



Name: \_\_\_\_\_ Period: \_\_\_\_\_

## Diffusion Lab

**Introduction:** In this lab you will observe the diffusion of a substance across a semipermeable membrane. Iodine is a known indicator for starch. An indicator is a substance that changes color in the presence of the substance it indicates.

**Pre-Lab: Answer the following questions in complete sentences.**

1. What happened when iodine came into contact with starch in the demonstration? \_\_\_\_\_

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2. Why is iodine called an indicator? \_\_\_\_\_

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

### Procedure:

1. Fill the plastic bag with a  $\frac{1}{2}$  spoonful of starch. Add 20mL of water to the baggie.
2. Have one partner gently mix the cornstarch and water, while the other partner completes #3 and 4.
3. Fill the beaker with 40mL of water.
4. Add 5 drops of iodine to the beaker of water.
5. Place the baggie in the beaker, the baggie with the cornstarch mixture is submerged in the iodine water mixture.
6. Wait 10 minutes and record your observations in the data table.
7. While you are waiting, answer the following questions.

**Questions: Answer the following questions in complete sentences.**

1. Make a prediction about what you think will happen after 10 minutes.

	STARTING COLOR	COLOR AFTER 10 MINUTES
SOLUTION IN BEAKER		
SOLUTION IN BAG		

1. Define osmosis. \_\_\_\_\_

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2. Define diffusion. \_\_\_\_\_

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3. What is the main difference between osmosis and diffusion? \_\_\_\_\_

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# Cell Theory, Structure and Transport

Name: \_\_\_\_\_ Period: \_\_\_\_\_

**What's in the bag? Think about concentrations now, which substances are more or less concentrated depends on which one has the most stuff in it.**

- 4. If the baggie was permeable to starch, which way would the starch move? Circle. (INTO THE BAG, OUT OF THE BAG)
- 5. if the baggie was permeable to iodine, which way would the iodine move? Circle. (INTO THE BAG, OUT OF THE BAG)
- 6. 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? \_\_\_\_\_
- 7. 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? \_\_\_\_\_
- 8. Now that 10 minutes has passed observe the solutions in the beaker and bag. Record your data in the table below.

	STARTING COLOR	COLOR AFTER 10 MINUTES
SOLUTION IN BEAKER		
SOLUTION IN BAG		

**Analysis Questions: Answer the following questions in complete sentences when necessary.**

- 9. Based on your observations, which substance moved? Circle. (IODINE, STARCH)
- 10. Explain how you determined which substance moved. \_\_\_\_\_  
\_\_\_\_\_
- 11. The plastic baggies was permeable to (IODINE, STARCH).
- 12. Explain how the baggie is selectively permeable. \_\_\_\_\_  
\_\_\_\_\_
- 13. Sketch the beaker and baggie in the space below. Use arrows to illustrate how diffusion occurred in the lab.
- 14. What would happen if you did an experiment in which the iodine was placed in the baggie, and the starch solution was in the beaker? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 15. Why is it not a good idea to store iodine in a plastic bag? \_\_\_\_\_  
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