

# CELL ANALOGIES

Cells are **systems** - their parts function together to promote an outcome. The the case of a cell, the outcome is the production of proteins.

To better understand the way the parts of a eukaryotic cell work together to promote life, I will compare a cell to a:    (system)

# CELL ANALOGY TO A BAKERY

I think a bakery is a good representation of a cell because they both have similar lay out.



# PROTEINS

**Found in (type(s) of cell):** All cell types

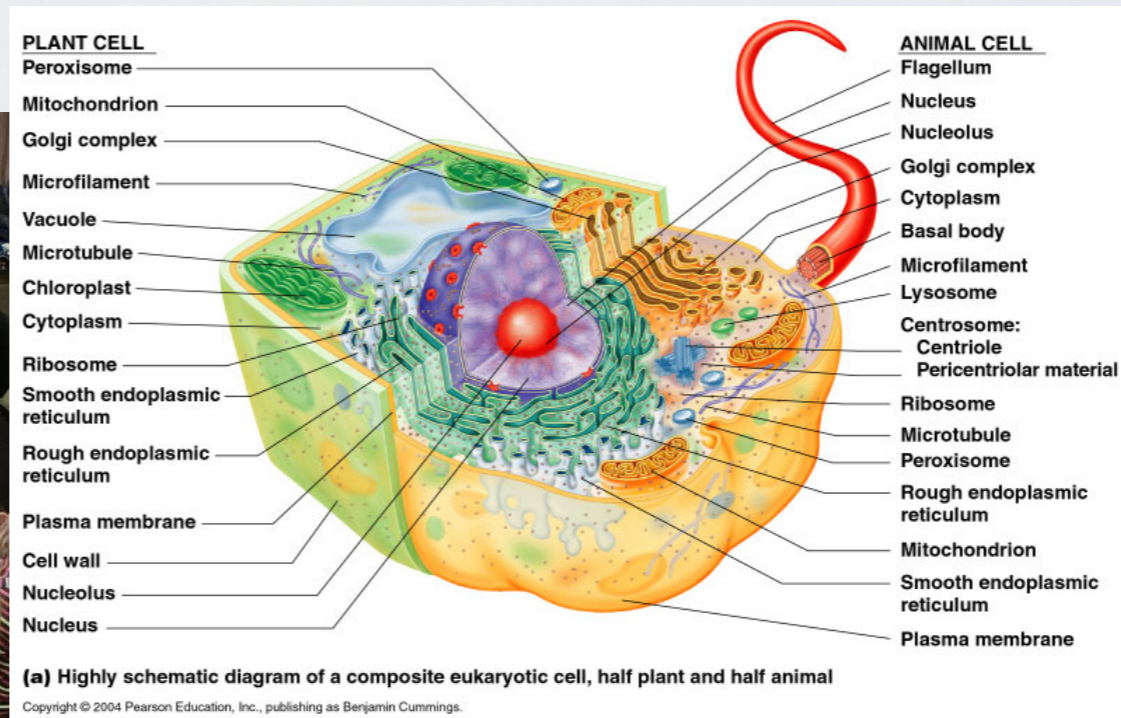
**Function:** A protein is what the cell produces. Cells are basically “protein factories.” Different cells produce different proteins

Examples:

- a skin cell produces proteins that keep your skin waterproof, protected from the sun.
- a red blood cell produces proteins that carry oxygen.
- a muscle cell produces proteins that promote movement.

**My Analogy:** (what does your “system” produce?) Proteins are like a bakery they produce goods that make people happy.

**Reason why I think this analogy properly represents this cell structure:** a bakery makes goods and it produces goods for people.



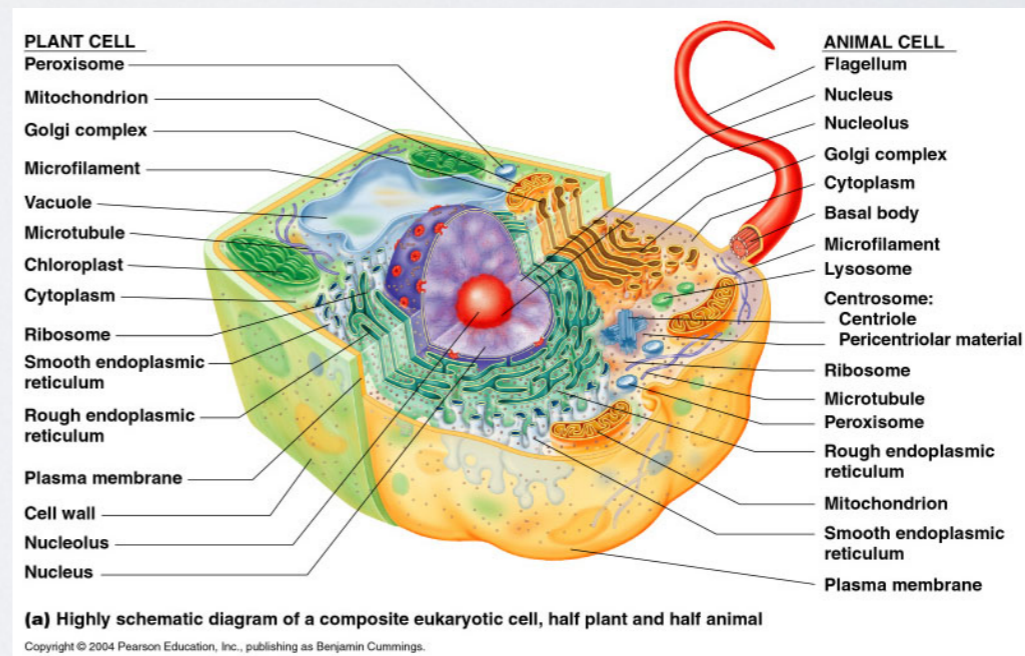
# DNA

**Found in (type(s) of cell):** All cell types

**Function:** DNA is the “recipe,” or set of instructions, for the production of proteins.

**My Analogy:** (What is the “recipe” or instructions for what your system produces?) the recipes they use to make there cupcakes, cookies, etc..... What they use to make there baked goods and to follow the instructions.

**Reason why I think this analogy properly represents this cell structure:** I think DNA resembles recipes because every bakery uses recipes to make all there baked goodies.



