



Diffusion Lab or, "Do plastic bags have holes in them?"

Purpose: To prove that small molecules may pass from an area of high concentration to an area of low concentration by passing through "pores" or holes in a semi-permeable membrane.

Materials:

Corn Starch
Iodine
Water
Three 500 mL beakers
Zip lock bags

Pre-lab

- ❖ Discuss the concept of molecules in solutions bouncing against one another randomly.
- ❖ Discuss the concept of semi-permeable membranes which allow some things to pass through (small molecules) while blocking larger molecules.
- ❖ Demonstrate what happens to a starch solution when two drops of iodine are added directly to it.
- ❖ This is the positive test for starch (it may be extended to rice, potatoes, white bread etc.)

Procedure

- ❖ Make a moderately strong solution of starch and water. Mix thoroughly.
- ❖ Make a solution of iodine and water (pale brown) and place in three beakers.
- ❖ Put 200 mL of the starch solution into one plastic baggie.
- ❖ Put 200 mL of plain water into another baggie.
- ❖ Float each baggie in its own beaker of iodine solution
- ❖ Add 10mL of the starch solution directly to beaker number three
- ❖ Wait one hour

Observation:

Draw the three beakers

Inference:

Why did the color change take place?

Wrap up Questions:

Did the iodine move into the baggie?

Did the starch move out of the baggie?

How do we know?