

Below you will find extra credit opportunities for science. You have two choices...to make a plant cell or an animal cell. Extra credit is due Tuesday, October 9, 2015

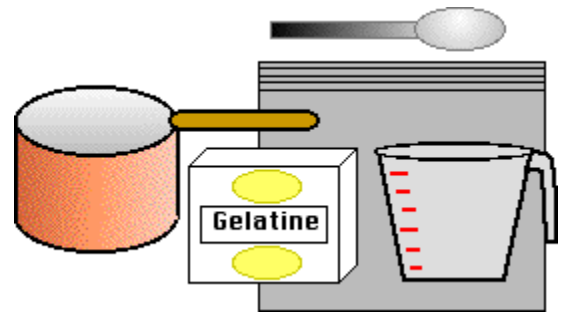
These directions are fantastic, but please feel free to be creative and make this project fit you. Mrs. Andrews

The parts of your cell must be labeled to receive full credit.

*Enchanted Learning Software's*  
***Jello 3-D Animal Cell Craft***

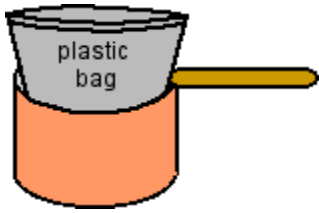
**Supplies:**

- Gelatin, either a light-colored Jello (like lemon) or unflavored gelatin with sugar or juice added
- Water
- Spoon (to stir the gelatin)
- Microwave or stove (used to heat the water)
- A small but sturdy plastic bag to make the gelatin in (we used 1-gallon ziplock bags)
- Various fruits and candies used to represent the parts of the cell: raisins, gummy worms (plain and sour), gumdrops, gum ball, jelly beans, grapes, mandarin orange sections, sprinkles, M&M's, jaw breakers, a small stone fruit (like a plum), dried fruit, and/or hard candy. Note: marshmallows will float on top of the gelatin, so they don't work well in this craft.
- Refrigerator (used to set the gelatin)

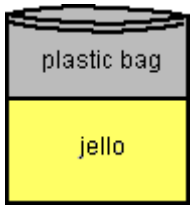


Make the light-colored Jello or gelatin, but make it with a bit less water than the instructions call for (this will make the gelatin a little stiffer and will make the cell components stay in place better). The gelatin will represent the cytoplasm of the cell.

First, heat the water to boiling (use about three-quarters of what is called for in the instructions). Dissolve the gelatin in the hot water and carefully stir it. Carefully add the same amount of cold water.



Place an open plastic bag (we used 1-gallon ziplock bags) inside a sturdy container (like a large bowl or pan) - this makes pouring the Jello easier. Slowly pour the cooled gelatin into the bag - make sure that there is room in the bag for all the cell components that will be added later. Seal the bag and put it in the refrigerator.



When the gelatin is almost set (this takes about an hour, but depends on the temperature of your refrigerator), open the bag and start adding the components of the cell. (Also, have the student [label the cell components using this printout, including the name of each cell component and what they used to represent it](#) using the [animal cell glossary](#).)

