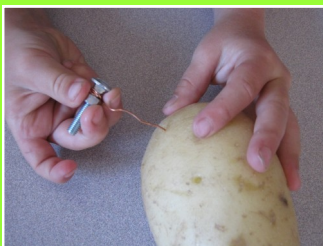


Make a Potato Battery

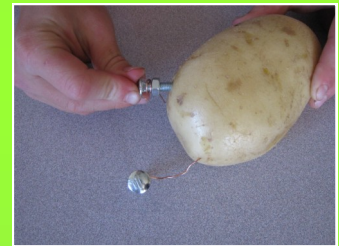


Potatoes are boring, right? Wrong! You can use a potato as a power source to light up a very small bulb or a light emitting diode (LED), which you can buy cheaply from a hardware shop.

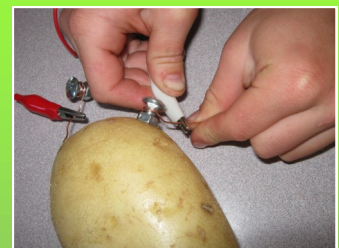
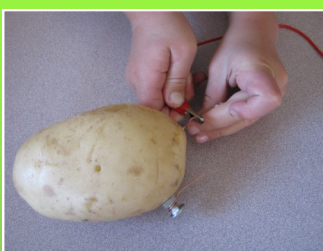
How to Make a Potato Battery



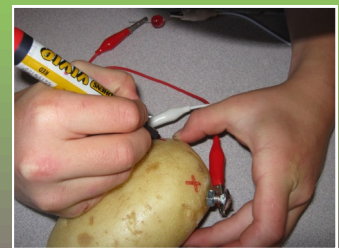
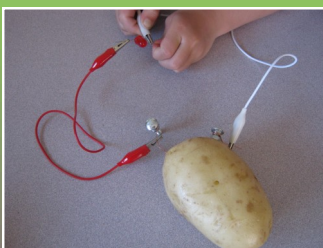
1. Push a piece of copper wire and a zinc-plated (galvanized) nail into the potato to act as the electrodes in this experiment. The two objects should be close together, but don't let them touch.



2. Connect the other end of the copper wire to one terminal of the LED or a connecting cable as we have used here, and use more wire to connect the other terminal to the steel nail.



3. The LED should light up as current flows through the circuit. If it doesn't work, try swapping the terminals of the LED. Mark each one with a + and a - sign so you know which one works. You might have to dim the lights to see the LED light up.



What is happening inside the potato? When the metals come into contact with the potato flesh, a chemical reaction occurs which releases metal ions into the potato. More specifically, potatoes contain phosphoric acid, which reacts with the zinc to form positively charged zinc ions and free electrons. At the other electrode, electrons in the copper combine with the hydrogen ions in phosphoric acid to produce hydrogen gas. The excess of electrons in the zinc electrode and the deficit of electrons in the copper electrode cause electrons to flow around the circuit, powering the bulb.