Most cells cannot be seen without a microscope. Yet, despite the small size of cells, life’s important activities take place within them. Cells are remarkable microcosms of life. They convert energy from one form to another. They use energy to synthesize chemicals for growth and development and for mechanical activities. Cells are the building blocks for plants and animals.

Objective:

- Describe animal cell components.

Key Terms:

- cell
- cell membrane
- cytoplasm
- endoplasmic reticulum
- Golgi complex
- lysosome
- mitochondrion
- nucleolus
- nucleus
- protoplasm
- ribosome
- vacuole

Animal Cell Structures and Their Functions

Animal cells are similar regardless of the animal being examined. The cells contain structures called organelles that carry out specific functions in the cells. A cell is a microscopic structure with a selectively permeable cell membrane—no rigid cell wall as in plants—that
holds the contents together. The cell membrane is also necessary for controlling the flow of material into and out of the cell.

The control center of a cell is the nucleus. The **nucleus** is the portion of the cell that not only coordinates cellular activity but also has the genetic material that is passed on during cell division. The **nucleolus** synthesizes the organelle ribosome.

Protein synthesis occurs in the **ribosome**. The **mitochondrion** is responsible for energy transformation through cellular respiration. The **endoplasmic reticulum** creates many cellular membranes and performs other functions. The **Golgi complex** takes in products of the endoplasmic reticulum, then stores, repackages, and transports them to other locations. Digestion within the cell occurs in the **lysosome**. Storage and waste disposal are key functions of the **vacuole**. The **cytoplasm** is the liquid that fills the cell, except the nucleus. The total content within the cell membrane is called **protoplasm**.

**FIGURE 1. Animal cell components.**
Summary:
Cells are similar in all animals. The nucleus coordinates cellular activity and contains the majority of the genetic material in a cell.

Checking Your Knowledge:
1. How are plant cells and animal cells different?
2. What are the major organelles in an animal cell?
3. What are the functions of the organelles?

Expanding Your Knowledge:
Without looking at Figure 1, label the organelles of an animal cell on this drawing. Then, check your answers against Figure 1.
Web Links:

Cells Alive! Animal Cell
http://www.cellsalive.com/cells/animcell.htm

Interactive Animal Cell structure
www.wiley.com/legacy/college/boyer/0470003790/animations/cell_structure/cell_structure.htm

Agricultural Career Profiles
http://www.mycaert.com/career-profiles