**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Parts all cells contain:

|  |  |
| --- | --- |
| Parts | Function |
| Cell Membrane | * Protects the cell * Barrier between outside and inside of cell * Controls what goes in and out of the cell |
| Cytoplasm | * Cushions/protects the organelles * Most chemical reactions of the cell take place in cytoplasm |
| Organelles | * Specialized to perform a specific function |
| DNA: deoxyribonucleic acid | * Provides instructions for all cell processes |

Important molecules found in cells

|  |  |
| --- | --- |
| **Molecule** | **Function(s)** |
| Lipids | * Store energy * Major component of the cell membrane |
| Proteins | * Build and repair body structures * Regulate body processes * Help chemical processes happen (enzymes) |
| Carbohydrates | * Provide energy * Store energy |
| Nucleic Acids | * Carries information in cells |

Part found only in animal cells

|  |  |
| --- | --- |
| **Part** | **Function(s)** |
| Lysosome | Contains digestive enzymes which break down:   * Worn out or damaged organelles * Waste materials * Foreign invaders |

Parts found only in plant cells

|  |  |
| --- | --- |
| **Part** | **Function(s)** |
| Cell wall | * Provides support for the cell * Provides protection for the cell |
| Large central vacuole | * Stores water * When full of water it helps support the cell |
| chloroplast | * Makes glucose (food) for the cell |

Organelles found in plant and animal cells

|  |  |
| --- | --- |
| **Organelle** | **Function(s)** |
| Nucleus | * Control center/tells cell what to do * Contains genetic material |
| Mitochondria | * Makes energy through cellular respiration |
| Ribosomes | * Makes protein |
| ER: Endoplasmic Reticulum | Rough:   * Makes protein * Packages protein * Transports protein   Smooth:   * Makes lipids * Breaks down toxic materials |
| Golgi Complex (Apparatus) | * Packages materials * Transports materials |

Photosynthesis

|  |  |
| --- | --- |
| **Definition** | The process by which plants, algae, and some bacteria use sunlight, carbon dioxide, and water to make food. |
| **Formula** |  |

Cellular Respiration

|  |  |
| --- | --- |
| **Definition** | The process by which cells use oxygen to produce energy from food. |
| **Formula** |  |

What is the cell theory?

1. All organisms are made up of one or more cells.

2. The cell is the basic unit of life.

3. All cells come from existing cells.

“How are living things organized” and what is their relationship to each other.

Cells 🡪 Tissue 🡪 Organs 🡪 Organ systems 🡪 Organism