

Molar Concentration Lab Activity

- ✓ Unit Conversions
- ✓ Molar Concentration

Name:

Date:

Block:

Purpose

To create salt-water solutions of varying concentration and understand how these solutions affect ocean circulation worldwide.

Materials

- 1L beaker
- 3-40mL beakers
- Graduated cylinder
- NaCl
- Scoopula
- Two colours of food coloring
- Scale
- Stir rod

Procedure

Solution #1

1. Prepare 800.0 mL of 0.570 M NaCl solution in your 1 L beaker. Use a small beaker to weigh the mass of NaCl. Complete calculations in the space below.

A. How much NaCl will you need? _____

B. How much water will you need? _____

Solution #2

1. Prepare 40.0 mL of 4.85 M NaCl solution in a small beaker. Use a graduated cylinder to accurately measure the volume of water. Complete calculations in the space below.

A. How much NaCl will you need? _____

B. How much water will you need? _____

2. Place two drops of **food colouring** into your solution and mix. The colour of this solution is _____.

Solution #3

1. Prepare 40.0 mL of 0.2 M NaCl solution in a small beaker. Use a graduated cylinder to accurately measure the volume of water. Complete calculations in the space below.
 - A. How much NaCl will you need? _____
 - B. How much water will you need? _____
2. Place two drops of a **DIFFERENT food colouring** into your solution and mix. The colour of this solution is _____.
3. **Slowly** and **gradually** pour solution #2 and solution #3 into either end of the 1 L beaker.

Observations

1. Record your qualitative observations and with a labeled diagram.

2. Complete the following table with the densities of the solutions.

	Solution #1	Solution #2	Solution #3
Density (g/mL)			

Analysis

1. Why do you think this happened? Can you give a possible explanation for what you observed?

2. How do you think this phenomenon affects circulation in our oceans?