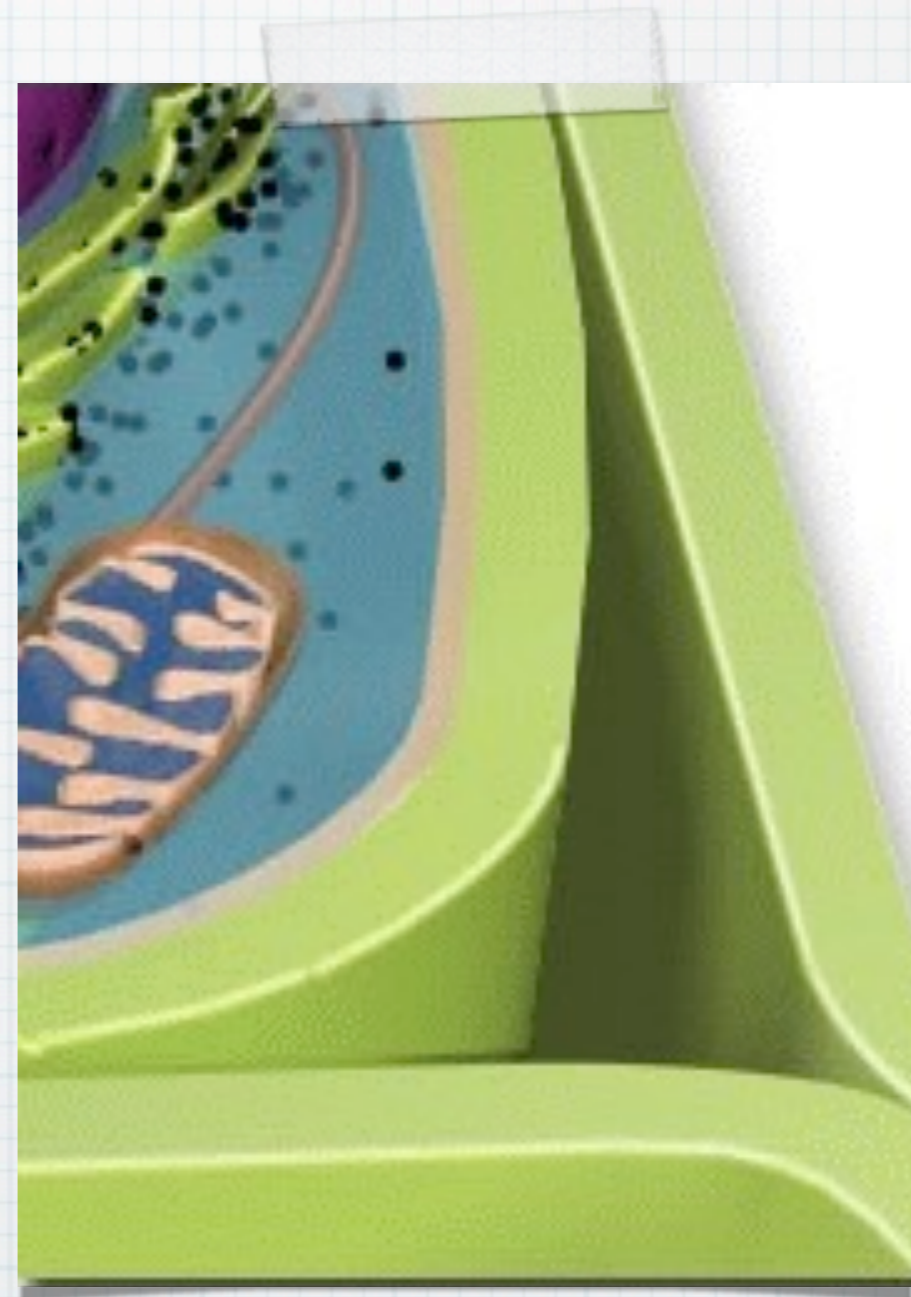


Cell Structures and Functions

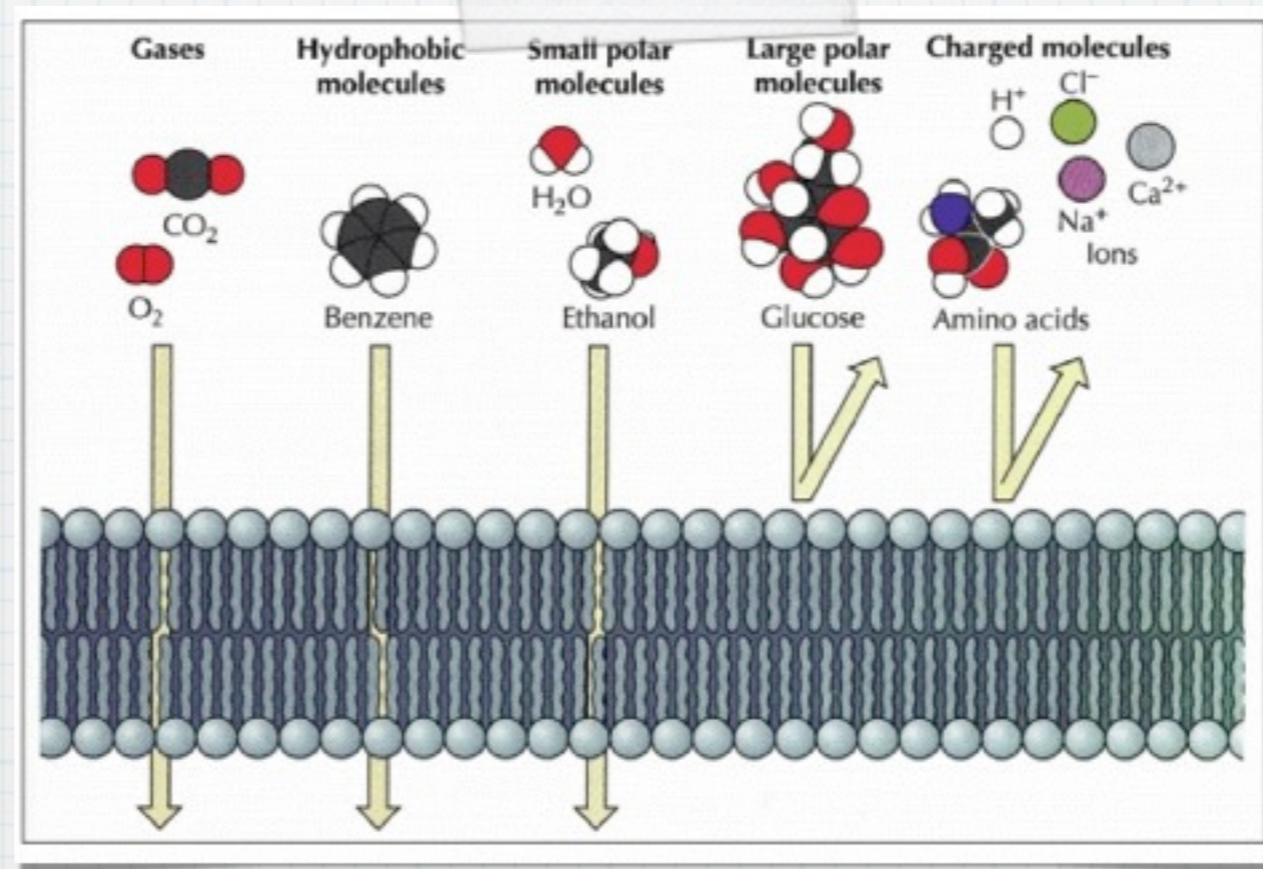
Cell Wall

- * In plant cells, cellulose lined, porous
- * Acts to shape and support, communication for cell



