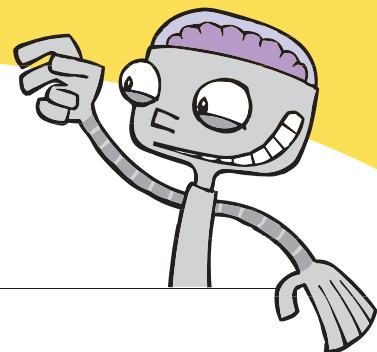


RUSTY PENNY



A chemical change makes the copper coating on pennies turn green (oxidize) when they're exposed to oxygen in the air. What cleans this kind of "rust" off pennies best?

WHAT YOU'LL NEED

- 2-6 small cups (depending on how many tests you do)
- 2-6 old pennies
- Small amounts of some of the following substances (it's up to you how many substances you want to test):
 - Water
 - Lemon juice
 - Vinegar
 - Liquid hand soap
 - Salt water (table salt mixed with water)
 - Baking soda mixed with water

WHAT TO DO

- 1** Fill your test cups with one substance in each cup. Mark each cup with its contents.

- 2** Put a penny in each cup. Leave the pennies in the cups for 24 hours. Take the pennies out and dry them off with paper towels. Make sure you keep track of which penny came out of which cup. Use the table on Page 2 to record what you see.

ACTIVITY CONTINUED ON NEXT PAGE (PAGE 1 OF 2)

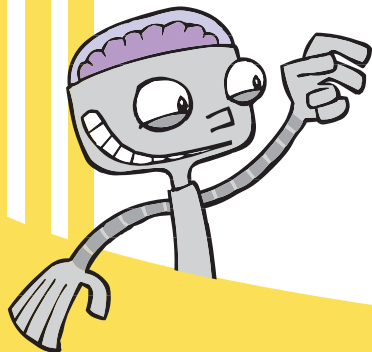
This activity was modified and adapted from "Shiny As a New Penny" on the NASA Explores website, www.NASAexplores.com.

RUSTY PENNY (ACTIVITY CONTINUED)

Test Substances	Results
Water	
Lemon juice	
Vinegar	
Liquid hand soap	
Salt water	
Baking soda mixed with water	

3 Which pennies came out clean? Which are still dirty?

4 Test out other substances, such as soda, orange juice, or milk. Which substance works the best?



DID YOU KNOW?

- The Statue of Liberty is made of copper too. Air and water have turned the statue's copper green.
- Rust and other types of oxidation can damage metals used in buildings and ships.

(PAGE 2 OF 2)

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