Soda explosion

Gideon A

Question

Why does soda explode when you put Mentos in it?

Hypothesis

The carbonation creates the explosion and the sugar content doesn’t matter at all.

Experiment Design

MATERIALS:

- Wood about 5ft tall
- Poster board
- Soda
- Mentos
- Gatorade
- Markers
- Tape measure
- Measuring cup

Experiment Design

SETUP:

Build a giant board, put it up against a wall draw centimeters up to 30 on the board and set it on a flat platform.
Take several different sodas and Gatorade (Dr. Pepper, Fanta, Gatorade, regular Coke, regular Pepsi, regular Mountain Dew, and diet versions + seltzer & gatorade. Then get a bowl and measuring cup.

Experiment Design

PROCEDURE:

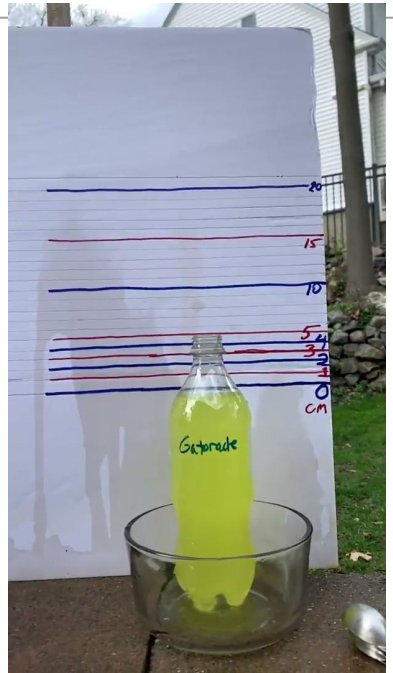
One at a time place the drinks in front of a board, line the soda up with 0 cm. Put two mentos in them to explode and observe. Videotape in slow-motion. Measure the height and amount of liquid lost.

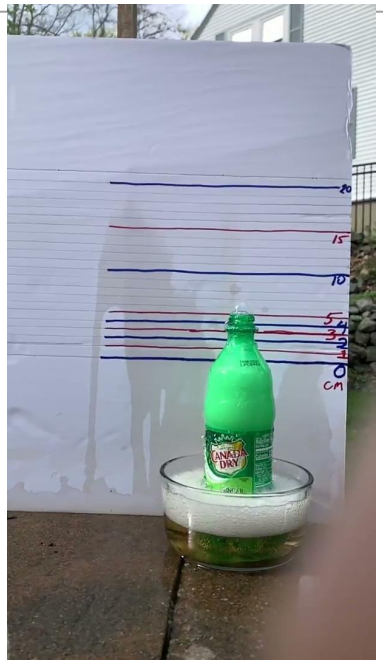
Results - Videos

Liquid Name: fanta Height: 16 cm Volume: 325 ml	Liquid Name: diet mtn dew Height: 17 cm Volume: 340 ml	Liquid Name: mtn dew Height: 9 cm Volume: 290 ml

Results - videos

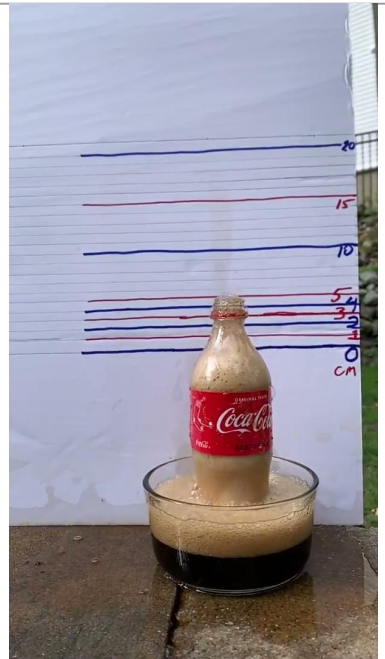
Liquid Name: lemon gatorade Height: 0 cm Volume: 0 ml	Liquid Name: ginger ale Height: 17 cm Volume: 360 ml	Liquid Name: root beer Height: 18 cm Volume: 340 ml

