

Lab: Observing Diffusion

Purpose:

- To demonstrate that particles diffuse in a regular rate from an area of high concentration to an area of low concentration (that there is a relationship between distance moved and time)
- To practice how to graph results obtained from making measurements

Materials:

- Drop of food colour
- Petri dish
- Ruler

Procedure:

1. Use a small beaker to carefully fill the Petri dish with water.
2. Place ruler with the 0 point in the center under the Petri dish.
3. When the water has settled, place a single drop of food color in the water above the 0.
4. Record the **radius** (center of circle to outer curve) of the main blob forming a circle in **millimeters** at one-minute intervals for 10 minutes.
5. **(2 points)** Record the data in the table below **on graph paper**.
6. **(5 points)** Plot a graph of radius (vertical, y-axis) vs. time (horizontal, x-axis) using this data, **on graph paper**. Label the axes; and include units. Give your graph a **title**. Connect the points on your graph to show the relationship between radius spread and time.

Data Table:

Approx. Time (min.)	0	1	2	3	4	5	6	7	8	9	10
Radius (mm)											

****Complete the following questions in addition to your data table and graph****

1. **(4 points)** Conclusion:
 - a. Restate the purpose and how the purpose was met
 - b. State your results in 3-4 sentences.
 - c. What is the independent variable? What is the dependent variable?
 - d. What would you expect if we used cold water? What about hot water?
 - e. List 3 variables that you controlled during this lab.