

Chemistry Cleans Pennies



YOU WILL NEED:

- A few old (not shiny) pennies or 2p coins
- 1/4 cup white vinegar
- 1 teaspoon salt
- Non - metal bowl
- Paper towels



This is an American penny.
Who is the person in the picture?

WHAT TO DO:

1. Pour some vinegar into the bowl and add the salt - stir it up.
2. Put about 5 pennies into the bowl and count to 10 slowly.
3. Take the pennies out and rinse them in some clean water. Admire their shininess!

HOW DOES IT WORK?

There is some pretty fancy chemistry going on in that little bowl of yours. It turns out that vinegar is an acid, and the acid in the vinegar reacts with the salt to remove what chemists call copper oxide which was making your pennies dull. You're not done yet, though, lets try another experiment:

Add more pennies to the bowl for 10 seconds, but this time , don't rinse them off. Place them on a paper towel to dry off. In time the pennies will turn greenish-blue as a chemical called malachite forms on your pennies. But wait, your still not done yet.

Place some nuts and bolts in the vinegar and watch - they become COPPER in colour! The vinegar removed some copper from the pennies and that copper was attracted by to the metal in the nuts and bolts - cool.

MAKE IT AN EXPERIMENT

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Will other acids (like lemon juice or orange juice) work as well?
2. Does the cleaning chemistry work on other coins?
3. Do other amounts of salt make a difference in the chemistry of this experiment?

Science
Bob