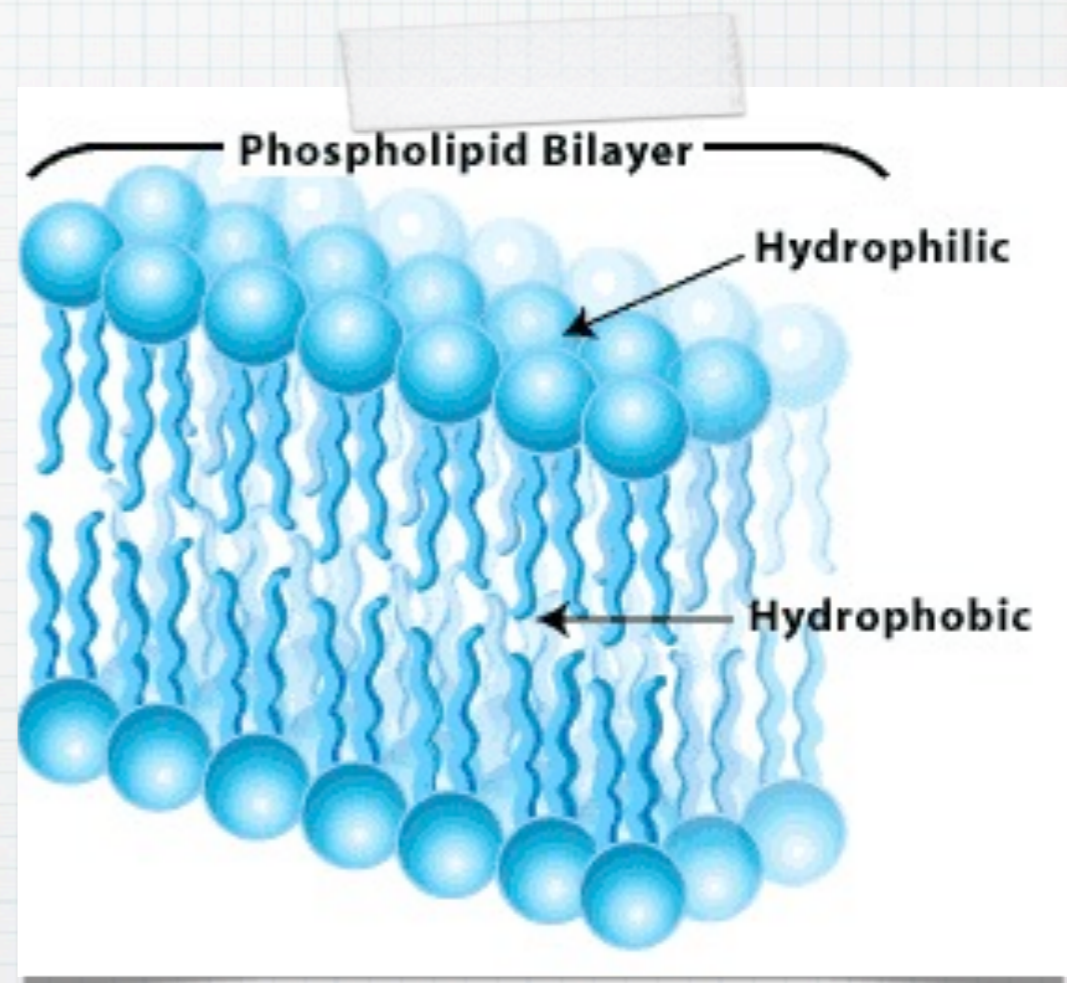
Cell Membrane

- * Permeable (through diffusion) to lipid soluble molecules, water and dissolved gases (O_2 and CO_2)
- * Impermeable to water soluble molecules (salts, ions, solutes, carbohydrates/sugars and proteins)

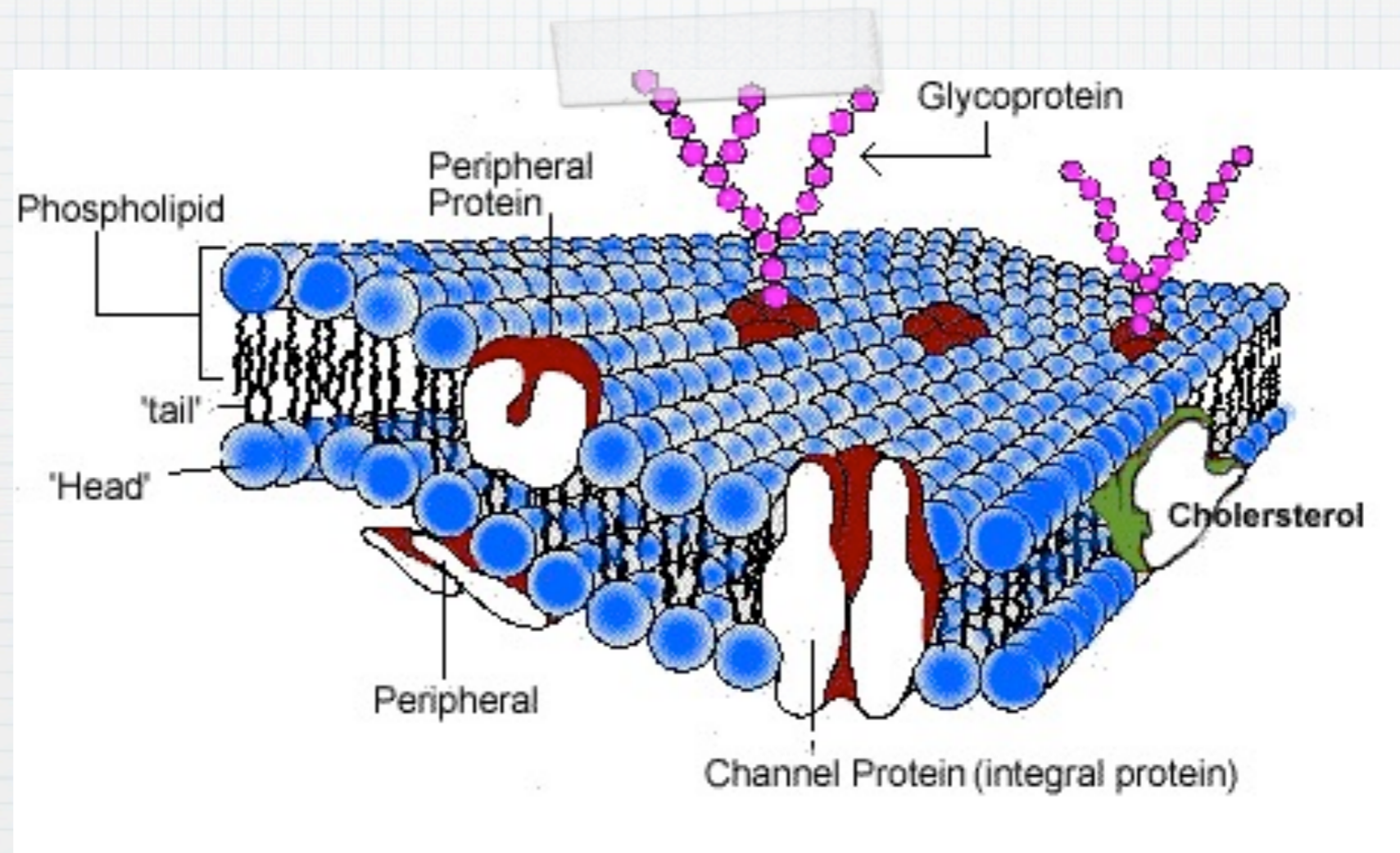


* **“Fluid mosaic model” - the cell membrane is a phospholipid bilayer**

* phospholipids have **hydrophobic tails** (repel water) and a **hydrophilic head** (attracts water)

