Cleaning Coppers Removing Copper Oxides from Coi

About CHaOS

Cambridge Hands-On Science -CHaOS for short - is a volunteer led group from the University of Cambridge.

We believe that science is fun and relevant to everyone! CHaOS take our wide range of hands-on science experiments & enthusiastic student demonstrators to venues across the country!

We always love to hear what you think of our experiments - so to get in touch, find even more experiments, and see more of what we do, visit our website!



CHaOS SCIENCE ROADSHOW

CHaOS@Home Experiment Files

Disclaimer

This experiments should only be carried out under supervision of a responsible adult Teachers should perform a risk assessment before use

I'm Boris Bones, the friendly CHaOS skeleton. I'm going to guide you through this experiment!



Today, we'll be exploring the corrosion of metals. 1p and 2p coins are made of a metal called copper.

Those grubby coppers in your pocket or purse can be shined up in minutes. Give it a try and find out how it works!



YOU'LL NEED

Plastic containers/cups, Vinegar, Cola, Lemon Juice, Ketchup, Water, Copper coated coins, Paper towels

SAFETY

Do not eat or drink the copper solutions (i.e. the liquids you're using to clean your coppers). Culinary acids may irritate eyes or broken skin. In case of contact, wash with plenty of water.



Explanation

Copper coins look dirty because they have corroded over time. Corrosion happens when the metal copper reacts with oxygen in the air, forming a copper oxide, which is black. A similar reaction makes copper chloride, which is green.

Acids are able to clean copper coins, since they can dissolve the copper oxide & copper chloride. Vinegar contains acetic acid. When this reacts with black copper oxide, it forms copper acetate, which is soluble in water and forms a pale green solution! Look carefully - you might be able to see this colour!

Make Connections! You may be surprised that cola is an acid! What do you think fizzy drinks may do to your teeth?

Your teeth contain a metal called calcium - Over time, the acid in fizzy drinks erodes the protective outside layer of your teeth, called "enamel". This can cause problems such as cavities.

Keep Thinking! Copper isn't the only metal that corrodes! When iron corrodes, it makes iron oxide, which is also known as rust!

Fun fact!

How acidic or basic a chemical is can be measured using the pH scale. Acids have a pH of less than 7, and bases have a pH above 7. The concept of pH was created in 1909 by Danish Chemist Soren Sorensen.

Want more?

Check out more experiments with household acids! Try "Red Cabbage" or "Mini Explosions".



