
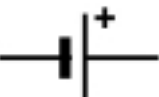




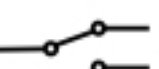







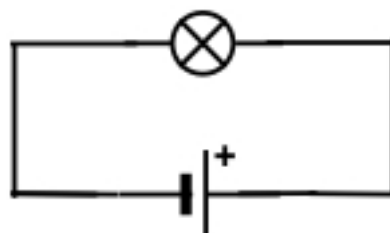
## Practical: Electric Current

On the table you will find a lot of basic materials for investigating the characteristics of the electrical current. You are going to wire the connection diagram as given below. Don't hesitate, just explore and look carefully, what you can see.

Used icons:

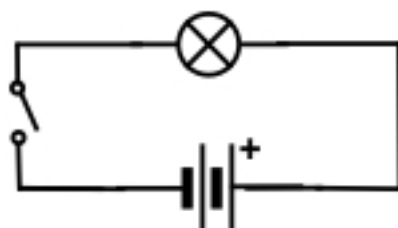
	Power source
	Battery
	Wire
	Crossing wire without connection
	Crossing wire with connection
	Switch on - off
	Changeover switch
	Bulb
	Current meter (Ampère)
	Voltage meter (Volt)
	Fuse
	Resistor

1. Experiment: With wires, one battery 1.5 V, a socket and a bulb make what is shown by the following wiring diagram.



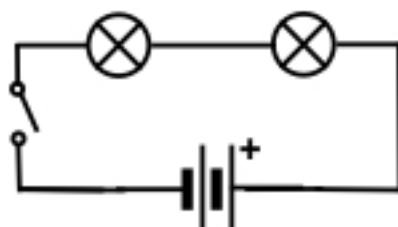
What do you observe? What is your conclusion? Make just the same layout but now with two batteries. What do you observe now?

2. Experiment: With wires, two batteries, a socket, a bulb and a self-made switch make what is shown by the following wiring diagram. Open and close the switch.



Does it make a difference, if the switch is put on the right side in the diagram? Try it! What do you observe? What is your conclusion?

3. Experiment: With wires, two batteries, two sockets, two bulbs and a self-made switch make what is shown by the following wiring diagram. Open and close the switch. Remove one bulb. What do you observe? What is your conclusion?



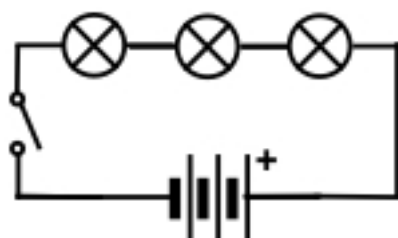
Does it make a difference, if the switch is put between the bulbs? Try it!

4. Experiment: With wires, three batteries, two sockets, two bulbs and two self-made switches make what is shown by the following wiring diagram. Open and close the switches in different combinations.

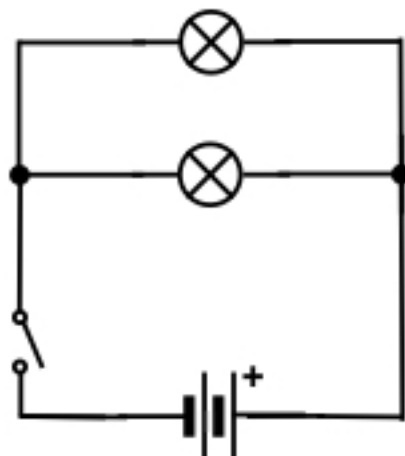


What do you observe? What is your conclusion?

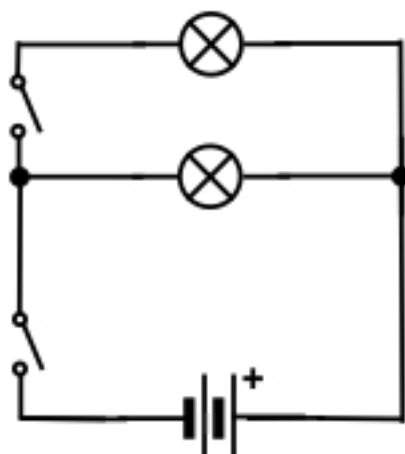
5. Experiment: With wires, 3 batteries, 3 sockets, 3 bulbs and one self-made switch make what is shown by the following wiring diagram. Remove one bulb. What do you observe? What is your conclusion?



