

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