How do animal and plant cells work?

Cells are the smallest functional nits of living things. Cells make energy, proteins, and other important substances for organisms. All cells contain individual parts called organelles that perform various tasks. Cells help living things carry on all the important life processes, such as movement, reproduction, growth, and digestion.

The activities within cells might be compared to those in a factory that operates 24 hours a day making dozens of different products. Just as a factory operates inside a building, a cell functions within a structure called the cell membrane. Materials that are needed to make specific products are brought into the structure. Finished products are moved out. Similarly, nutrients are absorbed in to the cell, and waste products are released. Each of the many types of structures and organelles in a cell carries out a particular set of functions. In this Virtual Lab you will investigate the functions and names of animal and plant cell parts.

Objectives:

* Describe the functions of various animal cell parts.
* Describe the functions of various plant cell parts
* Compare and contrast animal and plant cells.
* Discuss how living cells are similar to factories

Procedure:

1. Select a cell by clicking it.
2. The Clue box will tell you what goes on in the part of the “factory”.
3. Click the up and down arrows in the Structure/Function box to find the description of the selected cell part.
4. Click the Check button to see whether your selections match. If they do, the cell part will be labeled. If not, reexamine your choices and try again.
5. Record the name of the cell part in the appropriate column.
6. Repeat these steps to identify and level all the parts of the animal cell.
7. Click the Plant button and identify and label all the parts of the plant cell.
8. After you have completed the Table answer the Analyze and Conclude questions.

Analyze and Conclude:

1. What are the smallest functional units of living things?
2. List four important life processes that cells help living things carry out.
3. What is an organelle?
4. How are cells similar to a factory or business?
5. List five similarities between cells and a factory.
6. How are animal and plant cells similar? EXPLAIN
7. How are animal and plant cells different? EXPLAIN
8. A solar cell is a device that collects energy from the sun to make electricity. What part of a plant cell is most similar to a solar cell?
9. Why is the nucleus considered to be the “boss” of the cell?
10. Exploring the South American rain forest, a scientist discovers a mysterious organism and brings it back to the lab for further study. What cell characteristics should the scientist examine to tell whether the organism is an animal or a plant? WHY?