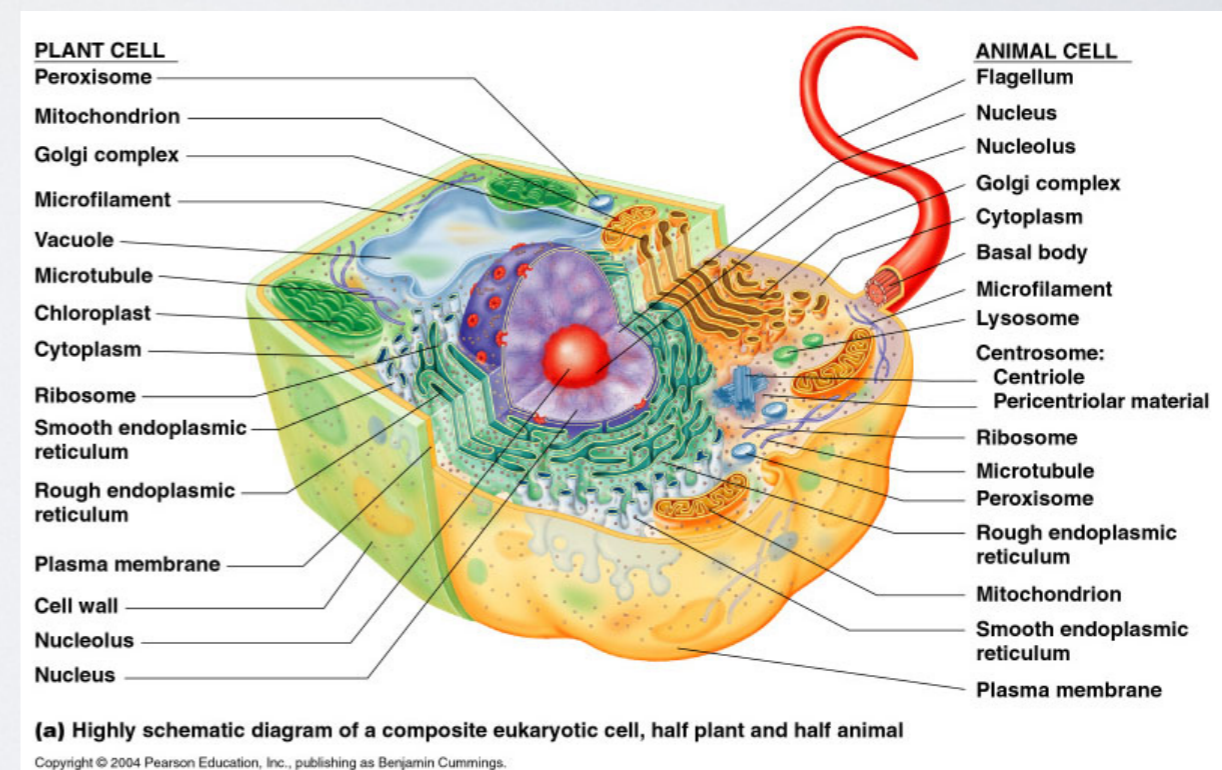
# RIBOSOMES

**Found in (type(s) of cell):** All cell types.

**Function:** Ribosomes are where the DNA gets translated into proteins. They are like “machines” that put together the proteins, according to the instructions in the DNA.

**My analogy: the oven is like the ribosomes**

**Reason why I think this analogy properly represents this cell structure:** I think the oven best fits ribosomes because it bakes and makes everything stay together. All the DNA together which would be all the ingredients in the baked goods.



# NUCLEUS

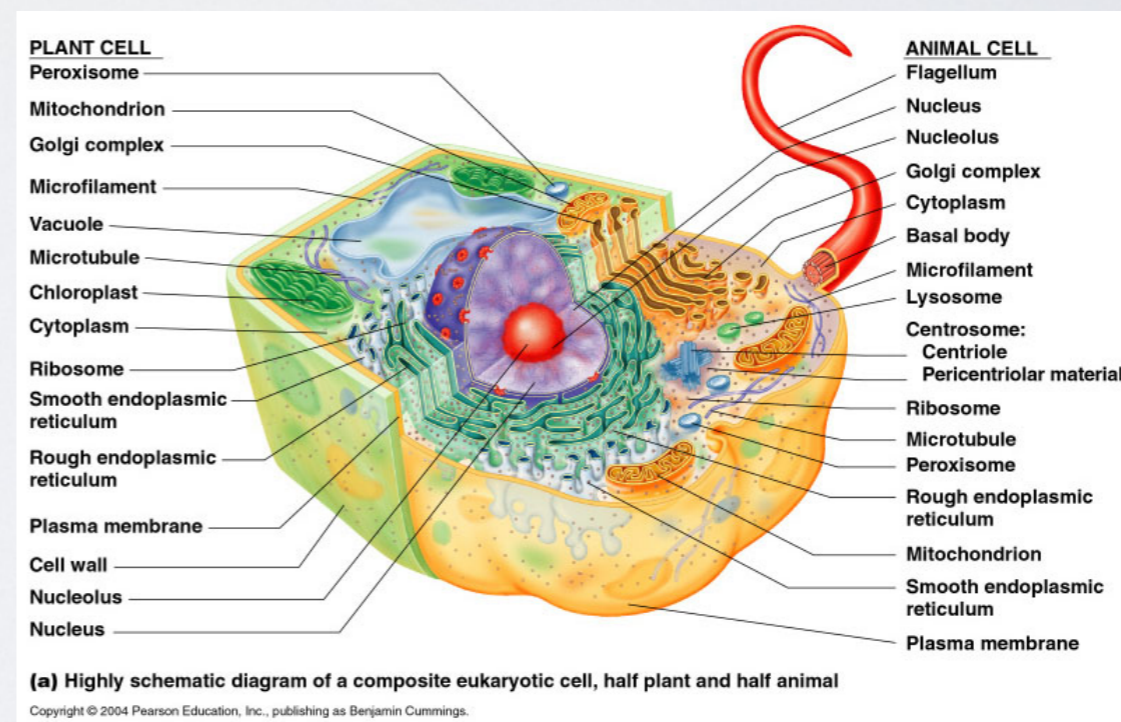
**Found in (type(s) of cell):** found in all types of cells

**Function:** the function of the nucleus regulates all cell activity and controls the enzymes.

**My Analogy:** the baker keep everything in line like the nucleus.

**Reason why I think this analogy properly represents this cell**

**structure:** the nucleus holds everything together and a baker makes sure everything is in order. The baker also puts the recipes in the oven which is the ribosomes.



