

Biology Quarter Project: 3D Cell Model

For the next two weeks, you will have the opportunity to create a 3D model of an animal or plant cell. The model is made from your choice of materials and may be either a plant or animal cell. There are several requirements that are listed below.

Requirements:

- The type of cell (i.e. plant or animal) must be prominently displayed
- The model must include the required structures/organelles
- All of the structures must be labeled on the 3D model
- A typed reference sheet with all the structures' functions must be included
- It must be neat and creative
- The project must be sturdy enough to travel from home to school without falling apart

In detail:

- The structures you must have on your 3D cell model
 - Cell wall (if present)
 - Cell membrane
 - Nucleus
 - Chromatin
 - Ribosomes
 - Golgi Apparatus/Complex
 - Endoplasmic Reticulum (smooth and rough)
 - Mitochondria
 - Chloroplast (if present)
 - Centrioles (if present)
 - Lysosomes
 - Cilia or flagella (if present)
 - Vacuole
- This means that you should have a total of 12 structures labeled on your model (smooth and rough ER counts as two).
- Each structure must be present on your model and clearly labeled! Its location must also be correct. For example, your chromatin should not be in your vacuole.
- Be creative with your building materials but be aware that they should be sturdy and non-perishable. I don't want to place these cells on display and have moldy nuclei!
- Make sure that your cell is clearly labeled as being either a plant or animal cell. You must pick one of the two so that you can add the appropriate structures. For instance, animal cells do not have a cell wall, so neither should your 3D model of an animal cell.
- Your reference sheet must have your name on it as well as all of the organelles listed above (even ones NOT on your model) and their functions. This should be typed, with Times New Roman font, size 12. You should also have 1 inch margins on your paper.
- Don't forget to put your name somewhere on your 3D model. It should be visible and easy to find.
- Look at the grading criteria sheet as you are doing your project to make sure that you complete all that you need to.

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DUE DATE: Tues Oct 14, 2008

A three dimensional model of the cell must be made with materials of your choosing. The model must include a reference list of all the organelles and their functions.

Neatness (Project must be 3D, neat, creative and sturdy) /10

Structures included

Cell wall* (presence, structure, location, function) /5

Cell membrane (presence, structure, location, function) /5

Nucleus (presence, structure, location, function) /5

Chromatin (presence, structure, location, function) /5

Ribosomes (presence, structure, location, function) /5

Golgi Apparatus/Complex (presence, structure, location, function) /5

Smooth Endoplasmic Reticulum (presence, structure, location, function) /5

Rough Endoplasmic Reticulum (presence, structure, location, function) /5

Mitochondria (presence, structure, location, function) /5

Chloroplast* (presence, structure, location, function) /5

Centrioles* (presence, structure, location, function) /5

Lysosomes (presence, structure, location, function) /5

Cilia or flagella* (presence, structure, location, function) /5

Vacuole (presence, structure, location, function) /5

*these may not appear in your model based on what type of cell it is. However, if you made an animal cell with a cell wall, you will get points taken off.

Reference sheet with functions (typed with all of the organelles listed above) /15

Type of cell indicated (plant or animal cell) /5

TOTAL /90