Chapter 2 Section 4

**Looking Inside Cells**

Main Ideas

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| What is the role of the cell wall? | It helps protect and support the cell. |
| What is the role of the cell membrane? | It controls what substances come into and out of a cell. |
| What are the functions of the cell’s organelles? | Each organelle carries out a specific function within the cell.  Just as organ systems in your body have different functions or responsibilities each organelle has a different function or responsibility. |
| How are cells organized in many celled organisms? | In many celled organisms, cells are organized into single cells,  tissues, organs, organ system, and organisms. |
| Key Terms |  |
| Organelles | Carry out specific functions within the cell. These are even smaller structures inside the cell. |
| Cell wall | A rigid layer of nonliving material that surrounds the cells of plants and some other organisms. (Animal cells son not have a cell wall.) A cell wall helps to protect and support the cell. (Composed or cellulose.) |
| Cell membrane | Located inside the cell wall (in organisms with a cell wall.) In other cells, the cell membrane forms the outside boundary that separates the cell from it’s environment.  It controls what substances come into and out of the cell. |
| Nucleus | The cell’s control center, directing all of the cell’s activities. |
| Nuclear envelope | The membrane that surrounds the nucleus. It protects the nucleus. |
| Chromatin | Contains genetic material, the instructions for directing the cell’s functions. |
| Nucleolus | The structure where ribosomes are made. |
| Cytoplasm | The clear, thick, gel-like fluid between the cell membrane and the nucleus. It is constantly moving |
| Mitochondria | The “powerhouse of the cell” because mitochondria convert energy in food molecules to energy the cell can use to carry out it’s functions. |
| Endoplasmic reticulum | The passageways that carry proteins and other materials from one part of the cell to another. |
| Ribosome | Some are attached to the endoplasmic reticulum. Some float in the cytoplasm.  They are small, grain-like bodies that function as factories to produce proteins. |
| Golgi body | Receive proteins and other newly formed materials from the endoplasmic reticulum. Package them, and distribute them to other parts of the cell. |
| Chloroplast | Capture energy from the sunlight and use it to produce food for the cell. |
| Vacuole | Large storage areas of the cells, usually storing water, or food, (or possibly wastes). |
| Lysosome | Small, round structures containing chemicals that break down certain materials in the cell. They are the “cell’s clean-up crew” |
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