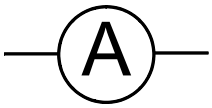
ΩhmCΩmfΩrts

Using the words below write a report or your own dictionary to explain their meaning

a) **Current**	***b)*** **Charge**	***c)*** **Voltage**
d) **Resistance**	***e)*** **Ammeter**	***f)*** **Voltmeter**
g) **Ohmmeter**	***h)*** **Multimeter**	***i)*** **Conductor**
j) **Insulator**	***k)*** **Potential Difference**	***l)*** **Circuit**
m) **Series circuit**	***n)*** **Parallel circuit**	***o)*** **continuity tester**
p) The effects of a current		

1. Electric charge is produced from the outer parts of atoms called electrons. When these small charges or electrons move around a circuit we call this a current, electric current or electrical current. When an electric current passes through a conductor it produces several useful effects, heat, light, magnetism, and chemical effects.

2. You will only get an electric current if there is a complete path for it to follow. This is known as a circuit. For example a light lamp will only light if there is a complete path from the power supply through the lamp and back to the power supply. We use the symbol I to represent current so we don't have to write out the whole word. I was used as people used to refer to current as intensity. The unit of current is the ampere or amp. Current is measured using an ammeter. Ammeters are connected in series. The symbol for an ammeter is



3. Electric charge cannot flow through all materials. Materials that charges flow through easily, such as copper, are called conductors. Materials that charges cannot flow through, for example rubber, are called insulators. These materials are similar to conductors and insulators of heat. Notice, materials that are good conductors of heat are also good conductors of electrical current, and materials that are bad conductors of heat are also bad conductors (or good insulators) of electrical current.

4. The number of free electrons in a substance determines how well it conducts electrical current. Metals such as aluminium, copper, silver and gold are good conductors because they have at least one free electron per atom. Some metals, such as lead and tin, are poorer conductors than other metals because they have less than one free electron per atom. Substances with no free electrons, such as glass, and rubber, do not normally conduct electrical current. They are called insulators.

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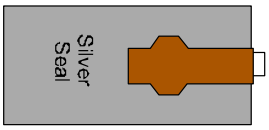
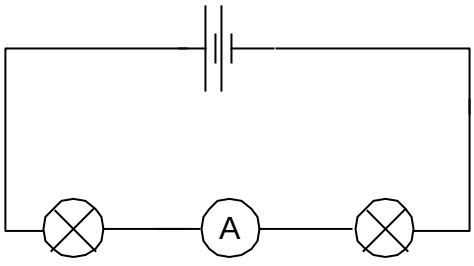
5. Resistance is a measure of how difficult it is for these charges to move through an object. Poor conductors resist the flow of electrical current more than good conductors. Resistance changes electrical energy into heat. Not all conductors are equally good at letting charge through. Some resist the current more than others. We say these materials have a high resistance. Resistance is represented by the symbol R and is measured in units called Ohms (symbol Ω) Resistance is measured with an Ohmmeter which has the symbol

6. The electrical push that allows charge to flow is called voltage. It is also a measure of the energy given to each of the charges as it passes through the power supply.

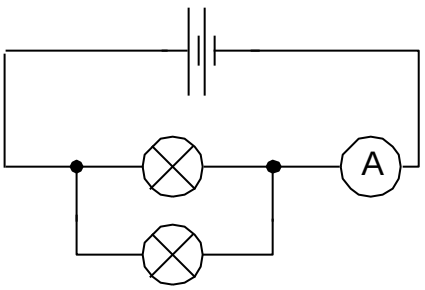


7. Potential difference (p.d.) is often called voltage. p.d. is the push that makes the charges move around a circuit. Voltage is measured in volts. Voltage is measured using a voltmeter. Voltmeters are connected in parallel and have the symbol

8. A circuit that can be built to test whether something was a conductor or an insulator is called a continuity tester. Rather than using a separate meter to measure current and voltage and resistance one meter can be used on different settings. This meter is called a multimeter.
9. Soon we are going to find out that there are two types of circuit that we can build. Remember that in a series circuit there is only one path for the current to take. Charge flows through all the components. In a parallel circuit there is more than one path for the current to take. An example of each is given below.



A series circuit



The lamps are in parallel