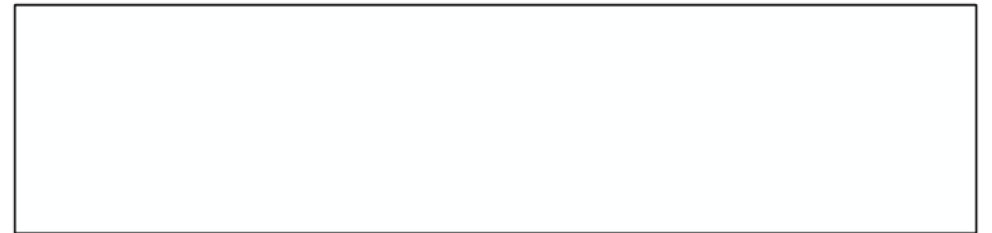


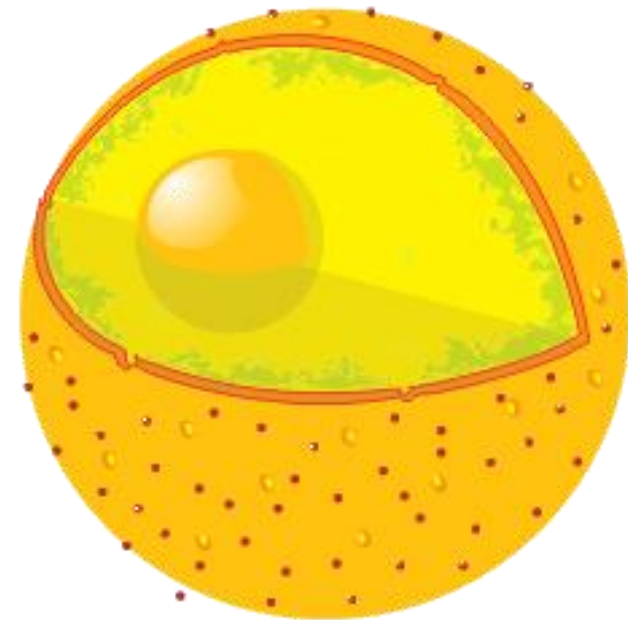
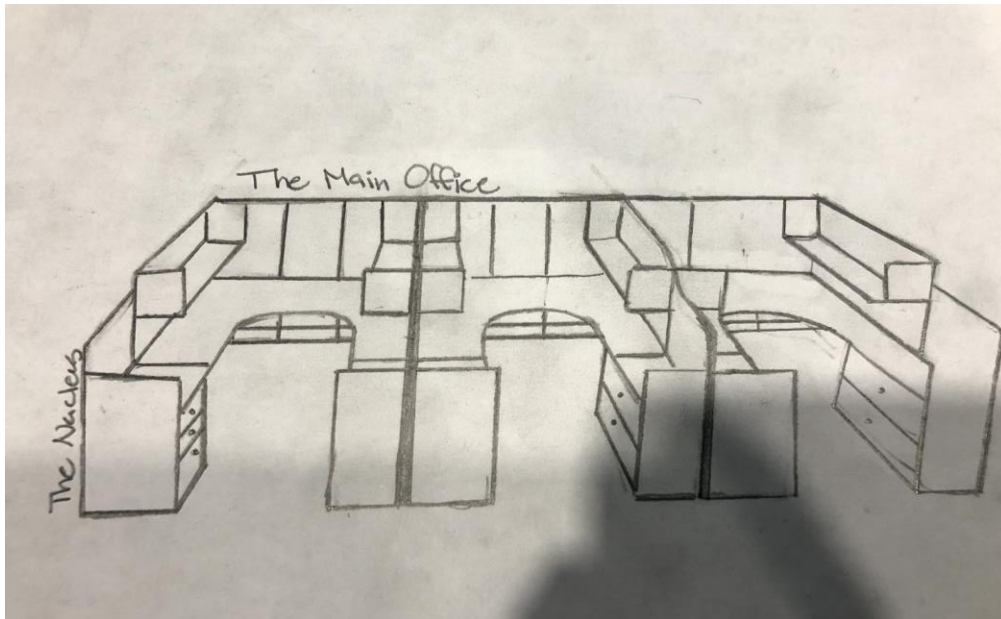


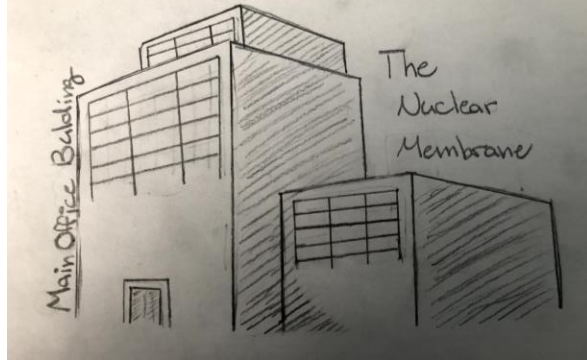
Cell: Cotton Candy Factory Analogy



Nucleus

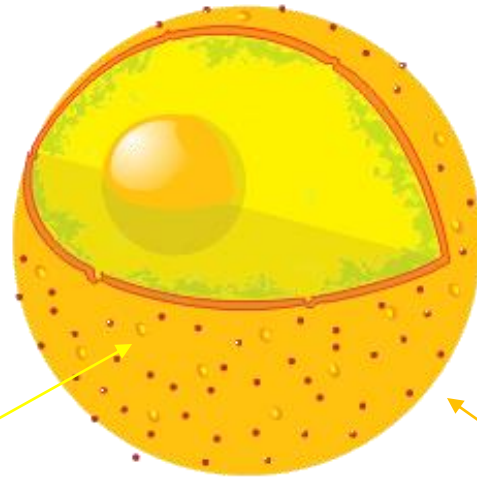
The Nucleus is the main office of the factory which controls and creates all factory plans.





