Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Diffusion Lab**

Introduction: 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 chances color in the presence of the substance it indicates. Watch as your teacher demonstrates how iodine changes in the presence of starch.

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

**Procedure:**

1. Get a piece of dialysis tubing and tie a tight knot in one end.
2. Open the opposite end of the tubing and use a dropper to add corn starch solution. Leave enough space at the top to tie another knot!
3. Tie the top end of the tubing closed
4. Fill a beaker halfway with iodine solution.
5. Place the tubing in the beaker so that it is submerged in the iodine.
6. Wait fifteen minutes and record your observations in the data table
7. While you are waiting, answer the questions on the front of the page.

**Questions:**

1. Define diffusion.

2. Define osmosis

3. What is the main difference between osmosis and diffusion

4. Why is iodine called an indicator?

5. Molecules tend to move from areas of \_\_\_\_\_\_\_ concentration to areas of \_\_\_\_\_\_ concentration.

**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. Is the baggie or beaker more concentrated in starch?

2. Is the baggie or beaker more concentrated in iodine?

3. Iodine solution: is the baggie or the beaker hypertonic?

4. Starch solution: is the baggie or the beaker hypertonic?

5. Which one is hypotonic in relation to starch, baggie or beaker?

**Make Some Predictions**

1. If the baggie was permeable to starch, which way would the starch move, into the bag or out of the bag? \_\_\_\_\_\_\_\_

2. If the baggie was permeable to iodine, which way would the iodine move, into or out of the bag? \_\_\_\_\_\_\_

3. If the baggie was permeable to iodine, what color would you expect the solution in the baggie to turn? \_\_\_\_\_\_\_ What about the solution in the beaker? \_\_\_\_\_\_\_\_\_\_\_

4. If the baggie was permeable to starch, what color would you expect the solution in the baggie to turn? \_\_\_\_\_\_\_\_ What about the solution in the beaker? \_\_\_\_\_\_\_\_\_

5. Make a prediction about what you think will happen:

**Data Table**

|  |  |  |
| --- | --- | --- |
|   | Starting Color  | Color after 15 minutes |
| Solution in Beaker  |   |   |
| Solution in Bag  |   |   |

**Post Lab Analysis**

1. Based on your observations, which substance moved, the iodine or the starch?

2. How did you determine this?

3. The dialysis tubing was permeable to which substance?

4. Is the dialysis tubing selectively permeable?

5. Sketch the beaker and tubing in the space below. Use arrows to illustrate how diffusion occurred in this lab.

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

7. Why is it not a good idea to store iodine in a plastic bag?