Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Plant and Animal Cell Model**

**Guiding Questions:**

* What are the organelles inside the cell?
* What part of a cell keeps it intact?
* What do you think some of these cell parts look like?

**Project:**

* Your group will build an edible 3-D model of an animal or plant cell.
* Your animal or plant cell must contain the following organelles (parts): cell membrane, nucleus, golgi apparatus, nucleolus, nuclear membrane, chromosome, vacuole, mitochondria, endoplasmic reticulum, ribosome, and cytoplasm. (Chloroplast and cell wall for plant cell or lysosomes for animals)
* The model and all cell structures must be edible.
* It must be three dimensional, taking the shape of an actual animal or plant cell.
* The size of each organelle must be in proportion to each other as they are in the cell.

**Analysis of Model: (to be completed after model is constructed and checked by teacher)**

|  |  |  |
| --- | --- | --- |
| **Organelle** | **Material Used in Model** | **Was the material a good choice? Explain why or why not.** |
|  Cell membrane |  |  |
|  Nucleus |  |  |
|  Nucleolus |  |  |
| Nuclear Membrane |  |  |
| Chromosomes |  |  |
|  Vacuole |  |  |
| Mitochondria |  |  |
| Endoplasmic reticulum |  |  |
| Ribosomes |  |  |
| Golgi Body |  |  |
|  Cytoplasm |  |  |
| Cell Wall (Plant) |  |  |
| Chloroplast (Plant) |  |  |
| Lysosomes (Animal) |  |  |

**Conclusion Questions:**

1. Why are models often used in science? Why are models useful when discussing cells?

2. How is your model like a real cell?

3. How is it different?

4. What are some limitations of models in general?

**Cell Rubric**

|  |  |  |  |
| --- | --- | --- | --- |
| **Features** | **Requirements** | **Possible Points** | **Earned Points** |
| **Construction** | Cell is outstanding in design. It is evident that the design was thoroughly planned. The cell demonstrates outstanding efforts to match the structure of each organelle. | 40 |  |
| **Proportion** | All organelles are in proportion to each other and to the cell and in the correct location. | 20 |  |
| **Presentation** | All organelles are correctly identified to the teacher after construction. | 40 |  |
|  | 10 point deduction for missing model document. |  |  |
| **Total** |  | 100 |  |