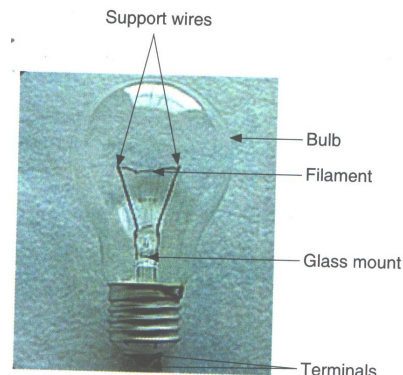


6th – Electric Circuits I

Electric current:

An electric current is flow of electric charge. In electricity circuits this charge is carried by moving electrons in a wire. Most of the devices and machines we use like an electric iron, oven, room heater, refrigerator, ceiling fan or an electric bulb work when an electric current flows through them. You will see that it has a thin filament (a very thin metal wire). The filament heats up when an electric current is passed through it. it heats up so much that it begins to glow and give out light.

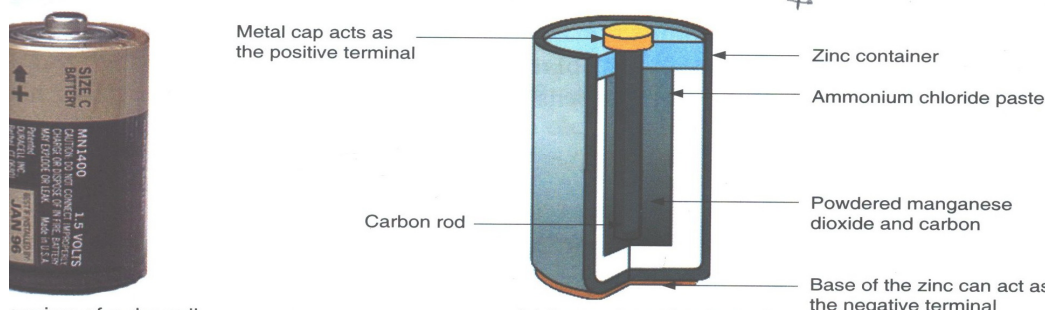


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Different types of electric cells:

Different cells use different methods for producing an electric current.

Primary cell: primary cell can be used only once, and have to be thrown away once they have been used up.

6th – Electric Circuits I

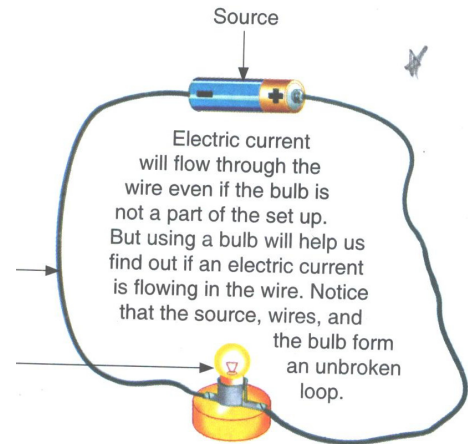
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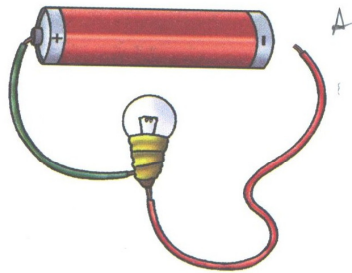


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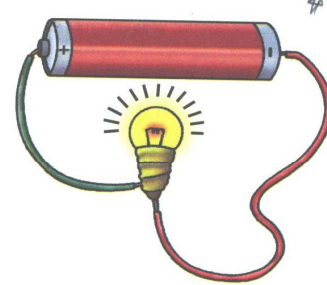
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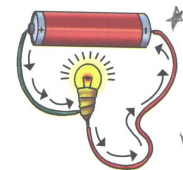
i) Open circuit—the bulb does not glow