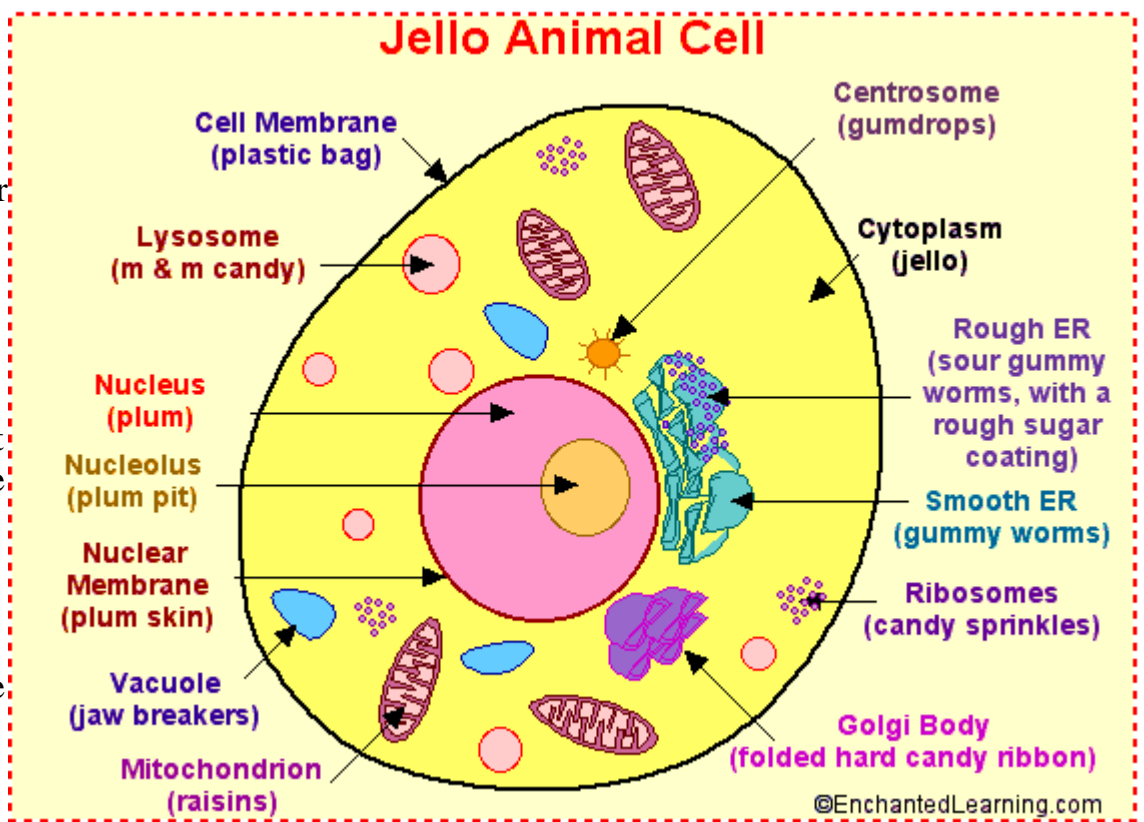
The Animal Cell pictured below has more parts than what we are learning in 5<sup>th</sup> grade. You only need to include the 5 listed in bold print below.

Cell components (we've included what we used for our model, but you can choose whatever edible parts you like):

**cell membrane** - the thin layer of protein and fat that surrounds the cell. It is represented by the plastic bag.

**cytoplasm** - the jellylike material outside the cell nucleus in which the organelles are located. It is represented by the gelatin.

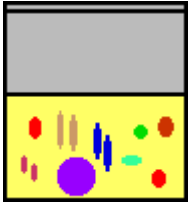
**mitochondrion** - spherical to rod-shaped organelles with a double membrane. The inner membrane



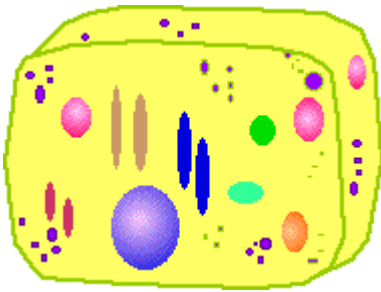
is infolded many times, forming a series of projections (called cristae). The mitochondrion converts the energy stored in glucose into ATP (adenosine triphosphate) for the cell. They are represented by raisins.

**nucleus** - spherical body containing many organelles, including the nucleolus. The nucleus controls many of the functions of the cell (by controlling protein synthesis) and contains DNA (in chromosomes). It is represented by the plum.

**vacuole** - fluid-filled, membrane-surrounded cavities inside a cell. The vacuole fills with food being digested and waste material that is on its way out of the cell. They are represented by jaw breakers.



Re-seal the plastic bag and refrigerate the gelatin until it is fully set.



When the gelatin is set, you can examine your 3-D gelatin cell and then eat it.

# Plant Cell Anatomy

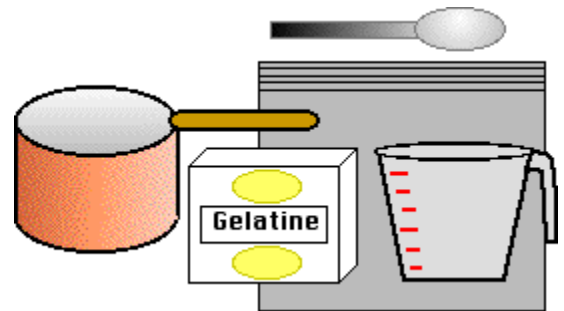
The cell is the basic unit of life. Plant cells (unlike animal cells) are surrounded by a thick, rigid cell wall.

