**How Do Animal & Plant Cells Work?**

**I. Introduction**

 Cells are the smallest functional units 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 into 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.

**II. Procedure**

 1. Start the activity by going to the following website :

<http://www.glencoe.com/sites/common_assets/science/virtual_labs/E08/E08.html> .

 2. Select a cell part by clicking it. The Clue box will tell you what goes on in that part of the

 "factory."

 3. Click the up and down arrows in the Name box to find the name of the selected cell part.

 4. Click the up and down arrows in the Structure/ Function box to find the description of the

 selected cell part.

 5. 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. Open the Table and record the name of

 the cell part in the appropriate column.

 6. Repeat these steps to identify and label all the parts of the animal cell.

 7. Click the Plant button and identify and label all the parts of the plant cell.

**III. Data**

 Record the animal or plant cell structure in the table.

|  |  |  |
| --- | --- | --- |
|  **Structure / Function** |  **Animal Cell Structure** |  **Plant Cell Structure** |
| Outer boundary of the cell |  |  |
| Contains genetic material(DNA)Long, uncoiled strands of DNA |  |  |
| Watery, gel-like substance |  |  |
| Channels that move materials |  |  |
| Site of protein synthesis |  |  |
| Package and move proteins |  |  |
| Digest wastes |  |  |
| Storage centers |  |  |
| Rigid, outer cellulose cover |  |  |
| Site of photosynthesis |  |  |

**IV. Analysis & Conclusions**

 1. How are cells similar to a factory or business? List five similarities.

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 2. How are animal and plant cells similar? How are they different? Explain.

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 3. 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? Why?

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 4. Why is the nucleus considered the “boss” of the cell?

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 5. 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 plant? Why?

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