

Density Tower (Salinity) Lab

Purpose: Understand the relationship between **density** and **salinity**.

Vocabulary:

Density: A property of matter representing the amount of matter in a specific space

Salinity: The measure of the amount of dissolved salt contained in water.

You will work in pairs, but you will share materials in groups of six.

Materials: Each group of six should have

- 1 portable sink (large plastic beaker with water)
- 4 beakers labeled A, B, C, D
- Container of Salt
- 3 test tubes (one for each pair)
- 3 teaspoons (one for each pair)
- Food coloring – yellow, red, blue
- 3 stirrers (one for each pair)
- 4 droppers (one for each solution)

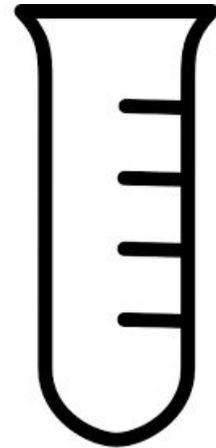
Procedures: to save time, divide the work between pairs for steps 1-5

1. Using the portable sink, carefully pour 100mL of water in each beaker.
2. In **beaker A**, put 10 drops of **blue** and 10 drops of **yellow** food coloring, stir and record in your data collection table. Rinse the stirrer in the portable sink.
3. In **beaker B**, dissolve (stir) **10 grams of salt (one heaping spoonful)** in water and 10 drops of **red** food coloring; and record in your data collection table. Rinse the stirrer in the portable sink.
4. In **beaker C**, dissolve (stir) **20 grams of salt (two heaping spoonfuls)** in water and 10 drops of **yellow** food coloring; and record in your data collection table. Rinse the stirrer in the portable sink.
5. In **beaker D**, dissolve (stir) **30 grams of salt (three heaping spoonfuls)** in water and 10 drops of **blue** food coloring; and record in your data collection table. Rinse the stirrer in the portable sink.
6. Make a plan for the order you should put the colors in the test tube and record.
7. Using the droppers, gently roll drops of each solution down the side of the test tube to layer the four colored solutions.
8. Label the test tube diagram (letter and color) to match your results and answer the conclusion questions.

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Data Collection:

Beaker	Salinity (g/mL %)		Solution color
A	0 g/mL	0%	
B	___ g/100mL	10%	
C	___ g/100mL	20%	
D	___ g/100mL	30%	



Make your plan: _____

Conclusion Questions:

1. What is the color of the most dense solution? _____

2. What evidence supports your answer?

3. What is the salinity of the most dense solution? _____

4. What is the color of the solution at the top of the test tube? _____

5. Why is this solution at the top?

6. Explain the relationship between density and salinity?

