Sci 8 3D Model of Cell Project

1. Alone or in pairs, choose to make either a model of a plant or animal cell. Decide on the items you will use to create the model (bits of yarn, marbles, buttons, pipe cleaners, dried pasta, pom poms, shoe box). All models must be made out of material that will not spoil.
2. Your project must include all structures listed below, structures must be labelled (either on the object or by a legend). Each structure must have its function described – ether on the legend or a separate sheet of paper.

Example:

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| --- | --- | --- |
| Cell Structure | Material chosen | Function |
| Nucleus | Balloon | The nucleus holds all the information needed to make every cell in the body. |

1. Structures to include:
   1. Animal Cell: Nucleus, nucleolus, chromatin, cell membrane, cytoplasm, mitochondria, ribosomes, endoplasmic reticulum, golgi apparatus, lysosome.
   2. Plant cell: Nucleus, cell membrane, cytoplasm, mitochondria, vacuole, ribosomes, endoplasmic reticulum, golgi apparatus, cell wall, chloroplast.

**Check list. Does your model have the following?**

* Title: Plant or Animal Cell
* Name, Partner
* Is a three-dimensional model
* All organelles included
* Structures clearly identified, and
* All functions described
* Use *appropriate scientific vocabulary* describing the function of each organelle.
* Use a variety of materials so each organelle *looks different*.
* Acceptable materials used – no perishable food products

Rubric

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| --- | --- | --- | --- | --- |
| **Performance Criteria** | **Level 1** | **Level 2** | **Level 3** | **Level 4** |
| Cellular Organelles  - Organelles are correctly labeled on model | Missing 5+ organelles *or* 5+ organelles are incorrectly labeled | Missing 3-4 organelles *or* 3-4 organelles are incorrectly labeled | Missing 1-2 organelles *or* 1-2 organelles are incorrectly labeled | ALL organelles are included and they are all identified correctly |
| **Organelle Functions**  - Detailed description of each organelle is included on the project | Missing 5+ descriptions *or* 5+ descriptions are incorrect or incomplete | Missing 3-4 descriptions *or* the descriptions are incorrect or incomplete | Missing 1-2 descriptions *or* the descriptions are incorrect or incomplete | ALL organelles have detailed descriptions and each description is accurate and complete |
| **Organelle Location / Shape**  - Organelles are the appropriate *size and shape*, and appear the correct location within the cell | Organelles are *inappropriate size and shape* (*round 'blobs)'*or they are *placed in the wrong locations or else missing entirely* | Organelles show some resemblance to their actual size and shape.  Most of them are 'roughly' in the correct locations but of the details/locations are unclear | The majority of organelles accurately represent the cells organelles.  Most of the organelles are found in the correct locations, with only a few mistakes | ALL the organelles accurately represent the correct *size and shape*  and they all appear in the correct locations within the cell |
| **Overall Quality/ Appearance**  - Labels/Descriptions are *neat* and *easy to read*  - Model looks polished and shows considerable *effort* and *creativity* | Labels/Descriptions are *messy or incomplete or missing.*  Model shows very little effort, and demonstrates little creativity.  Organelles are not clearly distinguished. | Labels/Descriptions are complete but *messy.*  Model demonstrates some creativity, but remains *unpolished*  and requires more work.  Organelles are easily distinguished. | Labels/Descriptions are complete and neatly written.  Organelles are easily distinguished  Model is polished and presentable.  Moderate amount of creativity and effort present, but still *lacks some originality* | Labels/Description are complete and neatly written.  Organelles are clearly distinguished.  Overall model is polished and demonstrates *large amount of creativity and effort* as well as *originality* |