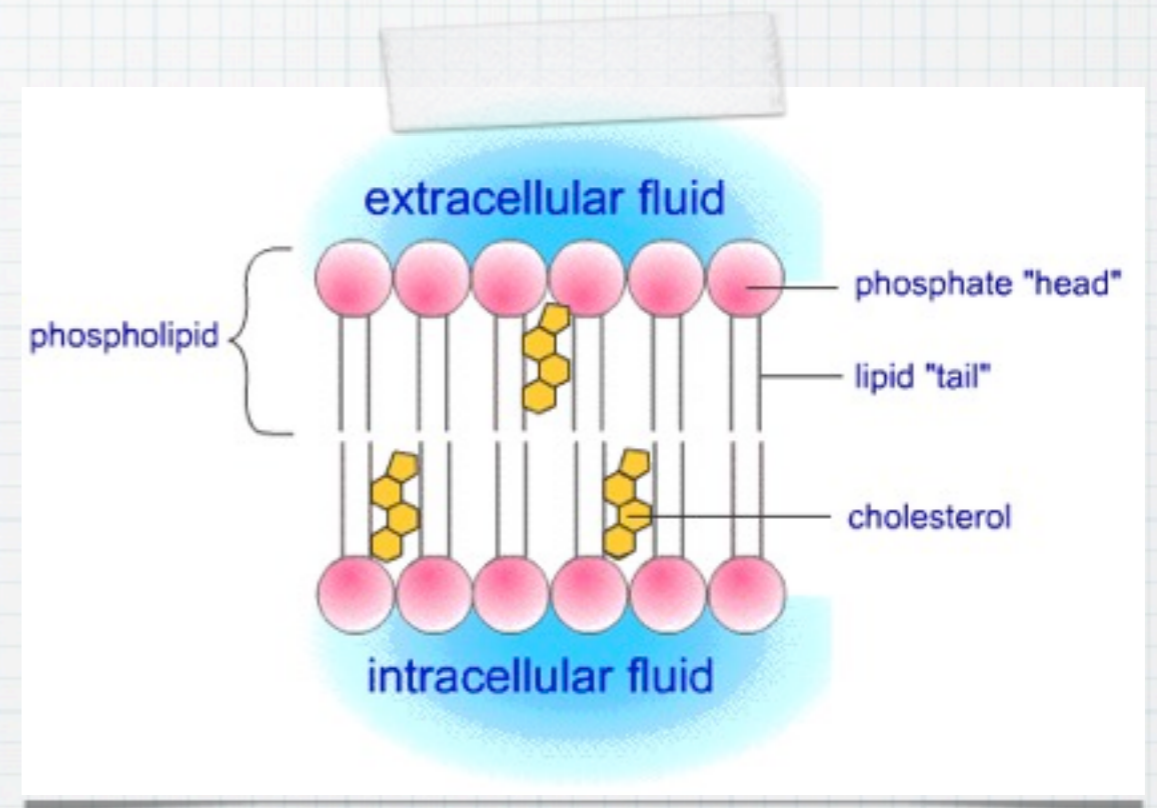


* also contains carbohydrates, lipids and proteins with specific functions



* Lipids are not bonded together - results in fluidity (easy movement), gives structure and orientation to the cell

* Cholesterol strengthens membrane, increases flexibility and decreases permeability to water soluble molecules

