VOLCANO SHOWDOWN

5-12 yrs | 15 min | Stage 2 - 3

Why do some Mentos volcanoes erupt higher than others?

? Wonder & Predict

Which volcano do you think will erupt the highest?

- ☐ Cold
- ☐ Room Temperature
- ☐ Warm
- ☐ Something else: _____

WHY DO YOU THINK THAT?

_____

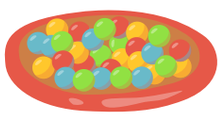
_____

_____

_____

What you will need

- 3 bottles Diet Coke



- Mentos

- Labels and pen

- Safety glasses

- Hot glue gun (adult help needed)

Investigate

Follow the steps carefully while observing.

1 Label Your Volcanoes

- Label three bottles:
- Cold
- Room Temp
- Warm

2 Make the Launcher

With adult help: Glue 10 Mentos together in a straight stack.

3 Prepare the Launch Zone

- Place bottles outside. Remove lids.
- Put on safety glasses.
- Stand well back.

4 Prediction Time

- Before launching: What do you think will happen?

☐ Cold will erupt highest ☐ Room Temp will erupt highest ☐ Warm will erupt highest

5 Launch!

- Drop the Mentos stack into each bottle.
- Watch carefully.

6 Observe & Record

Measure the approximate height of the volcano coke explosion for each bottle.

Observe & Record

What clues did you discover?

- ☐ The warm bottle fizzed fastest
- ☐ The cold bottle fizzed more slowly
- ☐ All bottles produced bubbles
- ☐ Some volcanoes lasted longer
- ☐ Temperature changed the result
- ☐ I noticed a pattern

What did you observe?

Describe what happened.

Why do you think this happened?

_____

_____

_____

_____

INVESTIGATE

INVESTIGATE

What happened?

Fill in the sentences using words from the box.

quickly | temperature | Mentos | carbon dioxide | eruption | lighter

1. Soft drink contains dissolved _____.
2. The rough surface of the _____ helps bubbles form.
3. The bubbles are filled with gas which is _____ than water and rise to the top quickly.
4. Lots of bubbles form very _____ around the candy.
5. The escaping gas creates the _____.
6. Changing the _____ can affect the size of the eruption.

The science behind it

Soft drinks contain a gas called carbon dioxide.

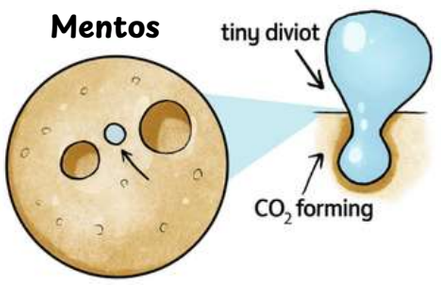
Most of the gas is trapped inside the drink.

When the Mentos fall into the bottle, their rough surface gives the gas thousands of places to escape.

Scientists call these places nucleation sites. Millions of bubbles form almost instantly.

As the bubbles rush upward, they push the liquid out of the bottle and create the famous Mentos volcano.

The warmer drink usually produces a bigger eruption because the gas escapes more easily.



Picture from my book (see below)

Take it further - Professor Picklebottom's Question

Does More Mentos Mean A Bigger Volcano?

You tested how temperature affects a Mentos eruption.

Now investigate a different variable. Keep the drink the same, but change how many Mentos you use.

Which eruption do you think will be the biggest?

Try
2 Mentos
5 Mentos
10 Mentos

My prediction:

_____

_____

What happened?

_____

_____