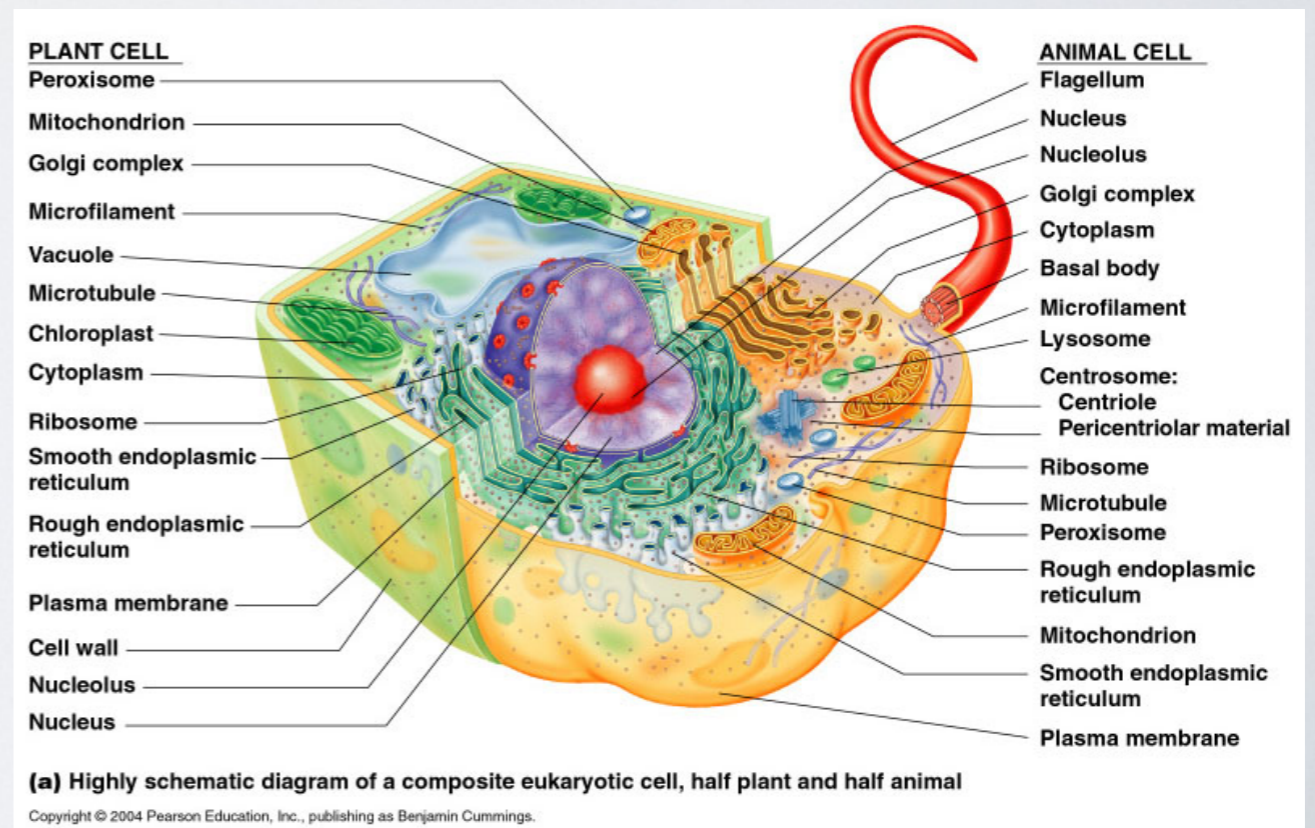
# NUCLEAR PORES

**Found in (type(s) of cell):** animal and plant cells

**Function:** produces ribosomes, inside the nucleus.

**My Analogy:** the doors

**Reason why I think this analogy properly represents this cell structure:** they both let things in and let things leave. They both choose what can come in and what can leave.



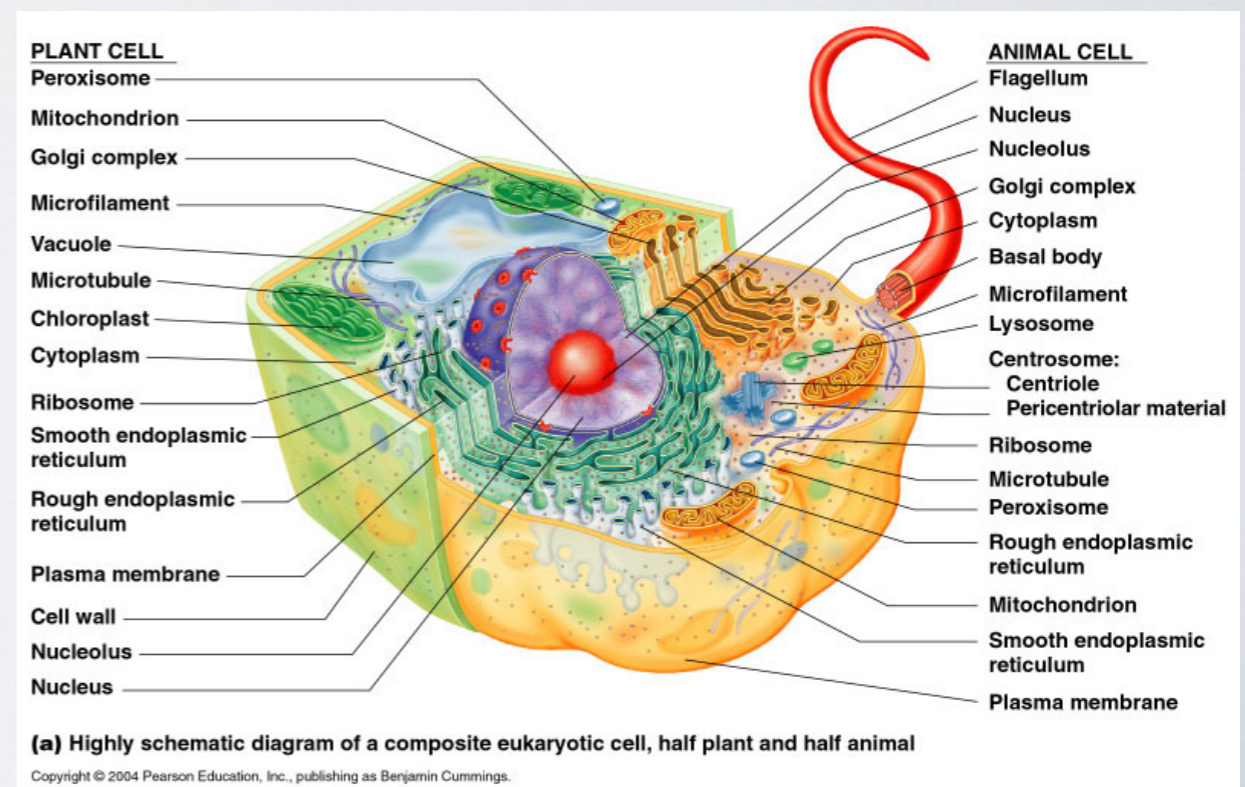
# NUCLEOLUS

**Found in (type(s) of cell):** all cells

**Function:** produces ribosomes, inside of the nucleus.

**My Analogy:** the stuff in the cupcakes

**Reason why I think this analogy properly represents this cell structure:** the cupcakes are the nucleus and the nucleolus is the filling in the cupcakes.





