

Diluting Color Activity:

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Students' Guide

Goals

- To understand the relationship between phenomena on the macro scale and the chemical properties on the molecular level
- To relate color and concentration through dilution

The Activity

This activity has two parts. First, there is the classroom demonstration in which the qualitative properties of the color solutions are demonstrated. In the second half, you will calculate the color content of solutions in test tubes. Then, given an unknown solution, you will estimate its color content, using the dilution series.

Materials for Each Group

- Graphing paper or computer with Excel
- Eight test tubes in test tube rack:
 - In the first test tube, there are 25 ml of water and five drops of red color
 - The other test tubes contains a dilution series in which each test tube contains 5 ml of the solution in the former test tube and 20 ml of water

SAFETY

Wear goggles at all times when handling chemicals.

Instructions

Calculate the amount of color (in drops) and write it down in the following table:

# of test tube	Calculations	Amount of color (in drops)	Log [# of drops]
1			
2			
3			
4			
5			
6			
7			
8			

Diluting Color Activity: Students' Guide, page 2

Is there color in all of the test tubes? _____

Graph the test tube numbers against the amount of color (number of drops) and explain what you see: _____

Graph the test tube numbers against the amount of color and explain what you see: _____

Try to estimate, as closely as possible, the amount of color in your test tube. Use the graph and explain how you estimated it: _____

Summary

Explain why you don't see color in the last test tube(s): _____
