Cleaning Copper Pennies

Did you ever you look at that change in your pocket, particularly pennies? Sometimes you get lucky enough to get a newly minted coin that's nice and shiny. Did you ever wonder why those other pennies looked darker? The copper atoms in the penny are attracted to the oxygen atoms in the air to form copper oxide. The pennies look dull and dirty because they are covered with copper oxide. We are going to try an experiment to see if we can clean the copper oxide.

What You Need:

- 20 dull and dirty pennies
- ¼ cup white vinegar
- 1 teaspoon salt
- A clear shallow bowl (not metal)
- Paper towels
- Spoon

What You Do:

1. Put the salt and vinegar into the bowl and stir until it dissolves.
2. Put the pennies into the bowl for about 5 minutes. Watch them when they first go in. What do you see?
3. Take half the pennies out and place them on a paper towel.
4. Take the second half out and rinse them off very well. Place them on a paper towel and mark it as being “rinsed”.
5. Wait about an hour and then check back on your two piles. What differences are there between the two? Record the differences and make some guesses about why they are different. The rinsed pennies will be bright and new looking.

What Happened? When the vinegar and salt dissolve the copper oxide they make it easier for the copper atoms to join with the oxygen in the air and the chlorine in the salt. When the pennies are not rinsed it allows the chemical reaction to occur. This makes up a compound called malachite which is what coats the dark pennies.

© Copyright 2006-2012 Education.com All Rights Reserved.