Name: _____ Group: _____ Date: _____

LAB 4
TECHNIQUE

PREPARING A SOLUTION BY DILUTION

STUDENT BOOK	Chapter 1, page 13
TOOLBOX	Page 29

Goals

– Prepare a solution of specified concentration by dilution of a solution of higher concentration with a solvent.
– Compare the colour of the solution obtained to the colour of the original solution.

Preliminary calculations

How is a solution of 50 mL with a concentration of 2 g/L prepared from a given solution with a concentration of 10 g/L?
Write down the calculations for preparing a solution of the amount and concentration specified.

Materials

- test-tube rack
- 2 test tubes (18 mm × 150 mm) and stoppers (No. 1)
- container of a given solution with a concentration of 10 g/L
- 25-mL graduated cylinder
- 100-mL beaker
- 50-mL graduated cylinder
- wash bottle of distilled water
- glass stirring rod

Procedure

1. Fill one test tube with the given solution (10 g/L concentration).
2. Add to the 25-mL graduated cylinder the amount of solution needed for a solution of 50 mL with a concentration of 2 g/L (see Preliminary calculations.)
3. Pour the solution into the beaker.
4. Measure into the 50-mL graduated cylinder the amount of distilled water needed.
5. Add the water to beaker.
6. Mix with the glass stirring rod.
7. Pour the solution into the second test tube and compare the colour to the colour of the solution in the first test tube. Record your results.
8. Clean up and put away materials.

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Results

Record your results in the table below. Give the table a title.

Title:

Concentration of solution (g/L)	Colour of solution

Reflecting on the lab technique

1. How can a solution be diluted?

2. How does concentration of a solution vary during dilution?

3. What are the possible sources of error in this lab?