

Lab: Diffusion & Osmosis

Learning Goals: (write out completely, 1 point each)

1. To investigate diffusion and osmosis through student selected experimental setups.
2. To predict the movement of water in real-life scenarios.

Prelab: (write out question and answer completely, minimum 1 point each)

1. What are the three descriptions used for solutions in osmosis? List and define all three.
2. What does selectively permeable mean in regards to the plasma (cell) membrane?
3. What are the two parts of any solution?

Science Journal: (4 points)

Record hypothesis, procedures, and data from the demonstrations performed in class. Record any and all qualitative and quantitative data that may be relevant to the learning objectives.

Postlab Assessment & Communication:

1. Create a data table for all scenarios performed.
2. Make a CEJ for each scenario observed. Include a diagram utilizing different symbols for different parts of the solution. Include a legend or key.
 - a. Claim - make a claim about what substance is moving where (into or out of the cell or both)
 - b. Evidence - use the mass recorded and a diagram to show supporting evidence of the claim. Evidence must include the use of quantitative data and not just qualitative data.
 - c. Justification - explain why the evidence supports the claim.

Synthesis Questions: (questions must be in lab book)

1. If a bowl of fresh strawberries is sprinkled with sugar, a few minutes later the berries will be covered with juice. Why? Make sure you correctly use ALL of the following terms at least once in your explanation. Hypertonic, hypotonic, solute, solvent, semi-permeable membrane, diffusion, and osmosis.
2. Why should we, as humans, not only drink distilled water?
3. **Compare** diffusion and osmosis.
4. What would happen to the rate of diffusion if the temperature of the demonstration involving dialysis tubing were to be varied (increased or decreased)? Make sure to address both conditions.
5. Why are the two slugs afraid of the slug with salt?

