

The Gold Penny Lab



In this lab, you will be converting a regular penny into a “gold” penny. In doing so, you are following a tradition that goes back to the earliest days of chemistry.

The modern practice of chemistry started with the study of alchemy in medieval Europe and the Middle East. Alchemists believed that by doing certain chemical reactions, you could turn cheap metals into gold. The alchemists would convince people that they could do this and sell them the secret, especially kings & queens.

Safety:

In this lab, it is very important that you wear your goggles and aprons at all times! The chemicals that we are working with are extremely dangerous and can cause serious injury.

Making a Silver Penny

1. You will find a beaker of solution containing zinc and sodium hydroxide.
2. Set up ring stand with wire gauze and Bunsen burner.
3. Heat the solution to a simmer. Do not allow it to boil!
4. Carefully place the penny into the solution using tongs. Allow the penny to boil in the solution for 1 minute. Flip penny over and boil for one more minute.
5. After 2 minutes use tongs to carefully remove the penny from the solution. Place penny in a 50mL beaker with 25 mL of water.
6. Use tongs to remove the penny from the water.
7. Dry the penny with a paper towel.

Making a Gold Penny

- Using the tongs, grasp the sides of the penny. Swipe one side of the penny across the flame several times for about fifteen seconds. You will notice the penny changing color.
- Repeat Step 6 for the other side of the penny.

WARNING: Pennies will melt if left in the flame too long!

- Set the penny on the tabletop to cool. Rinse the penny a second time in water.

Warning: Do not set hot penny on a paper towel!

Cleaning Up

Do not pour any chemicals into the sink!

- Rinse tongs with water.
- Cover zinc solution with watch glass.
- Turn off burner
- Clean and dry lab station