Name: _____ Date: _____

Group members: _____

Plop-Plop Fizz-Fizz Lab

Problems: Does store-brand Alka-Seltzer work as well as name-brand Alka-Seltzer? How can you get the Alka-Seltzer to dissolve fastest? Do you add the tablet or water first?

Background:

The idea came from a newspaper editor in Elkhart, Indiana, in the 1920's and was brought to the public by Hub Beardsley, president of the Dr. Miles Laboratories (now Miles Laboratories). Beardsley learned that an entire newspaper staff had remained influenza free during an epidemic when they took the editor's prescription of aspirin and baking soda. Beardsley knew he had found a moneymaking product. Launched in 1931, the tablet was a nationwide success before the end of the decade.

The fizzing you see when you drop an Alka-Seltzer tablet in water is the same sort of fizzing that you see from baking powder. A baking powder reaction is caused by an acid reacting with the baking soda (sodium bicarbonate). In school, you probably tried an experiment where you mixed baking soda with vinegar to see it foam – that is what happens with baking powder.

If you look at the ingredients for Alka-Seltzer, you will find that it contains citric acid and sodium bicarbonate. When you drop the tablet in water, the acid and the baking soda react and produces the fizz. You can think of Alka-Seltzer as compressed baking powder with a little aspirin mixed in.

Materials:

3 250-mL beakers	6 tablets	Mortar and pestle
Stopwatch	Graduated cylinder	

Tablets to choose from:

Alka-Seltzer
Store-brand Alka-Seltzer

Hypothesis:
If: _____

Then: _____

Identify the variables:

Independent variable: _____

Dependent variable: _____

Control variable(s): _____

Procedure:

1. Decide what you are testing – get this approved by the teacher!
2. You will need to write a procedure for your experiment – BE SPECIFIC!!
    a. Get this approved by the teacher! Check the ***NOTE*** at the end before you begin writing!
3. You will need to complete your experiment 3 times. You will need to create a chart similar to the one below for your data. After collecting your data you will also be graphing your results.

Time Recorded	Tablet Type 1	Tablet Type 2	Tablet Type 3
Trial 1			
Trial 2			
Trial 3			
Average			

4. After you complete your experiments and have cleaned up, you may begin to graph your data and answer the analysis questions below.
5. Finally – write a conclusion. What did you find out? Why is this important? Was your hypothesis proven correct? What did you learn?

Analysis:

1. Alka-Seltzer contains sodium bicarbonate, what is this material? What does it do?

   _____

   _____

2. If you decrease the particle size of a tablet, the rate of the reaction should _____.

   NOTE

   - Don't forget units
   - You will ONLY get 6 tablets, use them wisely!
     - This means 3-store-brand and 3 name-brand tablets if you are comparing the two.
   - You may want to test ½ tablets in your experiment to save materials
   - If you choose to crush your tablet only use ½ a tablet and place the powder in the beaker before adding water.
   - Water temperature should be stated!
   - You should add 200 mL of water to your beakers for your tests.

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