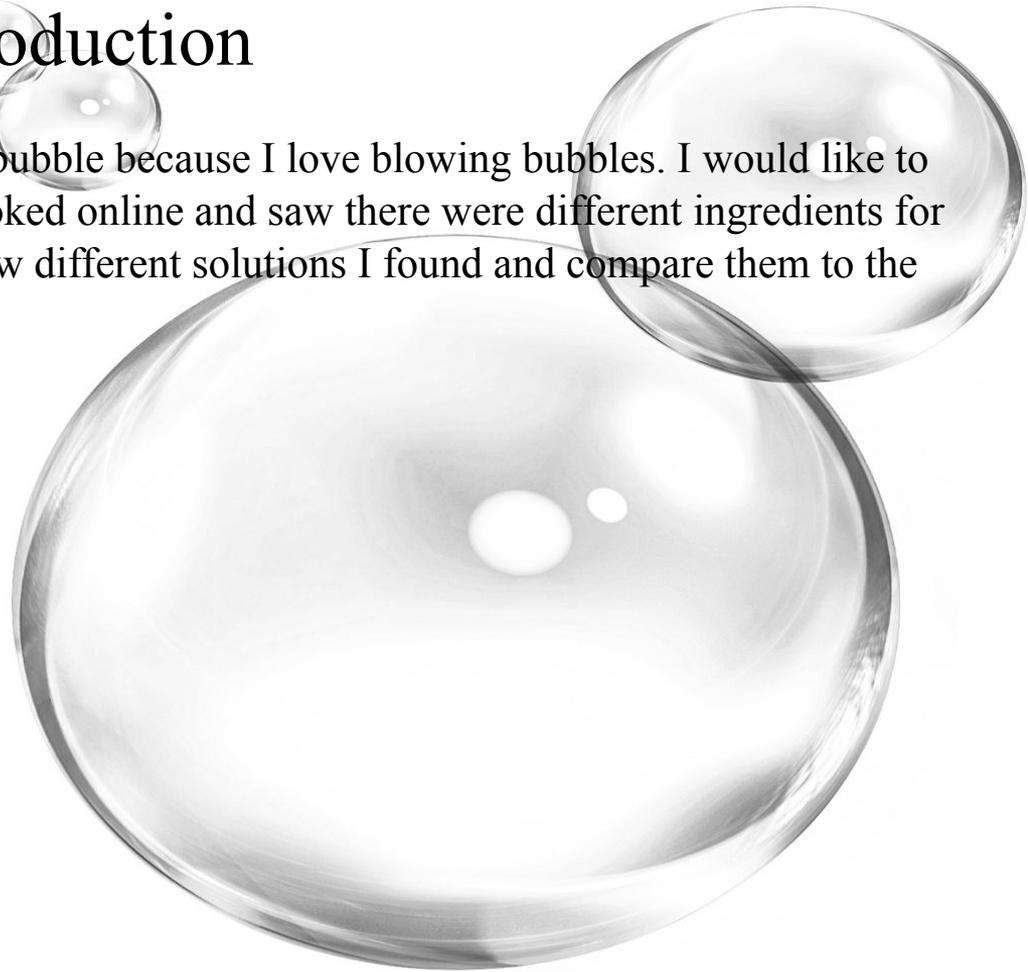


The Unpoppable Bubble

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Introduction

I am interested in learning about the unpoppable bubble because I love blowing bubbles. I would like to learn if there is a bubble that will last longer. I looked online and saw there were different ingredients for different ways to make the bubbles. I will try a few different solutions I found and compare them to the store bought bubbles I normally use.



Research Question & Hypothesis/Prediction

Background Research:

Thought.co/make -giant-bubbles told me how to make giant bubbles and about the giant bubbles and one part of how to make a giant bubble of a paragraph and it said "Ordinary soap bubbles are beautiful but fragile. You can make stronger bubbles by using a homemade bubble recipe. These bubbles are thicker and sturdier than regular soap bubbles. They're so sturdy in fact, you can pick them up and examine them. Glycerin is often added to bubble solution to slow down the rate of water evaporation so the bubbles will last longer". Also another part in another paragraph says " Mix the ingredients together to make the solution. For more solutions, simply double the recipe. Another option is to mix corn syrup into your regular bubble solution. This thickens the liquid so it sticks better to a bubble wand and forms thicker bubbles that are better for blowing into larger shapes.

Question: How does the strengthening ingredient affect the unpopable bubble.

Hypothesis: I think that my unpopable bubble is not going to pop as fast as a normal bubble would because a normal bubble pop's faster than an unpopable bubble because they don't pop as fast because the unpopable has a thing called glycerin and glycerin makes the bubble not pop as fast as an average bubble would. So if you compare a normal to a unpopable bubble the unpopable will pop after the normal will and the unpopable will pop a long time after a normal bubble would.

Variables: soap and water - control variable

Strengthening ingredient - independent variable

The strength of the bubble - dependent variable

Procedures

Materials

Glycerine
Corn syrup
Soap
Water
Store bought bubbles
Plastic bubble wand
Bowls
Timer
Measuring cup
Measuring spoons

Steps

1. Make dish soap, water and corn syrup bubbles.
2. Test the first solution to see how many seconds the bubble would last for 3 trials.
3. Make water, soap and glycerin bubbles.
4. Test the second solution to see how many seconds the bubble would last for 3 trials.
5. Test store bought bubbles for 3 trials.



