Name: _____ Band:_____ Lab 8.1

Lab Objective: Baking soda and vinegar will react inside fruit-juice bottles, inflating balloons. The amount of balloon inflation is dependent on an understanding of stochiometry and the concept of a limiting reagent.

1.) Write the balanced chemical reaction for the reactants NaHCO3 and $HC_2H_3O_2$.
There are 3 products, you have to determine what the 3rd product is, then balance the equation.

__ NaHCO3 + ___ $HC_2H_3O_2$ -→ _____ + ___CO_2 + ___H_2O

Give the written chemical name for baking soda : _____ and vinegar : _____

Part I. **Place a Pea sized amount of Baking Soda onto a watch glass. Add a drop of vinegar.**

2) What happens after adding the drop of vinegar (Describe in an articulate sentence)?

_____
_____

3) After a moment, add another drop of vinegar. Compare what happens vrs. when the first drop was added, in an articulate sentence.

_____
_____

4) Add just enough vinegar until your previous observations are no longer happening. In a well-written sentence, describe what and when this happens.

_____
_____

PART II ----------

Fill _____ balloons with _____ spoonfuls of baking soda, each.

Fill the bottles with _____ , _____ , _____ and _____ spoonfuls of vinegar, respectively.

Invert all attached balloons in synchrony.

5) How much do each of the balloons inflate? (make an articulate comparison)

_____
_____

6) Is there a relationship between the volume of the vinegar and the volume that each balloon inflates? Explain.

_____
_____

7) Is there a point where the addition of more vinegar does not increase the size of the balloon?

_____
_____

8) Is there a limit to the quantity of gas that is produced from one teaspoon of baking soda?

_____
_____

9) Which is the limiting reactant? The excess reactant?
LIMITING REACTANT: _____
EXCESS REACTANT: _____

10) Calculte the GFM of NaHCO3. Mr. Schwebach says that 1 tablespoon NaHCO3 has a mass of _____ g.
What was the maximum number of moles of CO2 gas this tablespoon made in your experiment?