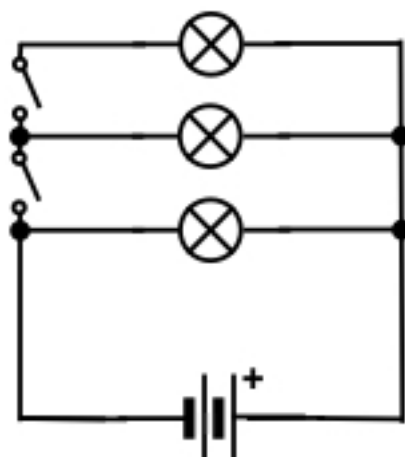
6. Experiment: With wires, two batteries, 2 sockets, 2 bulbs and one self-made switch make what is shown by the following wiring diagram. What do you observe? What is your conclusion?



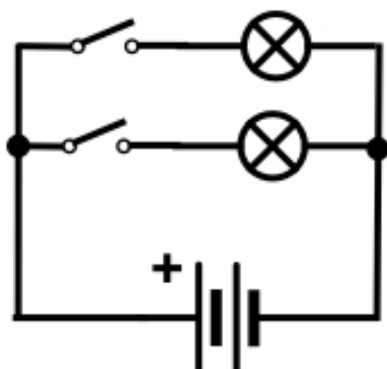
7. Experiment: With wires, two batteries, 2 sockets, 2 bulbs and two self-made switch make what is shown by the following wiring diagram. What do you observe? What is your conclusion?



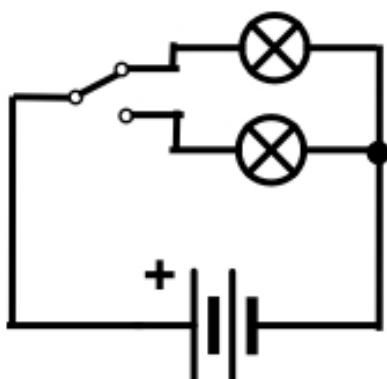
8. Experiment: With wires, two batteries, 3 sockets, 3 bulbs and two self-made switch make what is shown by the following wiring diagram. What do you observe? What is your conclusion?



9. Experiment: With wires, two batteries, 2 sockets, 2 bulbs and two self-made switch make what is shown by the following wiring diagram. What do you observe? What is your conclusion? Where can you use this as an application?

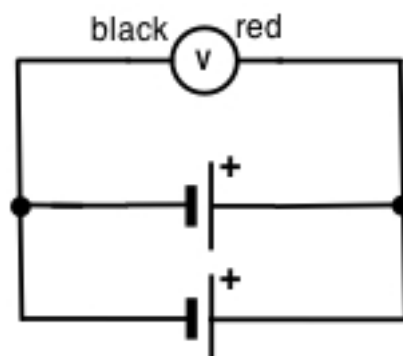
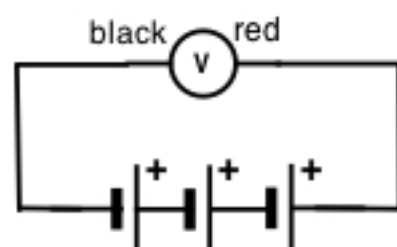
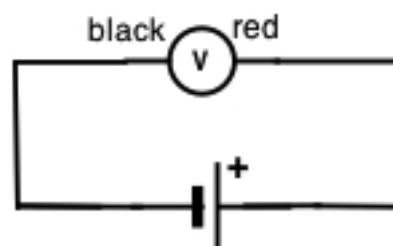
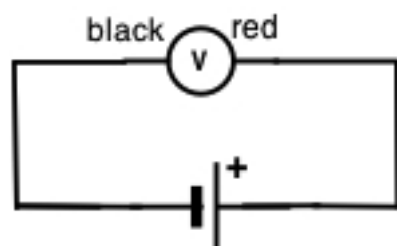


10. Experiment: With wires, two batteries, 2 sockets, 2 bulbs and one self-made change over switch make what is shown by the following wiring diagram. What do you observe? What is your conclusion? Where can you use this as an application?

