measuring current

Current is measured in amps, and using an ammeter. In a circuit, the ammeter must be connected in series with the component you want to find the current at.

measuring voltage

Voltage is measured in volts, and using a voltmeter. The voltmeter must be connected in parallel to ('around') the component you want to find the voltage across in a circuit.

• RESISTANCE

Resistance occurs because as an electric current occurs, electrons move through a conductor. The electrons collide with the atoms of the conductor which makes it harder for the current to flow and causes resistance.

Resistance increases (in a wire)
- the length of the wire increases
- the thickness of the wire decreases

POTENTIAL DIFFERENCE = CURRENT × RESISTANCE
V A ohm, Ω

When components are connected in series, the total resistance is the sum of their individual resistances. Adding more components increases the total resistance so less current will flow.

Variable resistors can also be used in circuits to alter resistance.