

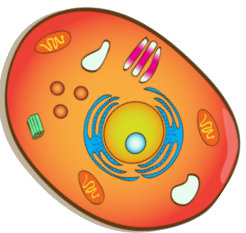
## ANIMAL AND PLANT CELLS - PAGE 1

Animals (including humans) are made up of many different types of

specialized cells (nerve cells, skin cells, blood cells, etc.), but all of these cells have a similar structure. Animal cells have a "bloblike" shape & include lots of tiny organelles that help the cell function. Think of your own body – your body contains organs (heart, liver, lungs) that allow your body to function & allow you to live. Similarly, the cell's **ORGANELLES** have different functions to help the cell do the same.

The cell membrane encloses the cell and acts like a screen to allow some materials to pass through it but not others. Think of a screen in a window. It allows fresh air in, but keeps bugs out! Cell membranes allow nutrients & water in while keeping harmful molecules out! The cytoplasm is the gel-like fluid made of mostly water that takes up most of the space inside the cell. The organelles are located in the cytoplasm. The nucleus is a organelle that is the "brain" of the cell. The nucleus is home to all the cell's chromosomes. Chromosomes are genetic structures that contain the information used to direct cell activity. Chromosomes are made of DNA.

Animal cells have many small fluid-filled structures that temporarily store different substances needed by the cell. These structures are called vacuoles. The mighty mitochondria are considered the "powerhouses" of the cell because they use oxygen to transform food into energy to help the cell carry out activities. **Animal Cell**



The smooth & rough endoplasmic reticulum serve as an internal delivery system for transporting materials the cell needs. Included in those materials are ribosomes which are tiny organelles that make protein for the cell (think of them as little protein factories!) Centrioles, located only in animal cells, help with cell division.

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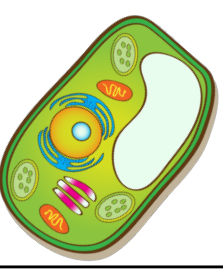
## ANIMAL AND PLANT CELLS - PAGE 2

Plants, trees, fruits, vegetables, and flowers are made of plant cells. Plant cells are very similar to animal cells, but have some major differences. Animal and plant cells both contain cytoplasm, a nucleus, mitochondria, ribosomes, vacuole, endoplasmic reticulum, and golgi bodies. Golgi bodies help package materials from the endoplasmic reticulum and distribute them around the cell or outside of it. Think of golgi bodies like a post office! Both animal and plant cells are surrounded by a cell membrane. Each of the same organelles between plant and animal cells serves the same function, but may have a slightly different structure. For example, animal cells have multiple small vacuoles for nutrient and water storage while the plant cell has one very large **vacuole**.

There are a few important differences between animal and plant cells. First, the structure of plant cells is more "box-like" than animal cells. If you look at plant cells under a microscope, they look like little bricks stacked up like a wall. Animal cells cluster together and are more circular. One reason for this shape difference is because plant cells have a cell wall. The cell wall in a plant cell provides extra support and structure for the cell that plant cells need. This cell wall is made mostly of cellulose, which is a fiber that is the main component of wood and paper.

