CELL PART/ ORGANELLE	FUNCTION (what it does)	PICTURE	Plant, Animal, or Both
Cell Membrane	▶ controls what goes in & out of the cell▶ protects the cell		both
Nucleus	▶ directs all the cell's activities▶ contains cell's chromosomes		both
Cytoplasm and Cytoskeleton	 ▶ clear jelly-like fluid that fills the cell (60-70% H2O) ▶ Holds the organelles in place and acts as a roadway for transport 	cytoplasm	both
Chloroplast (contains chlorophyll)	►Turns sunlight, water & carbon dioxide (CO ₂) into sugar & oxygen through photosynthesis		plant
Cell Wall	 ▶rigid (stiff) outer layer of a plant cell ▶ Holds the plant up (structure & support) 		plant
Mitochondria	► Burns sugar to produce energy / power for the cell ("Mighty Mitochondria")		both
Endoplasmic Reticulum (E.R.)	 ▶ network of folds/tubes that transports proteins and other materials ▶ Rough – ribosomes ▶ Smooth – no ribosomes 		both

Vacuole	► Storage tank for water, nutrients (food) & waste ► Plants have a large central vacuole used for structural support	Contains the green chemical chlorophyll, which traps light for photosynthesis. Cell wall Made of cellulose, gives the plant cell it is shape and helps to support it. Central vacuole Large, fluid filled space in plant cells, trily or absent from animal cells.	both
Chromosomes	►contain the cell's		
(Chromatin)	genetic information ▶ made of DNA	CHROMATIN	both
	I made of DNA	CHROMOSOMES	
Ribosome	► Makes proteins ► attached to E.R. or floating in cytoplasm	(small dark dots)	both
Golgi body (aka Golgi apparatus)	▶ Tags and sorts proteins, and then packages them into vesicles that get distributed throughout the cell ("Post Office")		both
Lysosome	►Breaks down food & worn-out cell parts ("The Recycler")		animal

Other Vocab to Know:

- <u>cell theory</u> all living things are made of cells, cells are the basic unit of structure and organization in living things, cells only come from other living cells
- <u>cell</u> smallest unit of life; building blocks of life
- organelle a structure within a cell with a specialized function
- unicellular- made of one cell
- multicellular made of many cells
- <u>eukaryotic</u> complex cell with membrane-bound organelles. Includes animal and plant cells.
- **prokaryotic** A primitive-like cell that has no membrane bound organelles. Bacteria are this type of cell.
- <u>selectively permeable</u> a characteristic of the cell membrane; it allows only certain materials to move in and out of the cell based on size

Cell	Important	Picture
Process	Fact/Description	
Cell respiration	• O ₂ + glucose → CO ₂ + H ₂ O + ATP	Respiration C ₆ H ₁₂ O ₆ + O ₂
	occurs in mitochondria	CO ₂ + H ₂ O + Energy
Photosynthesis	• sunlight + CO2 + H2O → O2 + glucose	Light
	occurs in chloroplasts	Carbon Dioxide + Carbohydrates Water Oxygen
Transcription	 Process in which the DNA code is transcribed into mRNA Occurs in the nucleus; then the RNA strand leaves through a nuclear pore 	TRANSCRIPTION RNA
Translation	 Process in which mRNA is read and translated into an amino acid chain Occurs on a ribosome located in the cytoplasm or attached to the ER 	TRANSLATION Protein
Protein Synthesis	 The process in which protein is created and folded (through transcription and translation) 	Transport to cytoplasm Protein Ribosome Translation U.S. National Library of Medicos

Osmosis	Diffusion of water over a membrane	Water NaCl solution Osmosis
Diffusion	Movement of molecules from high to low concentration	Diffusion High Low Concentration Concentration
Facilitated diffusion	Movement of large molecules across a cell membrane, with the help of channel proteins	Facilitated Diffusion Outside of cell Inside of cell
Active transport	 Movement of molecules from low to high concentration gradient (across a membrane) Requires ATP energy, and carrier protein 	ATP
Endocytosis	Intake of substances into a cell	Plasma membrane Pseudopodium Phagosome (food vacuole)
Exocytosis	outside a cell	Secretory product Secretory vesicle Cytoplasm

Other important	Important	Picture
molecules/parts	Fact/Description	
ATP	energy made by mitochondria during cell respiration	ENERGY
Vesicles	 "cargo" that holds proteins and transports them throughout the cell 	Vesicle Dynain
Motor proteins	moves vesicles along the cytoskeleton	Cargo moving along the axon Vesicle Motor protein
Transport proteins (channel and carrier)	moves substances in and out of the cell through the cell membrane	Channel protein Lipid bilayer Passive Active transport transport
RNA	 ribonucleic acid when in mRNA form, this is translated into an amino acid chain, which folds and becomes a protein Bases: A, U, G, C 	Adenine Guanine Uracil Cytosine P= phosphate R= Ribose
DNA	 deoxyribonucleic acid contains genetic code that determines traits located in the nucleus Bases: A, T, G, C 	DNA Adentine Thymine Granine Gylicsine Segre Ghopfald
Amino acids	 make a chain that folds to become a protein animals must eat in order to obtain essential amino acids for translation 	