

3/8/22

# Apple Oxidation Experiment Group 3



# Purpose and hypothesis

*How do we stop apples from turning brown?*



*Hypothesis: our hypothesis is that the soda apple will turn the brownest and the air apple will turn the least brown.*

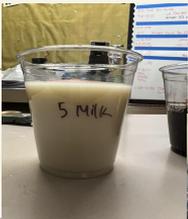
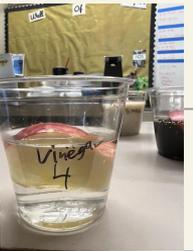


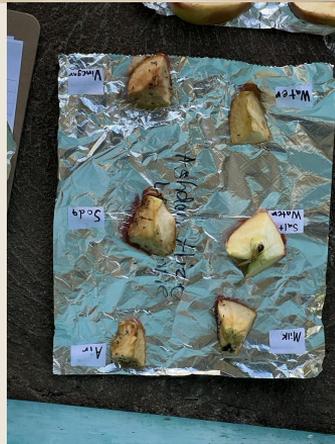
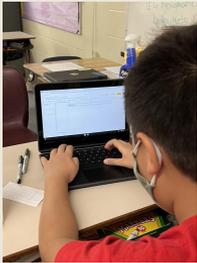
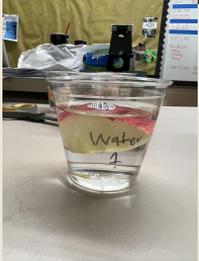
# Materials

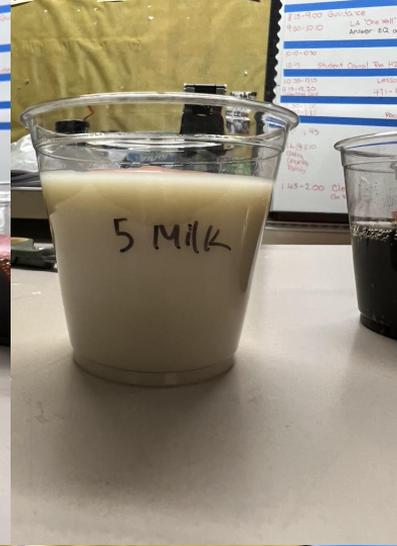
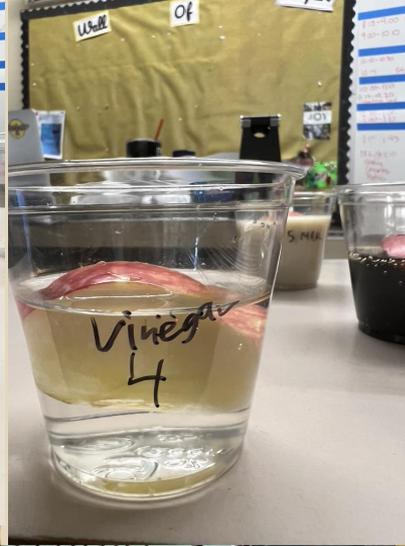
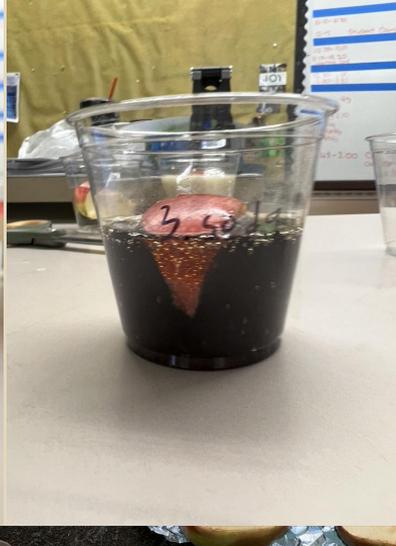
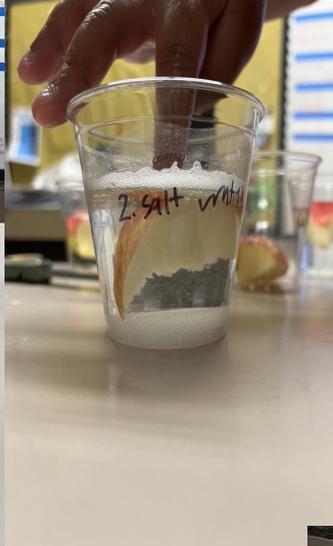
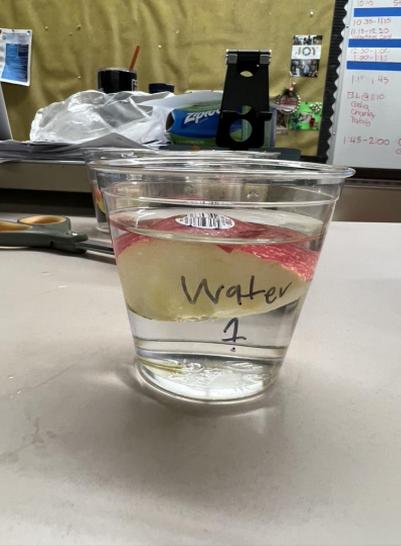
1. Apples
2. Cups
3. Vinegar
4. Water
5. Milk
6. Salt water
7. Sharpies
8. Paper
9. Scissors
10. Foil
11. Tape
12. Phone camera



