

Take the Challenge

Shiny Penny Challenge

All Ages | 🕒 20 Minutes



Instructions:

1. Set up the bowls with a different testing agent in each one. Place a paper towel in front of each bowl.
2. Place a penny into each bowl, there should be enough liquid to cover the entire penny.
3. Allow the pennies to sit in the testing agents for a few minutes. While you wait, predict which one will make the shiniest penny and write down your guess.
4. Take out the pennies from each bowl and put them on the paper towel in front of it to dry. Make sure to keep each penny in front of the correct bowl so you can keep track of which testing agent works best.
5. Next, wipe or scrub each penny clean using a q-tip, tooth brush or paint brush.
6. After each penny has been wiped and scrubbed compare their shine. Which testing agent made

the shiniest penny? Was your prediction correct?



Take it up a notch:

Try to get your pennies even

cleaner. Dip the pennies into your cleaning agent again, this time leave it to soak for less time or more time than your original experiment. What happens if you put only part of the penny in the liquid? Try rinsing the pennies in water after taking it out of the liquid. Test out some different ideas and see how they compare!



Why do pennies turn brown?

Pennies are made of copper. When copper is exposed to oxygen it will corrode (turn brown) because of chemical reactions. The brown coating is called patina. These are copper oxide molecules and they actually protect the metal underneath. Over time, copper transitions from its shiny brown color to a darker brown shade. The acetic acid in vinegar removes the patina from the pennies, exposing the brighter copper underneath once more.

OVERVIEW

Experiment with a variety of testing agents to see which one makes the shiniest penny.

SUPPLIES NEEDED

- Pennies
- Small cups or bowls
- Paper towel

Variety of scrubbing utensils *(you can choose to use some or all of these options)*

- Q-tip
- Toothbrush
- Paintbrush

Variety of testing agents *(you can choose to use some or all of these options)*

- Vinegar
- Vinegar + Salt
- Salt + Water
- Coke
- Ginger ale
- Ketchup
- Lemon or lime juice
- Lemon or lime juice + Salt
- Liquid soap
- Soy sauce
- Hot Sauce
- Mustard
- Pickle juice
- Milk

ONLINE RESOURCES

- [Instructional video link](#)



6

Week 1
Monday

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