Nuclear Membrane

- **The Nuclear Membrane** is the building of the main office which separates the main office from the rest of the factory.
- **The Nuclear Pores** are the security of the main office building, allowing in certified and important individuals to enter.



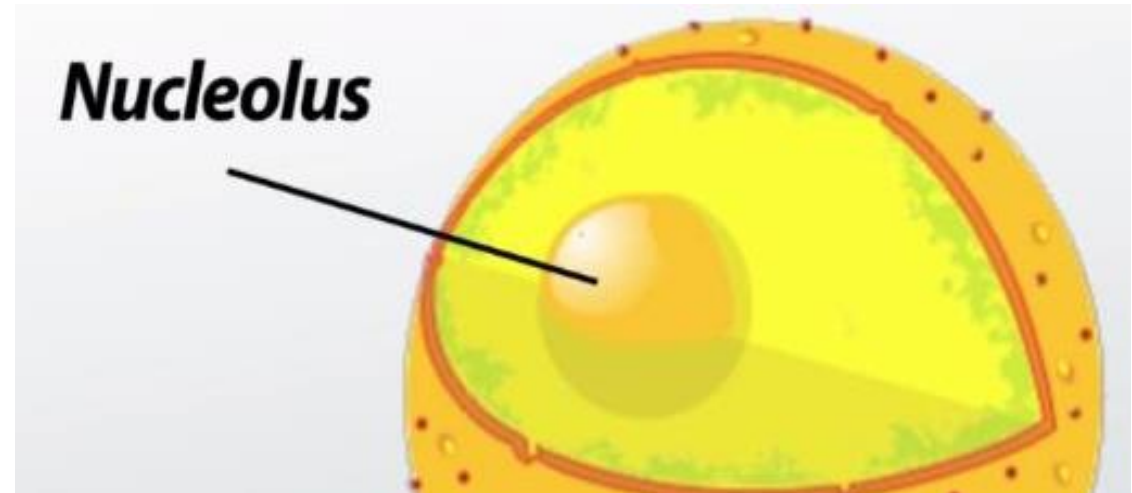
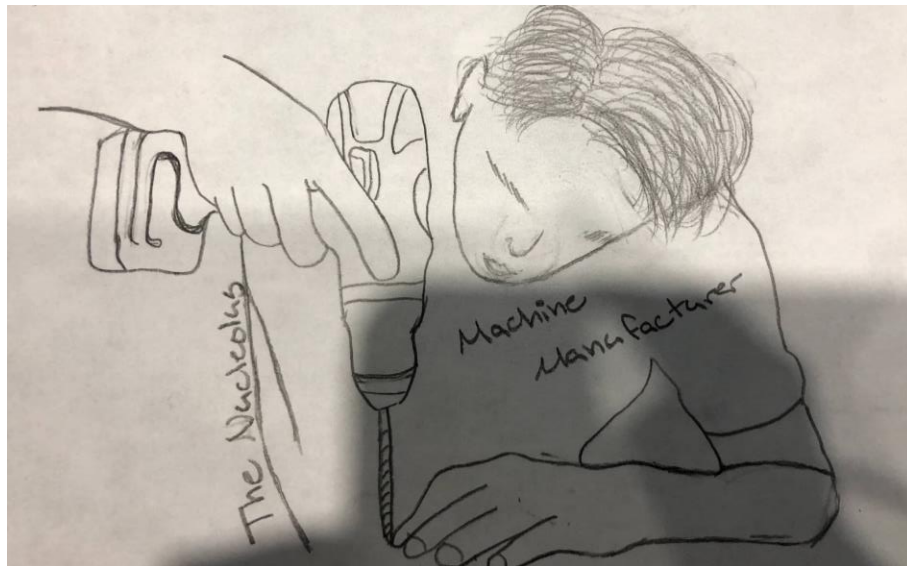
Nuclear Pore

Nuclear Membrane

Nucleolus

The head office employees

The **Nucleolus** are the employees of the main office who make the machines which produce the cotton candy (**Ribosomes**). These machines are sent to the **Rough Endoplasmic Reticulum, or the Transport Conveyer Belt**.

