

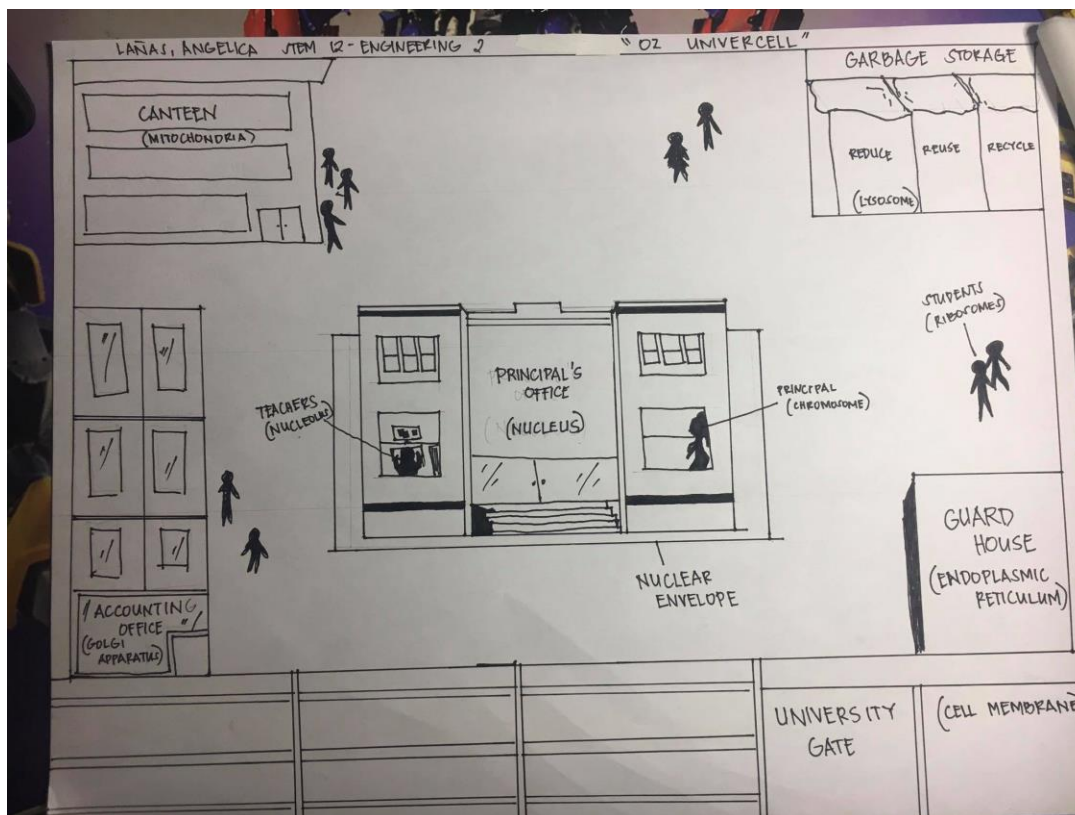
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Section: STEM 12- ENGINEERING 2

## CELL CITY ANALOGY WORKSHEET

Plant cell is being compared to a: School/University

Creative name of project: "OZ UNIVERCELL"



Use the following chart to explain why you chose each part of your "city" to represent each organelle. Write this on a separate sheet of bond paper and use complete sentences when writing your analogies.

Cell Part	Function in a Living Cell	Analogy – Identify the part and explain why this part of your "city" is like the organelle it represents?
Cell membrane	Holds everything together. It surrounds and protects the inside of the cell.	The school gate represents the cell membrane for it separates the interior of the school from the outside environment.
Nucleus	The nucleus controls and regulates the activities of the cell	The principal's office represents the nucleus. It is where the law and order of the school is controlled and regulated.
Nuclear Envelope	A highly regulated membrane barrier that	Nuclear envelope is the boundary or barrier that separates the principal's office from the cytoplasm or the surrounding.

	separates the nucleus from the cytoplasm in eukaryotic cells.	
Ribosomes	Ribosomes produce protein that is needed for cell functions, like repairing damage.	The students represent ribosomes. Students plays the biggest role in a school, just like the ribosomes which produces proteins, to keep the school going.
Endoplasmic Reticulum	It plays a major role in the production, processing, and transport of proteins and lipids.	In my cell school, the Guard House represents the ER, a guard house plays a big role in a school and helps in processes and production.
Mitochondria	Creates energy to keep the organelles working.	The school canteen represents the mitochondria. For it stores the food (energy) that is needed by the organelles.
Chromosomes	A chromosome is a string of DNA wrapped around associated proteins that give the connected nucleic acid bases a structure.	The principal represents the chromosomes for it is a part of the DNA (knowledge) which is needed in a cell (school).
Nucleolus	The nucleolus makes ribosomal subunits from proteins and ribosomal RNA, also known as rRNA.	The teachers represents the nucleolus for it controls the material properties and rRNA processing just like our teachers.
Golgi Apparatus	Receives protein transports from the ER.	The accounting office represents the Golgi Apparatus since it receives protein (money/tuition) that the ribosomes (students) produce.
Lysosomes	Lysosomes are membrane-bound organelles with roles in processes involved in degrading and recycling cellular waste, cellular signalling and energy metabolism.	The Garbage Storage represents the Lysosomes in my cell school. It is the recycle center of the cell. Just like a garbage storage, it recycles waste to make a new material out of it.