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Laboratory 3 – Diffusion and Osmosis

Description: This lab is designed to investigate (1) principles of diffusion and osmosis, (2) investigate the impacts of surface area:volume on diffusion/osmosis rates, (3) demonstrate the selectively permeable nature of living membranes

We cut two different sizes of potato cubes, 2 cm^3 (n=1) and 1 cm^3 (n=8). We weighed all potato cubes before the start of the experiment. The 2 cm^3 potato cube was placed in a beaker filled with distilled water. All eight 1 cm^3 potato cubes were also placed in a beaker with distilled water. The experiment was left to rest for 20 minutes and then ll potato cubes were reweighed and the weights recorded.

This experiment was done four times, once each for distilled water (0% NaCl), 0.9% NaCl solution, 2% NaCl solution, and 5% NaCl solution.

Datasets:

1. Group3_PotatoWeights.csv

Attributes

1. Group3_PotatoWeights.csv

Name	Description	Units
Treatment	Name of group sampled (1x2 cm^3 or 8x1 cm^3)	# of cubes & cm^3
Concentration	Trial – percent of NaCl in solution (four levels)	% NaCl
Final Weight	Final weight of potato cube(s)	g
Initial Weight	Initial weight of potato cube(s)	g

Rubric

Description (4 pts):

Purpose of lab is stated clearly (1)

Procedure is outlined clearly and in a reproducible way (3)

Datasets (1 pt):

All datasets present (0.75), files are appropriately named, group and lab is identifiable (0.25)

Attributes (4 pts):

Table is formatted correctly, 3 horizontal lines with separated headings (1)

Columns are correct and well described (3)

Format (1pt):

Correct headings and title (0.5), neat and organized (0.5)