# ENDOPLASMIC RETICULUM

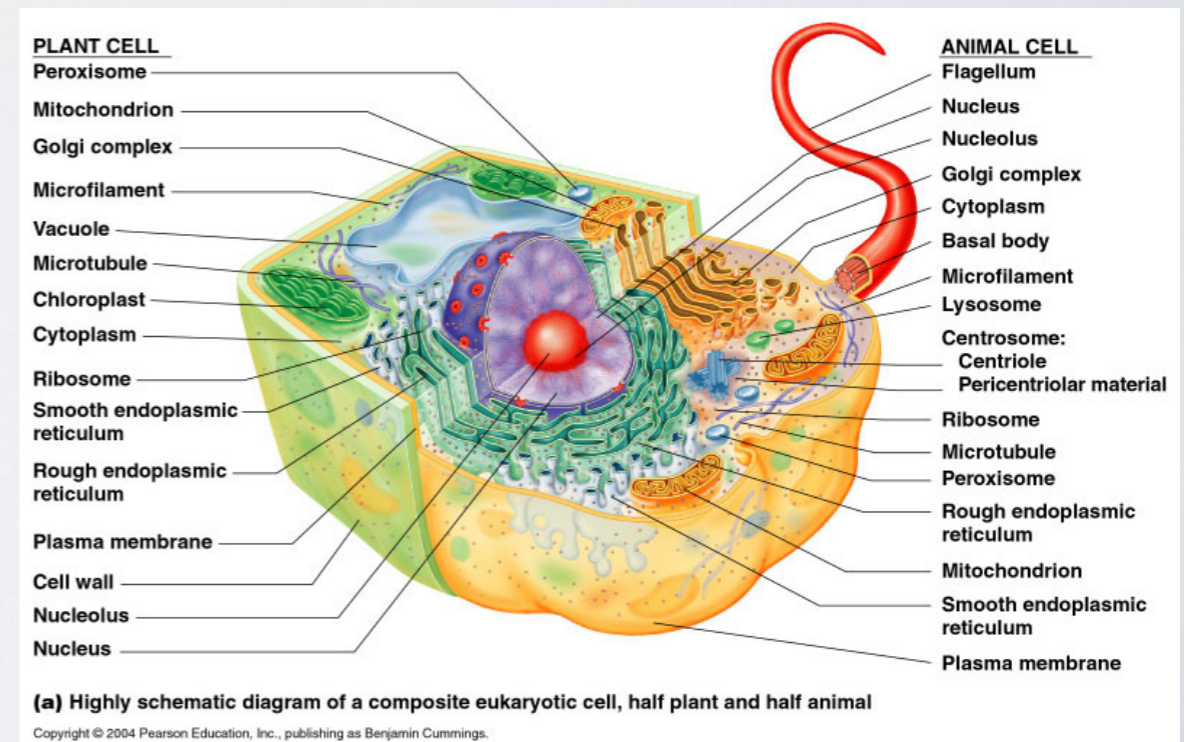
**Found in (type(s) of cell):** both plants and animal cells

**Function:** a highly folded membrane that is the site of protein synthesis or modifies anything inside the cell.

**My Analogy:** the decorators are like the endoplasmic reticulum in a cell.

**Reason why I think this analogy properly represents this cell structure:**

I think decorators are like the endoplasmic reticulum because they make sure everything looks good by decorating the goods.



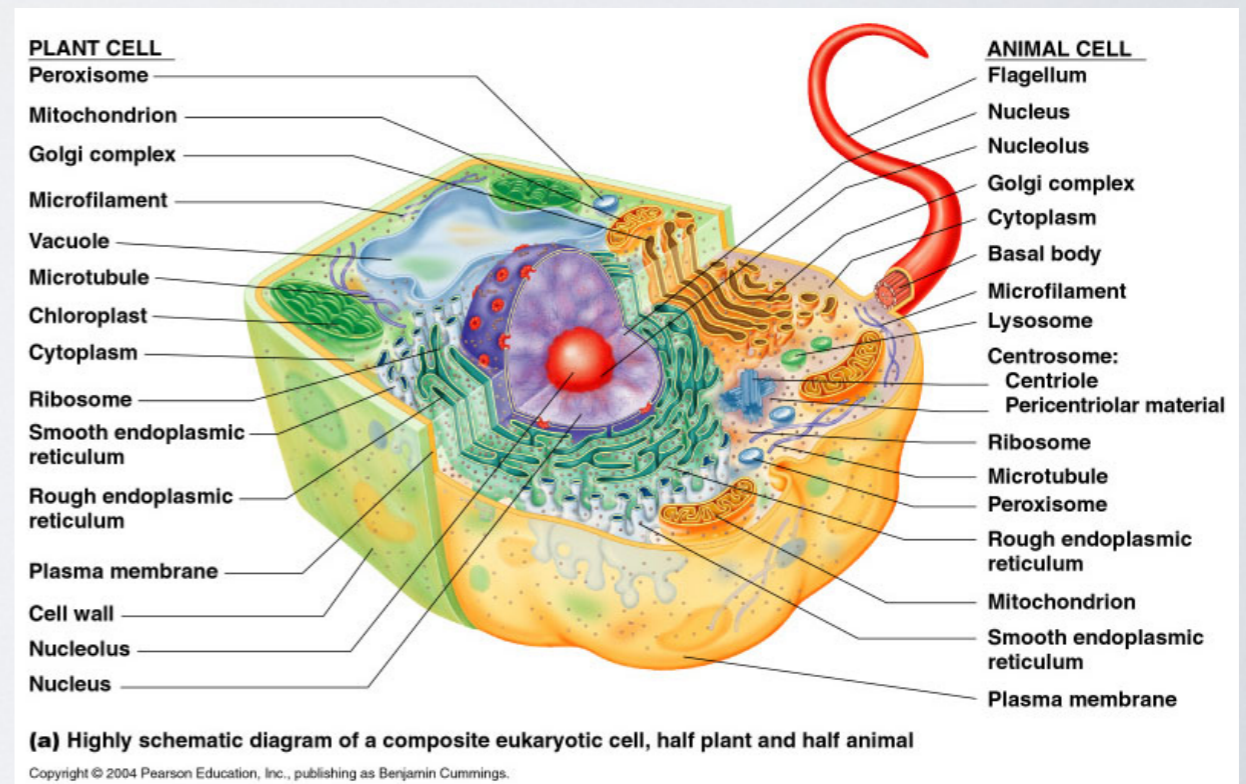
# GOLGI APPARATUS

**Found in (type(s) of cell):** found in both animal and plant cells

**Function:** a flattened stack of tubular membranes that modifies proteins and packages them for distribution outside the cells. The Golgi delivers packages and materials

**My Analogy:** the delivery service is like the Golgi apparatus

**Reason why I think this analogy properly represents this cell structure:** the delivery service would fit the Golgi because they deliver what you need for your business.