Results

Bubble Solution 1: 1 cup of dish wash liquid, ½ cup light corn syrup.

- The average bubble for this solution lasted 9.47 seconds (1.) 10.13, 2.) 10.88, 3.) 7.40).
- If the bubble landed on the counter it popped instantly, but if it landed on the solution it would last longer.

Bubble solution 2: 2 cups water, ¼ cup dish soap, 2 tbsp glycerin:

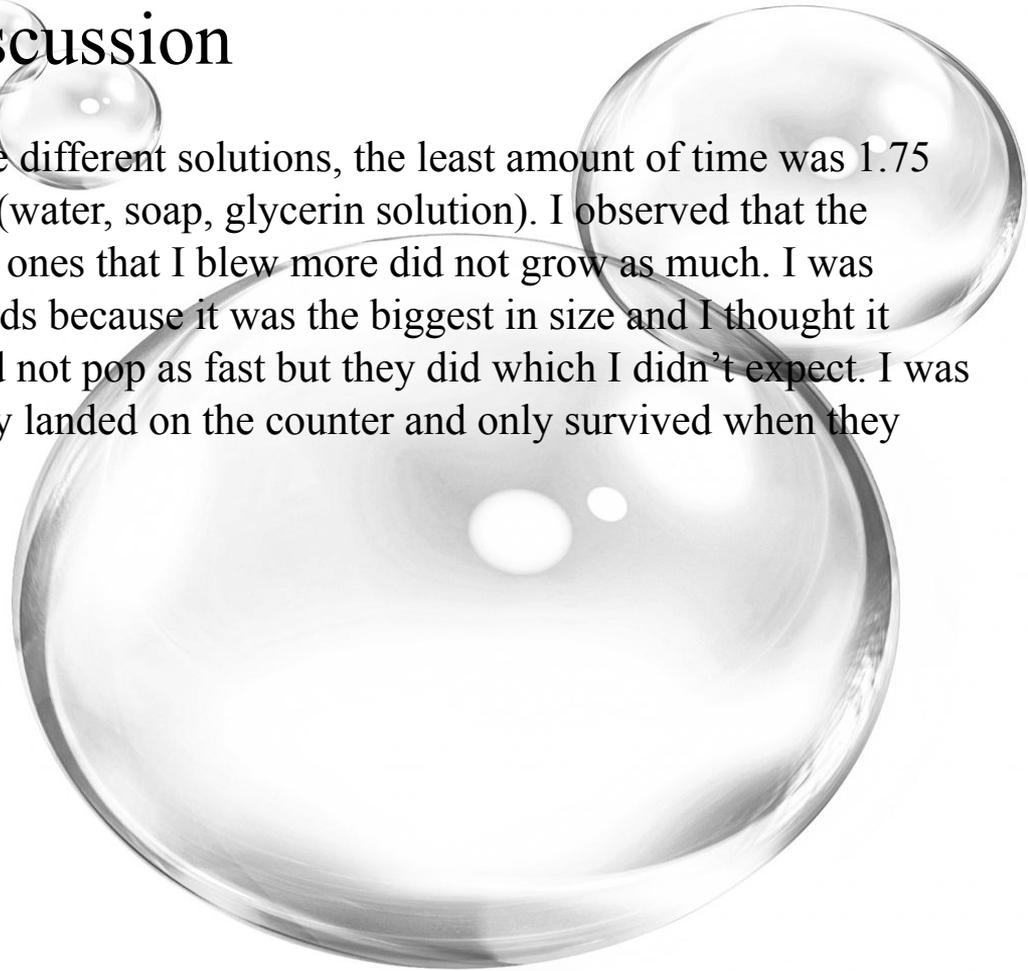
- The average bubble for this solution lasted 55.35 seconds (1.) 47.10, 2.) 5.13, 3.) 1:53:84)
- If the bubble landed on the counter it popped instantly, but if it landed on the solution it would last longer

Store bought bubbles:

- The average bubble for this solution lasted 3.26 seconds (1.) 2.01, 2.) 2.75, 3.) 6.03)
- When these bubbles were blown they instantly popped from the wand, they did not make it to the counter or the solution. They also did not grow much. They were a little different from the others because they popped instantly, the other 2 only popped instantly on the counter.

Discussion

All the bubbles lasted at least a few seconds in the different solutions, the least amount of time was 1.75 seconds (store bought) and the most was 1:53:84 (water, soap, glycerin solution). I observed that the bubbles that I blew the lightest got bigger and the ones that I blew more did not grow as much. I was surprised by the bubble that lasted almost 2 seconds because it was the biggest in size and I thought it would pop faster. I thought the smaller ones would not pop as fast but they did which I didn't expect. I was not surprised that they popped instantly when they landed on the counter and only survived when they landed in their solution.



Conclusion

My hypothesis was correct. I thought that the bubbles I normally blew would not last as long as the “unpoppable bubbles”. When I tested it out 3 ways I learned that only one of them did not last as long which was the store bought bubbles. The other bubbles that used the corn syrup and glycerin (unpoppable bubble solutions) stayed at least more than 2 seconds longer than the store bought bubbles. I also learned that in my experiment there was no such thing as an unpoppable bubble, but there is a way to make a bubble last longer than a regular bubble.

References

- Thought.co/make-giant-bubbles
- Learningresources.com/blog/diy-unpoppable-bubbles