



Curiosity Guide #308

Candy Science

Accompanies Curious Crew, Season 3, Episode 8 (#308)

Pop Rocks Inflation

Investigation #6

Description

Find out how Pop Rocks work in this sweet investigation!

Materials

- Package of Pop Rocks
- Balloon
- Funnel
- Full 16-ounce bottle of soda
- Spoon
- Table

Procedure 1: Use all Pop Rocks minus one

- 1) Open the package of Pop Rocks.
- 2) Remove one large Pop Rock from the bag. Set both the package and the large Pop Rock aside.
- 3) Place the narrow end of the funnel into the neck of a deflated balloon.
- 4) Pour the Pop Rocks from the package into the funnel so that the Pop Rocks fall into the balloon. Save the large Pop Rock for later.
- 5) Keep the balloon bag of Pop Rocks to the side, and stretch just the neck of the balloon over the top of the bottle.
- 6) Carefully lift the balloon bag up so that the Pop Rocks fall into the soda.
- 7) What happens?

Procedure 2: Experiment with the large Pop Rock

8) Place the large Pop Rock on the table.

9) Use the back of the spoon to carefully press down on the Pop Rock until the shell cracks. Could you hear the pop from the releasing carbon dioxide gas?

My Results

Explanation

When Pop Rocks are made, the boiled sugar, lactose, corn syrup, and flavoring mixture is pumped with pressurized carbon dioxide gas. The gas is pressurized at 600 pounds of pressure per square inch! The candy is thus filled with high-pressure carbon-dioxide gas bubbles.

Normally, when you place a Pop Rock on your tongue, part of the shell begins to dissolve. This releases the pressurized gas bubbles that pop. You can hear the pressurized gas bubbles when you crunch the candy with your teeth, as well.

When the Pop Rocks are dropped into the soda, the shells begin to dissolve. The carbon dioxide gas is released and is caught inside the balloon. That is why the balloon begins to inflate. The released carbon-dioxide gas is also the reason the candy pops when squished with the back of the spoon.

Hungry for more? Candy Chemists have discovered that nearly everyone finds some kind of candy appealing. Candy Chemists have also discovered that by changing the temperatures, the same ingredients can make different textures. Basic candy is made when sugar is dissolved in water. If the temperature is cooler, the candy will be chewy. If the temperature is a medium heat, the candy will be soft. If the temperature is hot, the result is a hard candy. Candy Chemistry is wonderfully sweet! Keep experimenting!

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