EMPIRIBOX

Primary School Science

Empiribox is dedicated to science and improving the science education in primary schools.

In this investigation, children will find out the difference between a conductor and an insulator and which materials are which, filtering them by category.

Spectacular Science

Conductors or Insulators?

SPECTACULAR SCIENCE
Conductors or Insulators?

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What are conductors and insulators?

Conductors are materials that allow the energy to flow freely and be moved from one place to another and are usually metals. This is why plugs are metal; so that electricity can come out of the socket and into the device.

Insulators are materials that do not allow electricity to flow freely and will stop the flow of electricity being transferred from one place to another, such as wood.

What you will need

Batteries + battery holders

Bulbs + bulb holders

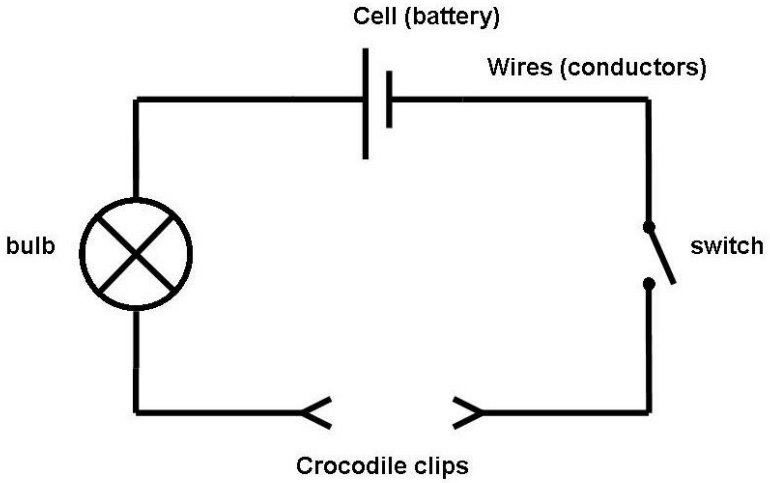
Wires with crocodile clips

Selection of materials to test – such as aluminium foil, uncoated paper clips, metal and plastic spoons, plastic cup etc.

As an extension – try a length of graphite from a propelling pencil. Should be the only non-metal they'll find that conducts.

Activity – which materials are conductors or insulators?

1. Ask the children to set up a simple circuit with a battery, a light bulb and 2 crocodile clips
2. Leave a space between the crocodile clips to test your materials



3. Put different materials between the crocodile clips. Ask them to write down if the bulb lights up or not using the chart on the following pages
4. Can they say which materials are conductors (bulb lights up) and which are insulators (bulb doesn't light up)

Class Discussion

Think of some examples of where we want parts of an object to be a conductor, and other parts to be an insulator – such as a plug, or a desk lamp. Why is it important?

Ask children to make a table like the below in their books to fill in their findings

Name of material	Does the bulb light up? Yes or No?	Conductor or Insulator?
Copper	Yes	Conductor