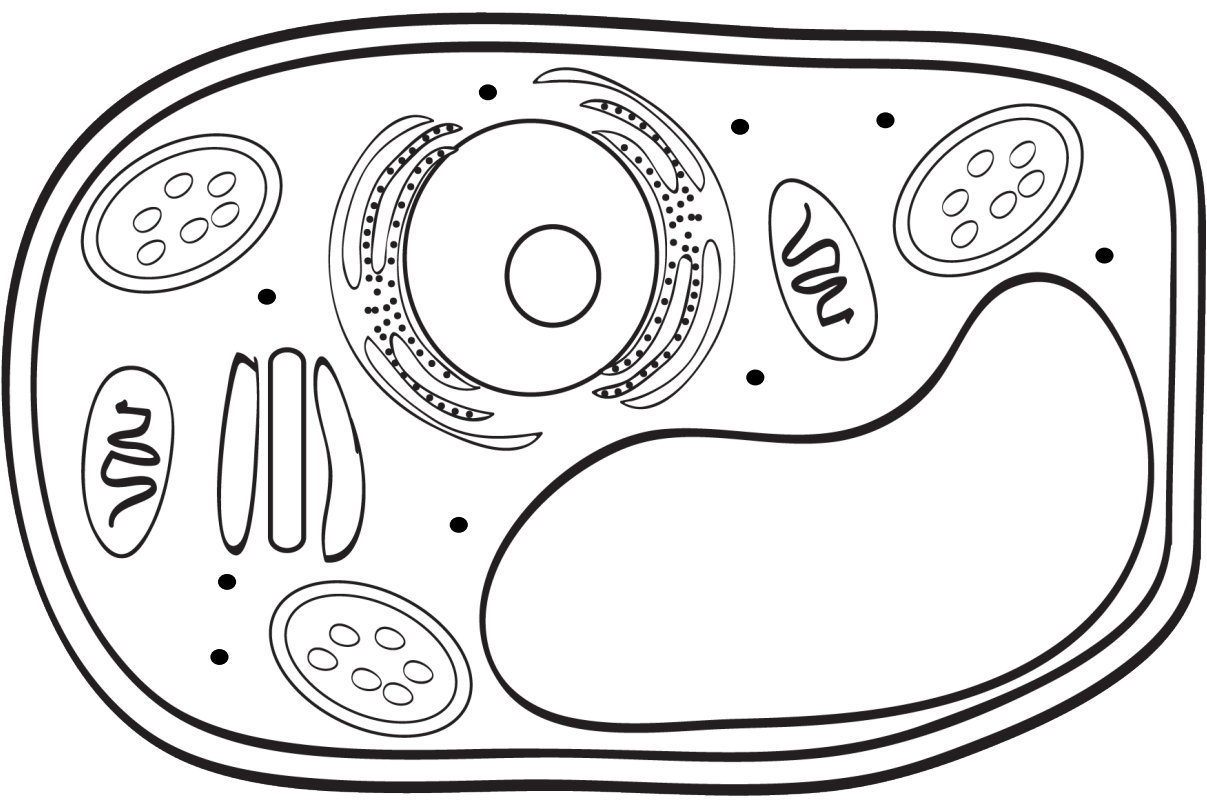
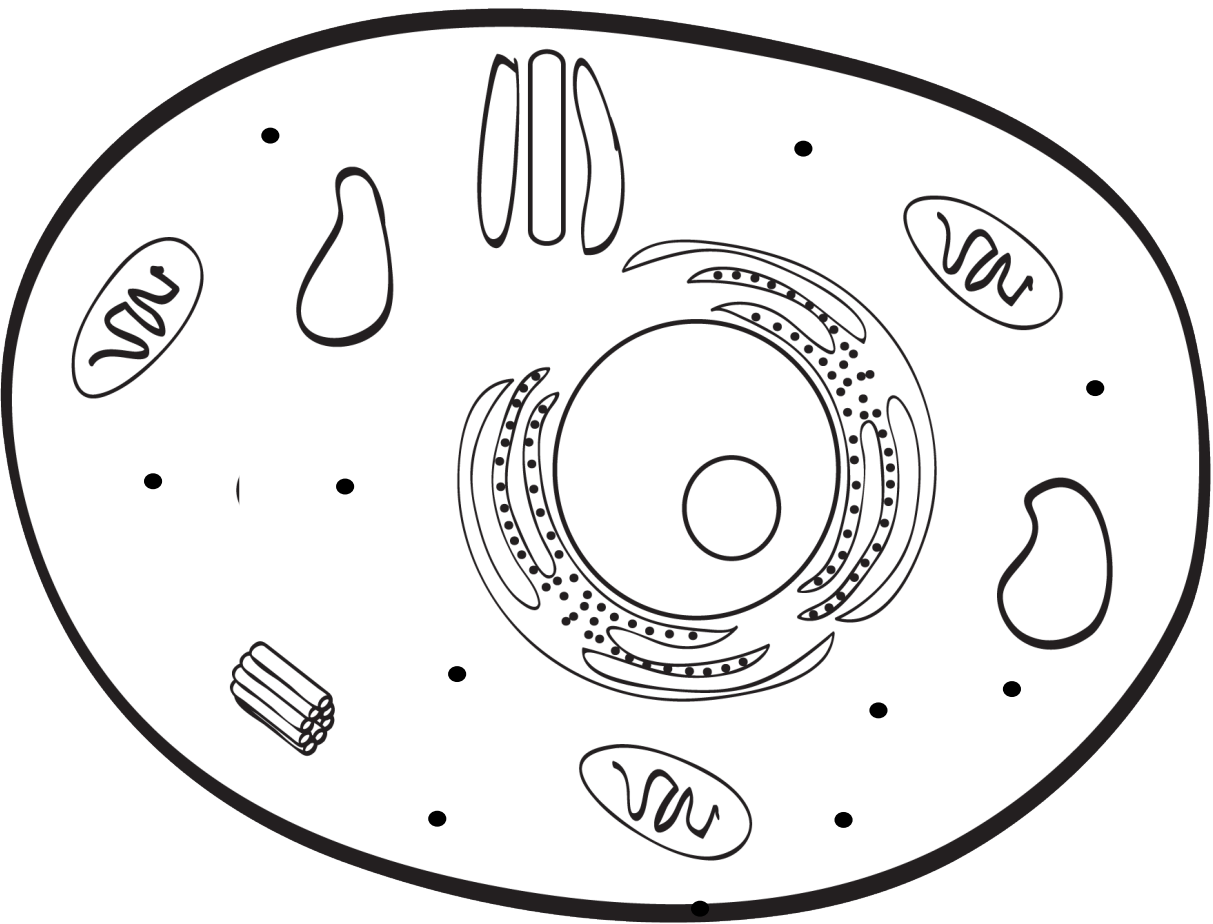
Plant cells also contain chloroplasts. Chloroplasts are organelles that help the plant make food for itself (because plants don't eat like humans and animals do!) Chloroplasts contain a green pigment called chlorophyll. The chlorophyll captures the energy of sunlight and uses it to make glucose, which is a simple sugar that plants use as food.