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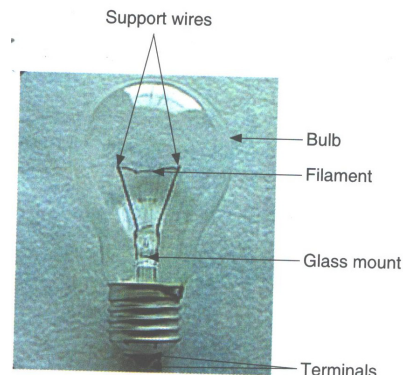
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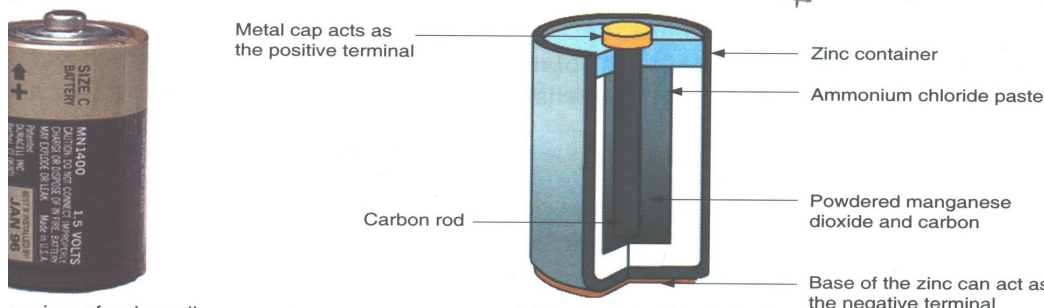


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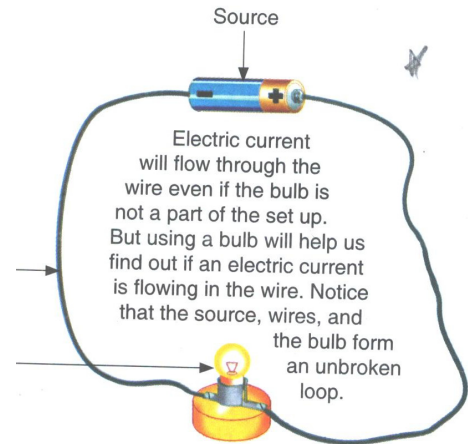
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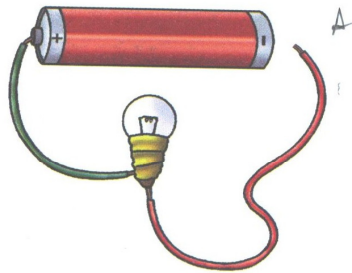


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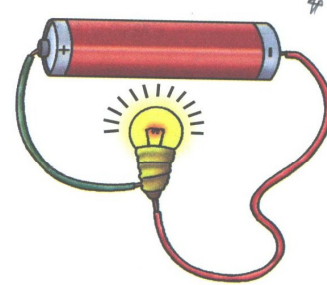
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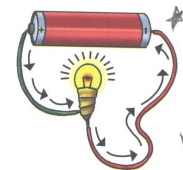
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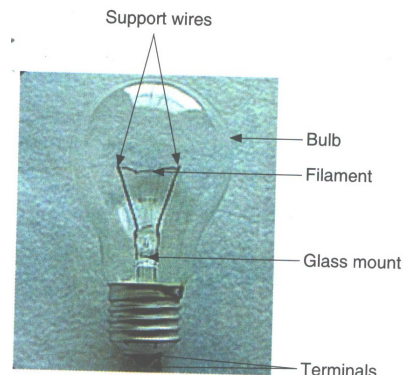
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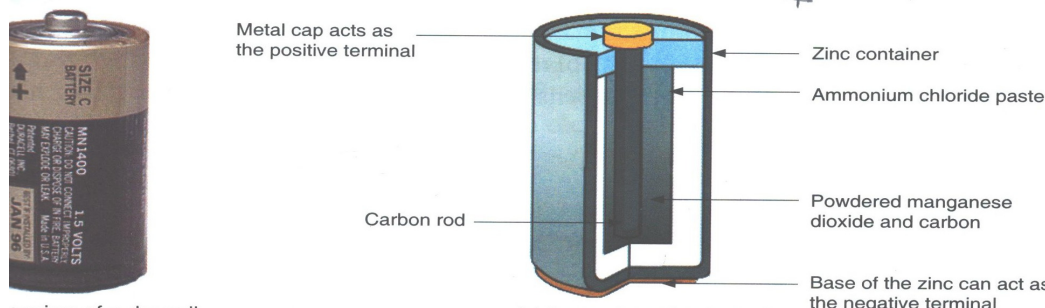


