3-D Cell Analogy Model

Group: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_

We will be spending the next few classes working on a 3-D Cell Analogy Model (of a plant or animal cell). You will use an analogy of your choice to represent a cell, create a 3-D visual display, and label how all parts of a cell are similar to the functions of your analogy.

You have the choice of working on this with a partner or on your own. You will be expected to plan out your cell model in class, make a list of supplies that you need, and bring them into class to work on your model during class time.

You are REQUIRED to bring your supplies to class on: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The project is due on: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Procedure**:

1. Design an analogy to explain the functions of a cell and present it on PowerPoint.

*Example Slide 1: We are comparing the Cell to a School.*

1. Compare the functions of the cell organelles with the features of your analogy. This will be done on PowerPoint in your Science 8 folder on Google Drive. Use one slide per organelle. You can use the following template:

*Example Slide 2: In our cell model, the* ***Headmaster*** *represents the* ***nucleus*** *in our cell model analogy. In the cell, the* ***nucleus*** *is the control centre of the cell. This is similar to the* ***Headmaster*** *because they both need to provide instructions and direct activities.*

*Example Slide 3: The school* ***custodians*** *represent the* ***lysosomes****. In the cell, the lysosomes digest waste material. This is similar to the custodians because they clean up the school.*

1. Build a 3-D model of your analogy and clearly label all organelles and structures of a cell in your display.



**Each model must include ALL organelles learned in class:** Use the checklist below to keep track!

|  |  |
| --- | --- |
| Animal | Plant |
| * Cell membrane
* Ribosomes
* Nucleus
* Mitochondria
* Vacuoles
* Vesicles
* Cytoplasm
* Golgi Body
* Endoplasmic Reticulum
* Lysosomes
 | * Cell membrane
* Cell wall
* Ribosomes
* Nucleus
* Mitochondria
* Vacuoles
* Vesicles
* Cytoplasm
* Golgi Body
* Endoplasmic Reticulum
* Lysosomes
* Chloroplasts
 |

**Cell Analogy Model Criteria**

Group: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Below Expectations** | **Meets Expectations** | **Above Expectations** | **Student Mark** | **Teacher Mark** |
| **Use of class time** | (1-2)Student not using class time productively, did not come to class prepared with materials. | (3-4)Student is on task most of the time, comes to class prepared with materials most of the time. | (5)Student in always on task, comes to class prepared with materials  |  |  |
| **Creativity** | (1-2)Little imagination model design simple with minimal effort, unsuitable analogy.  | (3-4)Some creativity shown in model of fair to good quality, analogy is common.  | (5)Imaginative to highly original model, good use of available materials, well thought out, uncommon analogy.  |  |  |
| **Representation and Labeling** | (1-2)Many structures are not properly labeled and/or compared to the structures and functions of the cell.  | (3-4)Most structures are properly labeled and compared to the structures and functions of the cell, either on the display or as an appendix. | (5)All structures are properly labeled and compared to the structures and functions of the cell, either on the display or as an appendix. |  |  |
| **Model Construction** | (1-4)The cell model is satisfactorily put together. Improvement is needed in the construction and choice of materials.  | (5-8)The cell model is neatly put together. Some effort is evident in the construction and choice of materials. | (9-10)The cell model is neatly and carefully put together. Much effort is evident in the construction and choice of materials. |  |  |
| **Google Slides** | (1-8)The Google Slide presentation may not be completed for each organelle. The descriptions for the organelles are incomplete or lacking detail. | (9-12)The Google Slide presentation is completed for each organelle. The descriptions for each organelle are adequate but some if not all are lacking in detail. | (13-15)The Google Slide presentation is completed for each organelle. The descriptions for each organelle are very detailed and accurate. |  |  |
|  |  |  | **TOTAL** | /40 | /40 |

**Cell Analogy Model Marking Sheet**

Group: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Below Expectations** | **Meets Expectations** | **Above Expectations** | **Student Mark** | **Teacher Mark** |
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