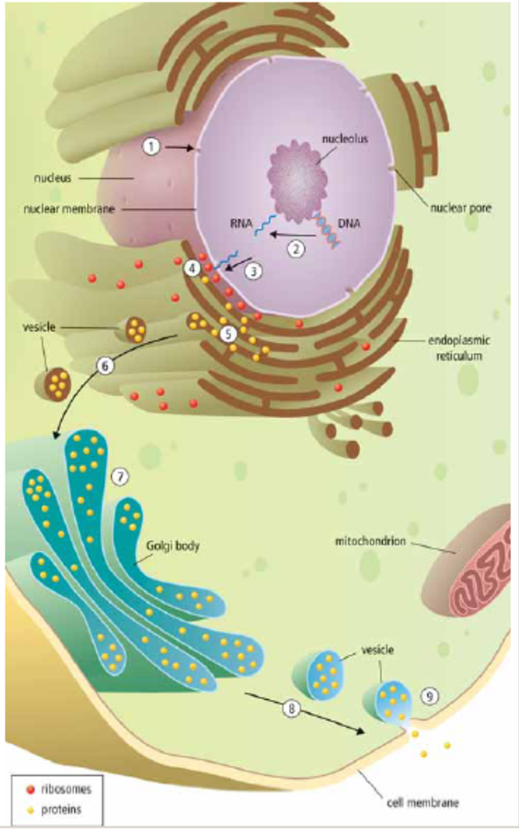
**Biology 11: Cell Processes**

Date: Name:

By the end of the lesson you should be able to:

* Describe protein synthesis
* Compare and contrast the processes of mitosis and meiosis
* Compare and contrast diffusion and osmosis.

**Protein Synthesis**

1. The nucleus receives a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to make a specific protein
2. The DNA message for a specific protein is copied into a small molecule called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. RNA leaves through a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The RNA message is delivered to the \_\_\_\_\_\_\_\_\_\_\_\_\_, where the protein is made
3. The manufactured protein enters the \_\_\_\_\_\_\_\_\_\_
4. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ forms off the end of the ER and carries the vesicle to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Golgi \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the protein for transport
6. A vesicle forms off the end of Golgi and \_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The vesicle attaches to cell membrane and is released out of the cell.

**Protein Synthesis Analogy**

**Cell Reproduction**

MITOSIS MEIOSIS

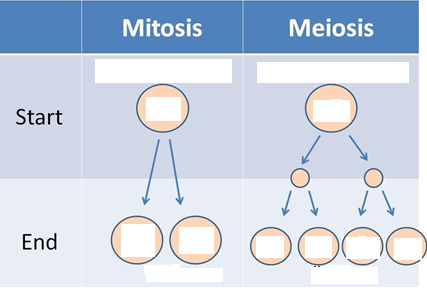
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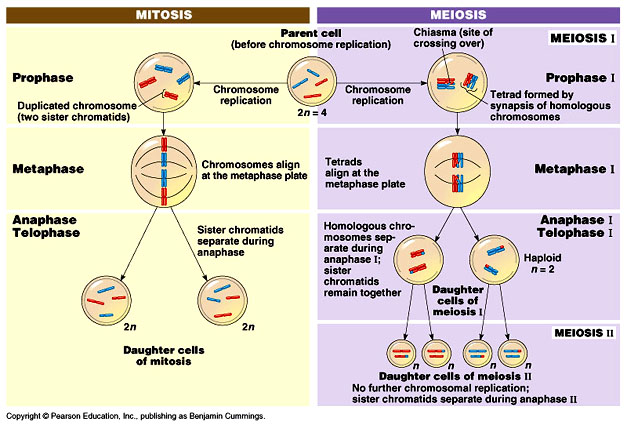
**Mitosis**

* A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (contains \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – one from each parent) will divide to form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells.

**Meiosis**

* A 2N diploid cell (contains two copies of each chromosome – one from each parent) will divide to form \_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells (half as many of the original number of chromosomes)



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**Diffusion and Osmosis**

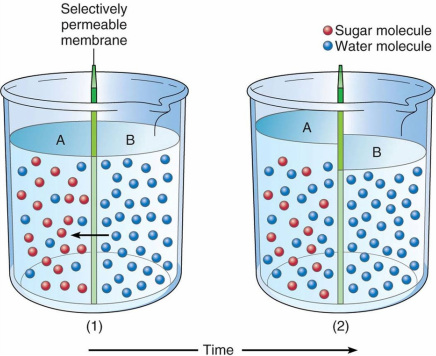
Diffusion

* Movement of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Osmosis

* Movement of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  from an area of high concentration to an area of low concentration

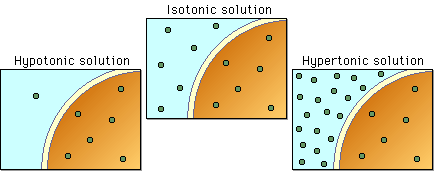
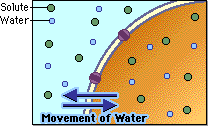
Selectively Permeable Membrane

* Cell membranes are selectively permeable – they select what is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Water is able to cross membranes while many solutes (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ such as sugar) do not cross freely
* This leads to osmosis, the diffusion of water

*Osmosis Details*

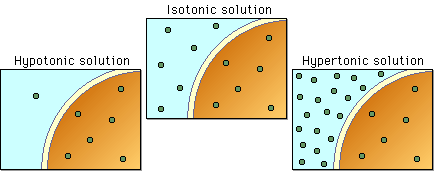
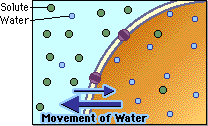
**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* + The concentration of the solute is equal on both sides of the cell membrane
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of water into or out of the cell

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: higher concentration of water inside the cell**

* + The concentration of the solute is higher outside of the cell
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the cell; the cell shrinks

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: lower concentration of water inside the cell**

* + The concentration of the solute is higher on the inside of the cell so \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; the cell swells (if too much it can burst! 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!)

