

Build Your Own Penny Battery

Background

The penny battery is a demonstration of how chemical energy can be stored and untapped in elements.

Materials Required

- 10 copper pennies
- Jar or bowl
- 1 tablespoon of salt
- Towel or paper towel
- Cardboard
- ½ cup of vinegar
- Tin foil
- Masking tape
- Two alligator clips (wires exposed on one side)
- 2 Volt LED Lightbulb

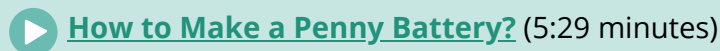
Tools

- Scissors
- Multimeter (optional)

Construction Plan: Build It!

Before you begin:

View this video for the construction of your Penny Battery:



Step 1: First off, we need to make sure our pennies are clean. Place your 10 pennies into a jar or a bowl. Add vinegar until the coins are submerged. Next, add some salt and mix with your fingers. Once the coins have been soaking for about 1 minute, clean off the coins with a towel or paper towel.

Step 2:

1. Trace out 9 coins onto a piece of cardboard and cut out the coin-shaped pieces.
2. Then soak your 9 coin-shaped pieces of cardboard in vinegar and salt.

Tip: Ensure that none of the layers hang out and touch each other.



Step 3: Fold a sheet of tinfoil multiple times until it is the size of a penny. Trace the shape of a penny into the tinfoil and then cut out the circle.

Tip: You will need 9 circles, therefore fold your sheet of tinfoil 4 times.



Step 4: Place a coin on the surface you are working on. Place a cardboard disk on top of it, and then a piece of tinfoil. Next, add a penny and repeat the steps until all your pennies have been stacked.

Tip: Ensure that both ends of your stack have a penny exposed.



Step 5: At this point, if you have a multimeter, you can check the voltage.

Step 6: Depending on your available equipment, you may need to strip one or both sides of your wires. You will need one side of the wires exposed with the other end having alligator clips.

Step 7: Place your tower of pennies onto a piece of masking tape, while sliding the stripped end of one of the wires underneath your stack of pennies. Secure your stack of pennies with masking tape.



Step 8: You are now ready to connect your light bulb to your battery! Clamp the alligator clips onto your LED electrodes. Your battery should now light up!

