

ELECTRICAL CONDUCTIVITY

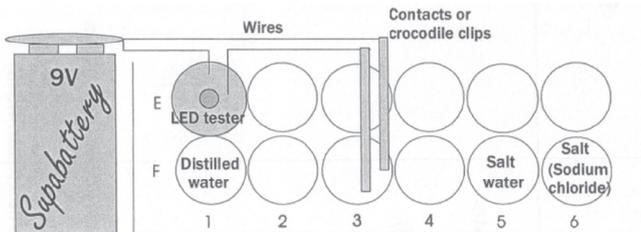
We use electricity every day. Sometimes we use it ourselves directly, for example on our MP3 player, or indirectly such as on the bus which needs indicators to turn safely.

List 3 other occasions when you used some electricity directly or indirectly today.



Eye protection must be worn in this area

Not all materials conduct electricity. In this experiment we are going to test different materials for conductivity.



Method

Testing solids

1. Set the equipment up as shown in the diagram.
2. Draw up a results table
3. Test the circuit first by touching the two contacts together. The red light-emitting diode (LED) should light up.
4. Place solid test samples between the crocodile clips to make the circuit complete - tick the box if it conducts.
5. Repeat this process for all samples

Testing solutions

1. Half fill well F 1 with distilled water, making sure the well is clean before you start.
2. Wipe clean the contacts, and then place them into the distilled water. Write your result in the table.
3. In F6 place 10 microspatulas of common salt (sodium chloride). Test the solid for conductivity and note down your result.
4. Add a little distilled water to F6 and stir. Then retest.

Wash the contacts off with distilled water before putting them away.

Results

Material	Conducts / Doesn't conduct
Plastic	
Distilled water	
.....	
.....	
.....	
.....	

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NAME:

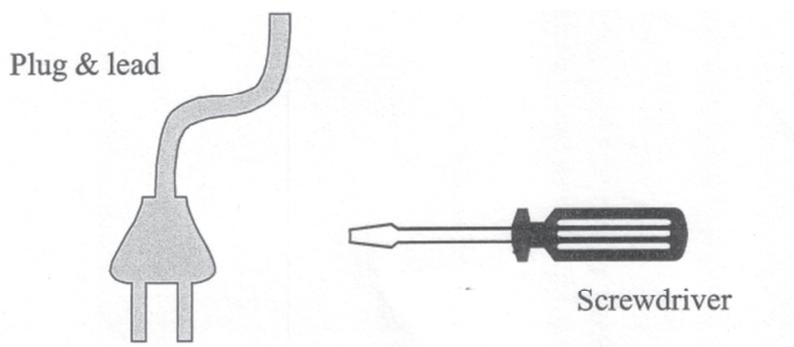
1. Complete the results table in your book and write a conclusion which summaries your results.
Use these words to help you.

Electrical conductor(s)	insulator(s)	metal(s)	non-metal(s)
Graphite	Complete circuit	LED	Flow

Additional words for solutions

Distilled water	ions	salt(s)	tap water
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2. The battery has provided the energy for this experiment. Write down the energy conversion(s) that have taken place when an electrical conductor is present in the circuit. Identify the useful and wasted forms of energy.



3. Above are two items, a plug and an electrician's screwdriver, each made from components some of which are conductors and others insulators

Describe why both items need these features to make them work properly. _____
