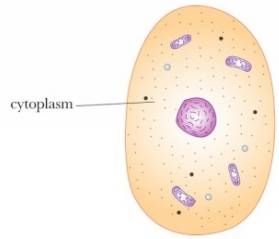
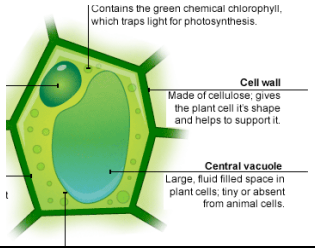
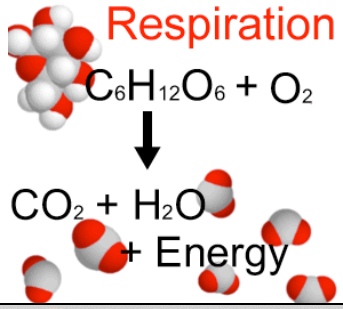
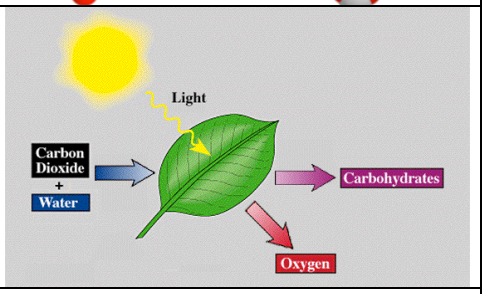
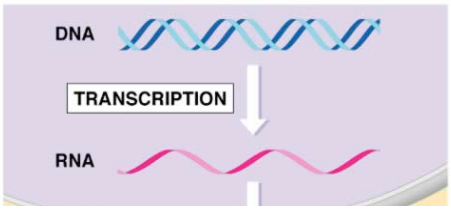
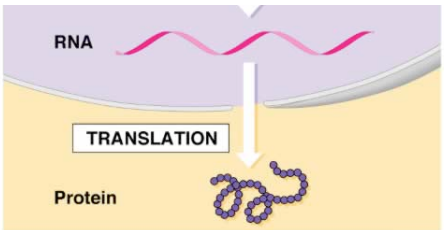
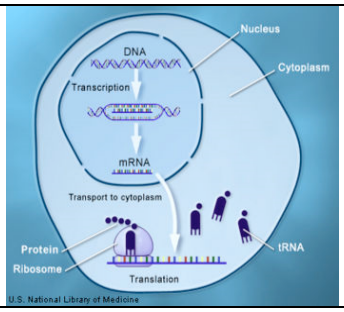
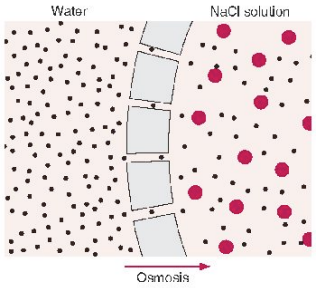
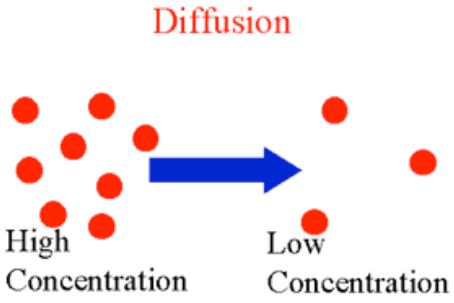
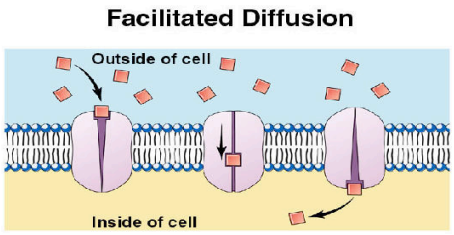
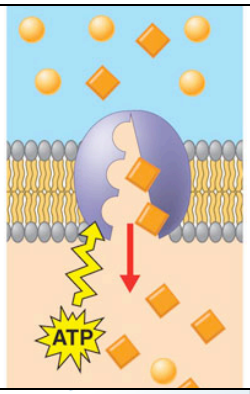
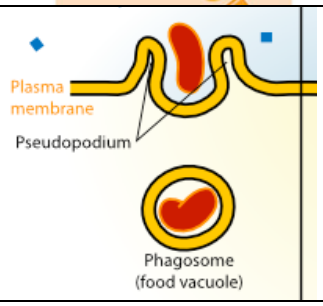
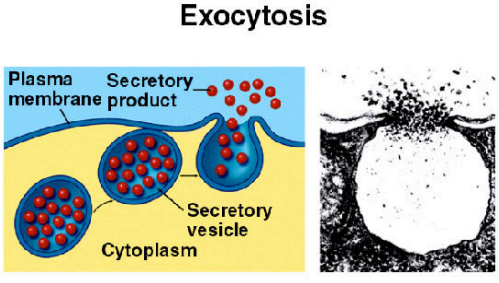
CELL PART/ ORGANELLE	FUNCTION (what it does)	PICTURE	Plant, Animal, or Both
Cell Membrane	▶controls what goes in & out of the cell ▶protects the cell		both
Nucleus	▶directs all the cell's activities ▶contains cell's chromosomes		both
Cytoplasm and Cytoskeleton	▶ clear jelly-like fluid that fills the cell (60-70% H_2O) ▶ Holds the organelles in place and acts as a roadway for transport		both
Chloroplast (contains chlorophyll)	▶Turns <u>sunlight</u>, <u>water</u> & <u>carbon dioxide</u> (CO_2) into <u>sugar</u> & <u>oxygen</u> 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

