Curiosity Guide #308
Candy Science

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

Buoyant Candy

Investigation #3

Description

Will the candy float or sink? You be the judge!

Materials

- Snickers candy bar
- Three Musketeers candy bar
- Kit Kat candy bar
- Hershey's candy bar
- Clear tank or jar
- Water

Procedure

1) Fill the tank or jar with water.
2) Remove the wrapper from each candy bar.
3) Predict if the bar will sink or float.
4) Place each bar in the water.
5) What happened?
6) Try cutting the bars in half.
7) Make your predictions.
8) Does cutting the bars in half make a difference?
9) What other candy bars could you test?

My Results

Explanation

Some candy bars are denser than others. For example, both the Kit Kat bar and Three Musketeers floated, while the Snickers and Hershey's bars sank. Look closely at each of the candy bars.

The Kit Kat bar has several air pockets that reduce its total mass. The amount of water that the Kit Kat bar displaces weighs more than the bar, making it float.

The same is true with the Three Musketeer bar. Even though the Three Musketeers bar looks more solid than the Kit Kat, the whipped nougat filling has air mixed in during the whipping process.

With both the Snickers and Hershey's bars, there is less air in the bar. The chocolate is denser in the Hershey's bar, and the Snickers bar has even more mass with the added peanuts, caramel, chocolate, and nougat.

Are you still curious? Chocolate is certainly a Candy Chemistry favorite! Did you know that a Cocoa tree takes almost a year to produce enough pods to make ten regular candy bars?

People have been enjoying chocolate since the time of the ancient Mayans, who harvested the pods and drank the chocolate. Only recently have we been eating the chocolate instead of drinking it, thanks to Joseph Fry, who invented the chocolate bar in 1847.

From our investigation, we now know that chocolate bars can be pretty dense and sink in water, but can you imagine the largest chocolate bar ever recorded? The largest chocolate bar weighed 12, 770 pounds! It surely would have sunk, but think how many Cocoa trees were needed to make that! Amazing!

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