

# Cell Structures and Functions

**Grade Level or Special Area:** Fifth Grade

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**Length of Unit:** Seven lessons (45 minutes each)

## I. ABSTRACT

This unit will provide a basic study of the animal and plant cell characteristics and their functions. In addition, the students will make a replica of a cell using Jell-O and get an edible representation of a 3-D version of a cell. The use of the Internet will provide detailed information about the structure of the cells.

## II. OVERVIEW

- A. Concept Objectives
  - 1. Students will gain an appreciation for the complex structures of living things.
  - 2. Students will understand that all living things are made up of cells.
  - 3. Students will understand that information can be gathered through observation and experimentation.
  - 4. Students recognize how to write and speak for a variety of purposes and audiences by using content technical vocabulary accurately.
- B. Content from the *Core Knowledge Sequence*
  - 1. Fifth Grade: Science: Cells: Structures and Processes (page 127) (this unit does not cover all of the content listed in this section)
    - a. All living things are made up of cells.
    - b. Structure of cells (both plant and animal).
      - i. Cell membrane: selectively allows substances in and out
      - ii. Nucleus: surrounded by nuclear membrane, contains genetic material, divides for reproduction.
      - iii. Cytoplasm contains organelles, small structures that carry out the chemical activities of the cell, including mitochondria (which produce the cell's energy) and vacuoles (which store food, water, or wastes).
    - c. Plant cells, unlike animal cells, have cell walls and chloroplasts.
    - d. Cells are shaped differently in order to perform different functions.
- C. Skill Objectives
  - 1. List and identify characteristics of living and nonliving things.
  - 2. Sort, compare and contrast living and nonliving things.
  - 3. Respond and discuss characteristics of the structure of animal's cells.
  - 4. Define vocabulary words through content reading.
  - 5. Create pictorial representations of various parts of the cell.
  - 6. Respond and discuss the characteristics of a plant cell.
  - 7. Compare/contrast the similarities and differences of plant and animals cells.
  - 8. Take notes.
  - 9. Define key words.
  - 10. Create a visual representation of a cell.
  - 11. Practice oral and listening skills.
  - 12. Demonstrate comprehension of the basic structures of a plant and animal cell by labeling the cell and matching the vocabulary words with their definitions.