**Science 8 – Cell Analogy Project** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

**Objectives:**

Show your understanding of Cells and Organelles by creating an analogy of a cell using some other (large) real world system.

Some ideas are: A cell is like a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(examples: Country, Airport, Hospital, City, Mall, Restaurant, Lab, Salon, Construction Site, Prison, etc.)

Each organelle must be related to things in in the “real world system”

To do this, you must draw a picture or create a model of your system and the cell.

• The cell image and real world system image both must be labeled.

• You must describe the roles performed by the organelles, and you must explain how these functions are similar to specific things of the systems you are comparing it to.

• Produce a product that is neat, clear and creative.

• For this project, you will work independently

Make sure you have all the organelles included;

1. Cytoplasm

2. Endoplasmic reticulum (rough and smooth can be same structure)

3. Golgi Apparatus

4. Lysosome

5. Mitochondria

6. Nucleus

7. Cell Membrane

8. Ribosome

9. Vacuole

10. Cell Wall (plant cells only)

11. Chloroplasts (plant cells only)

|  |  |  |
| --- | --- | --- |
| **Achievement**  **level** | **Level descriptor** |  |
| 0 | The student does not reach a standard described by any of the descriptors below. |  |
| 1-2 | The student is able to:   * **recall** scientific knowledge * **apply** information to make **judgments**. | Label diagram with some organelles and show an understanding of roles of some organelles. |
| 3-4 | * **state** scientific knowledge * **apply** information to make **scientifically supported judgments**. | Label Diagram with all organelles and Correctly explain the unique roles of the organelles. |
| 5-6 | * **outline** scientific knowledge * **interpret** information to make **scientifically supported judgments**. | Come up with good analogy for cell and organelles, and correctly link the roles of individual tools within an system. (as well as correctly labelling, identifying and explaining the roles of the organelles. |
| 7-8 | * **describe** scientific knowledge * **analyse** information to make **scientifically supported judgments**. | Come up with a unique and accurate analogy for cell and organelles, and correctly link the roles of individual parts within an system.  Shows an understanding of the interconnectedness of all the individual parts within the greater system. |

**To begin:** Create a “T” chart to organise your analogy. Refer to your Cell Scavenger Hunt for an example of an analogy where *“A Cell is like: A school”*

**If you plan to build a model of your analogy – you must also list the materials you will use for each.**

|  |  |
| --- | --- |
| **Organelle** | **Analogy** |
| Cytoplasm |  |
| Endoplasmic Reticulum |  |
| Golgi Apparatus |  |
| Lysosome |  |
| Mitochondria |  |
| Nucleus |  |
| Cell Membrane |  |
| Ribosome |  |
| Vacuole |  |
| Cell Wall (plant cell only) |  |
| Chloroplasts (plant cell only) |  |