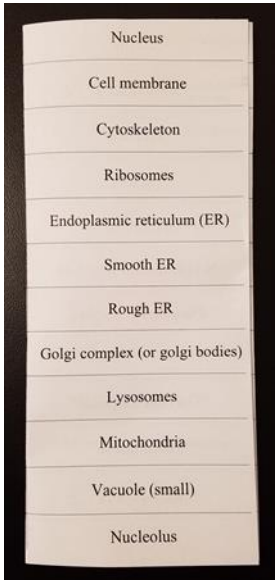
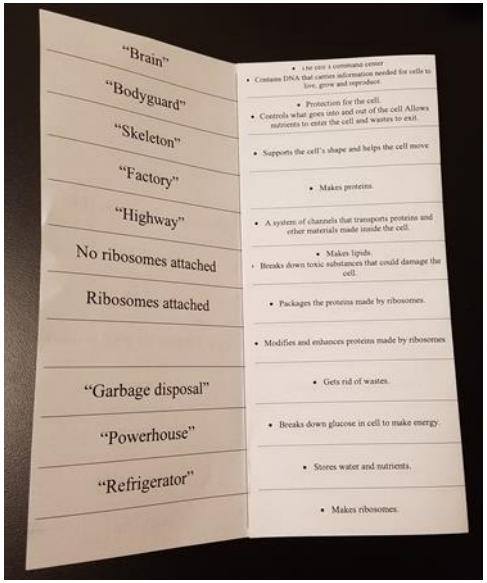
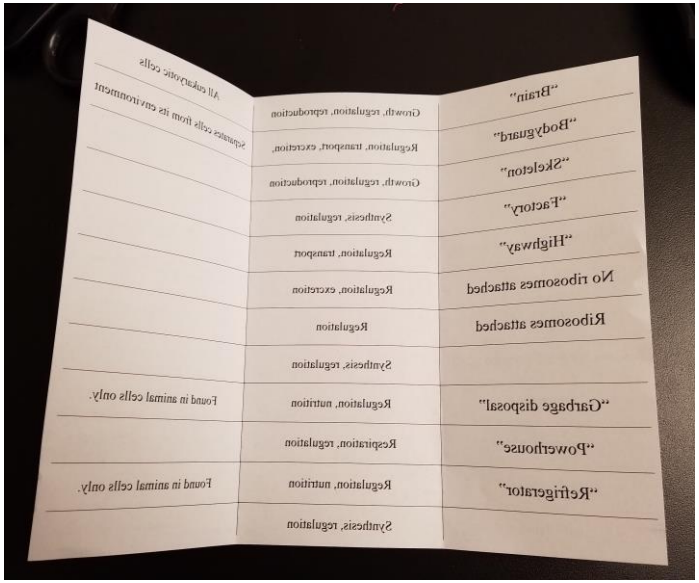
“Cells” Project

1. Draw a detailed, colored, labeled picture of a plant cell (pg. 2) on one sheet of large paper and a detailed, colored, labeled picture of an animal cell (pg. 3) on the other side of the same paper.
2. Print out 2 sheets of pg. 7 and fold along the solid lines.
3. Using the tables on pgs. 4 and 5, fill out your folded papers with the columns organized as illustrated below (one table for a plant cell paper, and one for an animal cell paper).
4. Feel free to color code your cell structure and functions folded papers.
5. Attach the back of each folded paper to the appropriate side of your drawings.



