<table>
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<tr>
<th><strong>CELL STRUCTURE</strong></th>
<th><strong>LOCATION</strong></th>
<th><strong>DESCRIPTION</strong></th>
<th><strong>FUNCTION</strong></th>
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| Cell Wall           | Plant, Fungi, & Bacteria, but not animal cells | • Outer layer  
• Rigid & strong  
• Made of cellulose (aka fiber) | • Support (grow tall)  
• Protection  
• allows H$_2$O, O$_2$, CO$_2$ to diffuse in & out of cell |
| Cell Membrane       | All cells | • Plant - inside cell wall  
• Animal - outer layer | • Support  
• Protection  
• Controls movement of materials in/out of cell  
• Barrier between cell and its environment  
• Maintains homeostasis (balance) |
| Nucleus             | All cells except red blood cells | • Large, oval  
• Holds DNA | • Controls cell activities  
• Contains the hereditary material (DNA) of the cell |
| Cytoplasm           | All cells | • Clear, thick, jellylike material (cytosol)  
• Organelles found inside cell membrane | • Supports and protects cell organelles |
| **Endoplasmic reticulum (ER)** | All cells except prokaryotes (like bacteria) | • Network of tubes or membranes  
• Smooth ER=no ribosomes  
• Rough with embedded ribosomes  
• Carries materials through cell  
• Aids in making proteins |
|-------------------------------|---------------------------------------------|--------------------------------------------------------------------------------|
| **Ribosome**                  | All cells                                  | • Small bodies free floating in cytoplasm or attached to ER  
• Makes proteins |
| **Mitochondrion**             | All cells except prokaryotes (like bacteria) | • Power house  
• Peanut shaped  
• Breaks down sugar (glucose) molecules to release energy  
• Site of 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, & 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 |
| **Chloroplast** | Plants and algae | Green, oval containing chlorophyll (green pigment) | Uses energy from sun to make food (glucose) for the plant  
Process called photosynthesis  
Release oxygen |
|---|---|---|---|
| **Golgi Apparatus** | All cells except prokaryotes (like bacteria) | AKA *The Post Office*  
Stacks of flattened sacs | Modify proteins made by the cells  
Package & export proteins |

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