Jan 10 2026

materials

-> Brown eggs

-> Plastic containers

-> Spoon

-> Pop/Juices

-> Clock/timer

-> Mask

-> Labels

-> Undisturbed place

-> Camera/Phone

-> Gloves

->

1/18/2026

X

Background Research

Before doing my experiments, I researches the following Topics

→ Tooth Decay

· When a tooth has a decay, it indicates that the acid has cut through the enamel and affected the dentine

→ Effect of sugary drinks on your teeth

· The sugary drink ~~affect~~ provide food to bacteria generally found in the mouth. The bacteria then generates acid which starts affecting the tooth

→ Finding an item similar to teeth

I wanted to figure out an object or a material which can be similar to teeth as I can't on any actual tooth

My ~~research~~ research and reading on the internet showed that eggshell or chalk is very similar to a human's tooth enamel in terms of color and material contents. I chose the eggshell to analyze the effect of corrosion on the inside walls after the experiments

Jan. 19 2026

Hypothesis

~~I assume~~

I assum that the 3 sodas I'm using will cause more damage than the juices because these sodas are fizzy and bubbly. So may be the fizziness will cause the eggshell to erode faster

I already know that sugar leads to most decaying-causing factor for our teeth which means that the drinks with the most sugar content may be the most harmful drink

Jan 12 2026

Varibles

My controlled varible were:

- Time - 72 hours - reading every 12 hours
- Quantity of drink - 355 mL (1 can)
- brown eggs

My uncontrolled varibles were:

- Humidity of the basement
- Container continamination

My responding varibles were:

- The colour varition of the egg shell
- Texture and erosion of the eggshell

Observation method:
After taking the pictures for every reading (every 12 hours). Each picture was rated on a scale of 0-3 by me

0-) No change
1-) Not bad
2-> Bad
3-> worst

Precaution taken: Eggs of same colour tone were carefully chosen for every experiment.

Jan11 2026

Procedure

First step: Measur (355 mL or 1 can) and pour the drink into the container and then put the brown egg into the drink. Label (date, time and drink name) and place the container in an undisturbed place for 3 days

Second step: I took a reading every 12 hours. To take a reading you will need a camera, a spoon, a mask and gloves. Wear your mask and gloves, then dip the spoon into the drink and pull the egg out. Place the egge on the lid of the container and click a picture of the egg and the drink together. Do that for 3 days

	Soda/ Juice	12hr	24hr	36hr
Reading 1	Orange juice			
	Apple Juice			
	Coke			
	Fanta			
	Sprite			

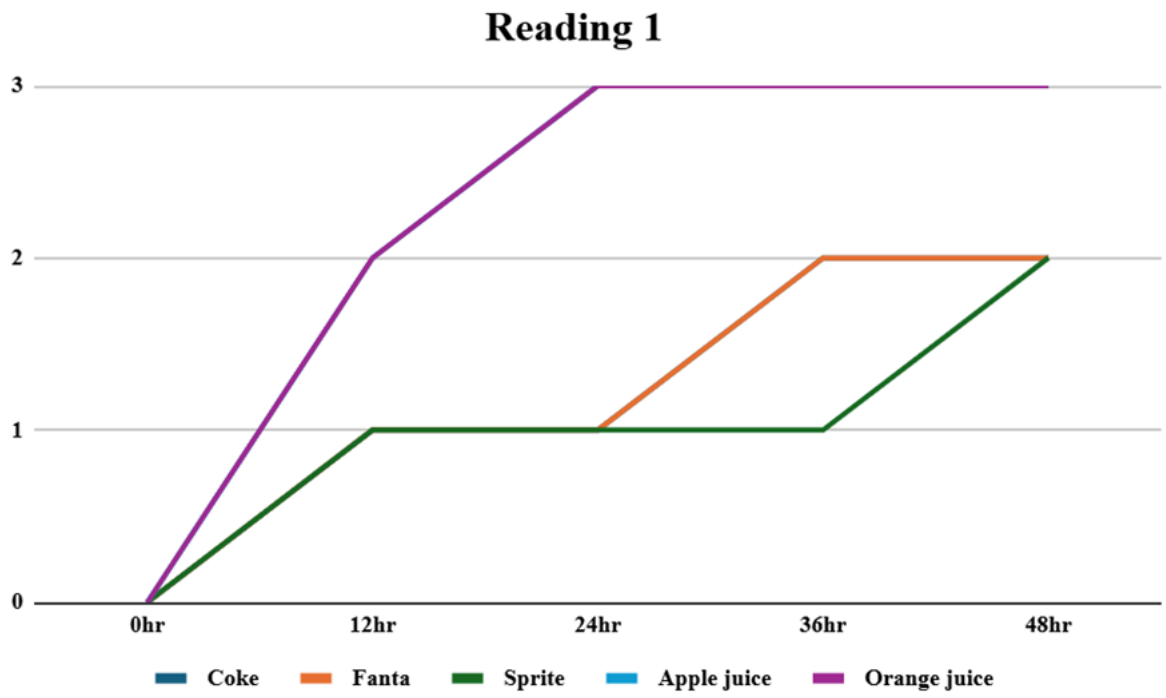
	Water			

Reading 2	Soda/Juice	12hr	24hr	36hr	48hr
	Orange juice				
	Apple Juice				
	Coke				
	Fanta				

