

Names _____ Date _____ Pd. _____

Mentos Investigation

Harned, Slatoff, Stanchock - 8th Grade Science

Pre Lab Questions:

1. How would you describe the surface of the Mentos if you look really closely? _____

2. Ingredients for the "Mentos Investigation" are listed below. Circle the unique ingredient that Coke and Diet Coke have in common. Box the unique ingredient that Diet Coke and Caffeine-Free Diet Coke have in common.

Mentos	Coke	Diet Coke	Caffeine-Free Coke	Caffeine-Free Diet Coke
Sugar, wheat glucose syrup, coconut oil, rice starch, gum Arabic, gellan gum, sucrose esters of fatty acids, natural flavor, carnauba wax and beeswax	Carbonated water, sucrose, caramel color, phosphoric acid, natural flavors, caffeine	Carbonated water, caramel color, aspartame, phosphoric acid, potassium benzoate, natural flavors, citric acid, caffeine	Carbonated water, sucrose, caramel color, phosphoric acid, natural flavors	Carbonated water, caramel color, aspartame, phosphoric acid, potassium benzoate, natural flavors, citric acid

Purpose: Which type of soda will cause the greatest reaction when Mentos candy is dropped in?

Hypothesis: If Mentos candy is dropped into Coke, Diet Coke, Caffeine-Free Coke, and Caffeine-Free Diet Coke, then dropping the Mentos into the _____ will have the greatest reaction because _____

Independent Variable: Type of soda

Dependent Variable: Fizz height (mL)

Constants: Same amount of soda, same flavor of mentos and same size cylinder.

Materials:

- 4 Mentos candies
- 1 100mL graduated cylinder
- (2)70mL samples of soda (see chart below)

Procedure:

1. Obtain the materials from the front of the room. Use the following chart to make sure you get the right type of soda.

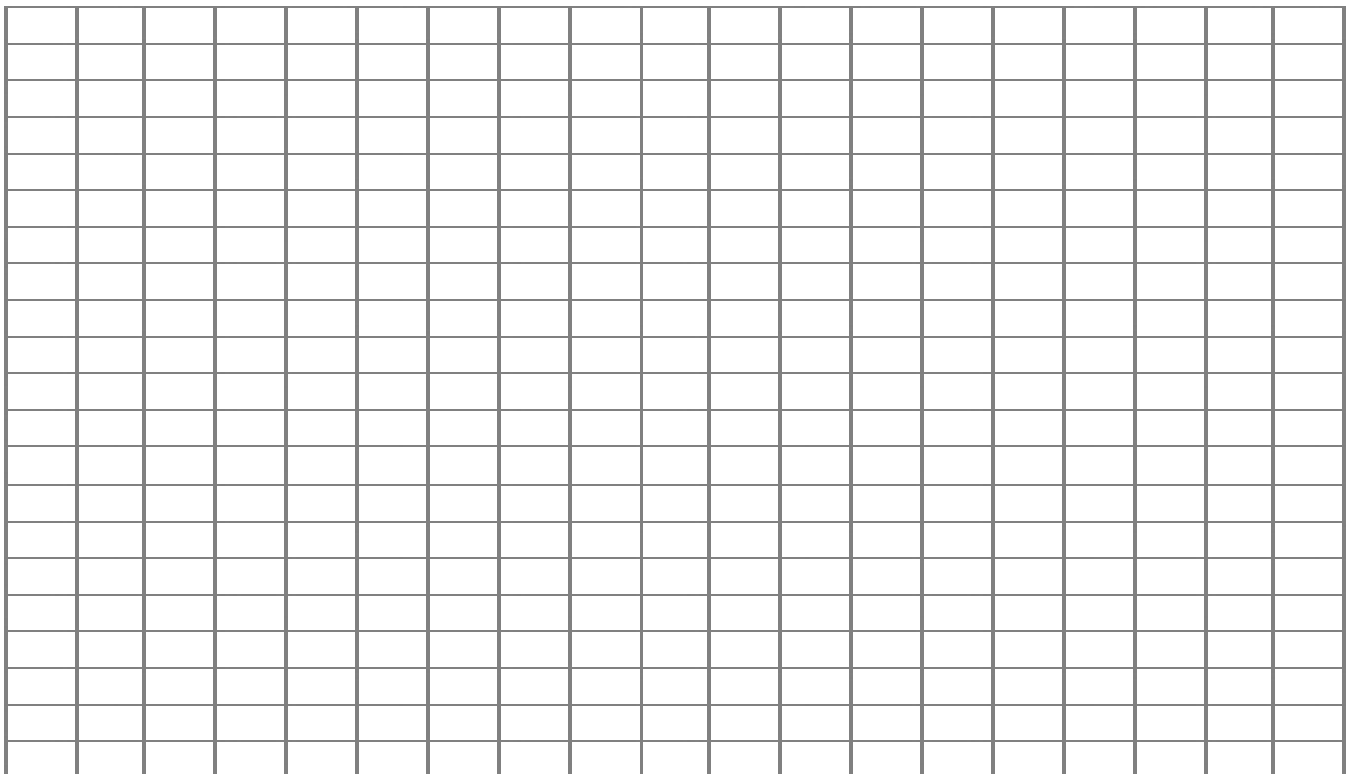
Group	Soda
1 and 2	Coke
3 and 4	Diet Coke
5 and 6	Caffeine-Free Coke
7 and 8	Caffeine-Free Diet Coke

2. Place your 70 mL sample of soda into your graduated cylinder. (Hint: Pour slowly and tilt cylinder as you pour)
3. Set your cylinder on a flat surface. Have at least two of your partners ready to record the height of the fizz column in the cylinder. Drop in 2 of your Mentos tablets and record the height of the fizz column to the nearest mL in the data table.
4. Rinse out your graduated cylinder and repeat steps 2 and 3 with fresh soda and Mentos.
5. Collect the fizz height data from the other groups in the room to complete your data table.
6. Calculate the average fizz heights for each type of soda by adding the fizz heights for that type of soda together and dividing by the number of fizz heights you added.
7. Clean your lab area, return your materials, and answer the questions in the conclusions section of the lab.

Results:

Soda Type	Trial Number	Fizz Height (mL)	Average Fizz Height (mL)
Coke	1		
	2		
	3		
	4		
Diet Coke	1		
	2		
	3		
	4		
Caffeine Free Coke	1		
	2		
	3		
	4		
Caffeine Free Diet Coke	1		
	2		
	3		
	4		

Graph: Create a bar graph showing the average fizz height (Y-Axis) versus the type of soda (X-Axis)



Discussion Questions:

1. A constant is anything kept the same in the trials of an experiment. Identify three constants that were used in this lab.

A. _____

B. _____

C. _____

2. An independent variable is something that is changed to see what effect it has in the experiment. Identify the independent variable in this lab.

3. A dependent variable is something that changes as a *result* of a change in the independent variable (what we measure). Identify the dependent variable in this lab.

4. According to your data, was your hypothesis correct or incorrect? Why? _____

5. There were multiple trials with the same type of Coke. However, there may have been some differences between these trials. What could cause these differences? _____

6. List the types of Coke from the one that produced the most foam to the one that produced the least amount of foam.

• _____

• _____

• _____

• _____

7. What ingredients do the two that produced the most foam have in common? _____

8. What ingredients do the two that produced the least amount of foam have in common?
