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.