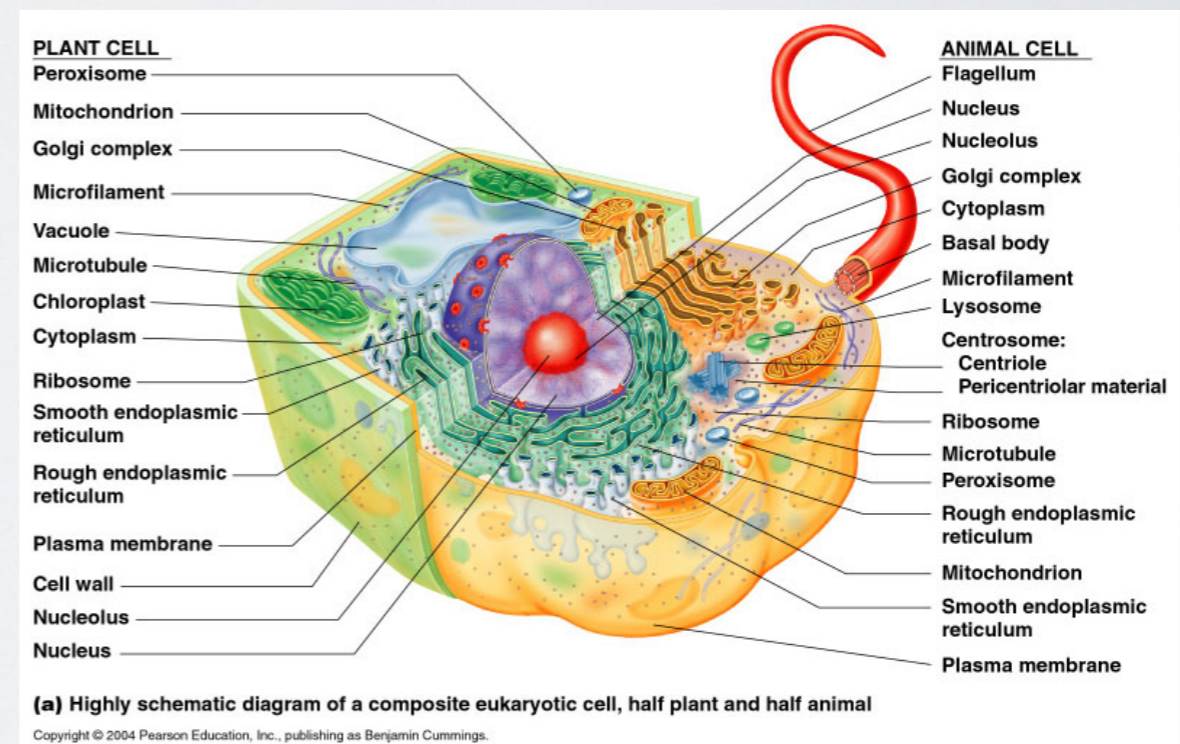
# VESICLES

**Found in (type(s) of cell):** animal cells

**Function:** moves packaged proteins from the Golgi out of the cell.

**My Analogy:** the mixing bowls

**Reason why I think this analogy properly represents this cell structure:** vesicles break down substances and a mixing bowl does the exact same breaking down the ingredients for the baked goods.



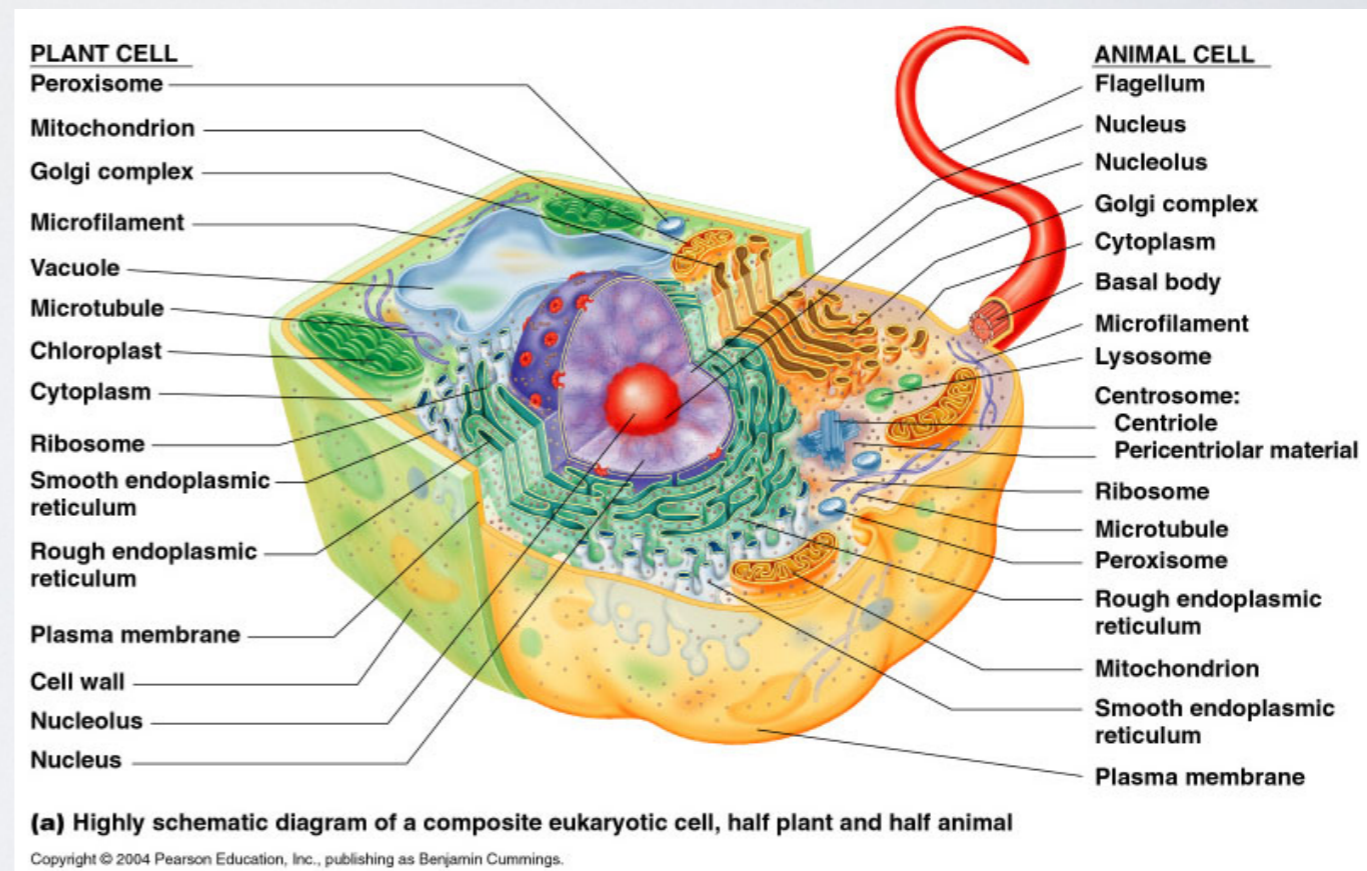
# VACUOLES

**Found in (type(s) of cell):** animal and plant cells

**Function:** a membrane-bound vesicle for temporary storage of materials.

**My Analogy:** a pantry

**Reason why I think this analogy properly represents this cell structure:** vacuoles store things for the cells and a pantry does the same thing it holds extra ingredients that you aren't using at that time.



