

NATURALLY CHARGED

Learn about battery chemistry by building your own battery and using it to create sound.

What you need

- 6 pennies
- 2 teaspoons of salt dissolved in a cup of warm water
- saucer
- tape
- pen
- scissors
- 2 wires, each about 15 cm long
- headphones
- aluminum foil
- paper towels

What to do

1. Trace a penny 6 times on the aluminum foil and 6 times on the paper towel.
2. Cut out all the traced circles.
3. Carefully remove 2 cm of the plastic insulation from the ends of the wires using the scissors.
4. Tape the second wire to a foil circle.
5. Put the wire with the foil circle in the saucer with the wire on the bottom.
6. Wet a paper towel circle in the salt water.
7. Put the paper towel circle and then a penny on top of the foil circle. These 3 pieces of foil, wet paper, and the penny make a cell. In a battery, a cell is one charge-storing unit within a pack of cells that form the battery.
8. Repeat the layers using the same order to build a stack of cells, one on top of the other, until you have used all the pennies, wet paper and aluminum circles. A battery is made up of cells.
9. Tape the second wire to the penny on top of the battery.
10. Put on the headphones and coil one wire around the headphone plug.
11. Rub the end of the second wire against the tip of the plug.

Observation

Describe what you hear.

Why?

A battery changes chemical energy into electrical energy (electricity). In this activity, the aluminum foil, salt and copper pennies produce a chemical reaction that becomes electricity. The electricity flows from the battery to the headphones where it is converted into sound energy.

Did you know?

A voltaic pile is a simple battery, much like the ones used to provide electrical energy for watches, flashlights, clock radios and small appliances.

The voltaic pile is named after Alessandro Volta, the first scientist to create a simple battery.

Web sites

Visit this site to learn lots more about batteries: www.howthingswork.com/battery.htm

Reference

Ardley, Neil. *The Science Book of Energy*. Toronto: Doubleday Canada Limited, 1992

