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 changes color in the presence of the substance it indicates. Iodine turns starch a "purplish brown" color.

Procedure:

1. Fill a plastic baggie with a teaspoon of corn starch and a ¼ cup of water. Tie or seal bag.
2. Fill a beaker halfway with water and add about 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 fifteen minutes and record your observations in the data table.
5. While you are waiting, answer the questions.

Questions:

1. What is the main difference between osmosis and diffusion?

2. Why is iodine called an indicator?

3. Molecules tend to move from areas of _____concentration to areas of _____ concentration.

What's in the bag?

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?

6. Give an example of a concentration gradient for one of the solutions.

What if...

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

8. If the baggie was permeable to iodine, which way would the iodine move, into or out of the baggie?

9. 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?

10. 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?

Results – Complete the table and answer the questions based on your results.

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

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? Why?

5. Sketch the experiment and show (use arrows) to illustrate how diffusion occurred in this lab.