Guided Notes: Concentration Units

Name: _____ Period: _____

Molarity:

- number of _____ of solute per _____ of solvent
- Units: _____
- ex: "3 M" is 3 _____

Molality:

- number of _____ of solute per _____ of solvent
- Units: _____
- ex: "3 M" is 3 _____

Conversion Information:

- _____ mL = _____ L
- _____ g = _____ kg
- _____ mL of water = _____ g of water (WATER ONLY!)

Practice. Show your work!

- What is the molality of a solution of 47.3 grams of potassium iodide dissolved in 500.0 g of water?

- How many grams of potassium carbonate are needed to make 200 mL of a 2.5 M solution?

- What is the concentration (in M) of an aqueous solution with a volume of 450 mL that contains 200.0 grams of iron (II) chloride?

Percent by Mass:

In order to maintain a sodium chloride (NaCl) concentration similar to ocean water, an aquarium must contain 3.6 g NaCl per 100.0 g of water. What is the percent by mass of NaCl in the solution?

Percent by Volume

What is the percent by volume of ethanol (C_2H_5OH) in a solution that contains 35 mL of ethanol dissolved in 155 mL of water?

Practice:

- What is the percent by volume of isopropyl alcohol in a solution that contains 24 mL of isopropyl alcohol in 1.1 L of water?

- What is the percent by mass of $NaHCO_3$ in a solution containing 20.0 g of $NaHCO_3$ dissolved in 600.0 mL of H_2O?

Guided Notes: Dilutions

- adding _____ to _____ the concentration
- Concentrated Solution: has a _____ amount of _____ per _____
- Dilute Solution: has a _____ amount of _____ per _____

Calculating Dilute Solutions:

M_1 = _____

V_1 = _____

M_2 = _____

V_2 = _____

Practice:

- What volume of a 3.00 M KI stock solution would you use to make 0.300 L of a 1.25 M KI solution?

- How many milliters of a 5.0 M H_2SO_4 stock solution would you need to prepare 100.0 mL of 0.25 M H_2SO_4?

- If 0.50 L of 5.00 M stock solution of HCl is diluted to make 2.0 L of solution, how much HCl, in grams, is in the solution?