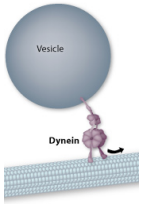
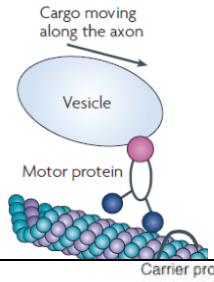
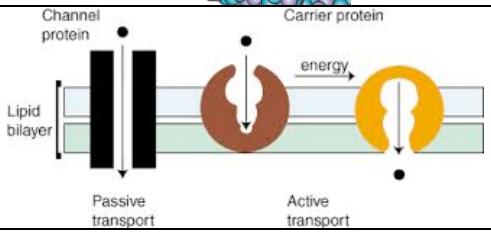
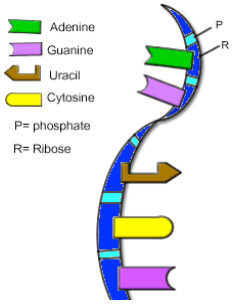
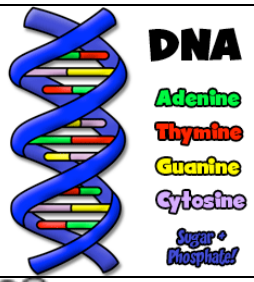
Vacuole	▶Storage tank for water, nutrients (food) & waste ▶Plants have a large central vacuole used for structural support		both
Chromosomes (Chromatin)	▶contain the cell's genetic information ▶ made of DNA		both
Ribosome	▶Makes proteins ▶attached to E.R. or floating in cytoplasm	 (small dark dots)	both
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:

- **cell theory** - 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
- **cell** - 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
- **eukaryotic** – 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.
- **selectively permeable** – a characteristic of the cell membrane; it allows only certain materials to move in and out of the cell based on size

Cell Process	Important Fact/Description	Picture
Cell respiration	• O_2 + glucose → CO_2 + H_2O + ATP • occurs in mitochondria	
Photosynthesis	• sunlight + CO_2 + H_2O → O_2 + glucose • occurs in chloroplasts	
Transcription	• Process in which the DNA code is transcribed into mRNA • Occurs in the nucleus; then the RNA strand leaves through a nuclear pore	
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	
Protein Synthesis	• The process in which protein is created and folded (through transcription and translation)	

Osmosis	• Diffusion of water over a membrane	
Diffusion	• Movement of molecules from high to low concentration	
Facilitated diffusion	• Movement of large molecules across a cell membrane, with the help of channel proteins	
Active transport	• Movement of molecules from low to high concentration gradient (across a membrane) • Requires ATP energy, and carrier protein	
Endocytosis	• Intake of substances into a cell	
Exocytosis	• Expelling of substances outside a cell	

Other important molecules/parts	Important Fact/Description	Picture
ATP	• energy made by mitochondria during cell respiration	
Vesicles	• "cargo" that holds proteins and transports them throughout the cell	
Motor proteins	• moves vesicles along the cytoskeleton	
Transport proteins (channel and carrier)	• moves substances in and out of the cell through the cell membrane	
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	
DNA	• deoxyribonucleic acid • contains genetic code that determines traits • located in the nucleus • Bases: A, T, G, C	
Amino acids	• make a chain that folds to become a protein • animals must eat in order to obtain essential amino acids for translation