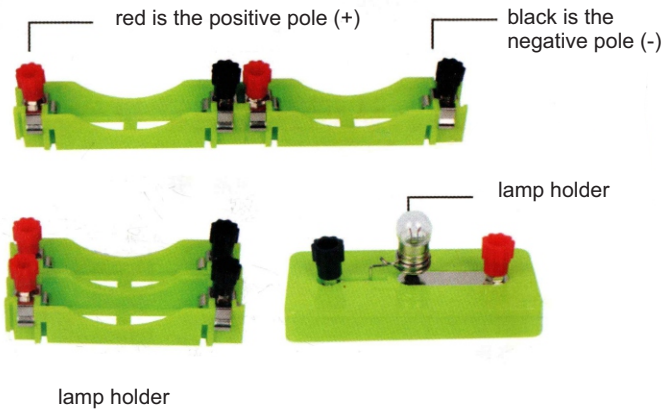
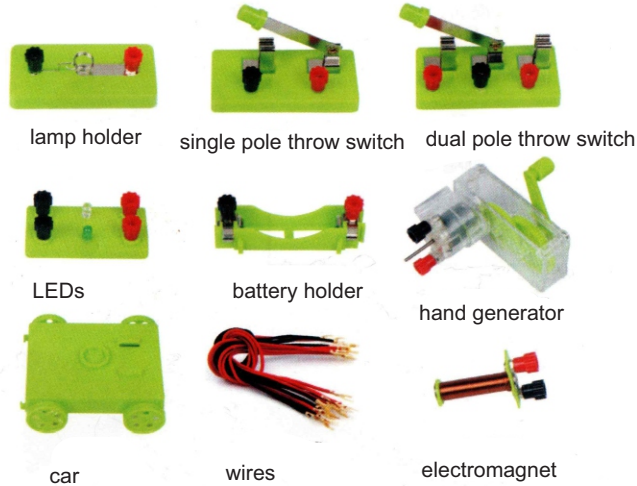


# Circuit Experimental Kit



## 1. Small Series Circuit

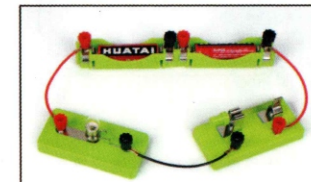
You can make up a small circuit with 2 x batteries in series, 1 x lamp and a switch. Once you flip the switch the lamp will go on.



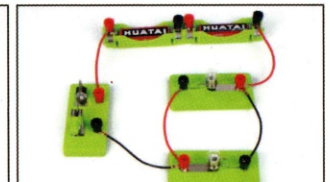
## 2. The difference between a series circuit and a parallel circuit

Pic 1 demonstrates how the lamp, switch and batteries are connected in series

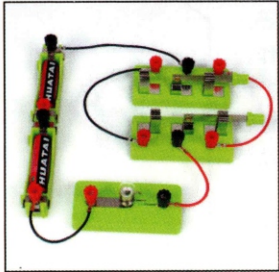
Pic 2 demonstrates how the lamp, switch and batteries are connected in parallel



pic 1: series



pic 2: parallel

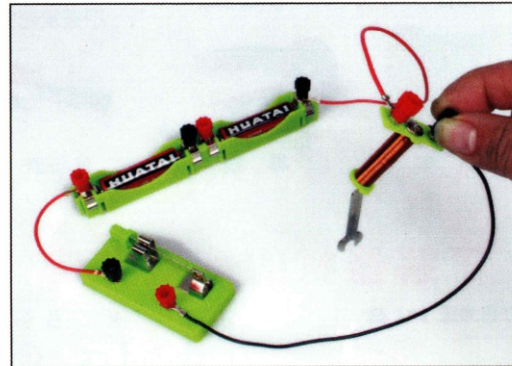


### Double way switch

Here we have connected 2 switches to the lamp to demonstrate that you can switch the lamp on or off from anyone of the switches.

### Electro magnet

Power a coil and you will have converted it into a magnet for as long as you supply it with power.



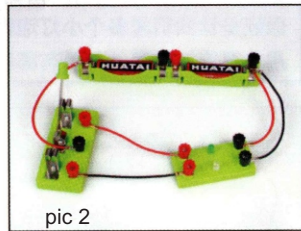
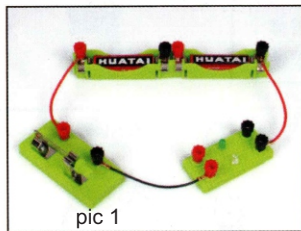
### LED light-emitting Diode



Light-emitting Diodes or LED is a high efficiency light emitting semi-conductor device that convert electrical energy to light.

LED's work on low volts, here we will switch it on with 3V, 2 battery cells in series.

When using the dual switch it will light up 1 LED at a time as shown in pic 2



### Understanding DC motors

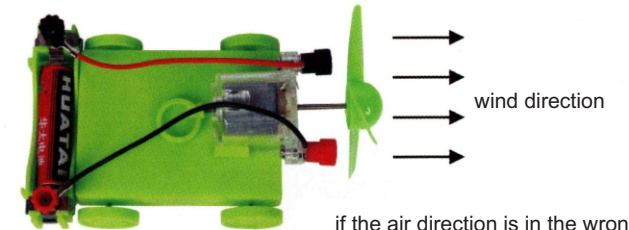
In everyday life we use motors. Motors convert electrical energy into kinetic energy.

This type of energy is used in all sorts of appliances like washing machines, toy motors, pumps and much more.



### We will need the following

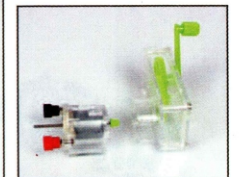
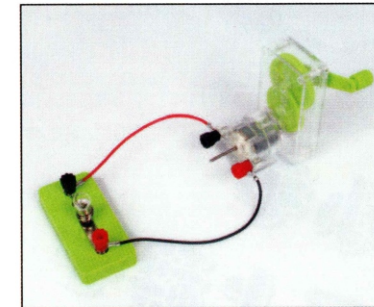
- 1 x battery
- 1 x car chase
- 1 x motor
- 1 x propeller



if the air direction is in the wrong direction swop the + (positive) and - (negative) on the motor

### Hand generator

The lever can be disassembled from the gearbox



By using a gearbox you can generate voltage to power up the lamp.