

PROJECT: THE CELL MODEL

Using your notes, textbook and other resource materials, create a 3-D model of a cell and describe the function of the parts. Some guidelines:

1. **BASE:** Use something sturdy like heavy cardboard, plastic, paper mache or Styrofoam so that your cell does not collapse when moved. You could also try making your cell like a mobile.
2. **CELL:** Decide what type of cell you want to make. The cell parts you use must be appropriate to the type of cell you are making (most of the ones listed are found in all cells, but there are exceptions). Your cell must include at least 10 organelles from the list (this may not work for all cell types).

Note: rough and smooth endoplasmic reticulum counts as ONE part. They look the same except for the ribosomes. The only color restriction is not to use green EXCEPT for the structure where photosynthesis occurs.

- | | |
|--------------------------|------------------|
| a. Cell membrane | j. Golgi body |
| b. Cell wall | k. lysosome |
| c. Centriole | l. microfilament |
| d. Chloroplast | m. microtubules |
| e. Chromosomes | n. mitochondria |
| f. Cilia or flagella | o. nucleolus |
| g. Contractile vacuole | p. nucleus |
| h. Cytoplasm | q. ribosome |
| i. Endoplasmic reticulum | r. vacuole |

Select items that look like the parts of the cell. Do not use anything that will spoil or be eaten!
(This project should not be an attractant to roaches and ants!)

3. **LABELS:** Identify your model. You need to identify the specific cell type that you made. Number each of the cell parts; do not write the name of the structures on your project.
4. **FUNCTIONS:** Attach a key that lists the number, name and function of each cell part.
5. *Choices: nerve cell, intestinal lining cell, cardiac {heart} muscle cell, or adipose {fat} cell) or a specific type of protist (choices: paramecium, vorticella, euglena, amoeba, blepharisma, spirostomum, micrasterias, diatom, radiolarian). You can choose others as well. Talk to your teacher*

Due date: _____

*If you are absent please arrange to get your project to school.
Early projects are accepted. Attach this sheet to your cell.*

Name: _____ *Period:* _____ *Date:* _____

Cell Project Evaluation

STRUCTURES (20 points): _____

- at least 10 structures included
- parts look accurate and are in appropriate locations.
- structures are appropriate for cell type.

FUNCTIONS (10 points): _____

- appropriate functions given for the cell parts

CONSTRUCTION AND APPEARANCE (10 points): _____

- creative and unique use of materials.
- well constructed—no leakage; parts well attached.
- meets 3-dimensional requirements: structures as well as overall cell has length.
- Width and height; little/ no structures are flat
- materials not edible/ spoilable
- visually appealing; looks like thought and effort were put into the project

LABELS (5 points): _____

- type of cell identified
- labels are neat clear and easy to find
- key linking structure and function is easy to interpret

SCORE: _____/45