

Can Vinegar Clean a Tarnished Penny?

YOU WILL NEED:

- Bowl
- Vinegar
- Salt
- Teaspoon
- A tarnished penny



1

Fill the bowl one-quarter full with vinegar.



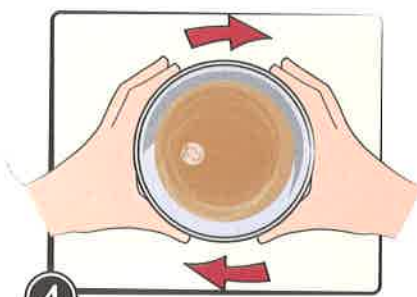
2

Add 1 teaspoon (5 mL) of salt.



3

Add your penny.



4

Swirl the bowl to mix.



5

Set the bowl aside for 5 minutes. What happens?



☞ Gather several tarnished pennies and try to clean each one with a different substance. Try ketchup, lemon juice, dish detergent, and water. Compare and contrast the results.



The SCIENCE Behind It

A penny contains a metal called copper. (And U.S. pennies made before 1996 contain more copper than newer ones.) After a while, copper loses its shine and becomes tarnished. This tarnish is caused when the copper in the penny mixes with the oxygen in the air and makes a coating called an oxide. When you put the penny in an acid like vinegar (acetic acid) and add salt (sodium chloride), the acid and salt combine to form hydrochloric acid. The acid removes the oxide. You're left with a bright copper penny!

