

Slime N' Cells

What's The Plan?

Your body is full of cells that help keep you alive, and inside of these cells are their own special structures that help keep them alive and working well. Today you will build a model of what the inside of one of these cells looks like, using slime!

What You'll Need:

Here's a list of everything you'll need! Don't have something exactly? *Get creative!* Some of our suggested swaps are listed in *Grey*.

- A small, shallow bowl | A plate, Metal pie tin, or other container you can mix in
 - $\frac{1}{2}$ cup white glue | *Clear glue*
 - $\frac{1}{2}$ teaspoon baking soda
- 1 tbsp contact lens solution (must contain boric acid, such as biottrue brand) | ***With a parent's help, you can mix $\frac{1}{2}$ tsp borax and 1 cup of warm water to use instead of contact lens solution. You must have a parent with you to do this since borax powder can be harmful if you get it in your eyes, nose, skin, or mouth***
- A spoon | *Any other mixing utensil, such as a popsicle stick*

- Any cup | A second small bowl
- Any food coloring (optional)
- Assorted craft supplies, such as pipe cleaners, string, rubber bands, beads, stickers, cotton balls, toothpicks, or popsicle sticks.
- Do you have a different recipe you use to make slime? Awesome! Any slime should work for this project, you can find some other recipes here: <https://www.homesciencetools.com/article/how-to-make-slime/>

What To Do:

1. Build your slime

Take your bowl and add about $\frac{1}{2}$ cup of white glue into it. Then take about $\frac{1}{2}$ cups of warm water, and add $\frac{1}{2}$ tsp of baking soda into it. Mix these together until the baking soda has dissolved into the water. Pour your baking soda/water mixture into the white glue and stir them well. Add a few drops of food coloring and mix in to give your cell some color. Now it's time to turn it into a bendy, sticky, slime! Take about 1 tbsp of your contact lens solution and add it to the mixture. Stir very well, and then test the slime with your finger to see if you like the texture. If it is too sticky, add more contact lens solution. If it is too rubbery and hard, try adding a very small amount of warm water or some more glue, and knead it in until your slime feels better.

The slime is going to act as your cell's cytoplasm, which is the jelly-like fluid that all the cells' organs are held in.

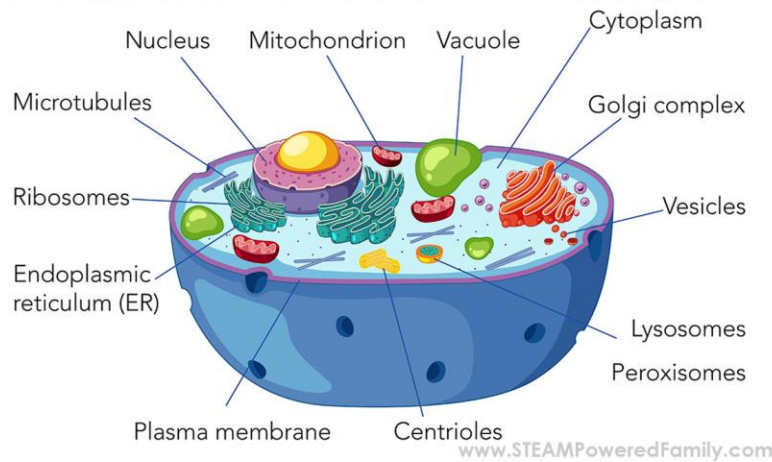
2. **Add in your organelles.**

Now that you have your cytoplasm, it's time to start adding organelles! Take a look at the picture of the cell, each of those little shapes inside of the blue fluid is an organelle. Read about what each of the organelles jobs are below, and choose which ones you want to add to your cell. Make sure you give your cell the organelles it needs to stay alive and function properly! With your craft supplies, make your organelles. You could fold pipe cleaners to form the golgi complex and endoplasmic reticulum, or drop beads in to be the vesicles. Get creative and see what you can use to build your cell!

3. **Extra challenge time!**

Think about what organelles your cell already has and ask yourself what could make them even better. Could your cell do with a larger mitochondria so it can produce more energy for the other organelles? What about changing the material of your bowl/cell membrane to make it even harder for bad things to get into the cell? Maybe your cell needs a whole new organelle that can perform an even better function than any of the ones it has now can. This is your chance to use your imagination and get creative with the craft materials you have, to make your cell even better!

ANIMAL CELL ANATOMY



What Are We Talking About?

Here is a list of important words we use during the project!

- **Cell:** Cells are the building blocks for all living things. They make up every part of your body and perform special jobs that help keep us alive and healthy.
- **Organelle:** Humans are full of organs that keep them alive, like their heart, lungs, and liver. Cells have their own special organs called organelles. Some of these organelles, like the mitochondria and endoplasmic reticulum, are shown below.
- **Cell Membrane:** In your model, the cell membrane is the bowl or container you put your slime inside of. The cell membrane acts like skin for a cell, keeping the good stuff in and harmful things out.
 - **Mitochondria:** Known as the "powerhouse of the cell", the mitochondria is an organelle that gives the cell and all its other organelles the energy to perform their jobs.
- **Nucleus:** The nucleus is the cell's version of a brain. Its job is to tell the cell and all its organelles what they should be doing at any given time.

- *Cytoplasm*: The cytoplasm is what you made with your slime! It feels like jelly, and suspends all the organelles inside of the cell so they can stay in their place. It also acts as a cushion, protecting the organelles from hitting each other or the sides of the cell.
- *Endoplasmic reticulum*: Forms the lipids (fats) for our cells and body.
- *Golgi complex*: Sorts and packages the proteins made by the endoplasmic reticulum.
 - *Vacuole*: Helps store materials inside of the cell.
- *Vesicle*: Helps move materials, such as proteins, around the cell.
- *Lysosome*: Digests old organelles in the cell, and gets rid of bacteria and viruses that enter the cell.
 - *Ribosome*: Helps build proteins for our body.

How Did It Go?

We'd love to hear about all the amazing STEM projects you're doing! Show us your finished projects on any of the following social media platforms by tagging us!

Twitter: @MyMindsInMotion
 Facebook: @mindsinmotion2014 || @ucactiveliving
 Instagram: @ucalgaryactive



Let us know how you felt about the project! Please [click here](#) or scan the QR code above to fill out a short survey!