



I Want A Shiny Penny

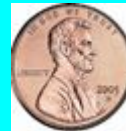
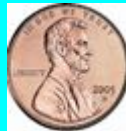


T3

PURPOSE & HYPOTHESIS

My Question: What liquids will clean pennies better: water (control), water with dish soap, coca cola, or lemon juice?

My hypothesis: I think that the water with dish soap will clean the penny better.



RESEARCH

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MATERIALS

Materials:

12 oxidized pennies

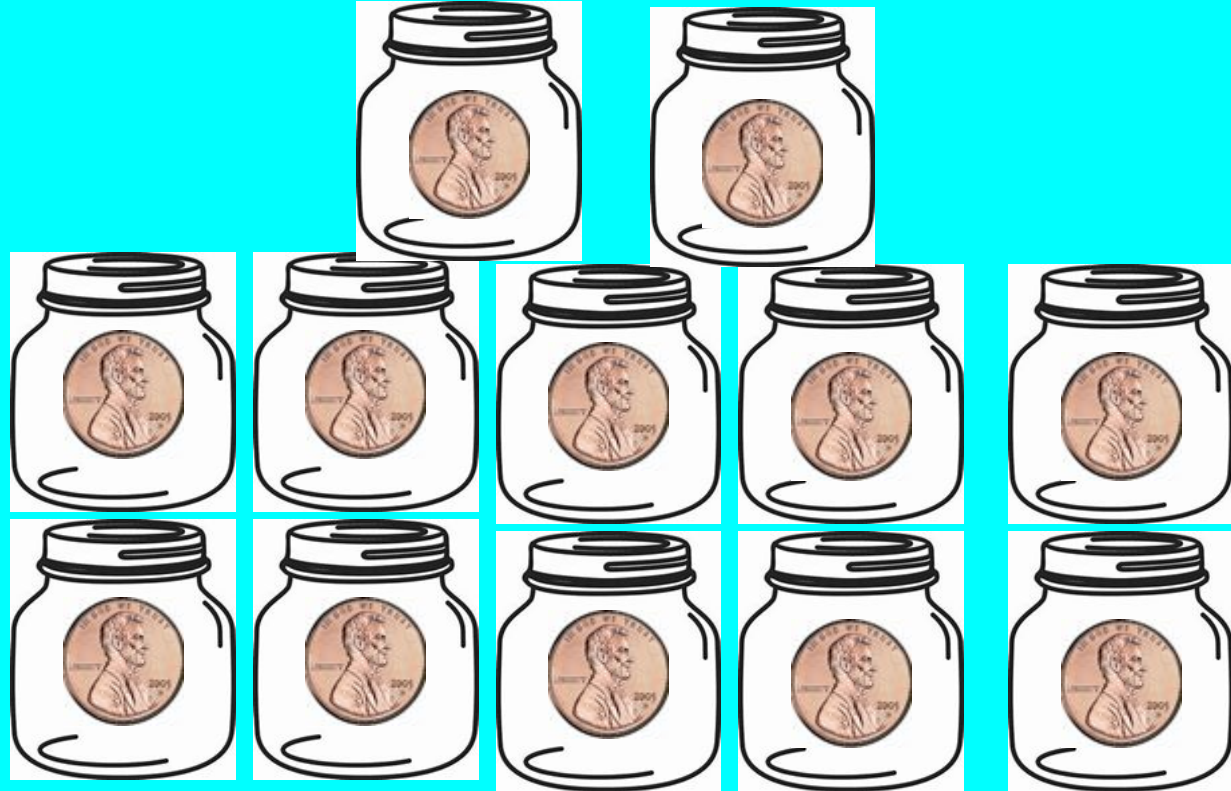
12 plastic cups with lids

20 ml of water

20 ml of water with soap

20 ml of coca cola

20 ml of lemon juice



EXPERIMENT



First I will put 3 oxidized pennies a plastic cup with 20 milliliters of water. This is the blue group.

Second I will put 3 oxidized pennies in a jar with 20 milliliters of water with dish soap. This is the green group.

Third I will put 3 oxidized pennies in a jar with 20 milliliters of coca cola. This is the red group.