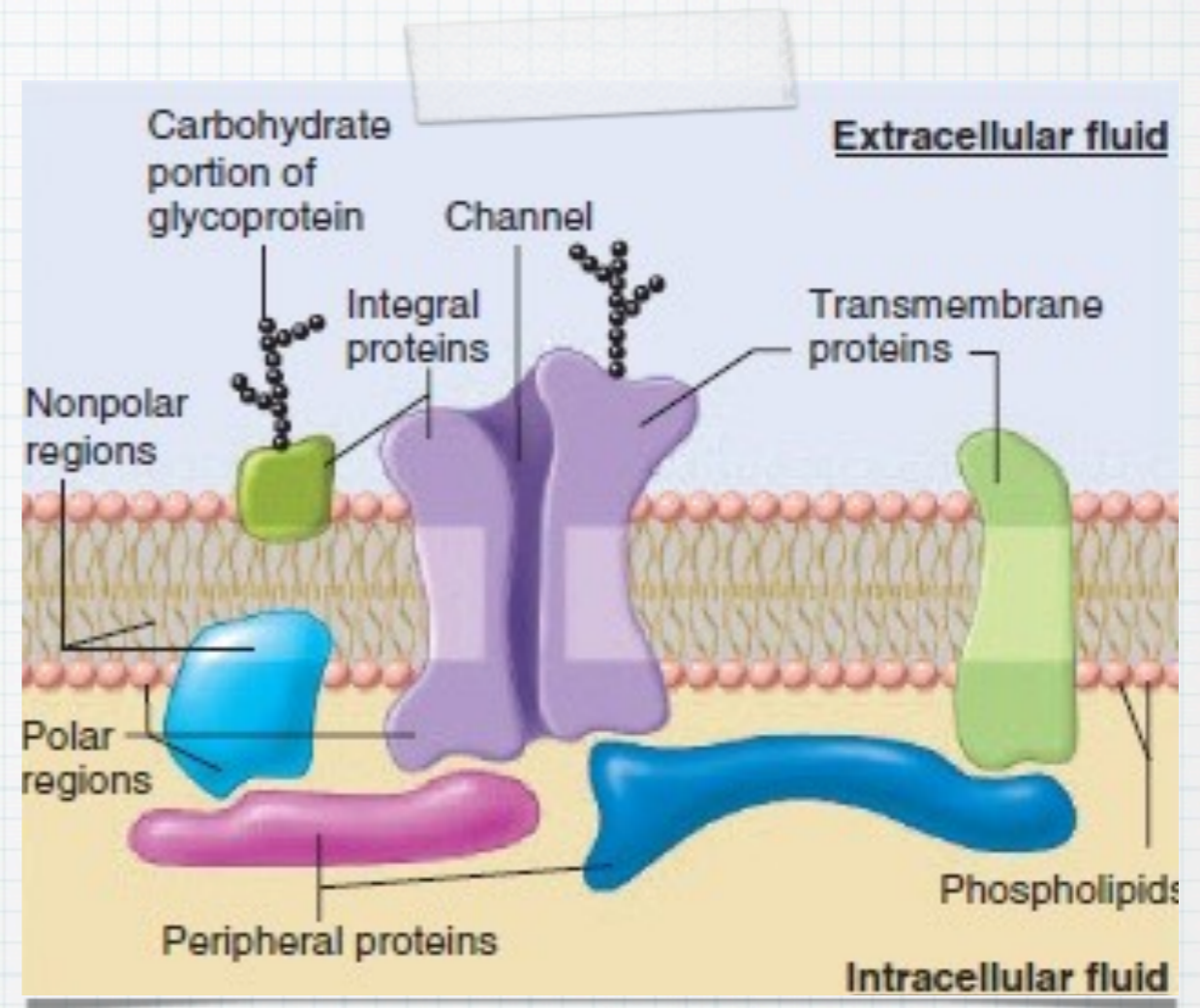


* **Proteins - are loosely attracted to hydrophobic regions**

* **act as channels/pores**

* **water soluble substances travel into the cell.**

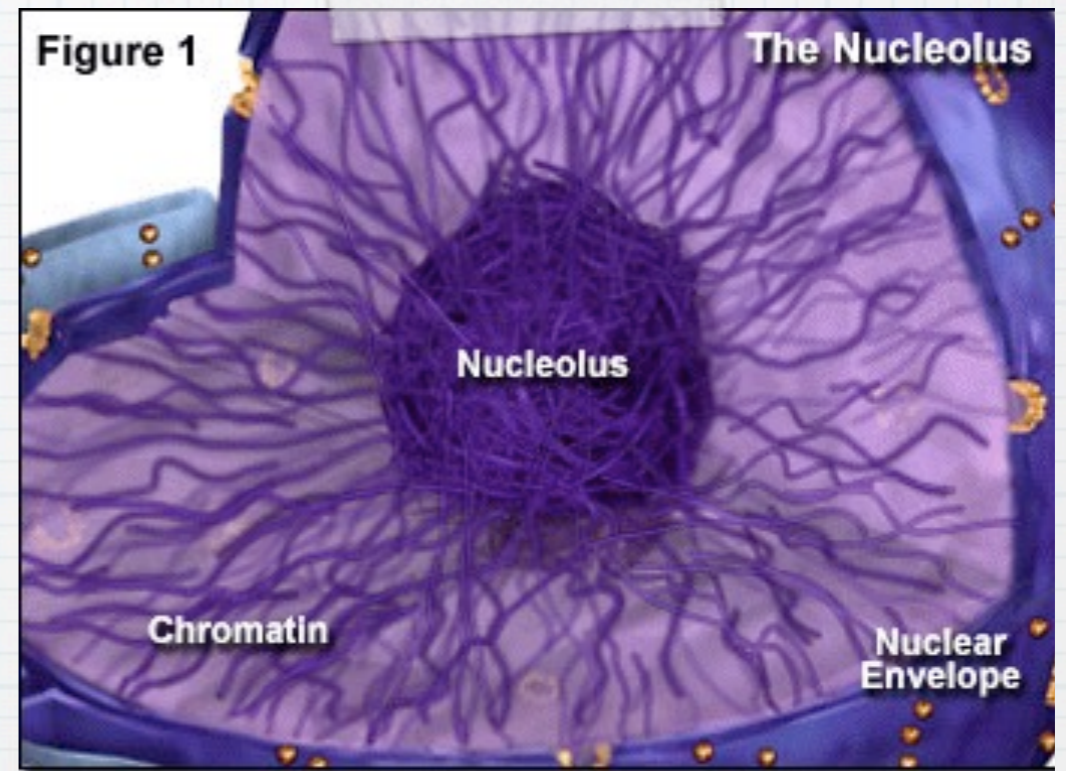
* **products of metabolism get out**



* **transport materials, recognition, catalyze reactions, communication, connect**

