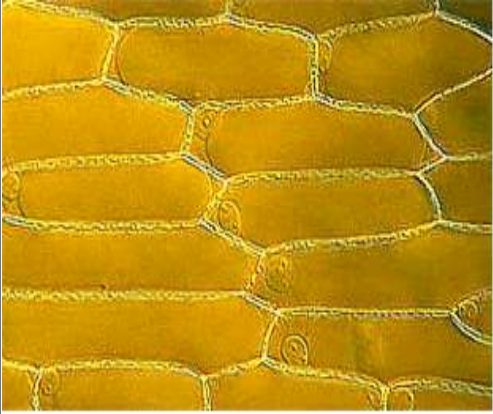
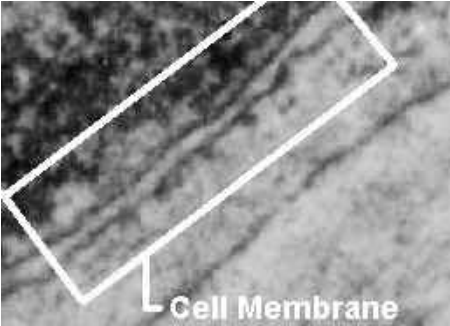
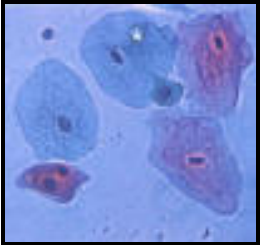
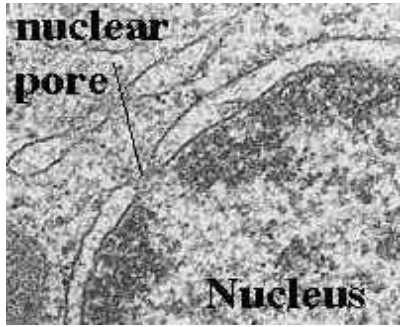


CELL STRUCTURE	LOCATION	DESCRIPTION	FUNCTION
<p style="text-align: center;">Cell Wall</p> 	<p>Plant, Fungi, & Bacteria, but not animal cells</p>	<ul style="list-style-type: none"> • Outer layer • Rigid & strong • Made of cellulose 	<ul style="list-style-type: none"> • Support (grow tall) • Protection • allows H₂O, O₂, CO₂ to diffuse in & out of cell
<p style="text-align: center;">Cell Membrane</p> 	<p>All cells</p>	<ul style="list-style-type: none"> • Plant - inside cell wall • Animal - outer layer; cholesterol • Double layer of phospholipids with proteins • Selectively permeable 	<ul style="list-style-type: none"> • Support • Protection • Controls movement of materials in/out of cell • Barrier between cell and its environment • Maintains homeostasis
<p style="text-align: center;">Nucleus</p> 	<p>All cells except prokaryotes</p>	<ul style="list-style-type: none"> • Large, oval • May contain 1 or more nucleoli • Holds DNA 	<ul style="list-style-type: none"> • Controls cell activities • Contains the hereditary material of the cell
<p>Nuclear membrane</p>			



All cells **except prokaryotes**

- Surrounds nucleus
- Double membrane
- Selectively permeable

- Controls movement of materials in/out of nucleus

Cytoplasm



All cells

- Clear, thick, jellylike material (cytosol)
- Organelles found inside cell membrane
- Contains the cytoskeleton fibers

- Supports and protects cell organelles

Endoplasmic reticulum (ER)



All cells **except prokaryotes**

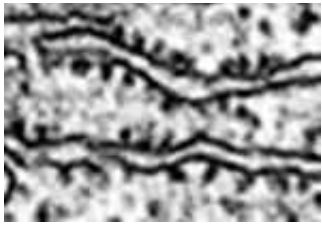
- Network of tubes or membranes
- Smooth w/o ribosomes
- Rough with embedded ribosomes
- Connects to nuclear envelope & cell membrane

- Carries materials through cell
- Aids in making proteins

Ribosome

- Small bodies free or attached to ER

- Synthesizes proteins



All cells

- Made of rRNA & protein

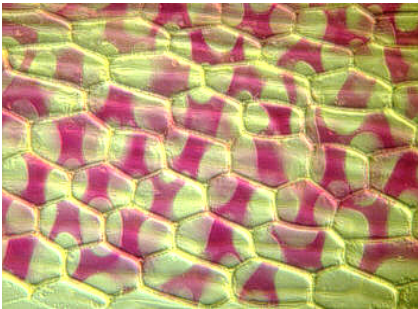
Mitochondrion



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 vacuole

Animal cells have small vacuoles

- Fluid-filled sacs
- Largest organelle in plant cells

- Store food, water, metabolic & toxic wastes
- 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

- Green, oval containing chlorophyll (green pigment)

Chloroplast



Plants and algae

- 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

Golgi Apparatus



All cells **except**
prokaryotes

- Stacks of flattened sacs

- Have a *cis* & *trans* face
- Modify proteins made by the cells
- Package & export proteins

Cilia

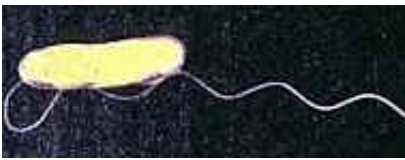


Animal cells,
Protozoans

- Have a 9-2 arrangement of microtubules
- Short, but numerous

- Movement

Flagellum

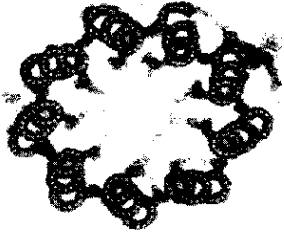


Bacterial cells & Protozoans

- Have a 9-2 arrangement of microtubules
- Long, but few in number

- Movement

Centrioles

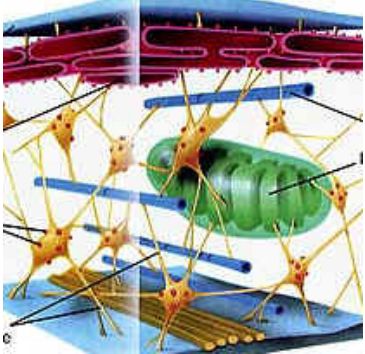


Animal cells

- 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