Name_____

DIFFUSION LAB

Homeostasis is the property of a system that regulates its internal environment so as to maintain a stable, constant condition. The plasma membrane of the cell plays a large role in maintaining homeostasis within a cell by controlling what moves in and out of a cell.
In this lab, you will observe the diffusion of a substance across a semi permeable membrane. Iodine is a known indicator for starch. An indicator is a substance that changes color in the presence of the substance it indicates. Watch as your teacher demonstrates how iodine changes in the presence of starch.

PreLab Questions

1. Define homeostasis _____

2. Define diffusion _____

3. Define osmosis _____

4. Define selectively permeable membrane _____

5. Why is iodine called an "indicator"? _____

6. Molecules tend to move from areas of _____ concentration to areas of _____ concentration.

PreLab Observations: Describe what happened when iodine came into contact with starch.

_____

Procedure:

1. Fill a plastic baggie with a teaspoon of cornstarch and a half a cup of water tie bag. (This may already have been done for you)
2. Fill a beaker halfway with water and add ten drops of Lugol's iodine.
3. Place the baggie in the cup so that the cornstarch mixture is submerged in the iodine water mixture.
4. Wait fifteen minutes and record your observations in the data table
5. While you are waiting, answer the questions.

What's in the Bag?

We're going to think about concentrations now, which substances are more or less concentrated depends on which one has the most "stuff" in it.

1. Which is more concentrated in starch? [baggie / beaker]
2. Which is more concentrated in iodine? [baggie / beaker]

Make Some Predictions

1. If the baggie was permeable to starch, which way would the starch move? [into bag / out of bag]
   If the baggie was permeable to iodine, which way would the iodine move ? [into bag / out of bag]

2. If the baggie were permeable to iodine, what color would you expect the solution in the baggie to turn? [orange / purple / no color change]
   What about the solution in the beaker? [orange / purple / no color change]

3. If the baggie were permeable to starch, what color would you expect the solution in the baggie to turn? [orange / purple / no color change]
   What about the solution in the beaker? [orange / purple / no color change]

Data Table:

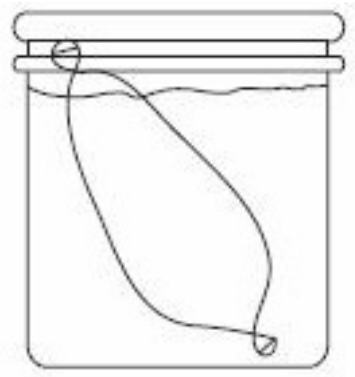
	Starting Color	**Color After 15 min**
Solution in Beaker		
Solution in Bag		

Post Lab Analysis

1. Based on your observations, which substance moved, the iodine or the starch? How can you be sure?

2. Is the baggie selectively permeable? _____ If so, what substance is it permeable to? Why?

3. Sketch the cup and baggie in the space below. Use arrows to illustrate how diffusion occurred in this lab.



4. What would happen if you did an experiment in which the iodine solution was placed in the baggie, and the starch solution was in the beaker? Be detailed in your description.