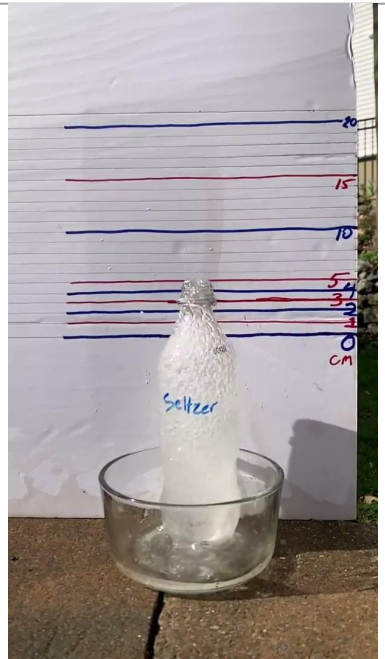


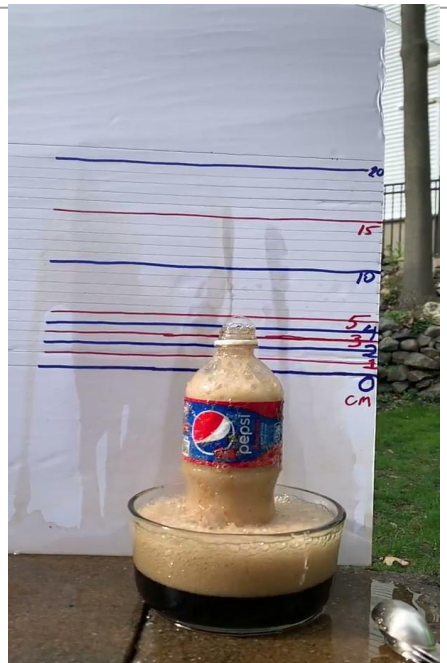


Results - videos

Liquid Name: coke Height: 27 cm Volume: 365 ml	Liquid Name: seltzer Height: 7 cm Volume: 75 ml	Liquid Name: pepsi Height: 34 cm Volume: 365 ml