Fourth I will put 3 oxidized pennies in a jar with 20 milliliters of lemon juice. This is the orange group.

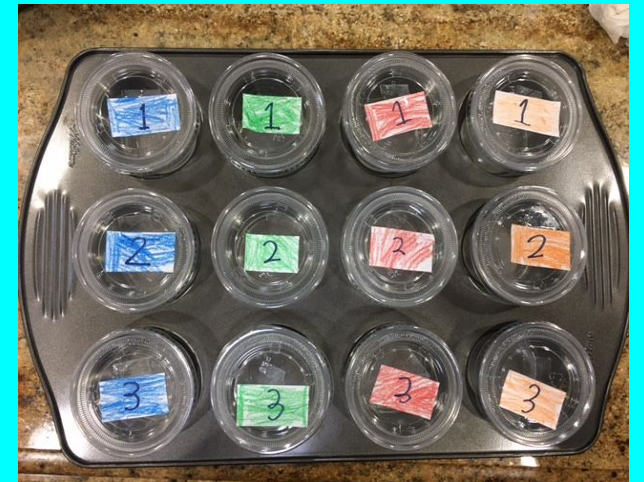
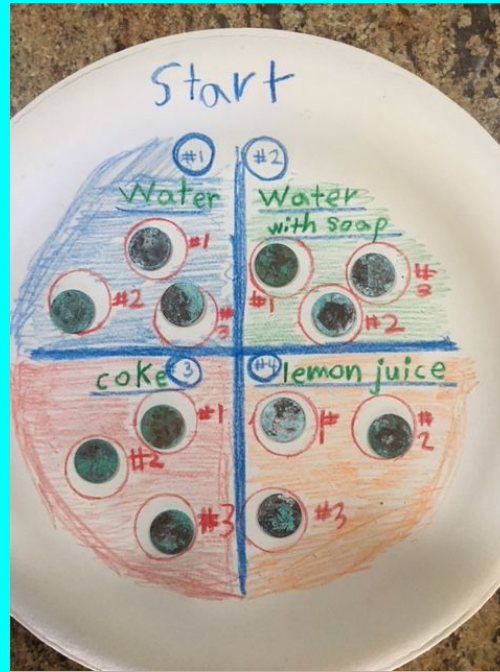
I will observe the pennies over time. I will record the pennies after 10 minutes, then after one hour, next after 1 day and then on day 5 I will clean the pennies with a cloth. Finally I will scrub the pennies with a toothbrush.

I will record the results in a chart.