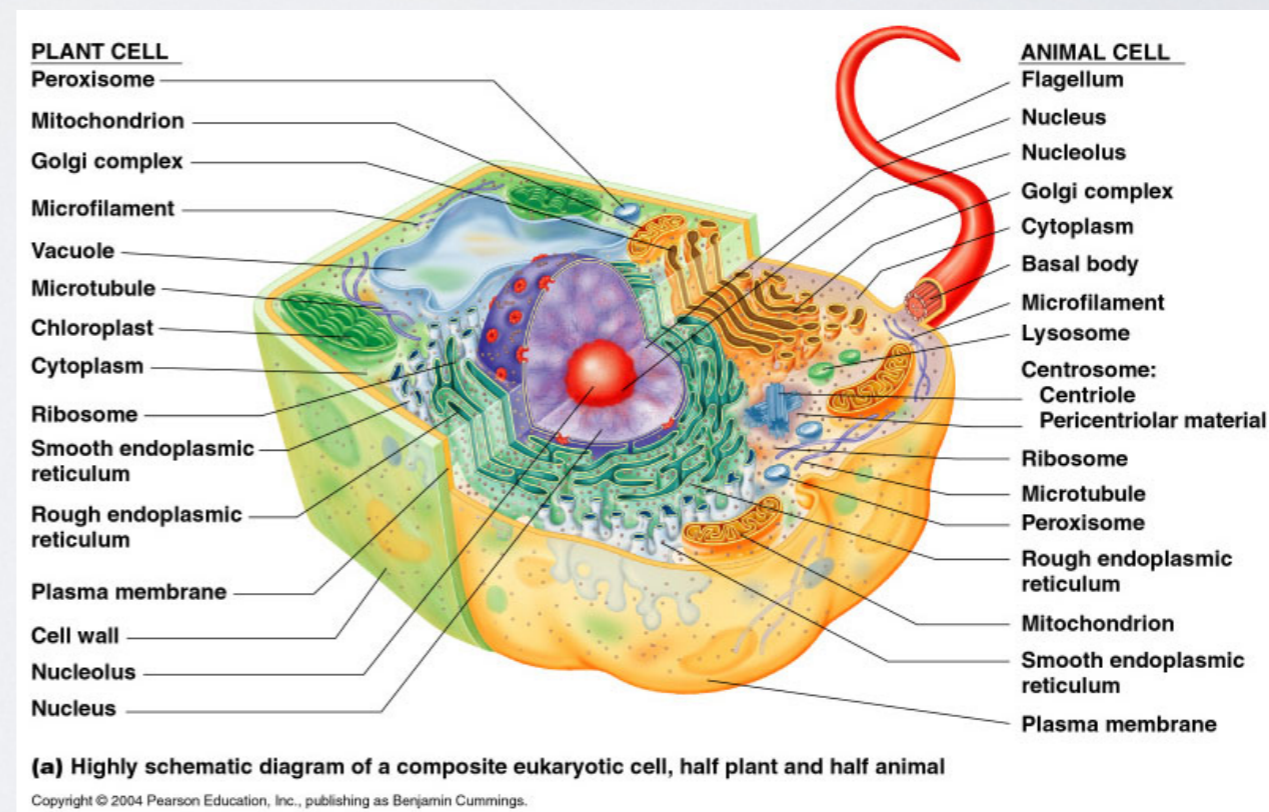
# PEROXISOMES/LYSOSOMES

**Found in (type(s) of cell):** Lysosomes are found in animal cells; Peroxisomes are found in plant cells. NEITHER are found in prokaryotic cells.

**Function:** a vesicle that contains digestive enzymes for the breakdown or exes or worn-out cellular substances.

**My Analogy:** a janitor

**Reason why I think this analogy properly represents this cell structure:** peroxisomes and janitors both clean up everything and makes everything nice and neat.



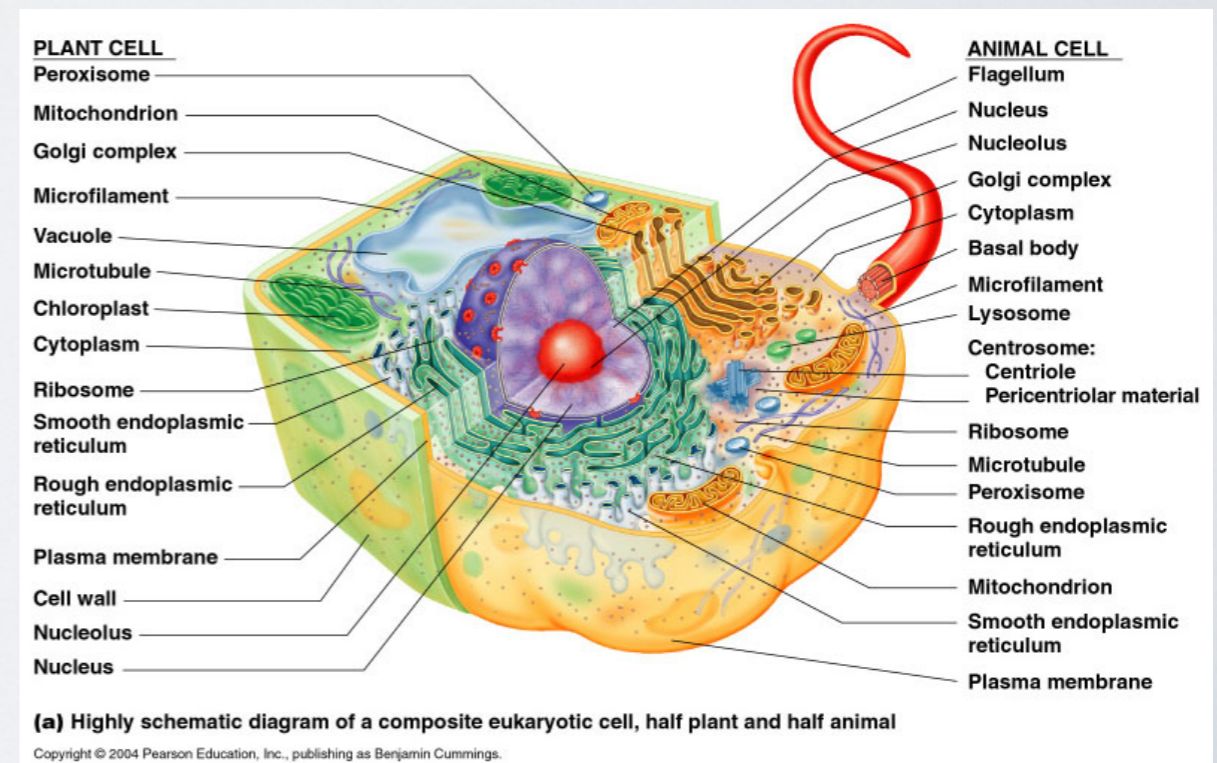
# CELL MEMBRANE

**Found in (type(s) of cell):** in all cells

**Function:** let's materials in and out of the cell

**My Analogy:** the outside of the building

**Reason why I think this analogy properly represents this cell structure:** the cell membrane and outside of the bakery are similar because they both keep things from unwanted things coming in and things leaving the building.