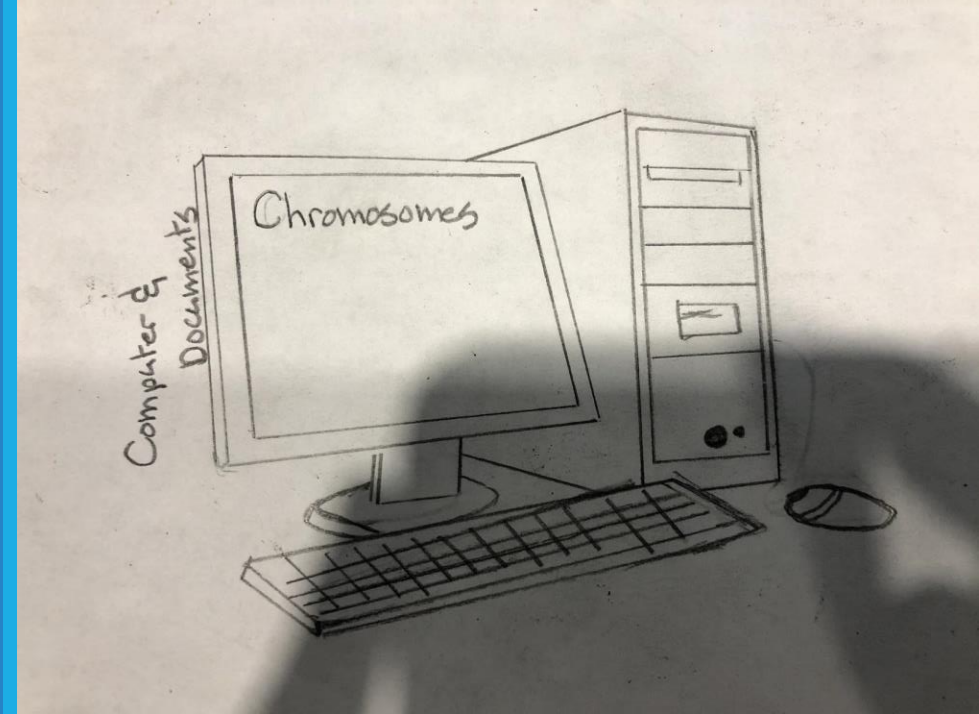


Chromosomes

The Computers

The Chromosomes are like the computers that contain the plans for future factories.

Chromosomes are DNA containing bodies found in the Nuclei. The DNA is much like the recipes for the Cotton Candy. They are replicated, then split into two daughter chromatids during mitosis.



Mitochondria

Energy Source

The mitochondria is like the energy source of a factory. For example, a hydro plant, which is what our Cotton Candy Factory uses.

The mitochondria is the powerhouse of the cell. It converts energy stored in glucose to ATP (Adenosine triphosphate) for the cell.



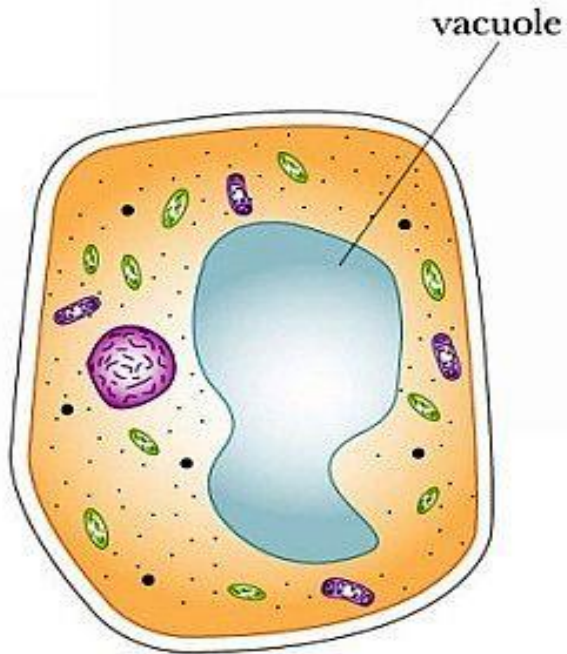


Vacuole

Warehouses

The Warehouse(s) of the cell. This is where all the cotton candy is stored before it is shipped away. It can store the Cotton Candy, as well as waste products.

Vacuoles are cavities in cells that store waste products, food and (in plant cells) water. Plant cells have one large Vacuole where animal cells have several smaller ones.



