



CLEANING COINS

How can we make dirty old coins shiny again?

What are we learning in this experiment?

Pennies are made of a material called **copper**. As the penny ages, the copper reacts with the **oxygen** in the air, forming **copper oxide**, which is what gives the penny its duller appearance.

When we expose the coins to **acidic** liquids such as lemon juice or cola, the acid begins to dissolve the copper oxide, making the coins shiny again.

You will need

- A selection of old coins
- At least 4 small bowls/containers
- Water
- A range of acidic liquids
(e.g. cola, lemon juice, vinegar)



Method

1. Lay out 4 small bowls, 4 coins and your 4 liquids on a table
2. Pour 3-4cm of liquid into each bowl, labelling each of them
3. Take a photo of each of your coins (the before shot)
4. Gently place each of your coins into the liquid (making sure all coins are facing the same way)
5. After 20 minutes, take each of the coins out of their bowls and place them on a paper towel to dry
6. Once dry, take a photo of each of the coins again, then compare the photos against the before photos
7. Place the coins back into the liquids. You can then repeat the process, leaving the coins in the liquids for an hour, or even overnight.
8. Remove the coins for a final time, rinse them off in the sink and compare your before and after results.

Optional: try adding salt to your vinegar bowl, what difference does this make?



Have the coins been restored to their original shiny colour? Which liquid was most successful in cleaning your coins?



When next out on your daily exercise, keep an eye out for examples of copper oxide, this can often be found on old buildings such as churches.