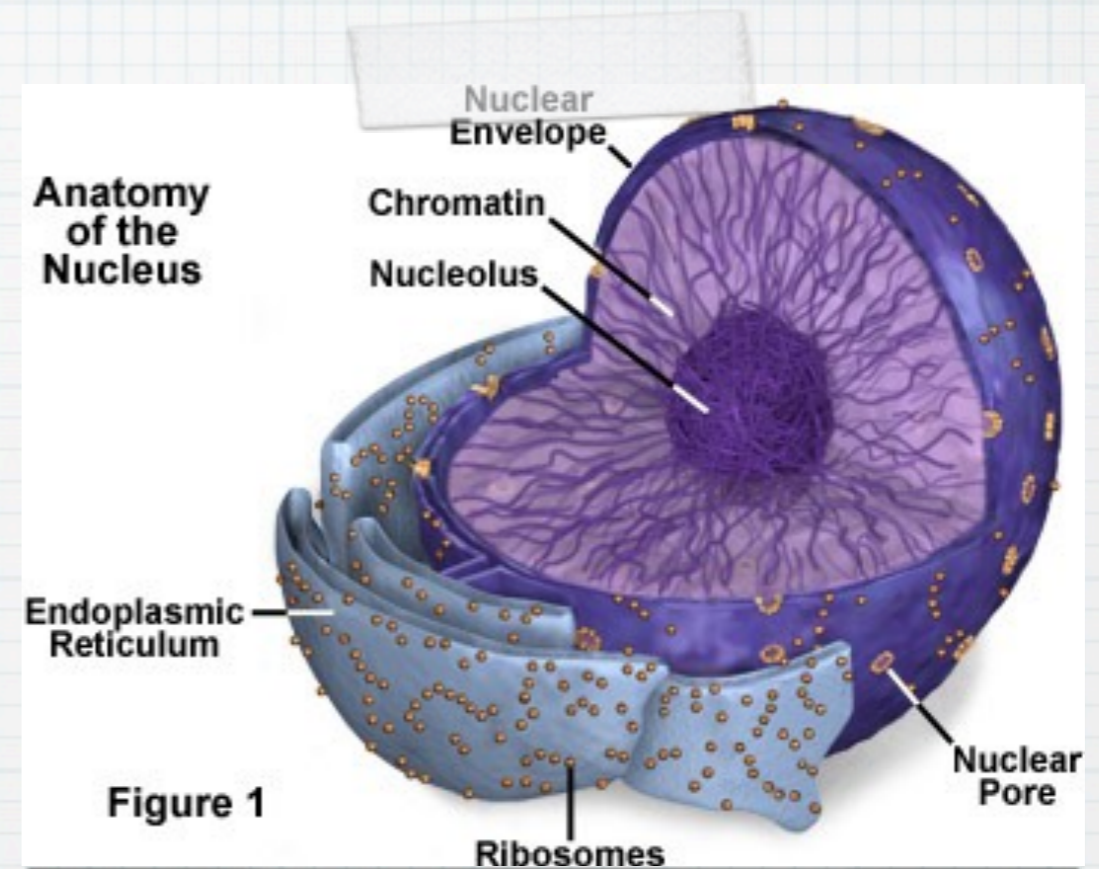
Nucleolus

- * Structure: located within nucleus
- * Function: assembles ribosomes



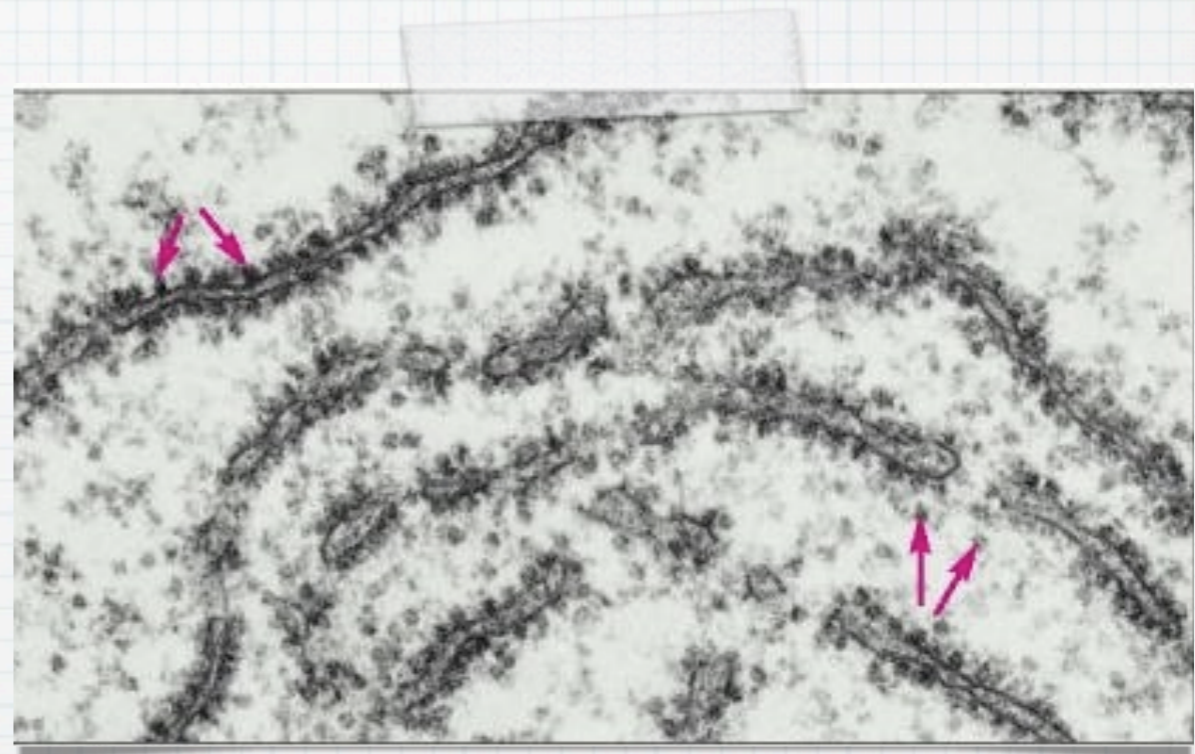
Nucleus

- * Structure: in almost all cells
- * Function: contains DNA, genes, chromatin chromosomes
- * control centre



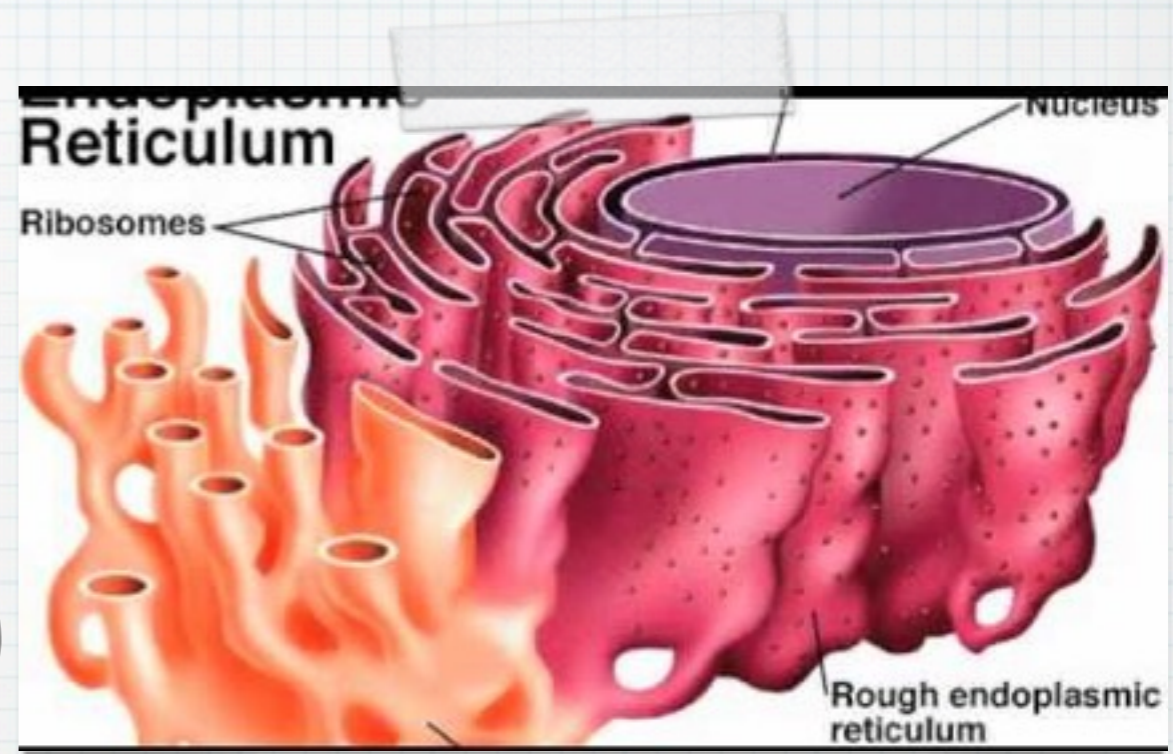
Ribosomes

- * Structure: small and spherical
- * attached or free floating
- * Function: synthesize proteins



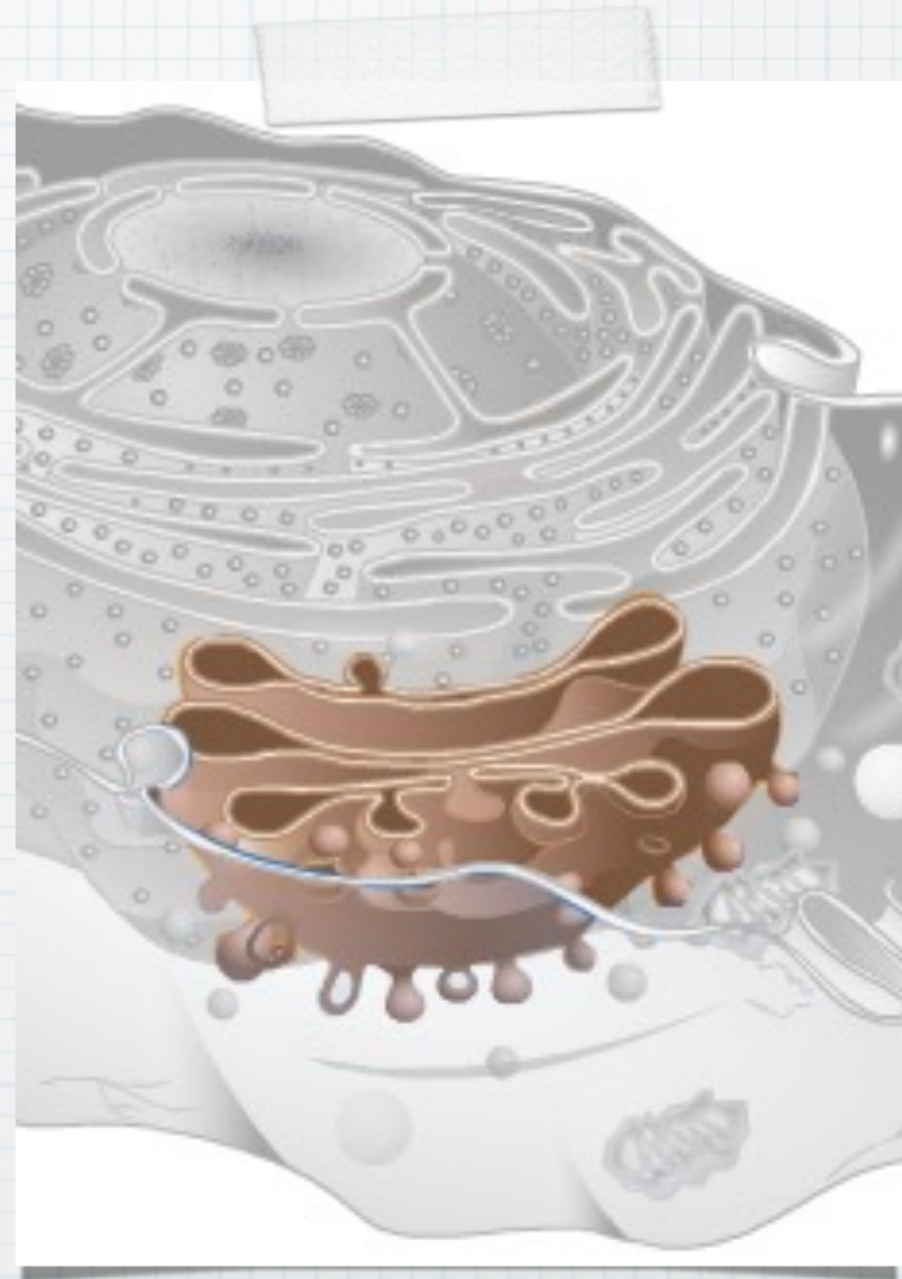
Endoplasmic Reticulum

- * Structure: tubes and channels continuous with nuclear membrane
- * Function:
- * Smooth (SER) - (no ribosomes) - fat production
- * Rough (RER) - (has ribosomes) protein synthesis