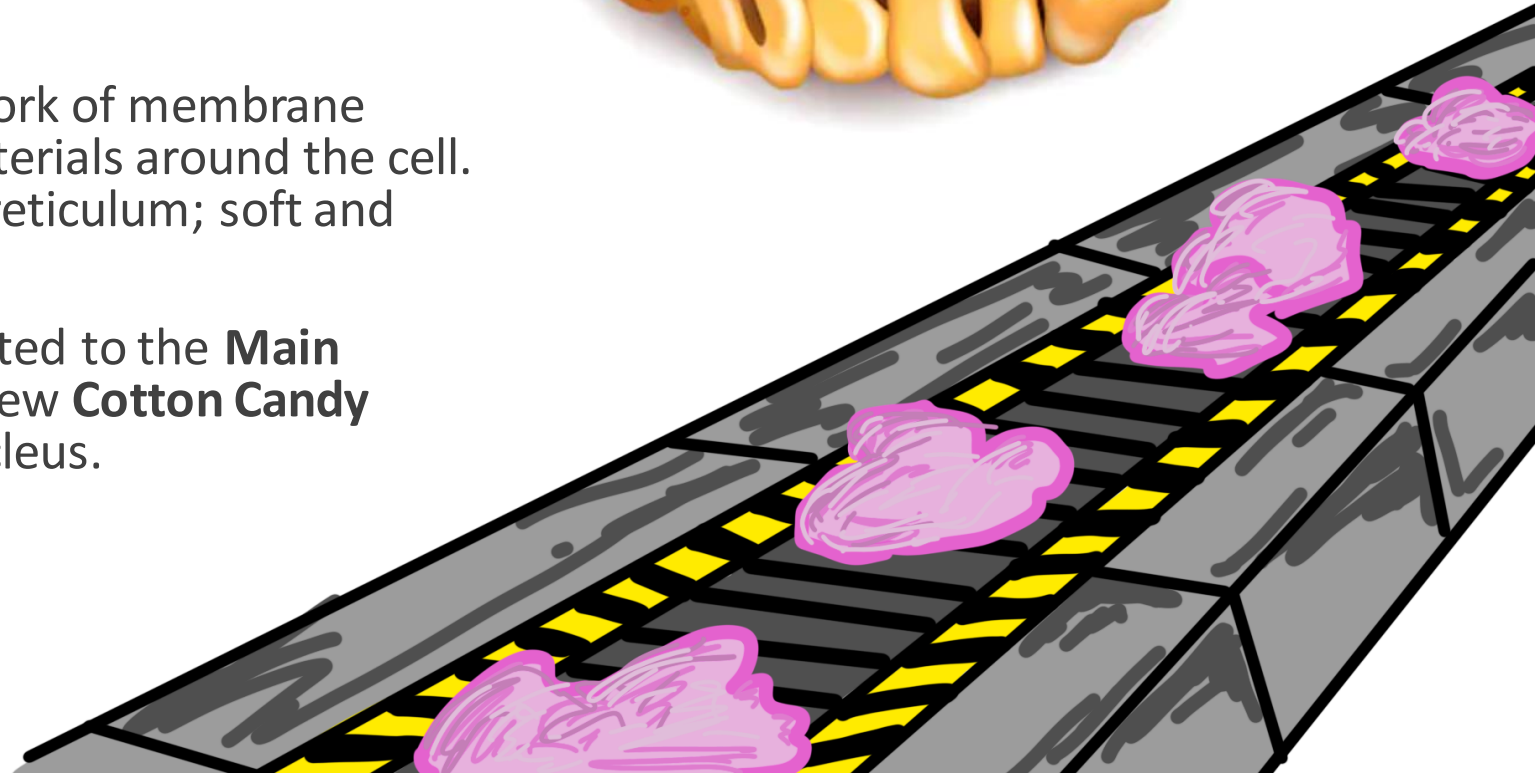
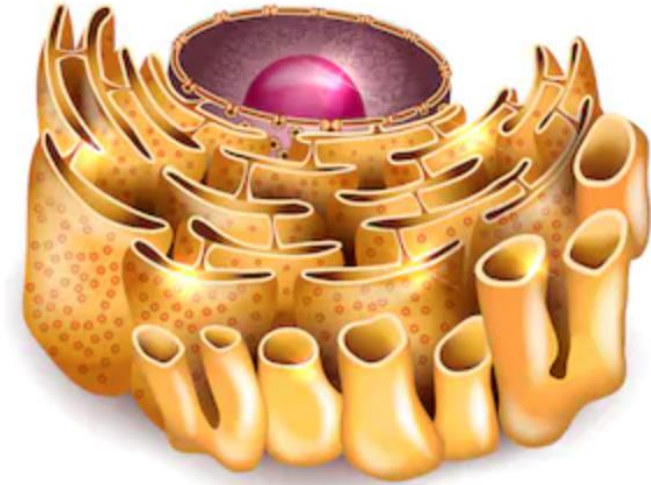
Endoplasmic Reticulum

Conveyor Belt

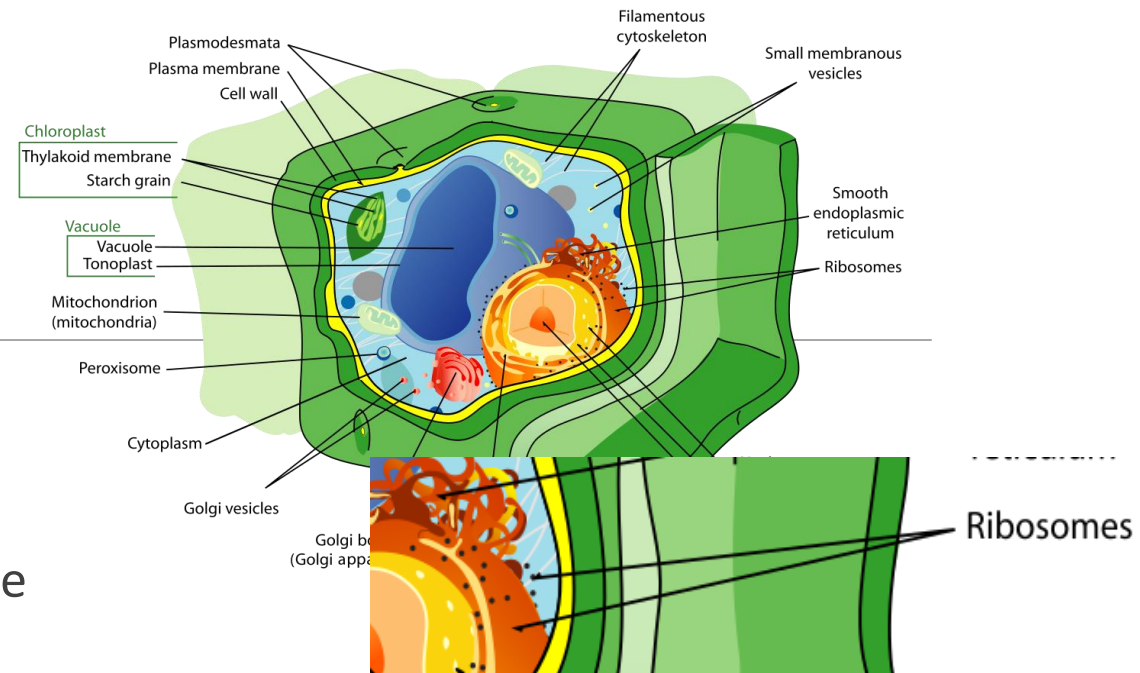
Transport conveyor belt of the factory. To move resources and products around the factory.

The endoplasmic reticulum is a network of membrane covered channels that transports materials around the cell. There are two types of endoplasmic reticulum; soft and rough.

The endoplasmic reticulum is connected to the **Main Office (nucleus)**, it transports fresh new **Cotton Candy Machines (ribosomes)** out of the nucleus.