**Plant Cell**

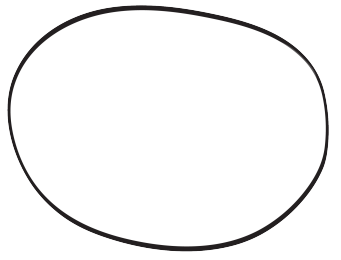


This process is called photosynthesis. Chloroplasts and the chlorophyll they contain are what give plants their green color. Not all plant cells have chloroplasts (not all plants are green!). Cells in the roots of plants, for example, are not exposed to sunlight so they do not need chloroplasts.

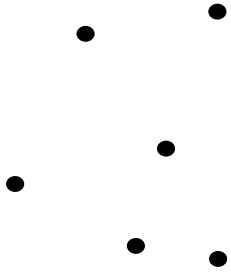
**INSTRUCTIONS:** These diagrams will go across 2 pages in an interactive notebook. Color, cut out and glue down the animal cell and the plant cell (one on each page). Color each organelle a different color. Color the organelles on the flip flaps the same colors you chose to color them in the cells. Cut out and paste the tops of the flip flaps around the cell and draw an arrow to the matching organelle using the flip flaps as labels. **BE SURE TO LAY OUT THE CELLS AND FLIP FLAPS BEFORE GLUING** to be sure you have enough space for everything! Under each flip flap, record the function of each organelle. Add any additional information your teacher instructs.



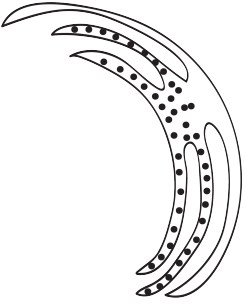
Cell Membrane



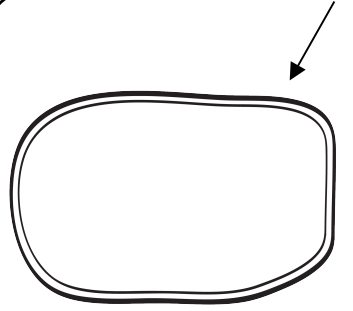
Ribosomes



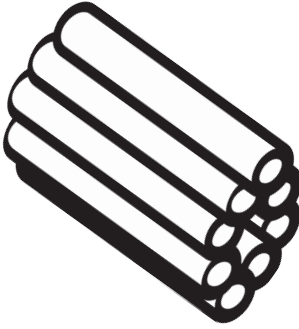
Endoplasmic Reticulum



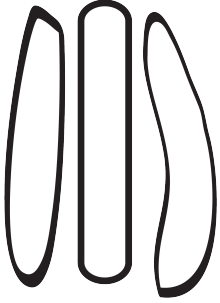
Cell Wall



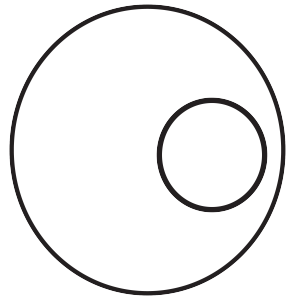
Centriole



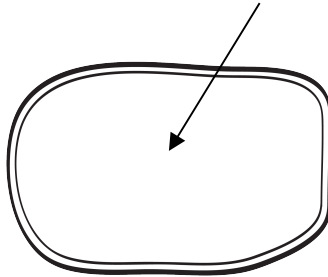
Golgi Bodies



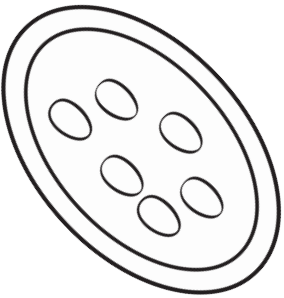
Nucleus



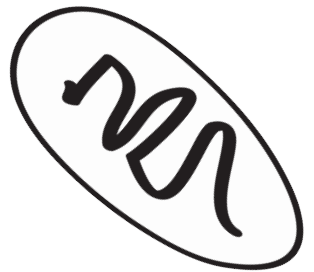
Cytoplasm



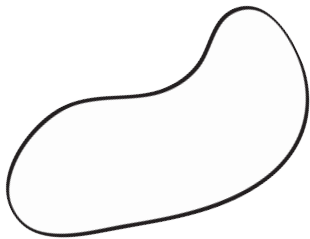
Chloroplast



Mitochondria



Vacuole



**INSTRUCTIONS:** Using the graphic organizer, list organelles, facts, and any similarities and differences between plant and animal cells.

The differences go on the outsides and the similarities go on the inside. Use this as a brainstorming tool for your writing prompt.

Next, complete the writing prompt using your reading passage, interactive activity, and brainstorming tool.

**ANIMAL CELL**

**BOTH**

**PLANT CELL**

**USING INFORMATION LEARNED, EXPLAIN THE SIMILARITIES AND DIFFERENCES BETWEEN PLANT AND ANIMAL CELLS. USE FACTUAL INFORMATION TO SUPPORT YOUR EXPLANATION.**

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