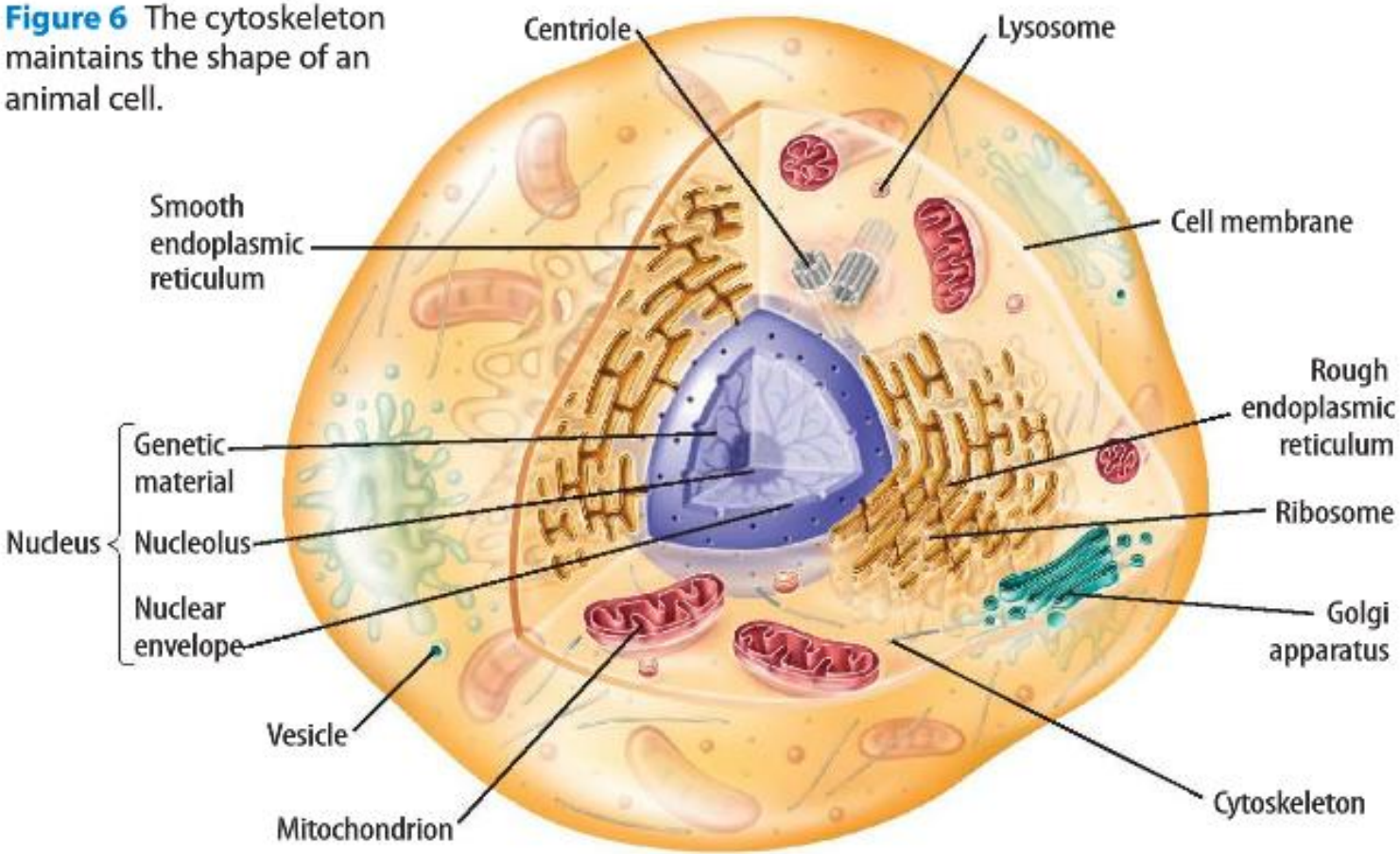




Animal Cell

Concepts in Motion Animation

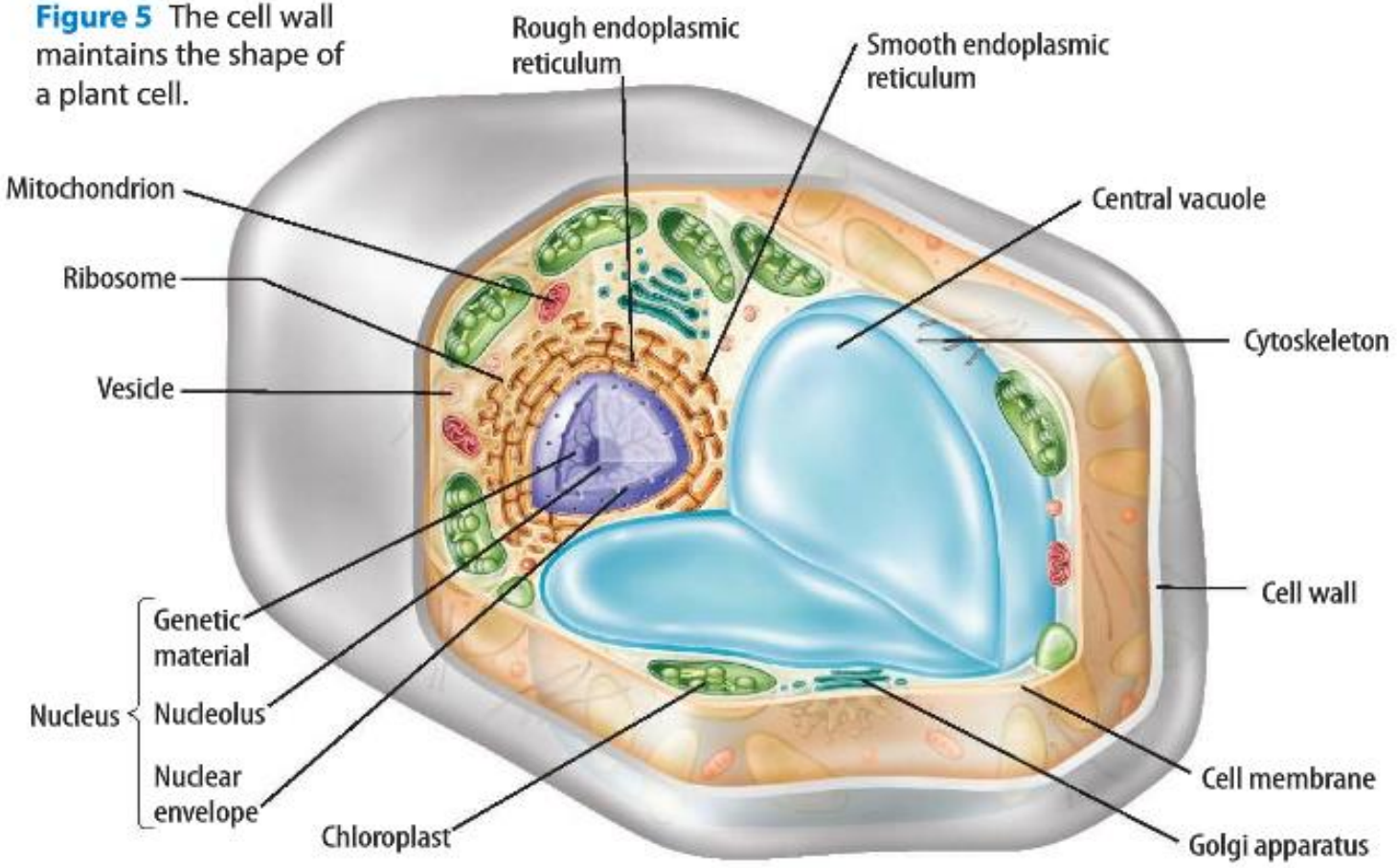
Figure 6 The cytoskeleton maintains the shape of an animal cell.