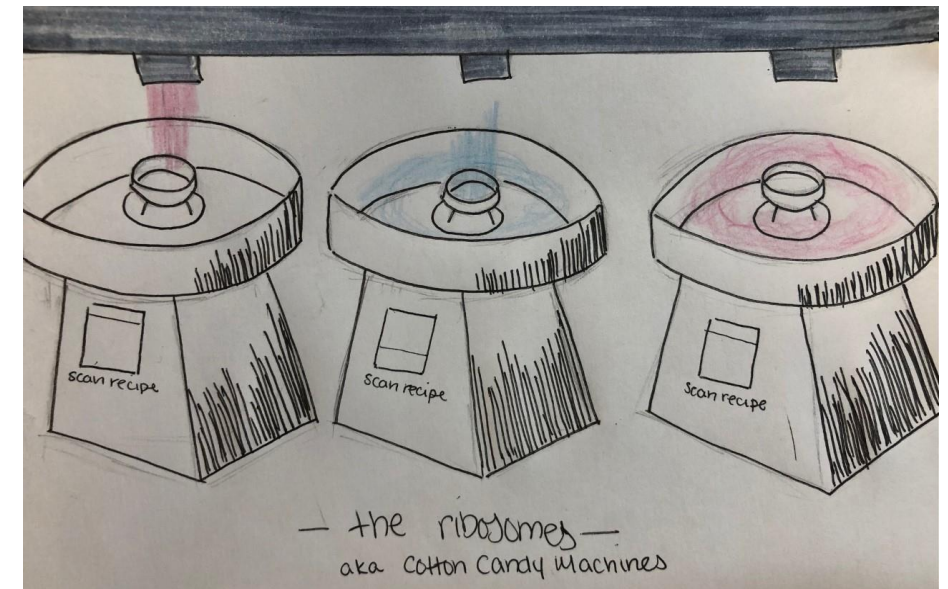


Ribosomes



Cotton Candy Machines

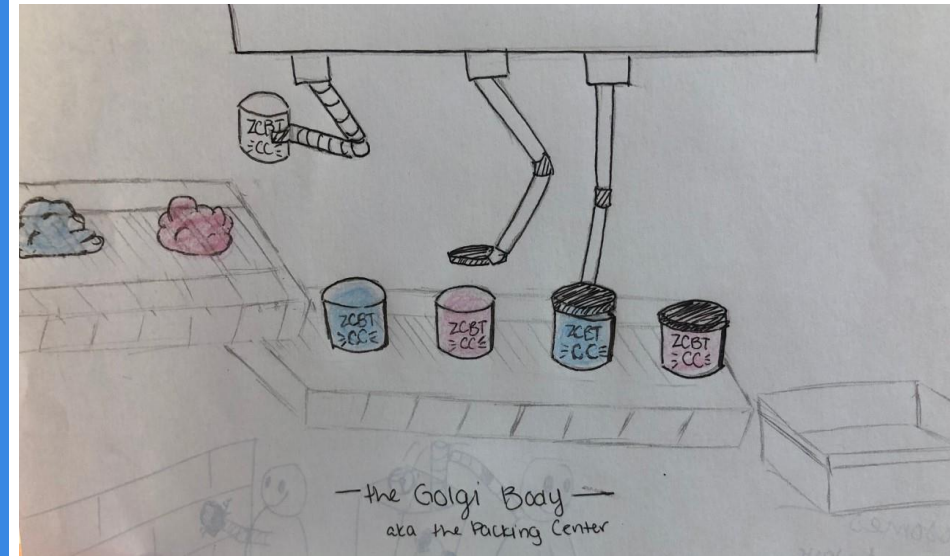
- They are responsible for producing the cotton candy
- These are a key part to the factory because they make the product
- The Cotton Candy Machines are located around the factory and by the Transportation Conveyor Belt (**Endoplasmic Reticulum**)
- The Main Office (**Nucleus**) keeps the original recipes (**DNA**) of the Cotton Candy that the Machines (**Ribosomes**) use
- These recipes are copied and delivered to the machines, which read the recipe and produce a specific flavour of Cotton Candy (Blue Raspberry or Pink Vanilla)