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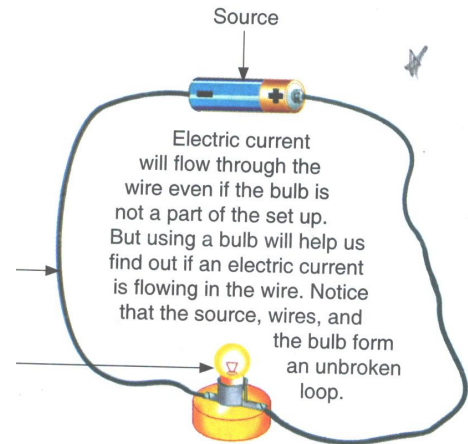
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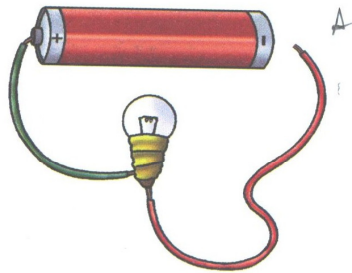


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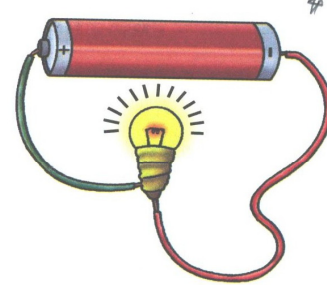
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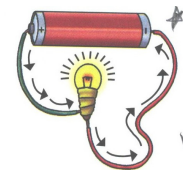
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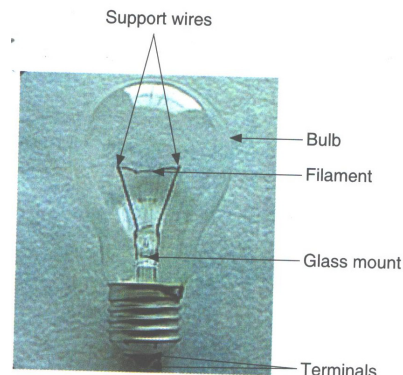
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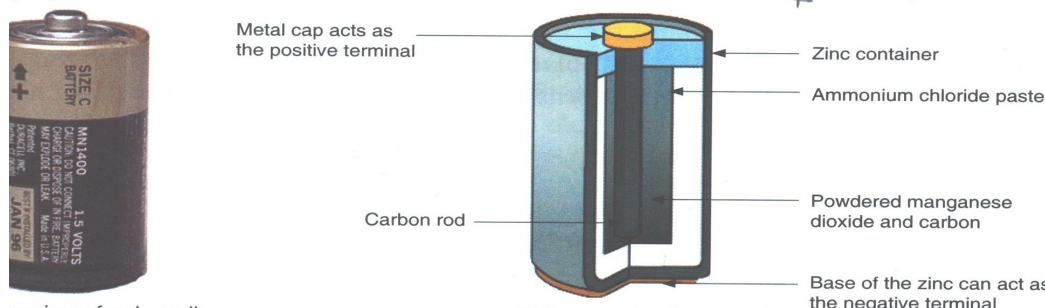


