**Structure of Life**

1. Cell
   1. Feature shared by all organisms
   2. Basic unit of structure and function of life
   3. Cells are able to make more cells like themselves--new cells can only come from existing cells
2. Types of Cells
   1. Prokaryotic: cells that do not have membrane-bound structures (organelles)
   2. Eukaryotic: cells that have membrane-bound structures 9organelles)
   3. Unicellular: made up of only one cell
      1. Can be prokaryotic or eukaryotic; all prokaryotes are unicellular
   4. Multicellular: made of many cells which work together to keep the organism alive and help it reproduce
      1. Each specialized cell in a multicellular organisms works with other similar cells to carry out a specific job.

|  |  |  |
| --- | --- | --- |
| **Structure (Organelle)** | **Animal Cell** | **Plant Cell** |
| **Cell Membrane** |  |  |
| **Cell Wall** | xxxx |  |
| **Cytoplasm** |  |  |
| **Nucleus** |  |  |
| **Chromosomes** |  |  |
| **DNA** |  |  |
| **Nuclear Membrane** |  |  |
| **Nucleolus** |  |  |
| **Vacuoles** |  |  |
| **Chloroplasts** | xxxx |  |
| **Chlorophyll** | xxxx |  |
| **Mitochondria** |  |  |
| **Endoplasmic Reticulum** |  |  |
| **Ribosomes** |  |  |
| **Gogi Bodies** |  |  |

|  |  |  |
| --- | --- | --- |
| **Structure (Organelle)** | **Animal Cell** | **Plant Cell** |
| **Cell Membrane** | Encloses the cell; acts like a gatekeeper--allowing some materials to pass through but not others | Encloses the cell--controls what materials enter and leave the cell |
| **Cell Wall** | xxxx | Outer barrier that provides extra support for the cell and gives it shape; made mostly of cellulose (a fiber) in plants |
| **Cytoplasm** | Gel-like fluid; mostly water with other substances | Gel-like fluid; mostly water with other substances |
| **Nucleus** | Structure usually located near the center of the animal cell; home to chromosomes | Structure usually located near the center of the animal cell; home to chromosomes |
| **Chromosomes** | Housed in nucleus; genetic structures that contain information used to direct cell activity--made of DNA (deoxyribonucleic acid) | Housed in nucleus; genetic structures that contain information used to direct cell activity--made of DNA (deoxyribonucleic acid) |
| **DNA** | Deoxyribonucleic acid; makes up chromosomes | Deoxyribonucleic acid; makes up chromosomes |
| **Nuclear Membrane** | Surrounds and protects the nucleus; has pores | Surrounds and protects the nucleus |
| **Nucleolus** | Found inside the nucleus; makes ribosomes which are transported to the cytoplasm | Found inside the nucleus; makes ribosomes which are transported to the cytoplasm |
| **Vacuoles** | Fluid-filled structures temporarily store substances needed by the cell; usually many small vacuoles in animal cells | Internal delivery system--moves proteins within the cell |
| **Chloroplasts** | xxxx | Food making structures (use sunlight energy to convert carbon dioxide and water into sugar and oxygen) |
| **Chlorophyll** | xxxx | Pigment in chloroplasts that captures the energy of sunlight during photosynthesis |
| **Mitochondria** | Use oxygen to transform energy into food to form the cell can use (glucose) | Use oxygen to transform energy into food to form the cell can use (glucose) |
| **Endoplasmic Reticulum** | Internal delivery system--moves proteins within the cell | Internal delivery system--moves proteins within the cell |
| **Ribosomes** | Produce important products for the cell, including proteins | Produce important products for the cell, including proteins |
| **Gogi Bodies** | Package products (proteins) from the endoplasmic reticulum and distribute them around the cell or outside of it | Makes cellulose; Package products (proteins) from the endoplasmic reticulum and distribute them. |