**Concentrate soda lab activity**

**Data:**

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| --- | --- |
| **Soda Volume (1Liter/1000ml)** | **Liters** |
| **Mass of full can** | **grams** |
| **Mass of empty can** | **grams** |
| **Labeled amount of sugar** | **grams** |
| **Mass of pan** | **grams** |
| **Mass of pan with flat soda** | **grams** |
| **Mass of pan with sugar** | **grams** |

**Analysis: Show all work!! Equations:** \_\_grams \* 1 mole/\_\_\_grams **= moles or Molarity** = moles of solute / liters of solution

You will need your periodic table to find molar masses. Round to .1 grams please for 1 mole /\_\_\_\_grams conversions.

1. Calculate the mass of the soda that was in the can at the start. (**Show subtractions or all work for every question)**
2. Calculate the mass of the “flat soda.”
3. Using your answers to #1 and #2 calculate the mass of the carbon dioxide lost while heating the soda.
4. Calculate the moles of carbon dioxide in the soda. (CO2)
5. Calculate the molarity of carbon dioxide in the soda.
6. Calculate the mass of the sugar that remained in the pan.
7. Calculate the moles of the sugar in the soda using the mass of sugar from #6. Assume the formula of sugar is C6H12O6.
8. Calculate the molarity of the sugar in the soda. (Experimental)
9. Using the soda’s label information (volume and grams of sugar), calculate the molarity of sugar in the soda. (Theoretical)
10. Calculate the moles of sugar
11. Calculate the molarity
12. Find the percent error of your calculated sugar molarity. Theoretical- Experimental/ Theoretical = % Error (Make sure you subtract then divide).

**Conclusion:**

1. What can account for the difference between the Theoretical and Experimental Sugar Molarities?
2. Diet Coke does not have the same molarity of sugar that Squirt has. Do you expect it to have a higher or lower molarity and why?