

Name _____

Period _____

Cell Organelles – Study Chart

| Organelle | Plant/Animal or both | Job / Function |
|--|----------------------------------|---|
| Cell Wall | Plants, Prokaryotes, NOT ANIMALS | Provides and maintains the shape of the cell and serves as a protective barrier. In plants, wall is made of cellulose . Bacterial cell walls are made of peptidoglycan . |
| Chloroplast | Plants, NOT ANIMALS | Uses the energy from sunlight to form glucose molecules from CO ₂ and H ₂ O. Glucose is an energy STORAGE molecule. |
| Nucleus | All Eukaryotes | Protective container for the cell's DNA . DNA never leaves the nucleus, but messages (mRNA) can be sent to other parts of the cell. |
| Ribosomes | ALL CELLS | Smallest organelle found in ALL cells. Builds proteins by putting together long chains of Amino Acids according to the mRNA message (a copy of a piece of DNA). Thousands in each cell. |
| Mitochondria | All Eukaryotes | Powerhouse of the cell . Converts glucose into ATP, an energy molecule used in almost every reaction the cell does. |
| Cell Membrane | ALL CELLS | Controls what molecules are allowed in and out of the cell . Also called the Plasma Membrane. Made of a sea of phospholipids molecules that together form the outer barrier of the cell. |
| Cytoplasm (A.K.A. Cytosol) | ALL CELLS | The liquid that fills the cell . Contains lots of proteins and dissolved ions that are involved in many cell reactions. |
| Vacuole | All Eukaryotes | Basically, a membrane enclosed sac that can be filled with anything the cell needs to keep separate. Stores food, water, etc. In plants the vacuole also helps the cell maintain its rigidity. |
| Golgi Body | All Eukaryotes | Receives products from the ER and adds final modifications . It also sorts these products and sends them to their final destinations. |
| Lysosomes | All Eukaryotes | A membrane enclosed bag of digestive juices. Breaks down large molecules and old cell parts into their components that can be recycled to build new cell parts |
| Rough ER | All Eukaryotes | Large folded membrane system studded with ribosomes. Ribosomes build proteins and the ER helps fold or modify them . Products are shipped to the Golgi. |
| Smooth ER | All Eukaryotes | Large folded membrane system. Puts together lipids and is important in making new membranes. |
| Microtubules & Microfilaments | All Eukaryotes | Long tubes or cord-like structures that provide the cell's internal structure and allow cell movement . Other organelles are anchored to this network called the cytoskeleton. Work together in muscle contraction, and the motion of cilia and flagella |