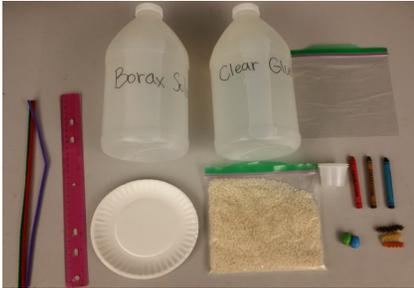


# Animal Cells

What are the most important organelles of an animal cell?

## MATERIALS



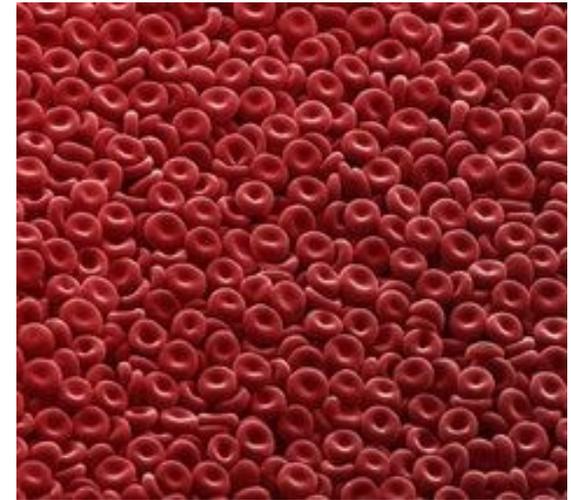
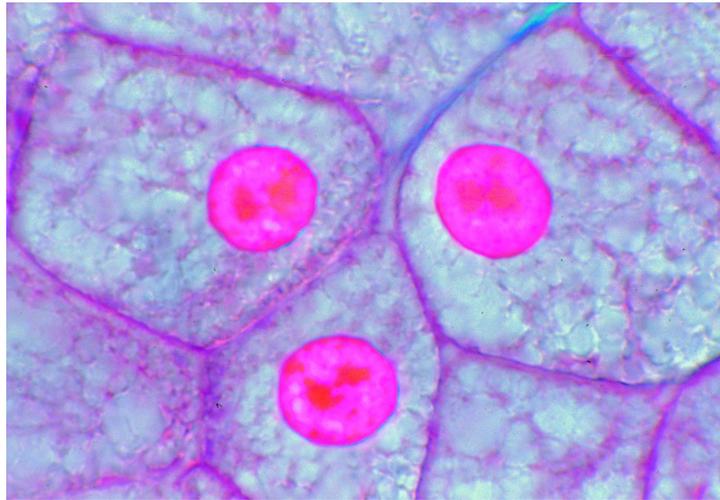
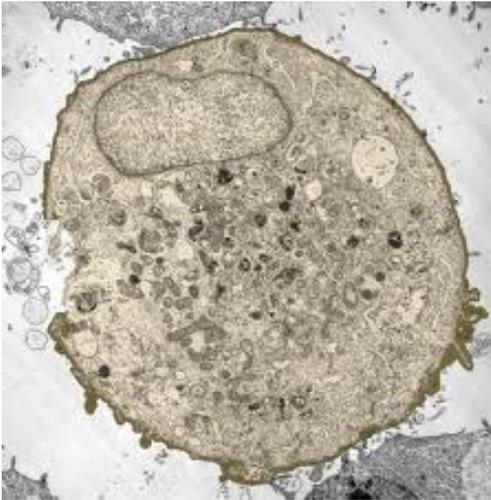
- ❖ Clear Glue
- ❖ Borax
- ❖ Dried Pasta
- ❖ Large Bead
- ❖ Pipe Cleaner
- ❖ Rice
- ❖ Small Paper Plate
- ❖ Sandwich Bag
- ❖ Crayons
- ❖ Measuring Cup
- ❖ Measuring Spoons
- ❖ Bowls
- ❖ Spoons
- ❖ Animal Cell Diagram

## Do the Experiment!

1. You will need to make two mixtures. Using your measuring cup, measure out four ounces of clear glue and pour into a bowl. Next measure out four ounces of warm water and pour on top of the glue. Mix these two together with a spoon. For the next mixture, measure out four ounces of warm water and pour into a different bowl than your glue. Add two level tablespoons of borax to the warm water. Stir these together.
2. Using your two mixtures you will make a new mixture. You can make as much as you want but use half as much borax solution as glue solution. So if you use 2 ounces of glue solution, you'll use one ounce of borax solution. Whatever you decide, mix the solution in a bag. Squeeze the bag to really mix them up. Pull out the results and spread out on a paper plate. This is the cell's **cytoplasm**.
3. In the middle of your cytoplasm, place a large bead. This is your **nucleus**.
4. Take a pipe cleaner and bend it back and forth like an accordion. Put it above your nucleus. This is the **endoplasmic reticulum**.
5. Select 3—4 pieces of pasta. Place them around the nucleus. These are **mitochondria**.
6. Take a pinch of rice and sprinkle it around and next to the endoplasmic reticulum. These are **ribosomes**.
7. The bag is the **cell membrane**. Place your completed animal cell in a new bag. It will keep your cell from drying out.
8. Using your animal cell diagram, draw your cell in your journal and label each organelle and its function. You'll notice that not every organelle is represented in your cell - look these organelles up on your own!

## DID YOU KNOW...

Cells are the basic structural, functional and biological units of all KNOWN living organisms. Cells are the smallest unit of life that can reproduce independently and are often referred to as the building blocks of life. Robert Hooke discovered the cell in 1665, and Matthias Jakob Schleiden and Theodor Schwann developed cell theory in 1839. You just created an animal cell. Plant cells and animal cells have some similarities, but are still very different. Animal cells do not have cell walls and they have far fewer vacuoles. What's really cool about animal cells is that there are many types. Humans alone have 210 different types of cells in their body including blood cells, bone cells and skin cells. Although cells in humans vary, they share the same organelles. It is very important to know how each organelle works to better understand how a cell functions.



## CHALLENGE

1. *Organelle* is a French word that means little.....? Can you guess?
2. What are some differences between animal cells and plant cells?
3. What do you think is the most important organelle in the animal cell? Why?

**STEAM Challenge:** Measure the diameter of your animal cell. What would the diameter be if your cell was three times larger? Five times larger? Half the size?