

First Grade Portfolio

Cell Structure and Function

1. Recognize that living things are made of smaller parts
 - Use magnifying glasses to look at the different parts of plants
-such as identifying stem, leaves, roots etc.
2. Recognize that smaller parts of living things contribute to the operation and well being of entire organisms
 - Observe and describe what happens when an object loses a part

First Grade Standards

-Cell Theory- Cells are the basic units of life

- All living things are made of cells

Cells- All cells have certain structural components in common. (*Nucleus, Mitochondria, Membrane*)

Nucleus-

- the “brain” of the cell.
- Contains genetic information
- controls the cell’s activity by directing protein synthesis
 - (a combination or mixture)

Mitochondria-

- carries out cellular respiration in eukaryotic cells
- Converts nutrients into energy in the form of ATP
 - ATP transfers energy throughout the cell

Membrane-

- outer cell boundary that permits some materials to leave and enter the cell. - (Protects the inside of cell)



Encarta Encyclopedia, Photo Researchers, Inc./M.I. Walker/Science Source

3. Hands-on activities to develop and support concepts
 1. “Jell-O Cells” - Use jello to create a cell and its’ parts to show that biology science can be a fun thing to learn about.
 2. Flip Books- Show them pictures of how cells split and reproduce. Have them draw the pictures to create a flip book that shows this process.

Sources-

- 1.) “Jell-O Cells”- Kate Hayne
<http://www.win.co.nz/bioweb/jello.html>

2.) **Flip Books** - Mark Porter and Robert Nielson
<http://www.accessexcellence.org/AE/ATG/data/released/0165-MarkPorter/index.html>

3). **Picture and Information about cells** - Microsoft ® Encarta ® 2006. © 1993-2005 Microsoft Corporation. All rights reserved.