

What is a cell?

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All living things have cells. They are the smallest part of every organism that can exist on it's own. Since they are so small, they are difficult to see even though they are all over the place. Our project this month is to make a model of a plant cell.

Here are the supplies you'll need:

- **A large box of lemon flavored gelatin (or any light color)**
- **Boiling water – grown-up help required!**
- **Cold water**
- **Mixing bowl**
- **1 quart resealable zipper bag**
- **One red grape**
- **6-10 green grapes**
- **5 raisins or prunes**
- **Small shoe box**

Start by preparing the gelatin using the boiling and cold water according to the directions on the box. Be sure you have grown-up help for this part so you don't burn yourself. Allow the gelatin to cool off to room temperature and then pour it into the zipper bag. Seal the bag and set it into the bowl. Place the bowl in the refrigerator for three to four hours, until the gelatin is firm.

When the gelatin is firm, take the bowl out of the refrigerator and open the bag. Use your fingers to press the red grape into the center of the gelatin and to put the raisins throughout the gelatin. Re-seal the bag and lift it out of the bowl. Place it on the counter or table. You've made a model of a basic cell!

In your new model, the plastic bag represents the cell membrane; which holds the cell together and protects the inner parts. The yellow gelatin represents the cytoplasm, which is the watery stuff that fills every cell. The red grape shows what the nucleus is like. The nucleus directs all the activities of the cell. The raisins represent the power stations of the cell, called mitochondria. That's where energy is produced so that the cell can work and live.

All cells have these four basic parts, but plant cells have a few more specialized parts. Now take the green grapes and add some to your cell model. They will be the chloroplasts in your model. They are green bodies in plant cells that make plants green. Now take your bag of gelatin and put it back in the bowl. Did the shape change any? What if you put the bag in a small box? Plant cells have a stiff outer layer called a cell wall that gives the cell it's shape; when you put your model in the bowl or box you are giving it a cell wall. Chloroplasts and cell walls are only present in plant cells.

Now that you know how to make a cell model, head to the library and check out some books on other types of cells. Even though cells are too small to see without a microscope, books often have enlarged photographs to look at. If you have access to the internet, go to this web site to see a cool photograph of plant cells in a leaf:

<http://www.usoe.k12.ut.us/curr/science/core/7thgrd/integrated/CELLS/sciber/chloro.htm>