**Diffusion Lab Name:**

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.

1.

**Procedure:**

1. Fill a plastic baggie with a teaspoon of corn starch and a half a cup of water. Tie the bag. (This may already have been done for you)
2. Fill a cup halfway with water and add ten drops of iodine.
3. Place the baggie in the cup so that the cornstarch mixture is submerged in the iodine water mixture.
4. Wait 45 minutes and record your observations in the data table
5. While you are waiting, answer the questions.

**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 solution or cup solution more concentrated in starch?

2. Is the baggie solution or cup solution more concentrated in iodine?

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

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

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

**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 plastic baggie was permeable to which substance?

4. Is the plastic baggie selectively permeable?

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