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_2O. 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