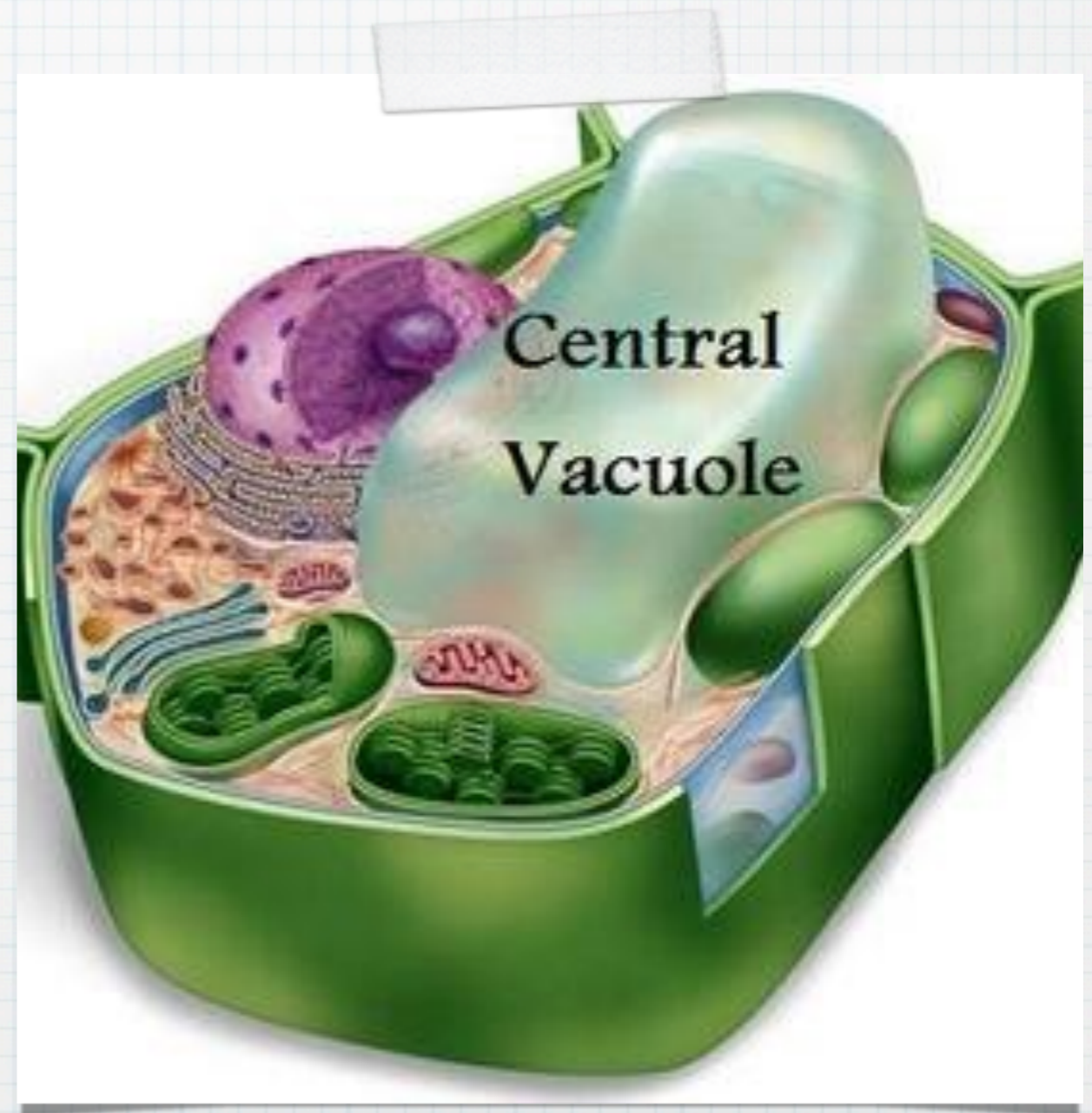
Golgi Apparatus

- * Structure: tubelike structure, looks like flattened sacs
- * Function: add fat or sugar to proteins made by RER



Vacuoles

- * Structure: vesicles (very large in plant cells, present in animal cells too)
- * Function: store food, water and waste
- * turgor pressure in plants



Lysosomes

- * Structure: contain variety of enzymes made by RER
- * Function:
 - * digest food
 - * destroy harmful chemicals
 - * kill a cell that is old or not working properly



Mitochondria

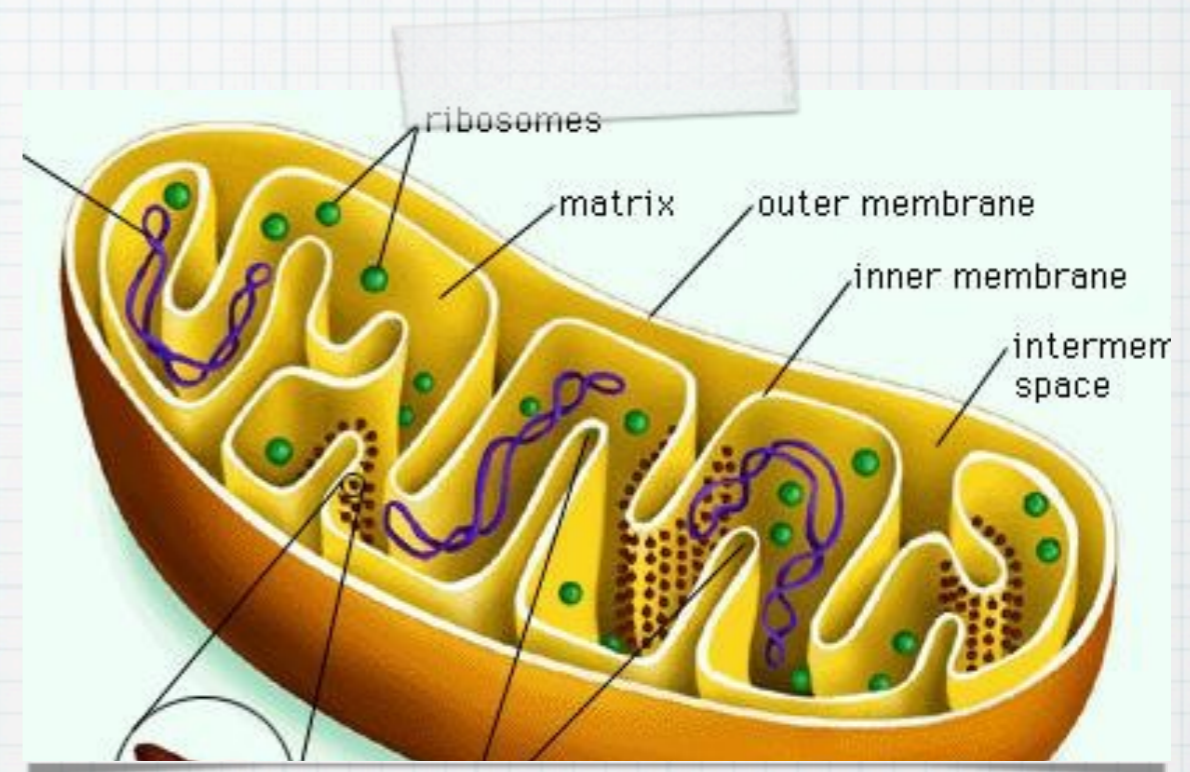
- * Structure:

- * rod shaped, with an inner and outer membrane.