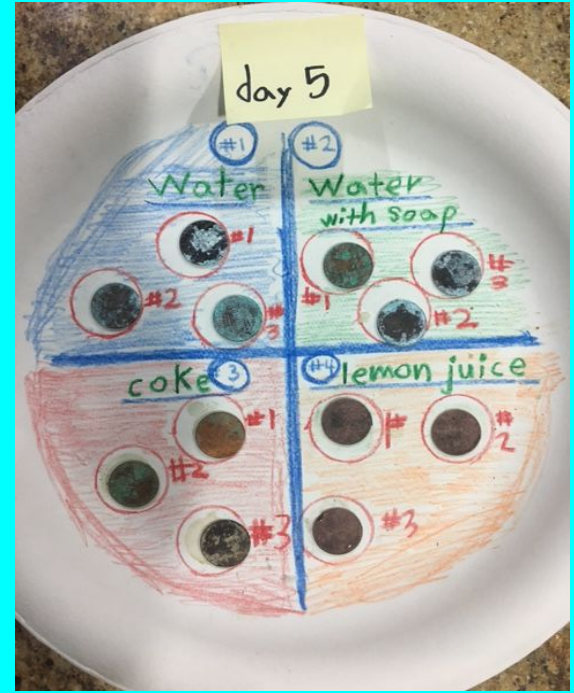
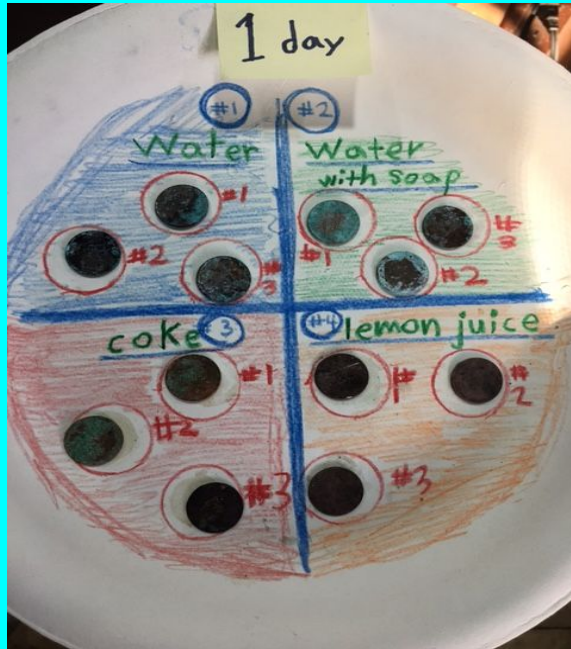
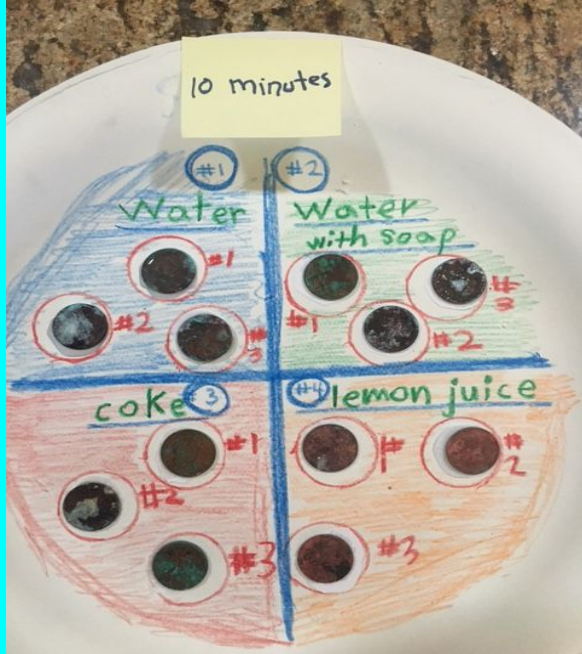
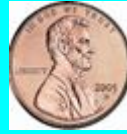
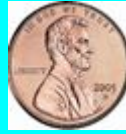
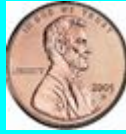
The pennies will receive points. The cleanest pennies will receive 4 points, the next cleanest will receive 3 points, the next cleanest will receive 2 points and the worst will receive 1 point.

I organized the pennies in four groups. Each group contained three pennies. Three in water were blue group. Three in soap with water were green group. Three in coke with water were red group. Three in lemon juice with water were orange group.

PHOTOS



PHOTOS

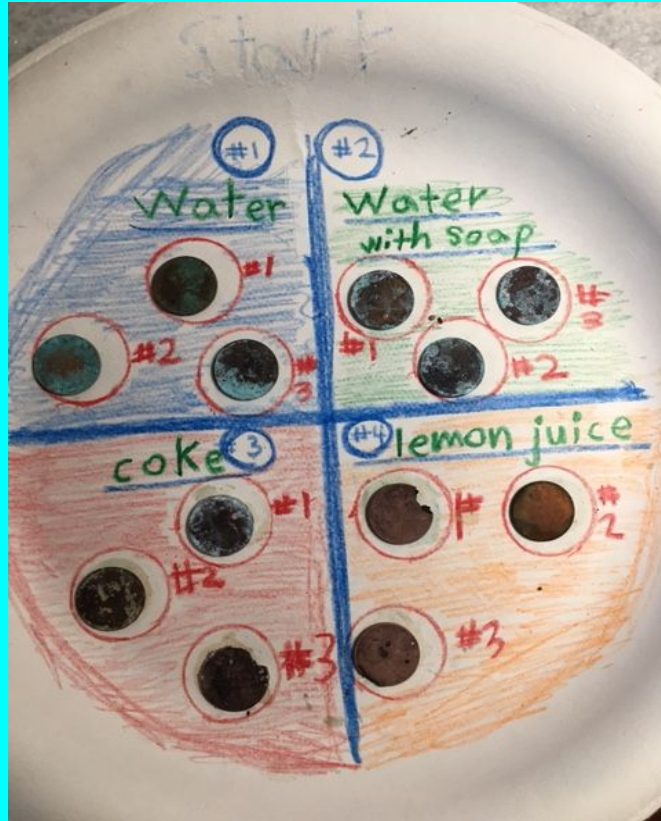


I took pictures of the pennies after 10 minutes and after 1 day and after day 5.

