DO NOW: Label: Nucleus, ribosome, cytoplasm, mitochondria, vacuole, cell membrane



**REVIEW:** *The 8 Organelles You Need to Know…*

1. **Nucleus-** Stores \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Cell Membrane**- Controls what enters and leaves the cell, “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”
3. **Cell Wall**- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ONLY, external to membrane
4. **Cytoplasm-** Liquid in the cell (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
5. **Ribosome**- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ synthesis
6. **Mitochondria**- Makes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (cellular respiration)
7. **Chloroplast**- Makes glucose (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
8. **Vacuole**- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (food/water)

**The Cytoplasm:**

* The cytoplasm is a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-based liquid with different substances\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in it.
* The cytoplasm is maintained at a certain *concentration*….

**Concentration of a Liquid:**

* The of a liquid means how much stuff is dissolved into that liquid.
* The  stuff in the liquid, the  the concentration.
* The stuff in the liquid, the  it is.
* Molecules like their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Naturally,** molecules will move from a place of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ concentration to a place of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_concentration.
* “*High concentration*”= where there is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* “*Low concentration*”= where there is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The movement of a molecule from a HIGH concentration to a LOW concentration is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Diffusion happens naturally, it does \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Diffusion Across the Membrane:**

* Molecules will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ across the cell membrane depending on their concentration.
* **In order for a cell to be in homeostasis, the concentration \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the cell MUST BE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of the cell.
* *If there is a “high concentration” of a molecule inside of the cell…. Some of that molecule needs to diffuse… OUT of the cell.*
* *There is a “low concentration” of a molecule inside the cell… MORE of that molecule needs to move into the cell.*

**ONCE AGAIN…**

* Molecules will ONLY diffuse until there are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_concentrations on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the cell membrane.
* When they are equal, the cell is in HOMEOSTASIS, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Selectively Permeable:**

* Not all substances can pass through the membrane…
* If a molecule\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pass through the membrane, the molecule is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* If a molecule \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pass through the membrane, the molecule is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Permeable**= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Because the cell membrane only lets certain molecules pass through, we can say that the membrane is “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”
* “**Selectively Permeable**”= only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ get through



**7 Questions:**

1. Which side of the beaker has the high concentration?
2. Which side has the low concentration?
3. In which direction will the molecule move?
4. What is this movement called?
5. Does it require energy?
6. When will the molecules stop moving?
7. Why is the cell membrane described as “selectively permeable?”