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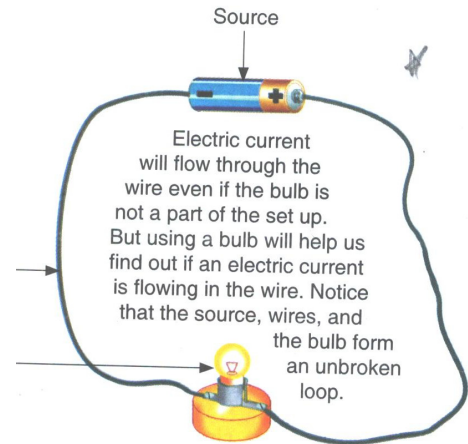
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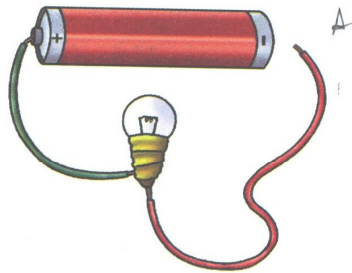


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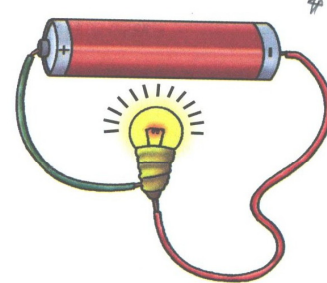
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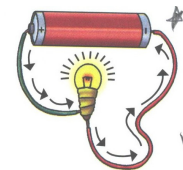
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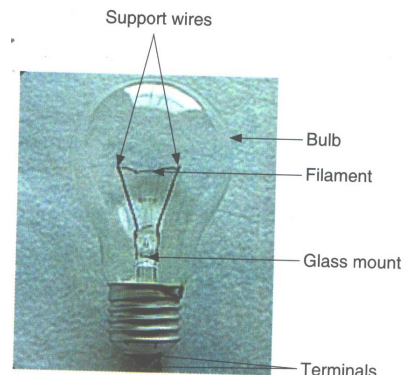
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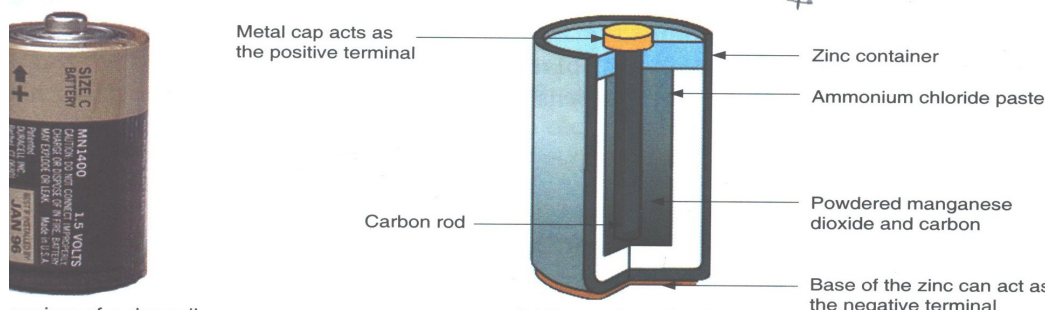


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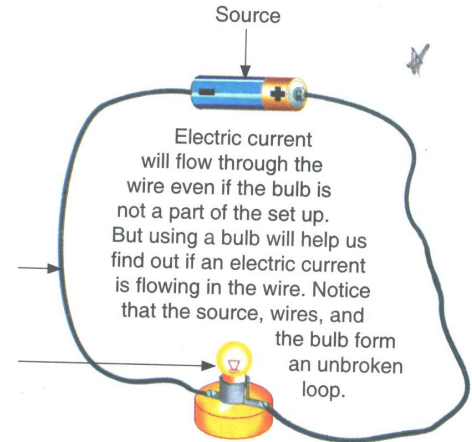
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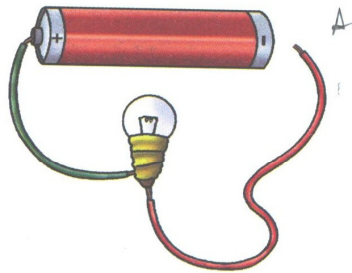