PHOTOS

This is the last picture. After I scrubbed with the toothbrush.

I looked at the pennies to see which ones were more clean and gave point to the pennies.



The pennies receive points.

*The cleanest pennies received 4 points. There is no green spots and you can see Abraham Lincoln.

*The next cleanest pennies receive 3 points. Most of the green is gone and you can see some of Abraham Lincoln.

*The not very clean pennies receive 2 points. Some of three green is gone but you can not see Abraham Lincoln good.

*The dirtiest pennies receive 1 point. The green is still on the penny and you can not see Abraham Lincoln.

The blue group with water received 28 point.

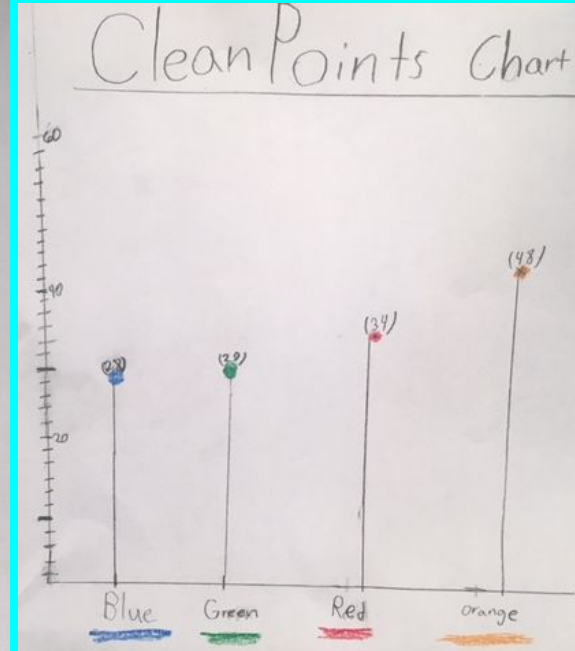
The green group with water with dish soup received 29 point.

The red group received 34 point.

The orange group received 48 points.

ANALYSIS

	after 10 minutes	after 1 hour	after 1 day	after cleaning with cloth	after scrubbing with tooth brush	total points
Blue Group pennies in water						
penny 1	1	2	2	2	2	9
penny 2	2	2	2	2	2	10
penny 3	1	2	2	2	2	9
Group Total						28
Green Group pennies in water with soap						
penny 1	1	1	1	2	2	7
penny 2	1	2	2	2	2	9
penny 3	2	2	3	3	3	13
Group Total						29
Red Group pennies in coke						
penny 1	3	3	3	3	3	15
penny 2	2	2	2	2	2	10
penny 3	1	2	2	2	2	9
Group Total						34
Orange Group pennies in lemon juice						
penny 1	3	3	3	3	4	16
penny 2	3	3	3	3	4	16
penny 3	3	3	3	3	4	16
Group Total						48



The orange group received the most points so it is the cleanest group.

CONCLUSION



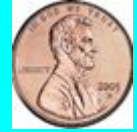
Was my hypothesis proven?

My hypothesis was not proven because I thought that water with dish soap would work better but lemon juice worked better to clean pennies and make them shiny.

Why?

Lemon juice the acidity removes the brown oxidation on pennies and leaves a bright orange.

REAL WORLD CONNECTION



Real life connection:



My real life connection is that my dad has a collection of coins. His father gave it to him and my dad is going to give to me when I grow up. I want to know how to keep them shiny. That is why I did this experiment. To know what can clean coins better with stuff I have at home: water, water with dish soap, coca cola and lemon juice.

WORKS CITED

treasurepursuits.com/best-way-to-clean-pennies

www.sciencebuddies.org

www.sciencekids.org

www.weareteachers.org

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