Lab: Counting Atoms

Name:

Block:

For Students:	For Teacher:
Lab performed:	Pre-lab completion: Yes No
Lab due:	Lab Submitted: On Time Late

Introduction & Objectives

Objectives:

1.

2.

3.

Procedure & Observations

Part I: Sugar vs. Salt

Procedure:

Sugar Formula:	Molar Mass:	Recorded Mass:
Calculate each of the following:		
Sugar Molecules:		
Carbon Atoms:		
Hydrogen Atoms:		
Oxygen Atoms:		

Salt Formula:	Molar Mass:	Recorded Mass:
Calculate each of the following: Salt Compounds: Sodium Ions: Chloride Ions:		

Part II: Gas Production

Procedure:

Gas Formula: H_2	Molar Volume (assume STP):	Recorded Volume:
Calculate each of the following: Hydrogen Molecules: Hydrogen Atoms:		

Part III: Solution Concentration

Procedure:

Salt Formula:	Molar Mass:
Mass of salt required for 40.0 mL of 0.200 M NaCl: Colour of Solution 1: Mass of salt required for 40.0 mL of 4.85 M NaCl: Colour of Solution 2:	

Observations:

Answer the following

1. Why do chemists use the mole when determining the number of atoms or molecules in a substance?

2. Within a scoop of sugar, would you expect there to be more molecules of sugar or more atoms of carbons/hydrogens/oxygens? Why?

3. a. Calculate the number of ions from Solution I in Part III

   b. Calculate the number of ions from Solution II in Part III

   c. Based on your answers to part a and b, state why Solution II sank to the bottom by relating the number of atoms within a solution to the concentration of the solution

Conclusion

State the results of your objectives:

1.

2.

3.