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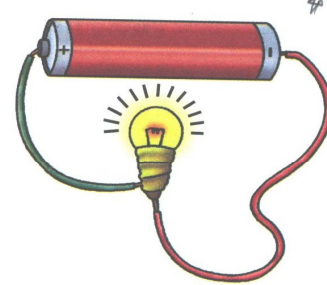
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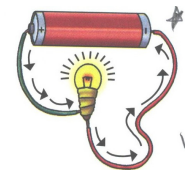
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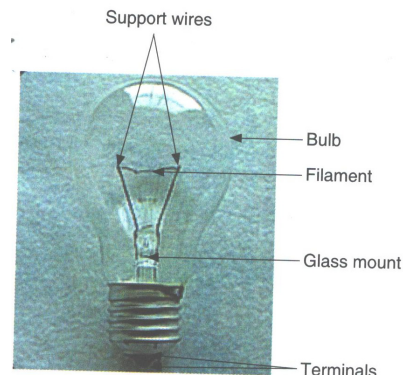
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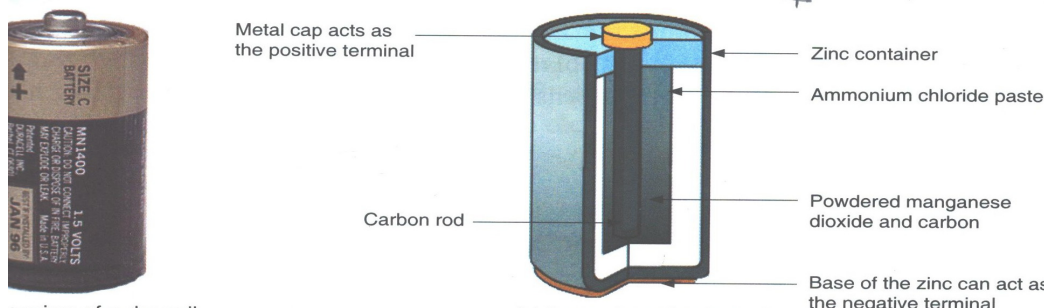


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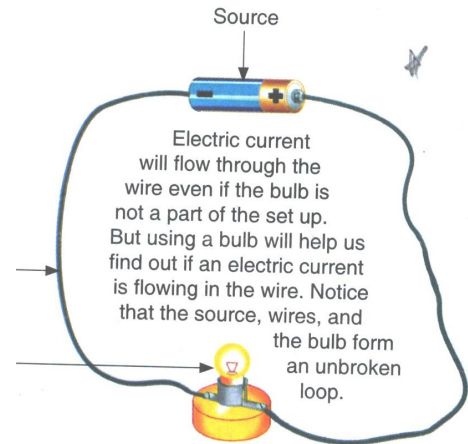
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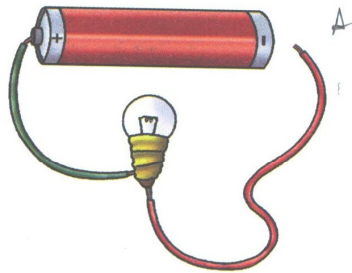


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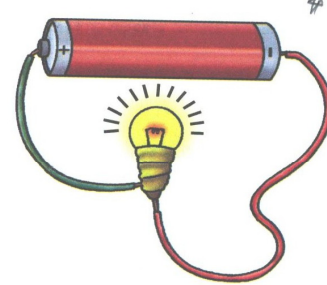
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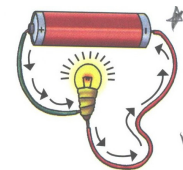
i) Open circuit—the bulb does not glow



(b) Closed circuit—the bulb lights up

Direction of electric current

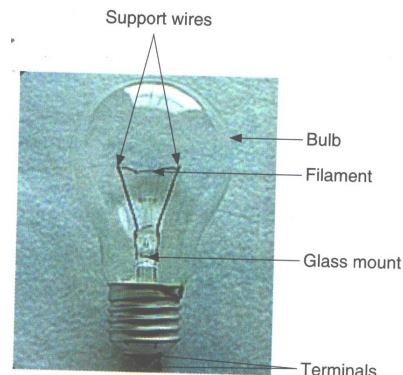
Electric current flows in a particular direction. In an electric circuit, the electric current flows from the positive terminal to the negative terminal of the electric cell. Diagram shows the direction of flow of electric current in a circuit.