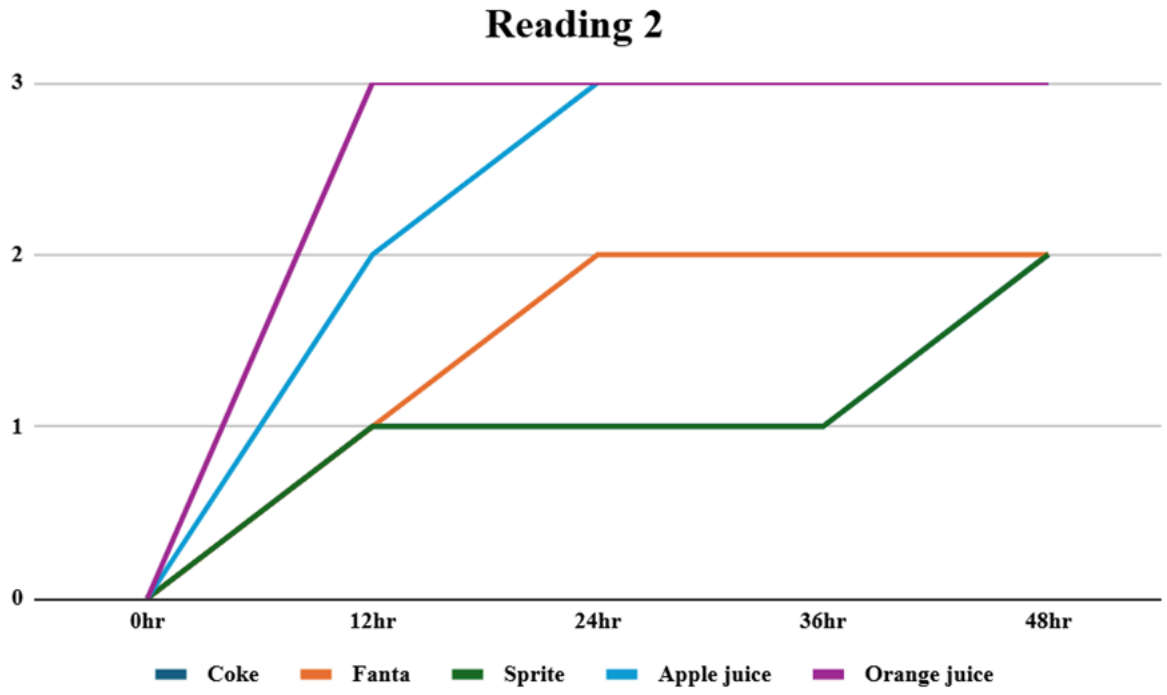
	Sprite				
	Water				

	Soda/Juice	12hr	24hr	36hr	48hr
Reading 3	Orange juice				
	Apple Juice				
	Coke				

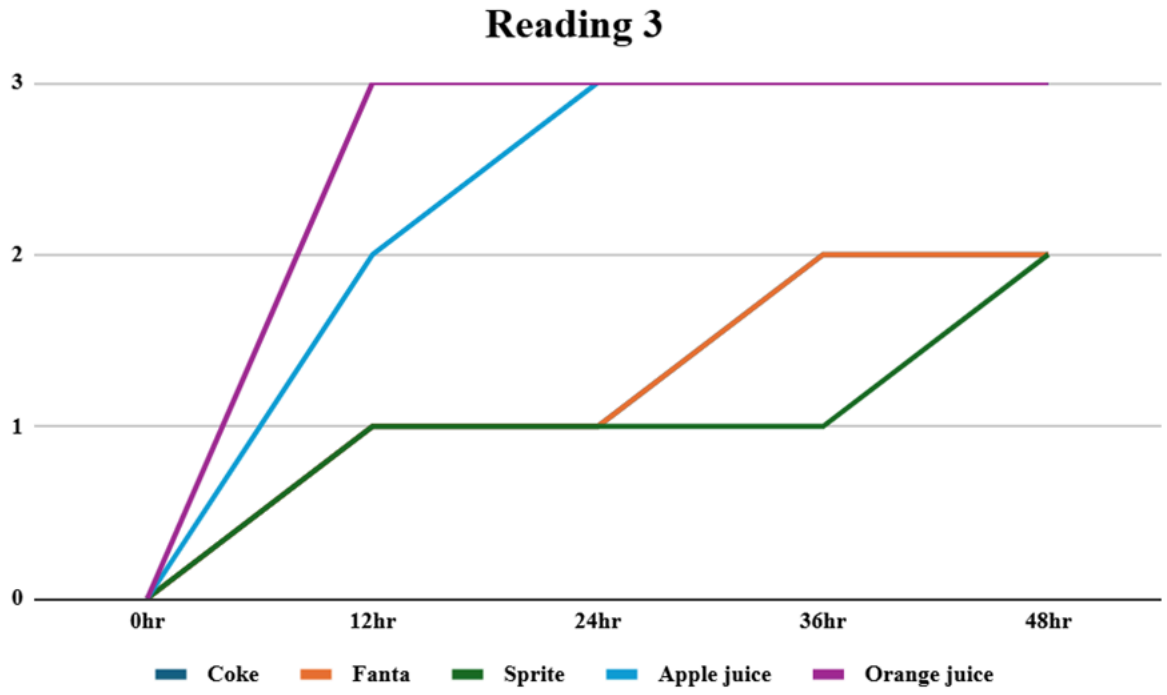
	Fanta				
	sprite				
	Water				



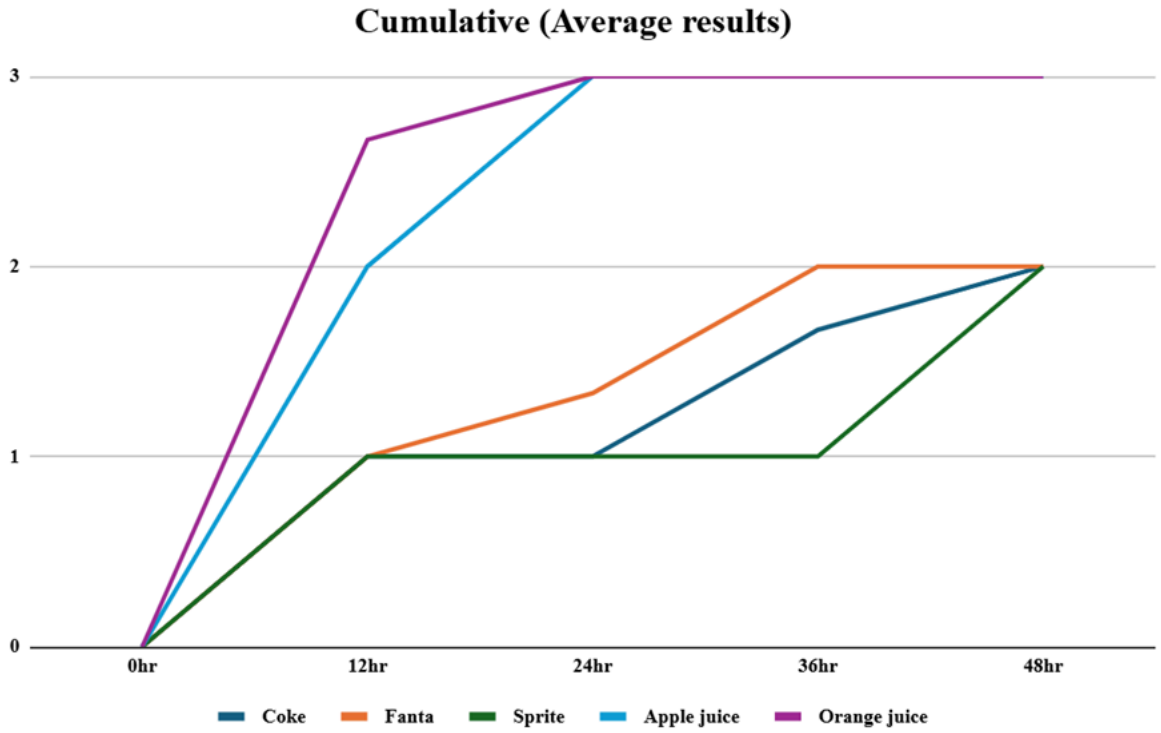
Analysis 1: Looking through the readings, I can see that sprite and coke were the least harmful drink while orange juice was the most harmful drink because orange juice has higher content of citric acid which is highly erosive to teeth and a low ph level



Analysis 2:, My reading tells me that sprite and coke were the least harmful drink while orange juice was the most harmful drink because orange juice has higher content of citric acid which is highly erosive and a low ph level



Analysis 3: My readings show me that sprite and coke were the least harmful drink while orange juice was the most harmful drink because orange juice has higher content of citric acid which is highly erosive and a low ph level



Analysis 4: I can see through my readings that sprite was the least harmful drink while orange juice was the most harmful drink because orange juice has higher content of citric acid which is highly erosive and a low ph level

Conclusion

In this study, I tested Diet Coca Cola, Sprite, Fanta, Orange Juice and Apple Juice (3 sodas & 2 juices).

Results indicated that over a period of 3 days every egg dipped in these drinks showed some level of discoloration, gradual staining and skin erosion.

Although sodas had a substantial effect on the eggshells, 2 juices, namely: Orange and Grape had drastically eroded the shells and stained the eggs in just 2 days. This impact was visible within the first 12 hrs.

Based on these observations and some additional information from the internet [5], I trained a Machine learner model. Using this model I could predict the effect of a drink given information about its ingredients.