- * Cristae (finger like projections from inner membrane)

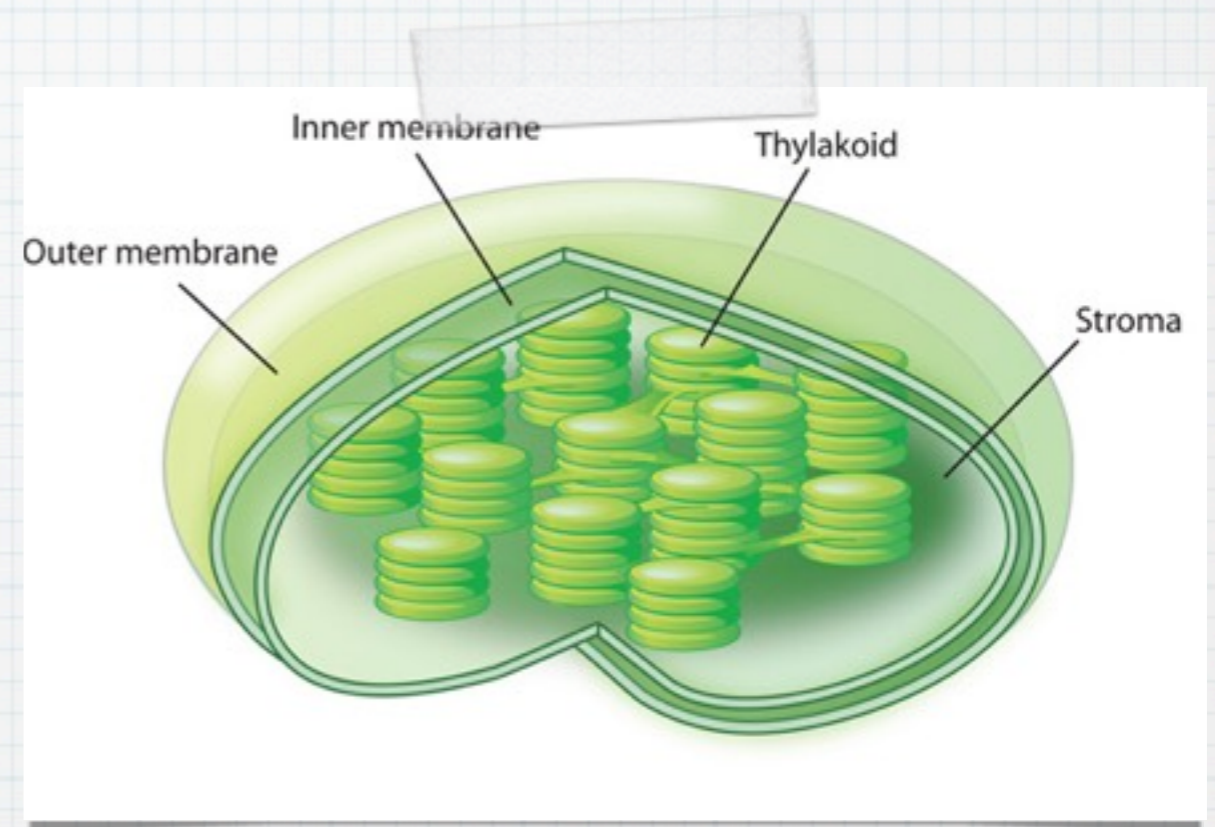
- * has its own DNA and ribosomes

- * Function: energy producer



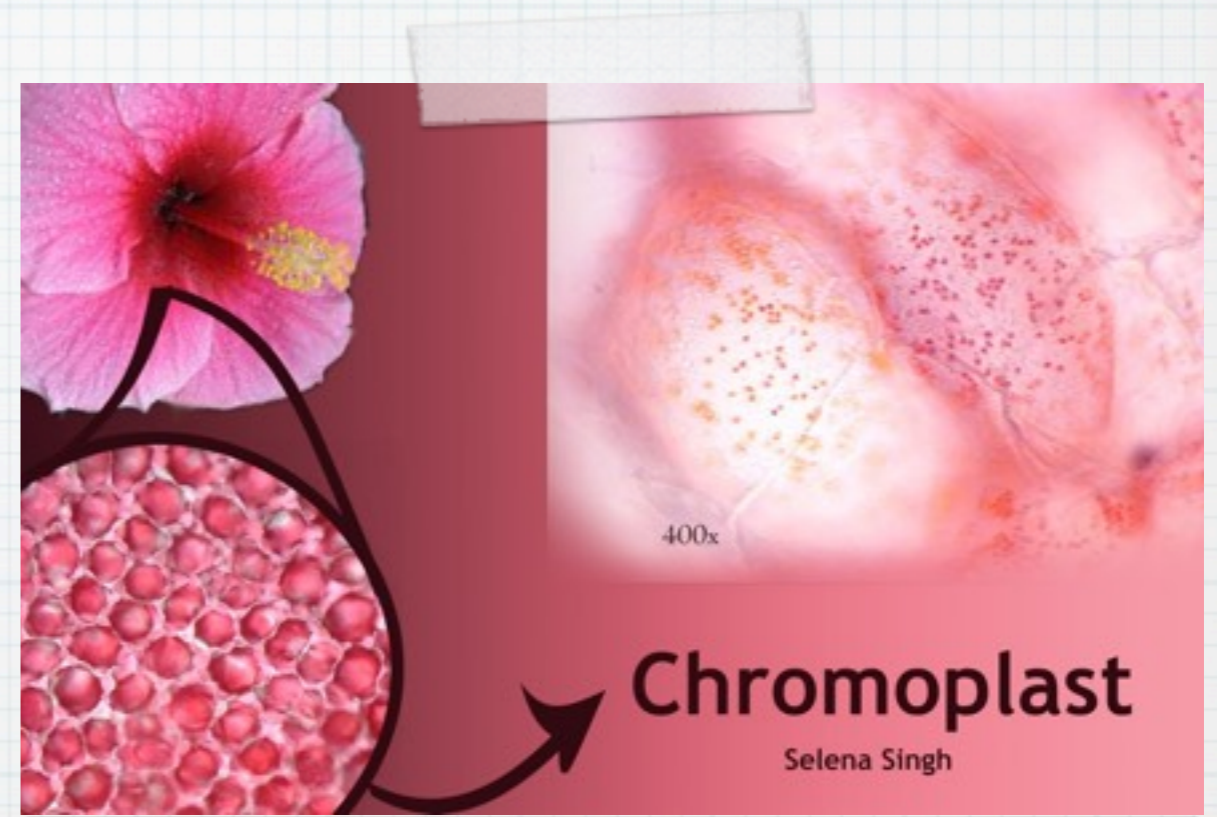
Plastids (only found in plants)

- * Chloroplast
- * Structure: oval, green, contains chlorophyll
- * Function: photosynthesis