6th – Electric Circuits I

Electric current:

An electric current is flow of electric charge. In electricity circuits this charge is carried by moving electrons in a wire. Most of the devices and machines we use like an electric iron, oven, room heater, refrigerator, ceiling fan or an electric bulb work when an electric current flows through them. You will see that it has a thin filament (a very thin metal wire). The filament heats up when an electric current is passed through it. it heats up so much that it begins to glow and give out light.

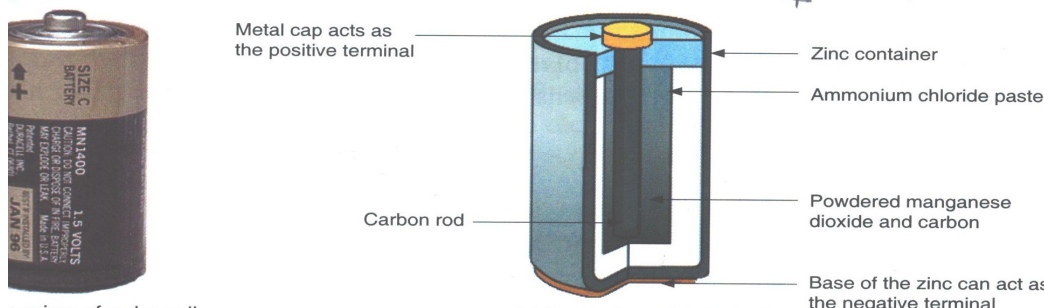


Source of electric current:

A device that can be used to produce an electric current is called a source of electric current. Common sources of electric current are cells and batteries (collection of cells) which comes in various shapes and sizes. A very useful kind of cell which we use very often is dry cell, due to a chemical reaction that takes place in cells and batteries, electric, electric current is produced.

The dry cell:

A dry cell is a very convenient source of electric current. The dry cell, as its name suggests, contains dry or semi- solid ingredients.



1. The dry cell contains a paste of ammonium chloride inside a zinc container.
2. Inside the paste, a cardboard container containing powdered manganese dioxide and carbon is placed.
3. The cardboard container has microscopic 'holes' in it (such materials are called porous materials) through which a chemical reaction takes place between ammonium chloride paste and powered manganese dioxide.
4. A rod, usually carbon, with a metal cap is dipped into the manganese dioxide.
5. The whole thing is then sealed (with only the metal cap sticking out), so that the contents do not spill out.

Every source of electric current has two ends or terminal where conducting wires are connected to draw electric current. The tip of the metal cap and the base of the zinc can are called the positive and negative terminals of the dry cell, respectively.

Different types of electric cells:

Different cells use different methods for producing an electric current.

Primary cell: primary cell can be used only once, and have to be thrown away once they have been used up.

6th – Electric Circuits I

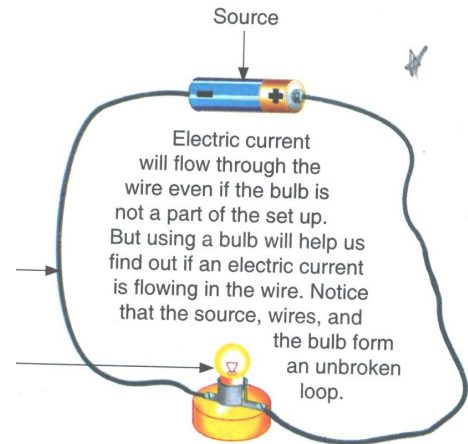
Secondary cell: there are cells that can be recharged once they are drained. These are called secondary cells. They are used in mobile phones, laptops, and car batteries.

Solar cells: solar cells are being used in many applications. Solar cells use sunlight to produce electric current. Many calculators are powered with solar cells. Solar panels made up of solar cells are used to light up streets and many homes.