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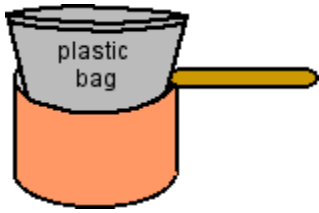
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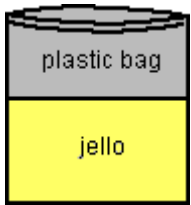


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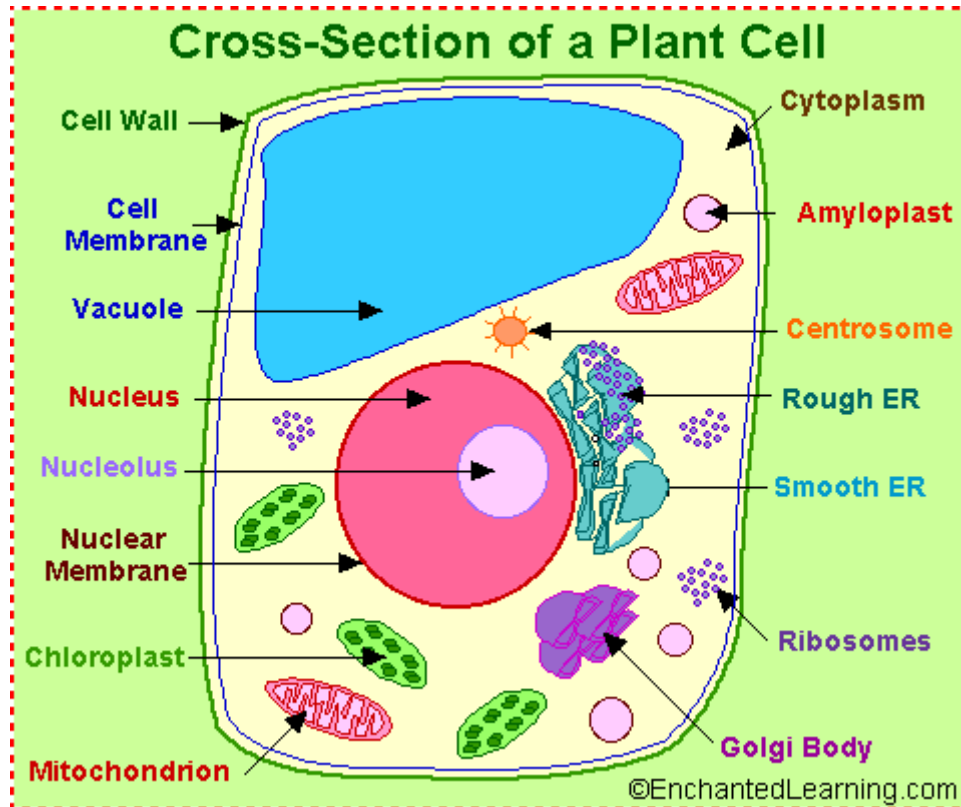


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The Plant Cell pictured below has more parts than what we are learning in 5<sup>th</sup> grade. You only need to include the 7 listed in bold print below.



The following is a glossary of plant cell anatomy terms.

**cell membrane** - the thin layer of protein and fat that surrounds the cell, but is inside the cell wall. The cell membrane is semipermeable, allowing some substances to pass into the cell and blocking others.

**cell wall** - a thick, rigid membrane that surrounds a plant cell. This layer of cellulose fiber gives the cell most of its support and structure. The cell wall also bonds with other cell walls to form the structure of the plant.

**chloroplast** - an elongated or disc-shaped organelle containing chlorophyll. Photosynthesis (in which energy from sunlight is converted into chemical energy - food) takes place in the chloroplasts.

**cytoplasm** - the jellylike material outside the cell nucleus in which the organelles are located.

**mitochondrion** - spherical to rod-shaped organelles with a double membrane. The inner membrane is infolded many times, forming a series of projections (called cristae). The mitochondrion converts the energy stored in glucose into ATP (adenosine triphosphate) for the cell.

**nucleus** - spherical body containing many organelles, including the nucleolus. The nucleus controls many of the functions of the cell (by controlling protein synthesis) and contains DNA (in chromosomes). The nucleus is surrounded by the nuclear membrane

**vacuole** - a large, membrane-bound space within a plant cell that is filled with fluid. Most plant cells have a single vacuole that takes up much of the cell. It helps maintain the shape of the cell.