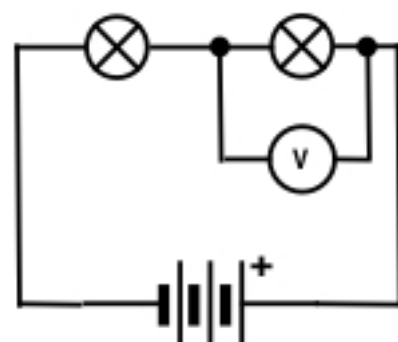
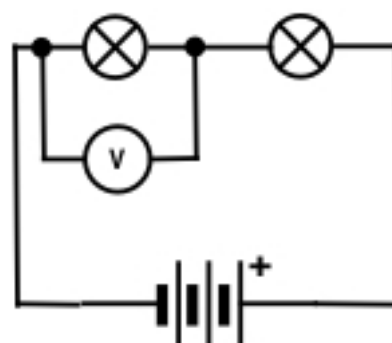
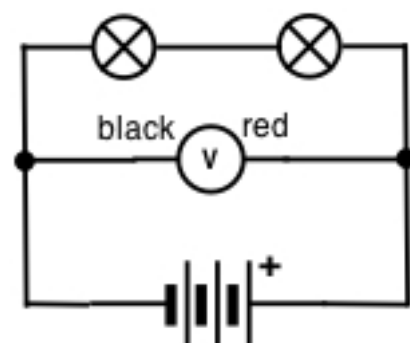


11. Experiment: Design an own wiring diagram with the gettable material and than build it. Does it function the way you planned it?

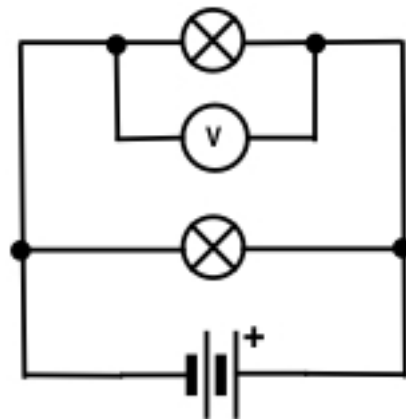
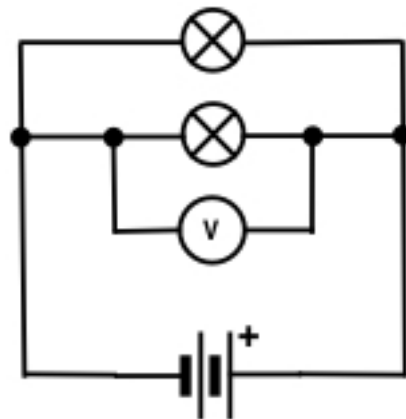
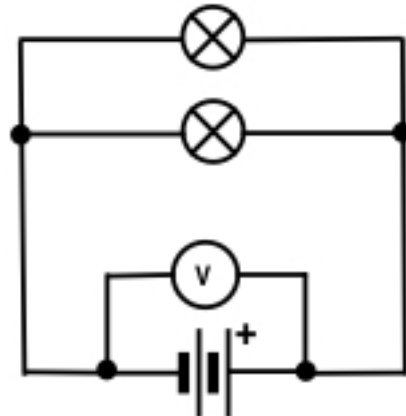
12. Experiment: With two connection wires, a voltmeter and one to three batteries measure the voltage of batteries as shown in the following wiring diagrams. What do you observe? What is your conclusion?



13. Experiment: With two connection wires, a voltmeter two bulbs and three batteries measure the voltage as shown in the following wiring diagrams. What do you observe? What is your conclusion?



14. Experiment: With two connection wires, a voltmeter two bulbs and two batteries measure the voltage as shown in the following wiring diagrams. What do you observe? What is your conclusion?



**Exercise**

In the wiring diagram below all bulbs are exactly the same. The battery has a voltage of 9 V. By thinking not experimenting find out what you could read as voltage on the voltage meter for each diagram-