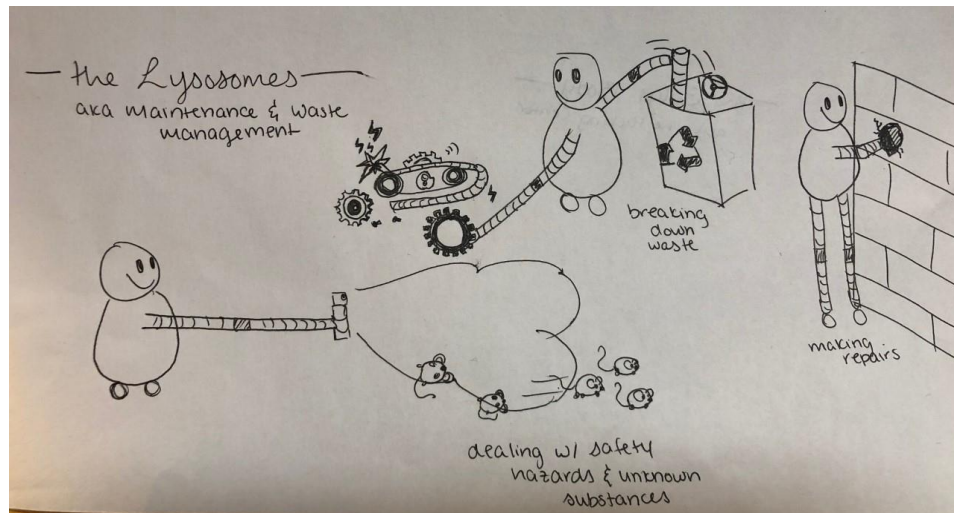
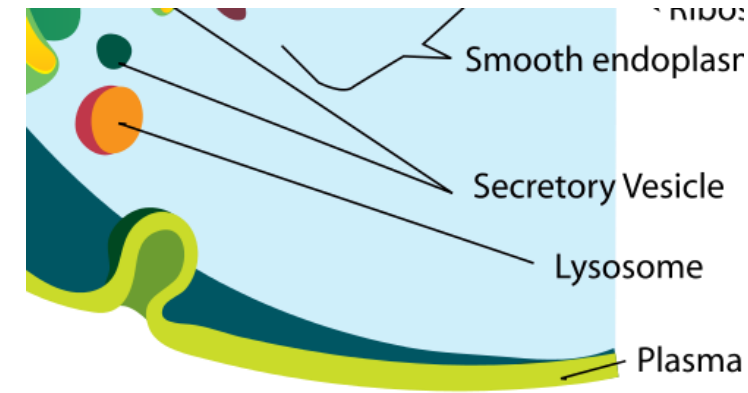
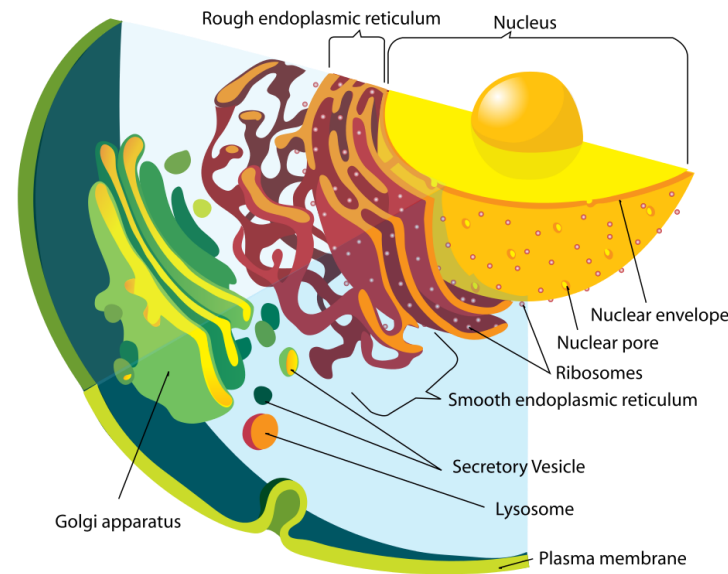
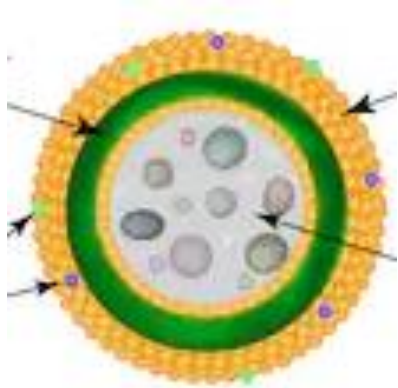
Golgi Body

Packing Center

- Processes and packages Cotton Candy into tubs, then into boxes (**Vesicles**) that will either be stored or sent out. Sorts the Cotton Candy packages by flavor- Vanilla Pink and Blue Raspberry.
- Located near the Transportation Conveyer Belts. Cotton Candy produced in the Transportation area is brought to the Packing Center



Lysosomes



Maintenance and Waste Management

Lysosomes have multiple tasks, which include:

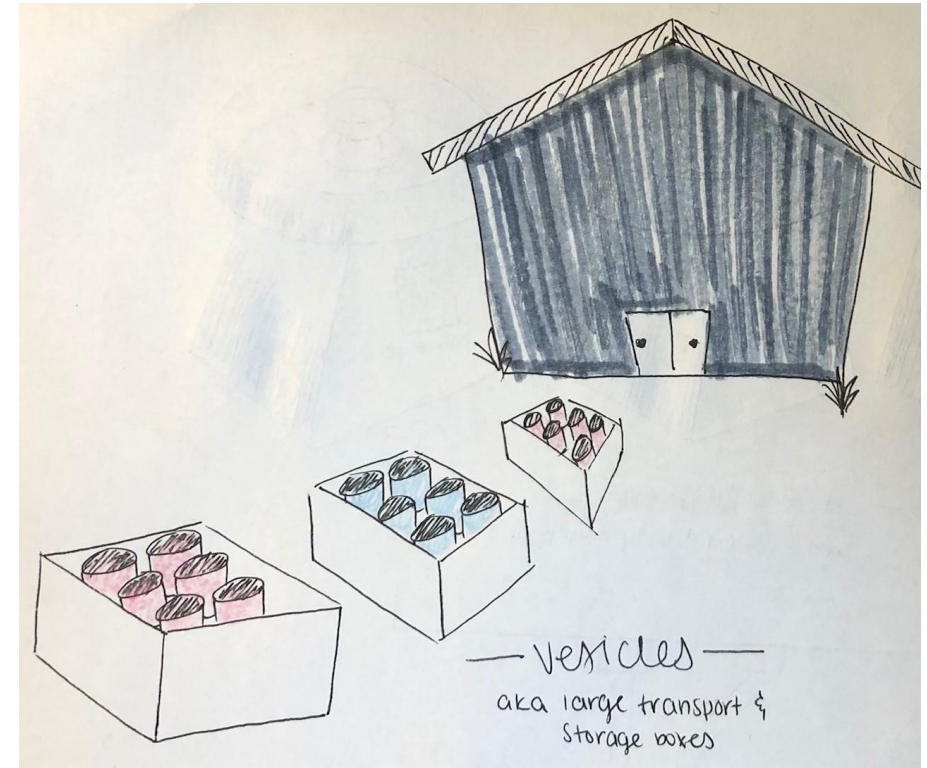
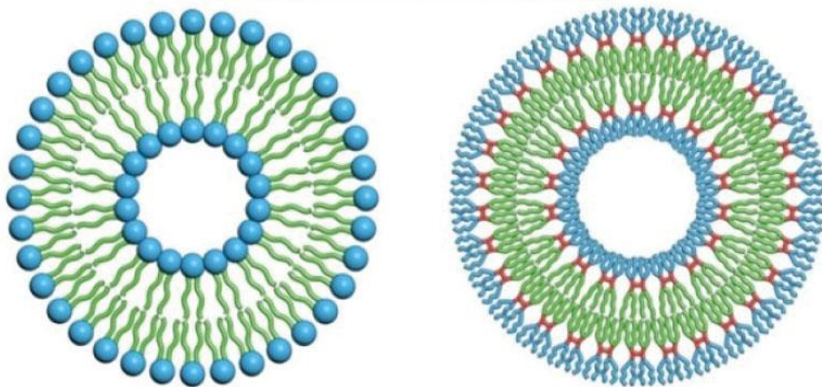
- make repairs on anything damaged (equipment, building, etc)
- regular inspections of the site for pest control and safety hazards
- Deal with and break down waste and worn-out equipment