Plant Cell

Concepts in Motion Animation

Figure 5 The cell wall maintains the shape of a plant cell.



Animal Cell Structure and Functions

Name of Organelle	"AKA"	Cell Function	Life Function	Also
Nucleus	"Brain"	• The cell's command center • Contains DNA that carries information needed for cells to live, grow and reproduce.	Growth, regulation, reproduction	All eukaryotic cells
Cell membrane	"Bodyguard"	• Protection for the cell. • Controls what goes into and out of the cell Allows nutrients to enter the cell and wastes to exit.	Regulation, transport, excretion,	Separates cells from its environment
Cytoskeleton	"Skeleton"	• Supports the cell's shape and helps the cell move	Growth, regulation, reproduction	
Ribosomes	"Factory"	• Makes proteins.	Synthesis, regulation	
Endoplasmic reticulum (ER)	"Highway"	• A system of channels that transports proteins and other materials made inside the cell.	Regulation, transport	
Smooth ER	No ribosomes attached	• Makes lipids. • Breaks down toxic substances that could damage the cell.	Regulation, excretion	
Rough ER	Ribosomes attached	• Packages the proteins made by ribosomes.	Regulation	
Golgi complex (or golgi bodies)		• Modifies and enhances proteins made by ribosomes	Synthesis, regulation	
Lysosomes	"Garbage disposal"	• Gets rid of wastes.	Regulation, nutrition	Found in animal cells only.
Mitochondria	"Powerhouse"	• Breaks down glucose in cell to make energy.	Respiration, regulation	
Vacuole (small)	"Refrigerator"	• Stores water and nutrients.	Regulation, nutrition	Found in animal cells only.
Nucleolus		• Makes ribosomes.	Synthesis, regulation	

Plant Cell Structure and Functions

Name of Organelle	"AKA"	Cell Function	Life Function	Also
Nucleus	"Brain"	• The cell's command center • Contains DNA that carries information needed for cells to live, grow and reproduce.	Growth, regulation, reproduction	All eukaryotic cells
Cell membrane	"Bodyguard"	• Protection for the cell. • Controls what goes into and out of the cell Allows nutrients to enter the cell and wastes to exit.	Regulation, transport, excretion,	Separates cells from its environment
Cytoskeleton	"Skeleton"	• Supports the cell's shape and helps the cell move	Growth, regulation, reproduction	
Ribosomes	"Factory"	• Makes proteins.	Synthesis, regulation	
Endoplasmic reticulum (ER)	"Highway"	• A system of channels that transports proteins and other materials made inside the cell.	Regulation, transport	
Smooth ER	No ribosomes attached	• Makes lipids. • Breaks down toxic substances that could damage the cell.	Regulation, excretion	
Rough ER	Ribosomes attached	• Packages the proteins made by ribosomes.	Regulation	
Golgi complex (or golgi bodies)		• Modifies and enhances proteins made by ribosomes	Synthesis, regulation	
Central vacuole (large)	"Water storage"	• Breaks down wastes • When water levels in here are low, plants will wilt	Regulation, nutrition	Found in plant cells only.
Cell wall		• Rigid and tough support for plant to stand upright.	Regulation	Found outside cell membrane.
Chloroplast	"Food production"	• Contains chlorophyll to capture energy from the sun for photosynthesis.	Synthesis, regulation	Found in plant cells only.
Nucleolus		• Makes ribosomes.	Synthesis, regulation	