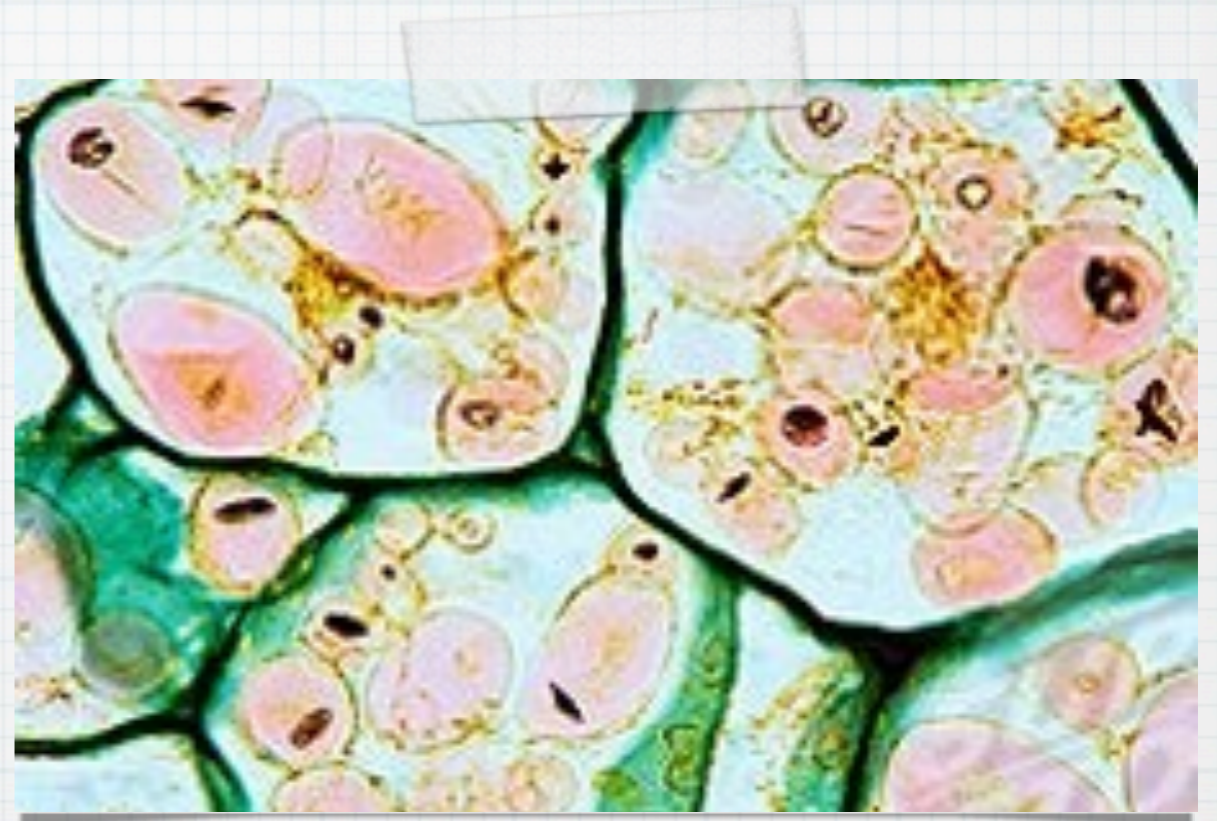
Plastids (only found in plants)

- * Chromoplast
- * Structure: red coloured plastid
- * Function: seed dispersal



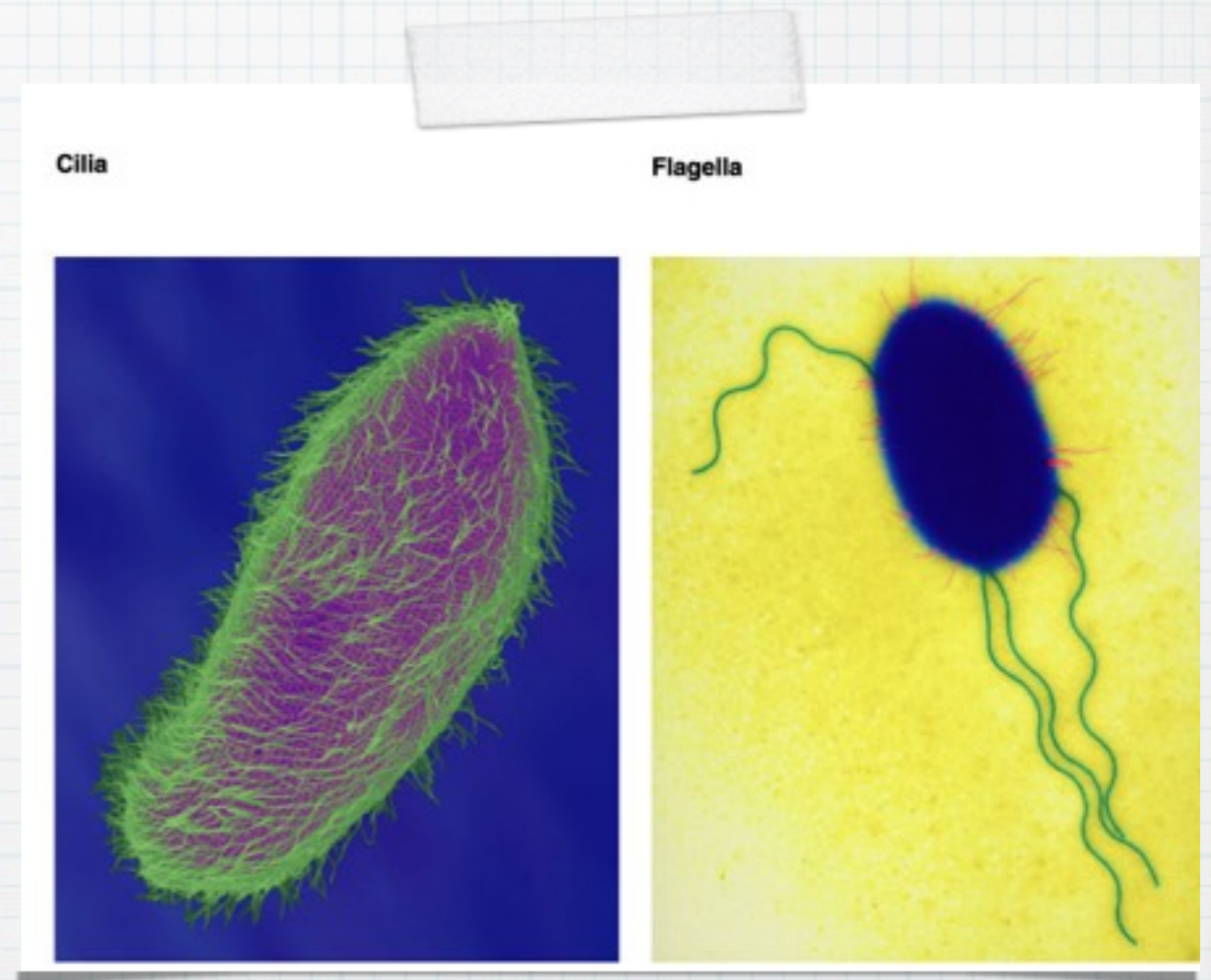
Plastids (only found in plants)

- * Leucoplast
- * Structure: white carbohydrate rich plastid
- * Function: storage



Flagella and Cilia

- * Structure: hair-like extensions, 1 or 2 flagella, large numbers of cilia
- * Function: movement



Centrioles

- * Structure: short cylinders in cytoplasm
- * Function: reproduction

