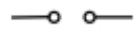
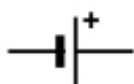




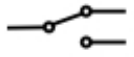
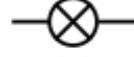
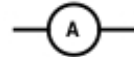





## Practical: Electric Current 2

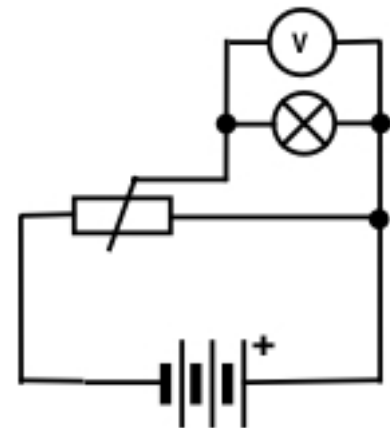
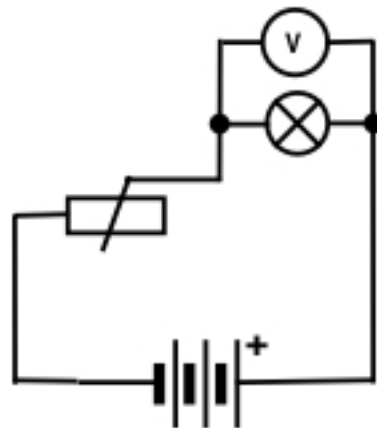
On the table you will find a lot of basic materials for investigating the characteristics of the electrical current, resistance and batteries. Don't hesitate, just explore and look carefully, what you can see.

Used icons:

	Power source
	Battery
	Wire
	Crossing wire without connection
	Crossing wire with connection
	Switch on - off
	Changeover switch
	Bulb
	Current meter (Ampère)
	Voltage meter (Volt)
	Fuse
	Resistor

15. Experiment: Measure the resistance of different items: e.g. nail, bulb, pencil, fruit, skin, tongue, wood, etc.
16. Experiment: On the table you will find some special wires. Find out by measuring, where there is a connection and where there is no connection in these wires.
17. Experiment: Produce resistors of different forms (length, width etc) by drawing it with a pencil on a sheet of paper. Than measure the different resistors and find out, what influences the measured values.
18. Experiment: You have a change over switch. Find out, which connection socket is the input and which connection sockets are the outputs in relation to the position of the switch.

19. Experiment: Variable resistor: With wires, three batteries, 1 sockets, 1 bulbs and a lead make what is shown by the following wiring diagram on the left. Be carefully, that the lead does not break:



With masking tape stick the lead onto the board and connect at each end a piece of wire. In a first step leave one end open. With the wire, which is connected to the bulb slide gently over the lead and observe the lamp and the voltage meter.

Optional connect the open end of the resistor as shown in the right diagram with the lamp and do the same.

20. Experiment: Draw a scheme with two changeover switches, a battery and a bulb, so that the bulb can be lit independently from the switches. Than make the wiring.

21. Experiment: Material you need:
- 1 medium size lemon or lime or....
  - 1 piece of copper
  - 1 steel nail
  - 1 zinc plated nail or a piece of zinc
  - Small piece of sand paper
  - A voltmeter

Squeeze the lemon a bit, take the steel nail and copper piece to start with. They are our battery terminals. Lightly sand the end of the copper and nail. Without letting any part of the nail touch the copper, insert both 'terminals' in the lemon about 2 to 3 cm deep and as close together as you can get them.

With the Voltmeter measure if there is a voltage. Change position of the nail and copper, replace the nail or the copper by the zinc and always make a measurement. What can you observe?