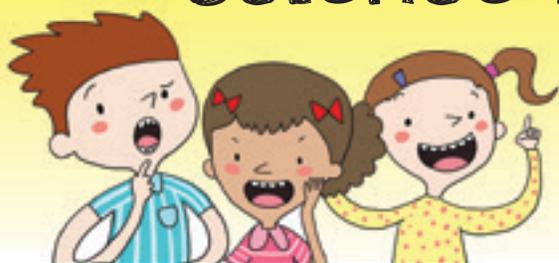


# Science Kids Explore



# COPPER!®

## DESTROYING ALUMINUM FOIL

### What You Need

- A clear glass for drinking water whose diameter is large enough that a one or two inch square of aluminum foil can lie flat on the bottom.
- Water
- A penny made before 1982 or some copper wire. If you use the copper wire, coil it in the shape of a flat spiral. (Pennies made before 1982 are about 95 percent copper.)
- A square of aluminum foil that measures one or two inches on each side.

### The Procedure

1. Put the square of aluminum foil so it is flat on the bottom of the glass.
2. Put the penny or the wire on top of the foil, right in the middle.
3. Gently and carefully put water into the glass until it is almost full. Don't let the water move the copper or the aluminum foil.
4. Let the glass stand for at least 24 hours in a safe, undisturbed place.
5. Pour out the water, and remove the aluminum foil and the copper.

### What You Should See

The longer the aluminum and the copper are in the glass, the cloudier the water should be. When you take the aluminum foil out of the water, it should be perforated, and the place where the copper was should be partially eaten away.

### What Happened

The aluminum foil decomposed through a process called corrosion. If metal mixtures in an alloy are distributed unevenly, then corrosion occurs more quickly than it would otherwise. By the way, you also created a small electrical charge, because the decomposition released energy as the aluminum became more and more corroded.

### Why This Experiment Works

Most of the time, aluminum resists corrosion very effectively because it has a thin oxide layer on the surface that prevents more oxidation from taking place. The aluminum didn't resist corrosion this time during your experiment because you made an uneven distribution of metals by placing the copper right on the aluminum, and then you added water. The water acts as an electrolyte that has dissolved salts in it; the salts are usually chlorides. What that means is that the water caused a chemical reaction. The cloudy water was caused by the chemical reaction, because the reaction released corroded aluminum into the water. ■

