3D Cell Project

Name: _____ Due Date: Tuesday, May 19th, 2023

Project Guidelines:

- The project must be three-dimensional and may be made from any safe household materials.
- All cell parts must be clearly labeled (on the model) and defined/described (in the key/report). [Ex: Ribosomes- small] Students may use flags or numbers and a key for identification.
    - The function of each organelle must be described in writing on the KEY/REPORT.
- Project must be easily photographed. All organelles must be shown. If more than one picture is needed, so it shall be done.

Choose to do either an animal cell or a plant cell:

- **Organelles required for animal cell models:** cell membrane, vacuole, nucleus, mitochondria, cytoplasm, ribosomes, Golgi apparatus, Endoplasmic reticulum, and lysosomes.
    - +5 Extra Credit: Include the nuclear envelope and nucleolus.
- **Organelles required for plant cell models:** cell wall, cell membrane, chloroplast, large central vacuole, nucleus, mitochondria, cytoplasm, ribosomes, Golgi apparatus, Endoplasmic reticulum.
    - +5 Extra Credit: Include the nuclear envelope and nucleolus.

PROJECT RUBRIC:

CATEGORY	**25**	**20**	**15**	**10**
Construction-Materials	Creative and unique materials were selected and creatively modified in ways that made them even better.	Creative and unique materials were selected, and there was an attempt at creative modification to make them even better.	Appropriate materials were selected, and organelles' structure and function were somewhat represented.	Inappropriate materials were selected and contributed to a product that did not represent the structure and function of organelles.
Organelle size and shape	Each organelle is a characteristic size and shape that represents the organelle's structure and function. (Example: ribosomes are smaller than the ER)	1-2 organelles are designed inappropriately or may have disproportionate shapes. Or 1-2 organelles may be missing from the model.	3-6 organelles are designed inappropriately or may have disproportionate shapes. Or 3-6 organelles may be missing from the model.	Construction appears careless or haphazard. Many details need refinement for a strong or attractive product. More than 7 organelles are missing from the model.
Organelle structure and function spelling	No spelling errors exist.	1-2 spelling errors exist in organelle names and functions.	3-6 errors in spelling exist in organelle names and functions.	7 or more spelling errors exist on cell model projects.
Flag construction	All organelle flags are correctly labeled with their correct functions. Flags are typed or neatly hand-printed. OR the organelle is pictured or described well on the key.	1-2 flags missing either name or organelle, or function. 1-2 flags may be misplaced. Flags are neatly handwritten or typed. OR the organelle is slightly higher than average, represented on the key.	3-6 flags missing either name or organelle, or function. 3-7 flags may be misplaced. Flags are neatly handwritten or typed. OR the organelle is average represented on the key.	7 or more flags missing either the name of the organelle or function, 8 or more flags may be misplaced. Handwriting on flags is indecipherable. OR the organelle is poorly represented on the key.