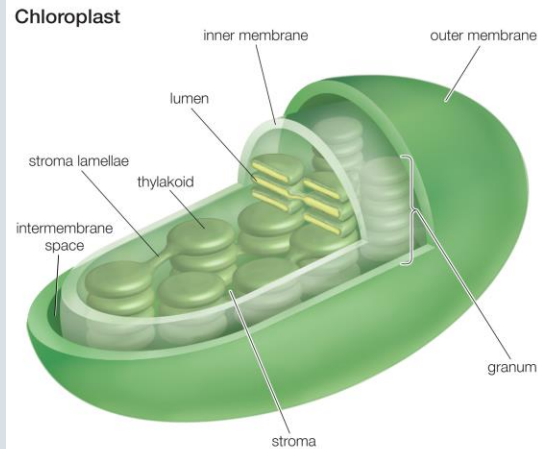
Vesicles

Boxes

- Large boxes that store and transport Cotton Candy throughout the factory
- Specific pathways some boxes take include:
 - bringing Cotton Candy from the **Transport Conveyor Belt (ER)** to the Packing Station
 - taking no longer needed materials out of the factory.

Vesicles





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Chloroplast

Solar Panels

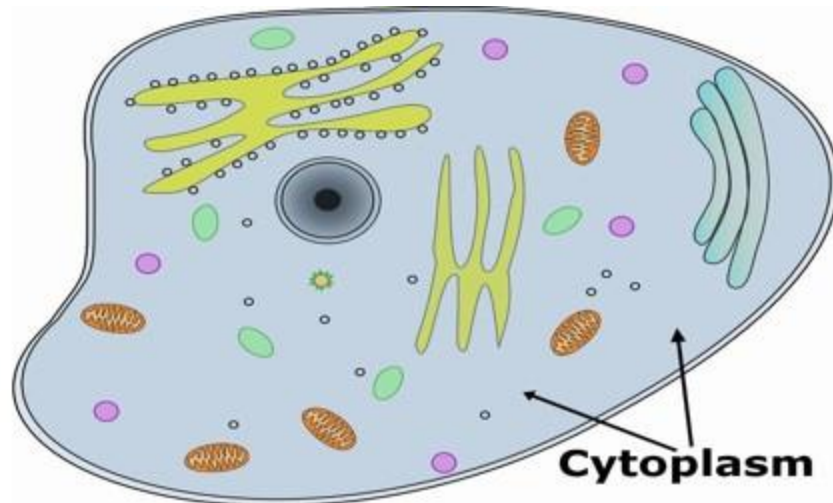
The chloroplast is kind of like a solar panel. Trapping the sun's energy and using it to create power for the factory.

Chloroplasts are only found in plant cells. They trap the sun's energy and use it to make glucose, which is broken down in the mitochondria to power cell activities.