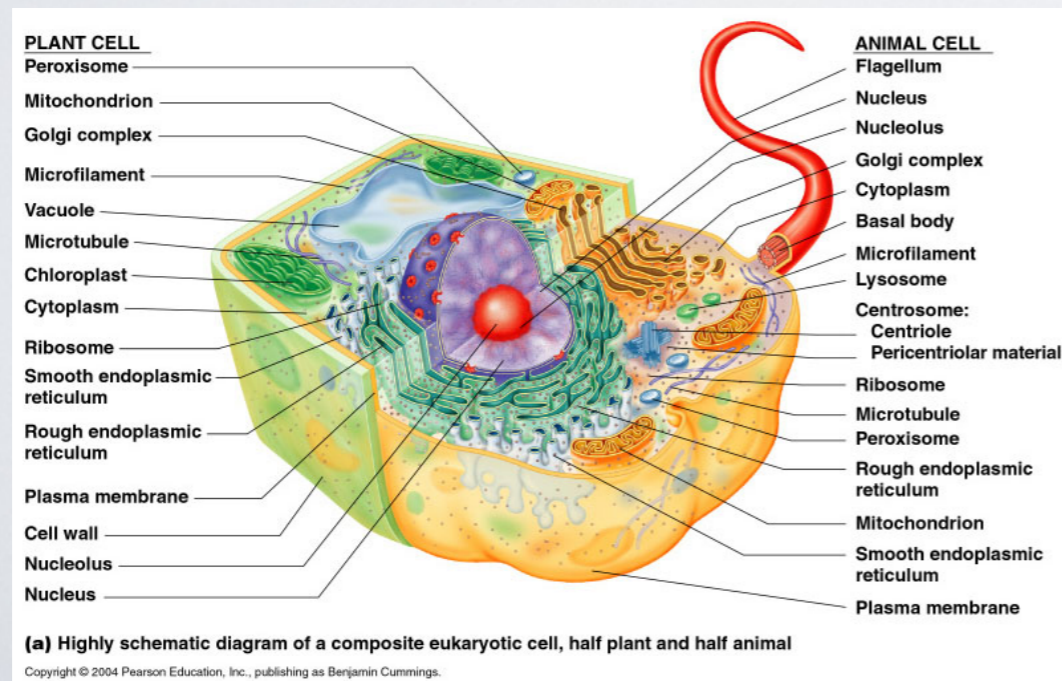
# CYTOPLASM

**Found in (type(s) of cell):** in both

**Function:** fluid internal environment of the cell.

**My Analogy:** the air in the building

**Reason why I think this analogy properly represents this cell structure:** cytoplasm and air are both internal in the building and float around.



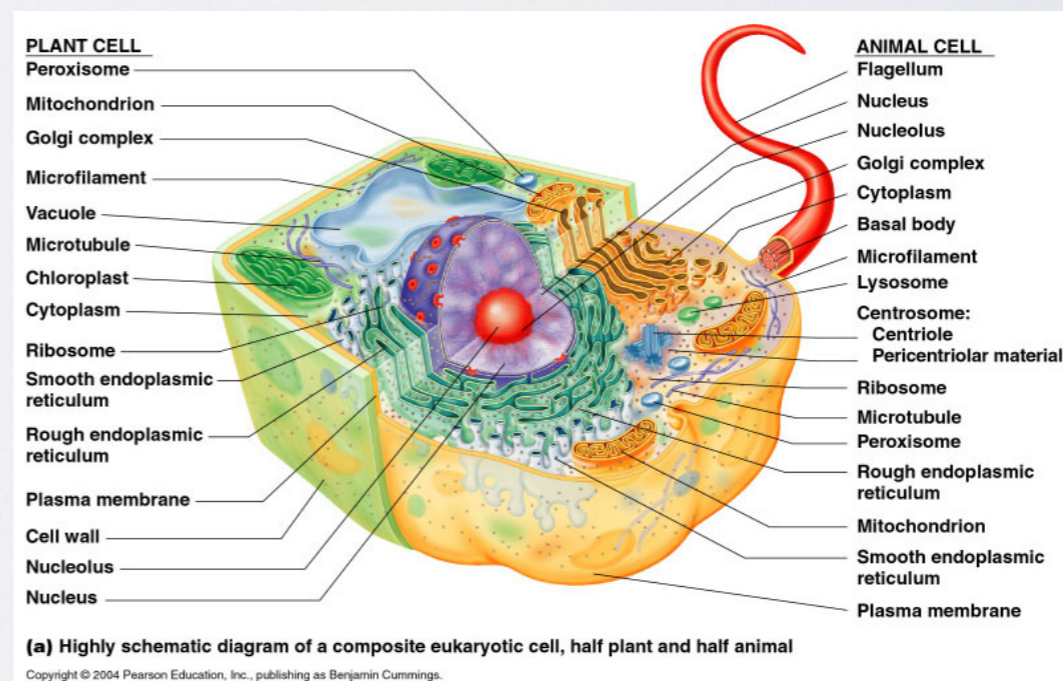
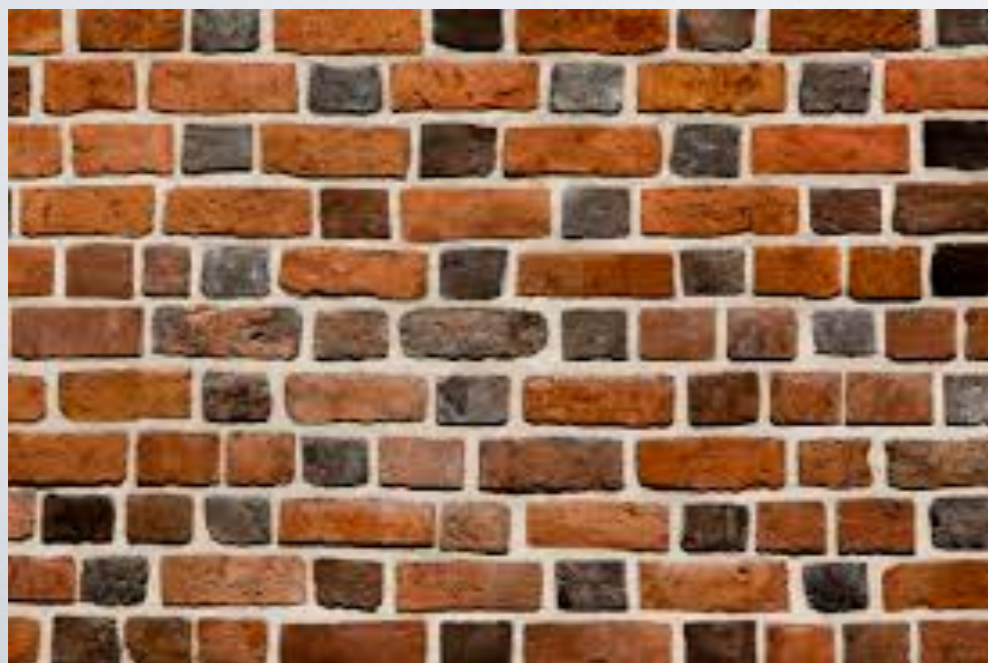
# CELL WALL

**Found in (type(s) of cell):** in all cells

**Function:** protects the structure around the cell.

**My Analogy:** the outside of the building

**Reason why I think this analogy properly represents this cell structure:** the cell wall and outside of the building properly represent it because it helps from wreaking the inside of the building.