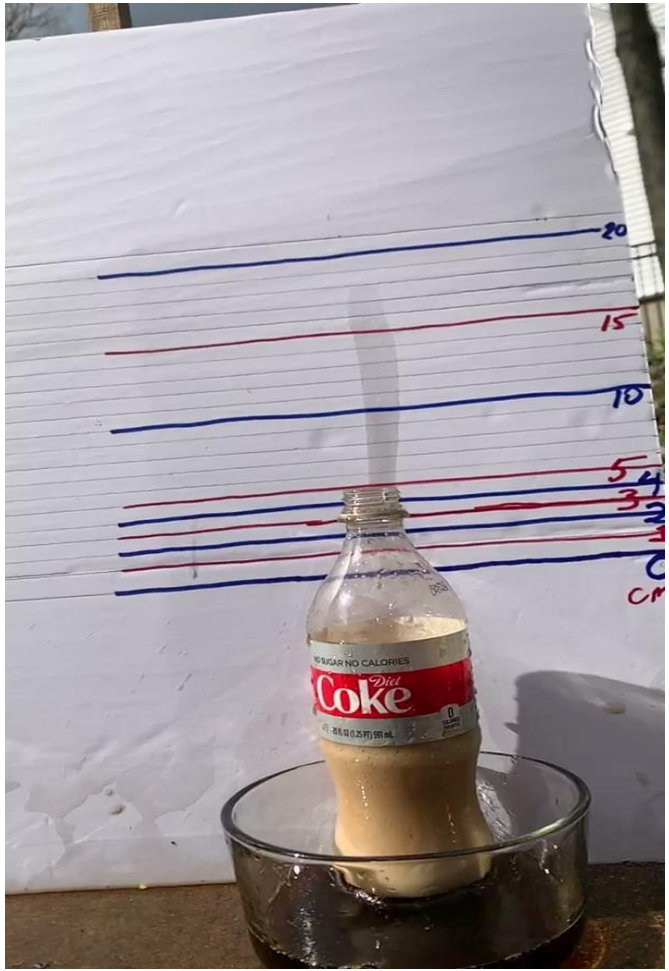






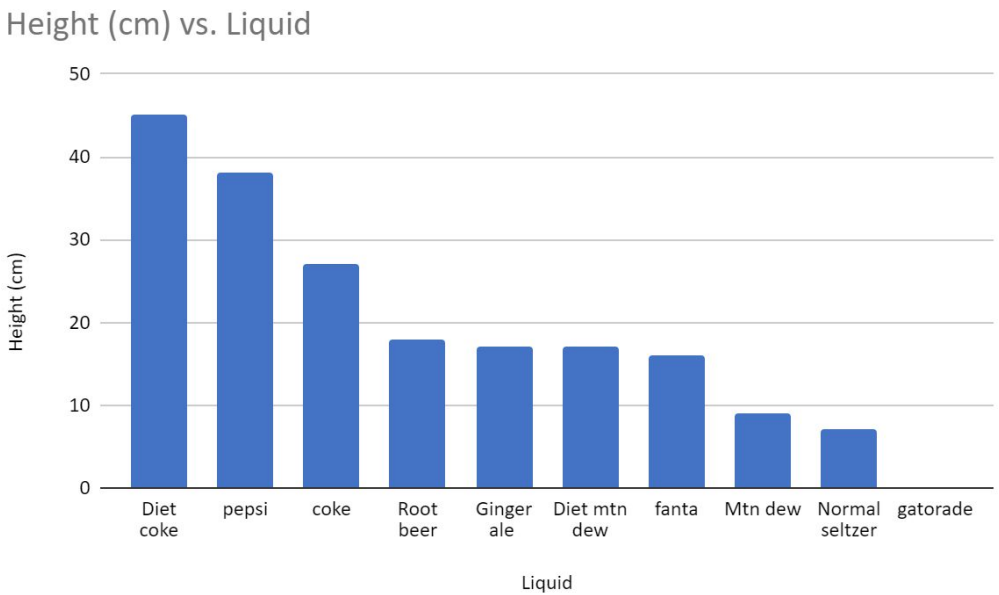
Results - Video

Liquid Name: diet coke
Height: too high to measure
Volume: 410 ml



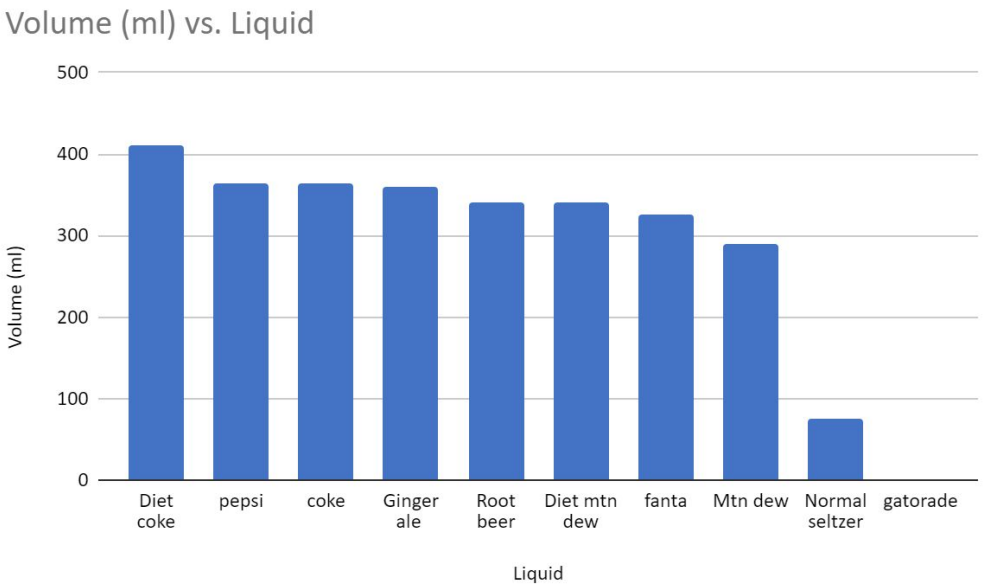
Results - Graphs

Height



Results - Graphs

Volume lost



Results - Description

The highest explosion went to 45 cm and was diet coke. The second highest was 38 cm for pepsi. The lowest one went 0 cm and was gatorade. The most volume lost was 410 ml for diet coke. Pepsi and coke were tied for second most volume lost at 365 ml. The least volume lost was 0 ml for gatorade.

Conclusions

Did your project confirm your hypothesis? yes Why, or why not?

What did you learn?

I learned that the sugar content in a bottle of soda or any other drink won't explode when you put a mento in it. But if you put a mento in a carbonated drink it is pretty much guaranteed that it will explode. We think the reason one soda/drink with carbonation will explode more than another is because of the amount of carbon dioxide in the drink. For my next experiment I will test a new hypothesis. I will test sodas with different levels of carbon dioxide and see if that changes the height and volume of the explosion.

Mentos

- Ingredients. Sugar, **Wheat Glucose Syrup**, **Hydrogenated Coconut Oil**, Rice Starch, Natural Flavors, Gum Arabic, **Sucrose Esters** Of Fatty Acids, Gellan Gum, Carnauba Wax, Beeswax.