

3-D Cell/Membrane Model Project  
Regular Biology

Goal: To create a three dimensional model of a cell (plant or animal) or the cell membrane using ordinary items such as non-perishable food, notions, building toys, etc. It should NOT cost you money to make.

You will be graded on the following criteria:

1. Does it look like the thing that you were assigned to do?
2. Is it properly and fully labeled?
3. Is it neat and well put together?
4. Is it creative?
5. Is it on time?

Size: Modest in size please—generally between a softball and a basketball. It should be easy to carry/transport.

Points lost if:

1. Styrofoam or floral foam is used.
2. 3-D to you is printing two pieces of paper, stapling them and stuffing them with tissue. Or flat (pieces of paper) are used as components of the whole.
3. Your labels/key are handwritten.
4. Tape is visible and not neat.
5. Glue is evident or glue-strings are not trimmed.
6. Things are coming apart.
7. Using the same material for more than one component.

Use your colorsheet as a guide.

Labels should include:

|               |                           |                     |                     |
|---------------|---------------------------|---------------------|---------------------|
| Cells (both): | membrane                  | nucleus             | nucleolus           |
|               | nuclear pore              | cytosol             | vacuole             |
|               | ribosomes                 | Golgi apparatus     | mitochondria        |
|               | R/S endoplasmic reticulum |                     |                     |
| Animal only:  | lysosome                  | centriole           |                     |
| Plant only:   | chloroplast               | wall                |                     |
| Membrane:     | phospholipids             | polar heads         | nonpolar tails      |
|               | receptor protein          | receptor protein    | marker protein      |
|               | carbohydrate chain        | cholesterol         |                     |
|               | hydrophobic portion       | ←(of the proteins)→ | hydrophilic portion |