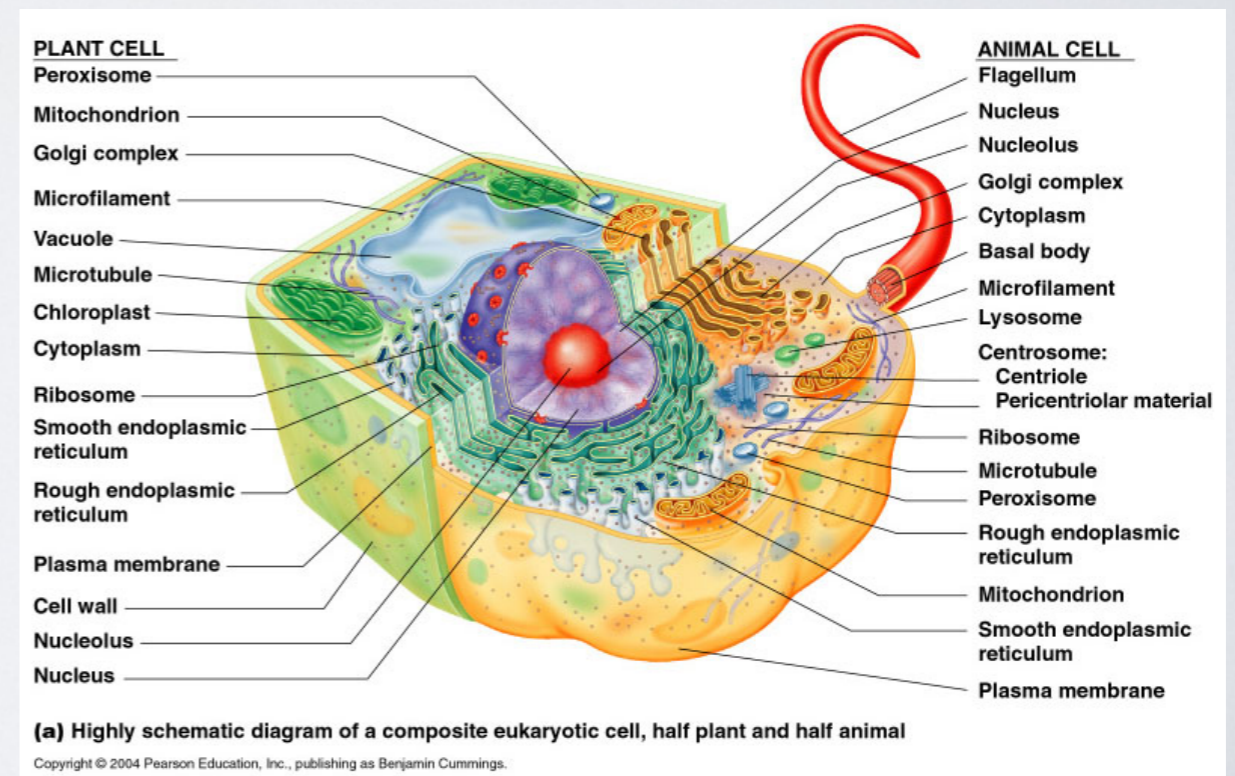
# CYTOSKELETON

**Found in (type(s) of cell):** all eukaryotic cells

**Function:** a framework for the within the cytoplasm.

**My Analogy:** cytoskeleton is like the inside of the bakery.

**Reason why I think this analogy properly represents this cell structure:** the cytoskeleton is everything inside and the inside of the bakery would be similar because they both are the framework of the cell and building.



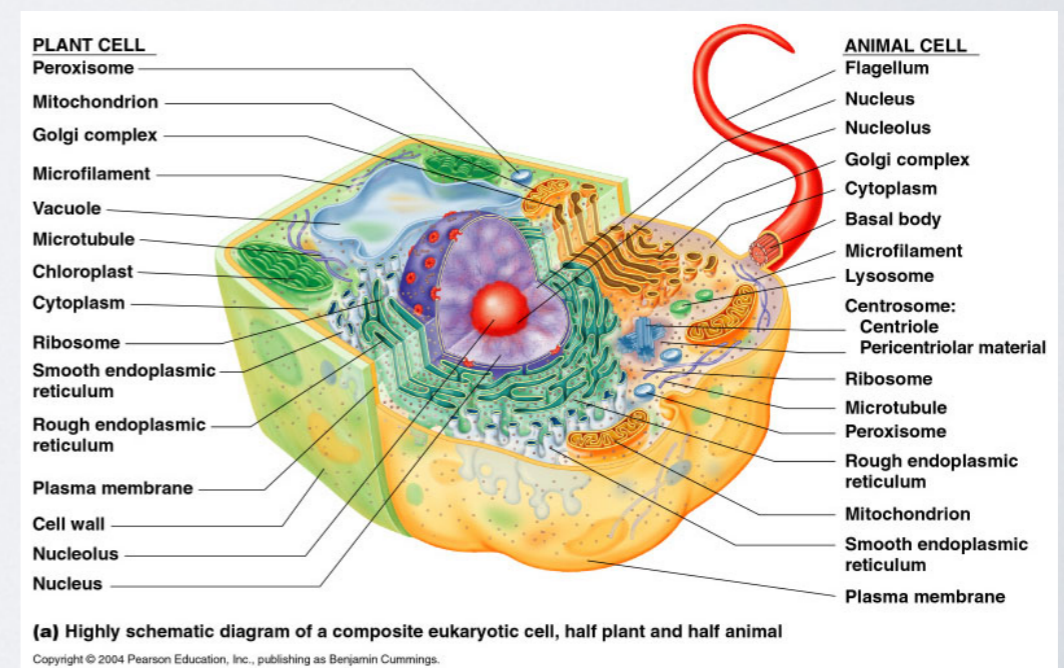
# CHLOROPLASTS

**Found in (type(s) of cell):** only plant cells

**Function:** a double-membrane organelle with thylakoids containing chlorophyll where photosynthesis takes place.

**My Analogy:** a generator

**Reason why I think this analogy properly represents this cell structure:** both a generator and chloroplasts make energy for the building and cell.



# MITOCHONDRIA

**Found in (type(s) of cell):** in both plant and animal cells

**Function:** a membrane-bound organelle that makes energy available to the rest of the cell.

**My Analogy: wiring**

**Reason why I think this analogy properly represents this cell structure:**

the wiring and mitochondria both make energy or light to make it visible to see what your doing.

