CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY

Name(s)
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Project Number
31754

Project Title
Effects of Carbonated Drinks on Limestone

Abstract

Objectives/Goals
I believe that the pH level of carbonated drinks is the result of its brand because my research shows that Pepsi will have the lowest pH of all.A&W root beer will have the least pH, according to my backround research. THe effect on the limestone will be similar to the type of pH the soda will recieve. The more pH, the less damage. The less pH, the more damage.

Methods/Materials
Materials:
Eight soda cans of Pepsi, A & W Root Beer,Fanta Orange,Hansen#s Natural Cane, Welch#s Grape soda, PH meter, PH 7.01 & 4.01 buffer solution, screw driver, Table Paper towel, Thermometer (to keep the ph buffer solution at 86° F) A big container/ measuring cup (preferably a jar), 48 pieces of limestone, 8 for each soda 48 cups, Water
Procedure:
Procedure Part 1 Start by calibrating the pH meter using th emini scredriver and the bufferssolutions. Onc your have donethat, you can start to test the pH of the carbonated solutions; then, record your results. Clean any spills using the paper towel. Procedure Part 2 Take the three sodas cans left over from each soda and distribute it evenly at 4 ounces per cup into 8 cups. Then, let the cups sit in a temperature controled room for seven days with a thin sheet covering the opening of the cup. After seven days, record your results.

Results
For the first part of my results, I got my results because I used a digital pH meter, instead of using pH paper. I got a few irregular results such as A & W Root Beer trial 1-5. It was the highest pH I could have obtained (4.55 on average) for the soda 4.2-4.3. I think the reason this happened was because the pH meter used for the experiment was only up to one decimal place, whereas I could have used a pH meter with 3 decimal places for more accuracy.

Conclusions/Discussion
My background research also said that Pepsi has a pH of around 2.5 and A & W Root Beer has a pH of about 4.24. I had also thought that A&W Root Beer will result in the least damage to the limestone and Pepsi will give the most damage to the results. I found out that my results supported my hypothesis in my experiment. I was not surprised at the results of the pH of the soda. As expected, Pepsi had the most fizz among all the sodas. Unexpectedly, the A & W Root Beer had lots of fizz, but at the same time had a high pH. The results with the limestone, however, surprised me. All of the limestone pieces had no polish, or

Summary Statement
My project is about how the pH of a carbonated drink(soda) affects the density of limestone(I chose limestone to represent teeth).

Help Received
Mother helped with the assembly of the board; Father helped gather/buy suplies needed.

Preliminary