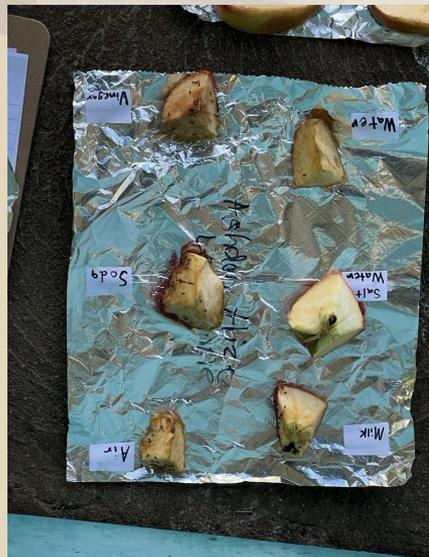
# Data/Observations

Liquid		1 hour	2 hours	5 hours
Water		The third best apple was the water one.	The water apple got a little bit browner.	The water apple got a little browner.
Milk		The second brownest apple is the milk apple.	The milk apple is the same as hour 1.	The milk apple got browner than hour 2.
Vinegar		The second best apple is the vinegar apple.	The vinegar apple is turning browner.	The vinegar apple is getting browner.
Soda		The brownest apple is the soda one.	The soda apple is a little bit browner than hour 1.	The soda apple is turning brown.
Salt Water		The healthiest apple was the saltwater apple.	The salt water apple is the same as hour 1.	The salt water apple didn't change and is the same.
None/Air		The third place for the brownest apple is the air apple.	The air apple is the same as hour 1.	The air apple is getting brown.

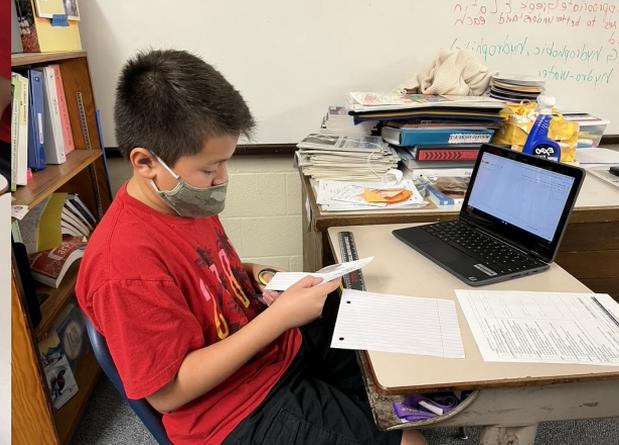




The apples that we had experimented on.



# People working on the project





## Hour 24



Water: The water apple got browner and is now in fifth place.

Milk: The milk apple turned browner and got a little black in one spot it is fourth place for being brown.

Vinegar: The vinegar apple got really brown and it is now the brownest.

Soda: The soda apple got drier and browner it is second place for brown spots.

Salt Water: Salt water apple looks very fresh and doesn't really have any brown spots so it is the healthiest.

None/Air: The air apple got drier and got browner so it is third place for being brown.

# 48 hours



Water	The water apple has a crater like hole in one spot and is starting to wrinkle. On one side of this apple it is brown, on the other side it is yellow.
Milk	The milk apple has gotten the driest and brownest yet. The milk apple got smaller as time passed. The milk apple is drier than all of the other apples.
Vinegar	The vinegar apple looks drier than hour 24. The vinegar apple is wrinkling on the edges.
Soda	The soda apple looks drier and browner than we last saw it. The soda apple is starting to wrinkle in the edges. The soda apple had the most ants out of all the apples.
Salt Water	The salt water apple is turning yellow while the other apples are turning brown.
None/Air	The air apple looks drier and smaller. This is because it was not in liquid. This apple is starting to become smaller.



# Conclusion



Our hypothesis was wrong about the air apple because the inner part of the apple is exposed to air, which is when browning in apples occur. That browning process is called enzymatic browning or oxidation reaction.

Our hypothesis of the soda apple was correct because the soda apple was second place for brownness.

Salt does prevent the oxidation of apples because Salting places the cells of an apple in a hypertonic environment (the environment is saltier than the inside of the cells).