

**Safety:**

**Instruments:**

- bell wire
- battery (voltage suited to the light bulb)
- two paperclips
- a screwdriver
- insulated pliers
- small light bulb
- light bulb socket
- scissors
- thick cardboard

**Experiment:**

- Cut two pieces of bell wire and strip the insulation from the ends. Twist both ends of each wire tightly to get rid of any loose ends. Then connect one wire to each pole of the battery. Make sure that the wire firmly touches the metal pole. Place one of the free wire ends on the end of a light bulb and the other wire on the metal threads. What happens?
- Screw the light bulb into the socket. Attach the two wire ends to the socket. What happens?
- Break the circuit by removing the battery from the wires. What happens?
- Prepare a third piece of bell wire exactly like the first two. Tie one end to one battery pole. Cut a 3 x 5 cm piece of cardboard out as the baseplate for an electrical switch. Fasten a paperclip to the wire attached to the light bulb socket. Press it through the cardboard piece and bend the ends around it. Repeat this for the wire from the battery, but before you press it through the cardboard, add another paperclip which can be moved back and forth to touch the other paperclip and close the circuit. This is your movable off-on switch. Close the switch by touching the movable paperclip to the other half of the circuit. What happens?

**Advice for the teacher:**

The pupils see that the light bulb only glows when the circuit is closed.

They should learn that electricity flows through electrical conductors. If the battery is correctly connected, electric current flows from one pole to the other through the connecting wire, the switch, and the light bulb. This is called an "electrical circuit."