Flow of electric current:

There basic conditions are required for an electric current to flow.

- A device used to produce an electric current like cell, battery, or a plug point acting as a source.
- A wire made of a metal like copper, silver, or aluminum, which will allow electric current to flow through easily.
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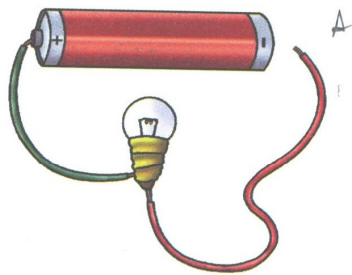


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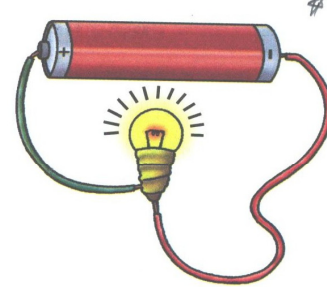
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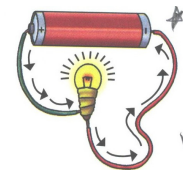
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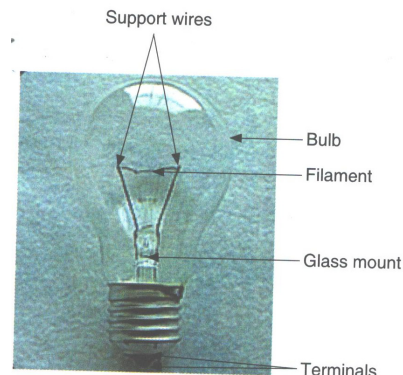
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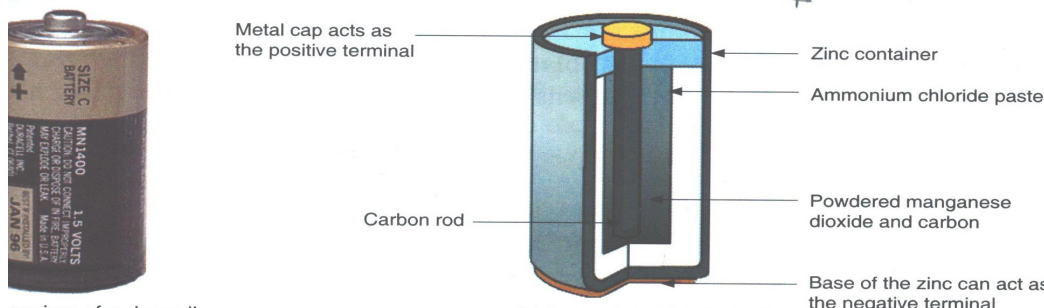


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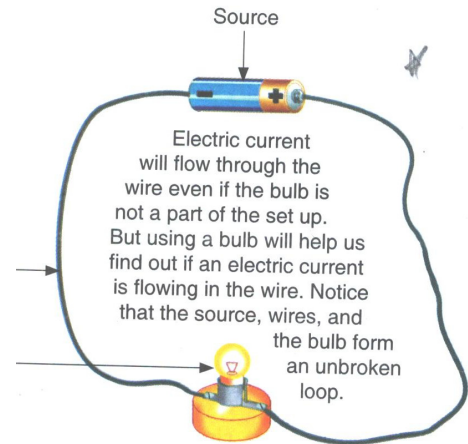
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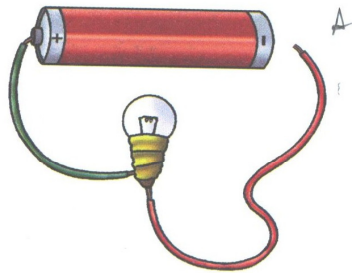


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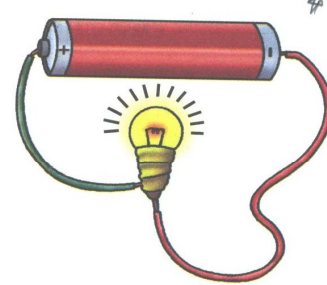
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