Cell Wall • Support tall)	
 Plant, Fungi, & Bacteria, but not animal cells Rigid & strong Made of cellulose Protection allows H O₂, CO₂ diffuse in out of cellulose 	on [₂ O, to n &
Cell Membrane• Plant - inside cell wall• Support • Protection • Controls movement layer; cholesterol • Double layer of phospholipids with proteins • Selectively permeable• Support • Protection • Controls movement materials in/out of • Barrier • Barrier • Maintain homeost	nt of s cell cell nent is
Nucleus• Controls activitiesAll cells except prokaryotes• May contain 1 or more nucleoli • Holds DNA• Controls activities	s the y
Nuclear membranemuclearpor eAll cells exceptprokaryotesNucleusNucleusNucleus	nt of s
Cytoplasm • Clear, thick,	

8/4/2015	Cell Fun	ctions	
	All cells	 jellylike material (cytosol) Organelles found inside cell membrane Contains the cytoskeleton fibers 	• Supports and protects cell organelles
Endoplasmic reticulum (ER)	All cells except prokaryotes	 Network of tubes or membranes Smooth w/o ribosomes Rough with embedded ribosomes Connects to nuclear envelope & cell membrane 	 Carries materials through cell Aids in making proteins
Ribosome	All cells	 Small bodies free or attached to ER Made of rRNA & protein 	• Synthesizes proteins
Mitochondrion Image: Constraint of the second sec	All cells except prokaryotes	 Peanut shaped Double membrane Outer membrane smooth Inner membrane folded into cristae 	 Breaks down sugar (glucose) molecules to release energy Site of aerobic cellular respiration
Vacuole	Plant cells have a single, large	• Fluid-filled sacs	• Store food, water, metabolic & toxic wastes

8/4/2015	Cell Fun	ctions	
	vacuole Animal cells have small vacuoles	• Largest organelle in plant cells	• Store large amounts of food or sugars in plants
Lysosome	Plant - uncommon Animal - common	• Small and round with a single membrane	 Breaks down larger food molecules into smaller molecules Digests old cell parts
Chloroplast Image: Chloroplast	Plants and algae	 Green, oval containing chlorophyll (green pigment) Double membrane with inner membrane modified into sacs called thylakoids Stacks of thylakoids called grana & interconnected Gel like innermost substance called stroma 	 Uses energy from sun to make food (glucose) for the plant Process called photosynthesis Release oxygen
nucleolus	All cells except prokaryotes	 Found inside the cell's nucleus May have more than one Disappear during cell division 	• Make ribosomes

http://www.biologyjunction.com/cell_functions.htm

8/4/2015	Cell Fun	ctions	
Golgi Apparatus	All cells except prokaryotes	• Stacks of flattened sacs	 Have a <i>cis</i> & <i>trans</i> face Modify proteins made by the cells Package & export proteins
Cilia	Animal cells, Protozoans	 Have a 9-2 arrangement of microtubules Short, but numerous 	• Movement
Flagellum	Bacterial cells & Protozoans	 Have a 9-2 arrangement of microtubules Long, but few in number 	• Movement
Centrioles	Animal cells	 Paired structures near the nucleus Made of a cylinder of microtubule pairs 	 Separate chromosome pairs during mitosis
Cytoskeleton	All cells	• Made of microtubules 7 microfilaments	 Strengthen cell & maintains the shape Moves organelles within the cell

