Topic	Energy
Phenomenon	Current flows around a circuit
Experiment	Conductors and non-conductors (insulators)
Material to be provided	1 strip of aluminum foil 1 balloon 3 batteries (1.5 V) 1 battery holder (for 3 x 1.5 V batteries) 3 cables with alligator clips 1 drinking straw 1 incandescent lamp with a socket 1 nail or screw 1 paper clip 1 pair of scissors 1 spoon
Additional Material	Some strips of paper
Preparation for experiment	The children should have already had experience with a simple circuit.

Researcher question

What objects can electricity flow through?

Description of experiment

Give the children a battery holder with batteries, an incandescent lamp with socket, and three cables. Tell them to use these materials to make the incandescent lamp light up.

Ask the children if they have any ideas about how they can make the circuit bigger. As a suggestion, you can, for example, clip a nail or screw in between two cables. Does the incandescent lamp continue to light up? How does the incandescent lamp respond if the nail or screw is replaced with a strip of aluminum foil, a drinking straw, or a paper clip?

Together with the children, sort out the tested objects into those that light up the incandescent lamp and those that don’t.

Look for other test materials with the children, for example, scissors, a balloon, a spoon, or a piece of paper.

Explanation

The incandescent lamp lights up when electric current can flow in the circuit. Metals conduct electricity, so the incandescent lamp lights up when the children clip metallic objects like a paper clip, a nail or screw or aluminum foil between two cables. Since they conduct electricity, these objects are called “conductors”. Wood, plastic, and rubber do not conduct electricity. They are therefore called “non-conductors” or “insulators”.