Cytoplasm

Ground of the Factory Site

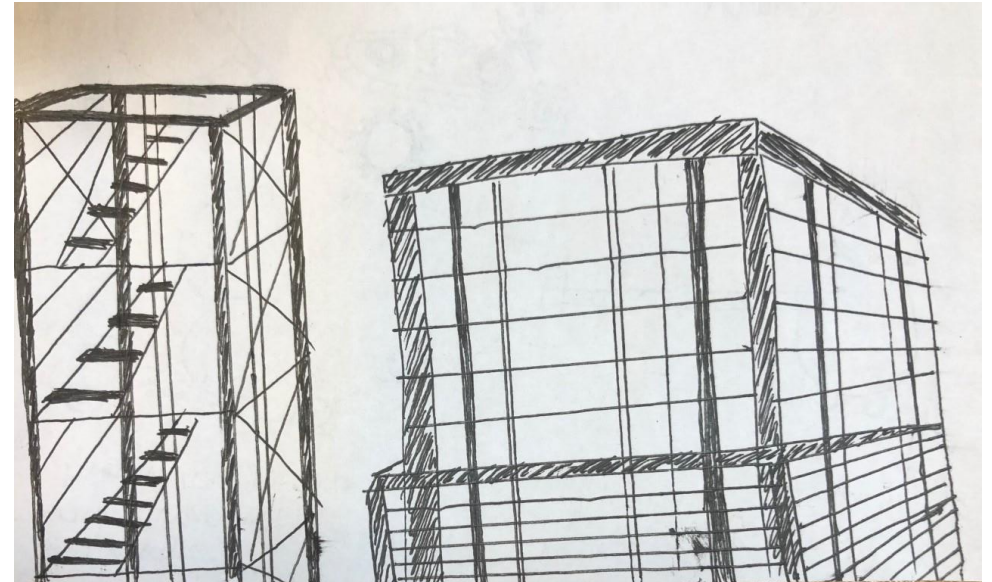
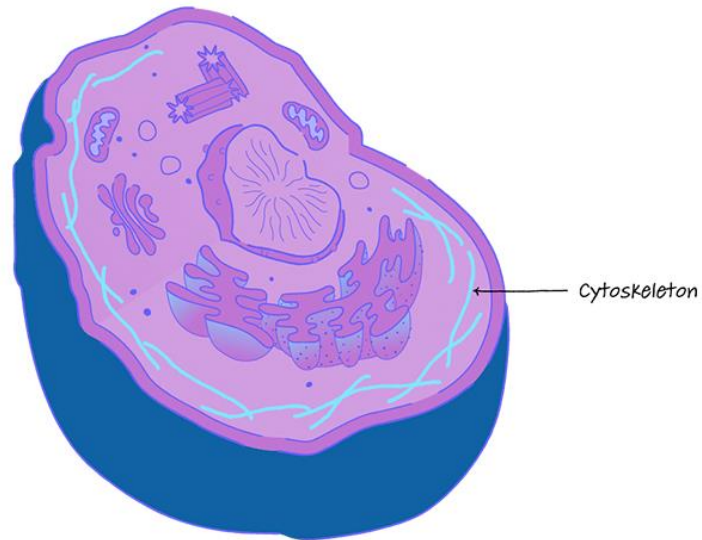
- The Cytoplasm can be seen as the ground in which the factory buildings are built upon
- It holds all the contents of the factory
- In a cell, it is a jelly-like substance



Cytoskeleton

Structure of the Buildings

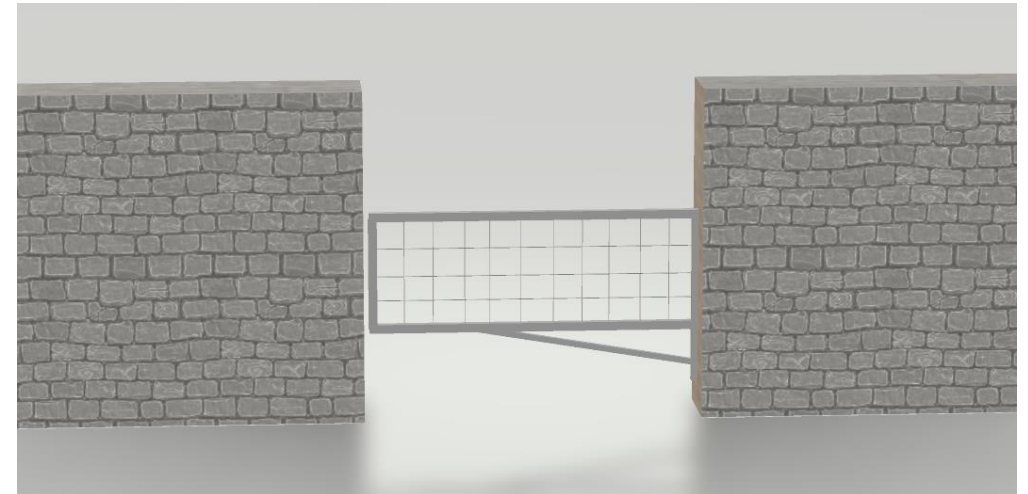
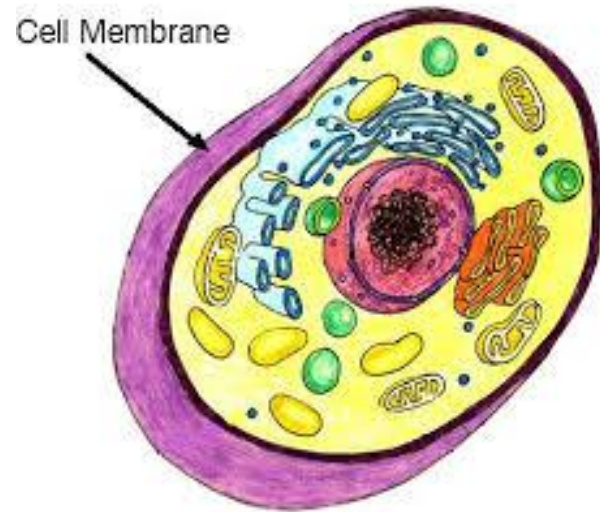
This can be called the structure of the factory's buildings. It provides the framework and structure for the whole factory. In a cell, it provides tracks where vesicles and organelles can move.



Cell membrane

ID-checking Station

This is like a checkpoint, or ID checking station before you can enter the factory. This controls what enters and exits the factory site. The ID checking Station ensures only workers and people with granted access can enter.



Cell wall

Security Wall

The Cell Wall is the security wall encompassing the entire factory. It is tough and rigid, providing support for the factory. This security wall is only found in certain types of factories.

