Dissolving Egg Shells

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Question

How do different liquids affect the shell of an egg in different ways?

Hypothesis

My hypothesis is that vinegar will be the most corrosive on the egg shell.

Materials:

4 Eggs, vinegar, coke, bleach, water, cups

Variables:

Manipulated Variable:

The different types of liquids that each egg is in

Controlled Variables:

The egg

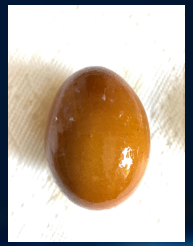
Measured Variables:

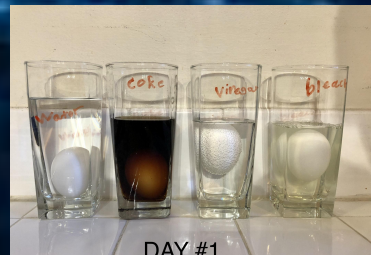
What the change is over time

1. Fill each cup with each one of the liquids
2. PUt one egg in each cup
3. After each day record the differences on each egg
4. Repeat step 3 each day for as long as you're doing your experiment
5. After you are done recording all of you data the liquid that did the most erosion on the egg shell is the most corrosive of the liquids

data

Day	#1	#2	#3
Water	No change	No change	No change
coke	Changed to color brown	Darker brown	No change
vinegar	Appears that shell was dissolved and covered in bubbles	Very slimy and still covered in bubbles	Still covered in some bubbles and not any more squishy
bleach	Slimy coating on outside of egg	Goopy coating on outside of egg	Same as last time





CONCLUSION

In conclusion, My hypothesis was correct. I know I was correct because it was the only liquid that deteriorated the shell of the egg. The actual answer to my scientific question of “How do different liquids affect the shell of an egg in different ways?” The answer is vinegar is the most corrosive and the only other difference to the eggs was what the coke did to the shell by tinting it brown. Or “If you soak this egg shell in vinegar (which is about 4% acetic acid), you start a chemical reaction that dissolves the calcium carbonate shell. The acetic acid reacts with the calcium carbonate in the egg shell and releases carbon dioxide gas that you see as bubbles on the shell.” The data tells me that vinegar and coke were the only liquids that changed the properties of the egg shell.