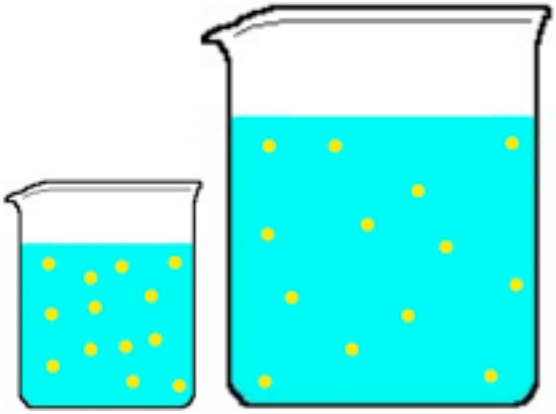
SCH3U

Solutions & Solubility

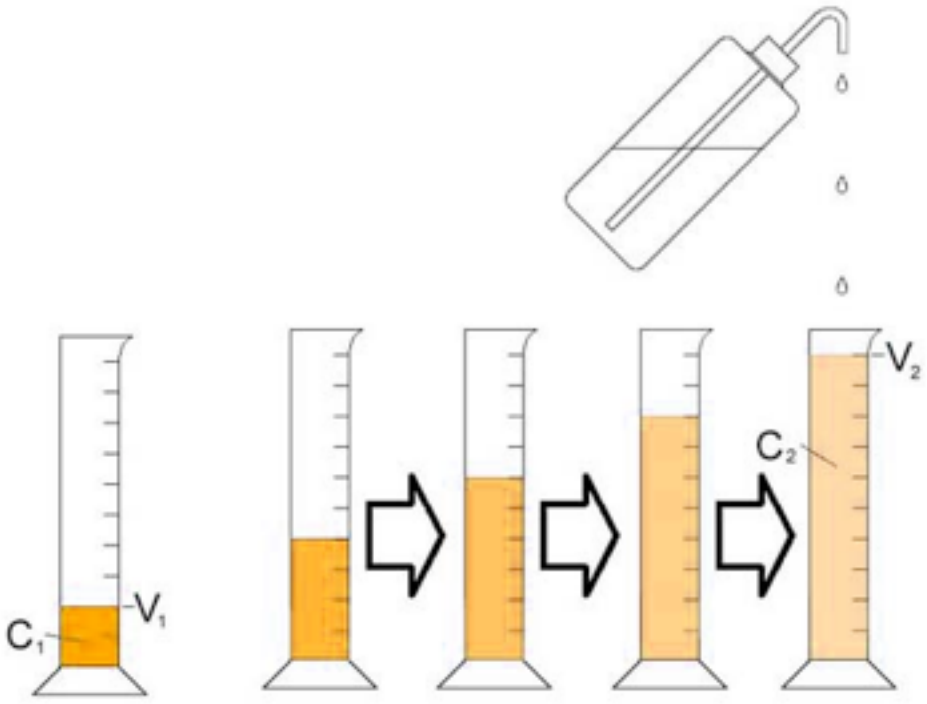
Dilution Calculations

Scientists often make a “stock” solution (a concentrated solution) from which they can dilute to make other solutions.
Since they are only adding water, the number of moles doesn’t change and so we can say:



Where:

ie) You want to make a 500 mL solution of 1.0 mol/L NaCl. You have a stock solution of 5.0 mol/L. How can you make it?



Ex. 1: What volume of a 1.60 mol/L stock solution of calcium chloride, $CaCl_2(aq)$, would you use to make 0.500 L of a 0.300 mol/L solution?

Ex. 2: Water is added to 100 mL of 0.15 mol/L sodium nitrate, $NaNO_3(aq)$, to make 700 mL of diluted solution. Calculate the molar concentration of the diluted solution.

Ex. 3: What volume of 1.25 mol/L potassium iodide solution can you make with 125 mL of 3.00 mol/L potassium iodide solution?

Try it: p.386 #52,58,59