
- Why cell division is important (growth, repair, reproduction).

- **Focus questions:**

- What are the main stages of the cell cycle?
- What happens during each phase of mitosis?
- Why is cell division necessary for living organisms?

N.B.: Do not forget to study the Lesson Check of each lesson. Remember to access the resources corresponding to each lesson available on the Resources page on LMS.