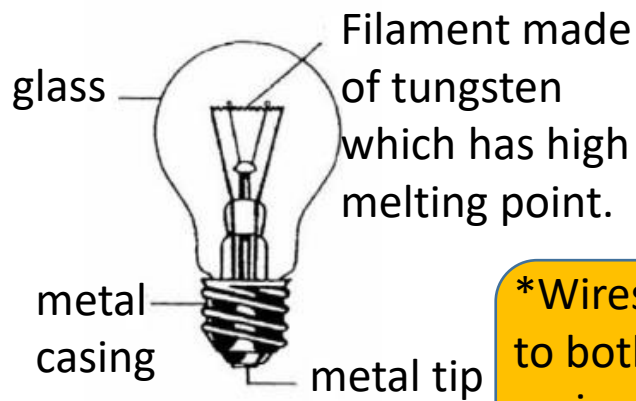
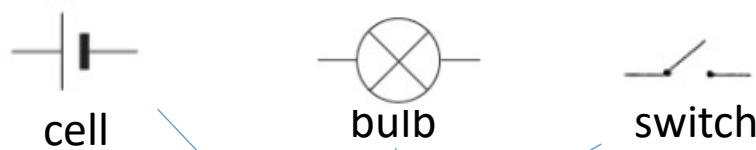




*Wires must connect to both metal tip and casing to form closed circuit



Circuit diagram

Components

Electric Circuit

Open circuit

Closed circuit

- Electric current cannot flow when there is a gap.
- Batteries are not connected properly.
- A bulb is fused, an open circuit is created.
- Electricity cannot flow through insulators of electricity like wood and plastic.

Brightness of bulbs

Arrangement of bulbs

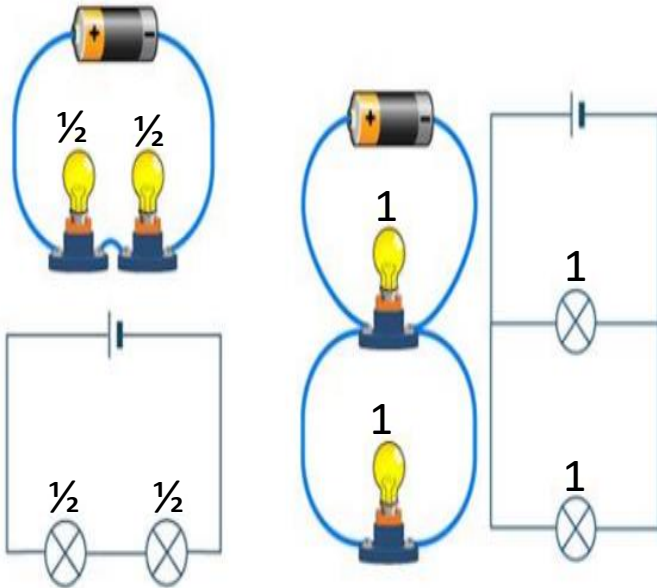
Number of bulbs

Number of batteries

- Electric current can flow when there is no gap.
- Electricity can flow through conductors of electricity like metals.

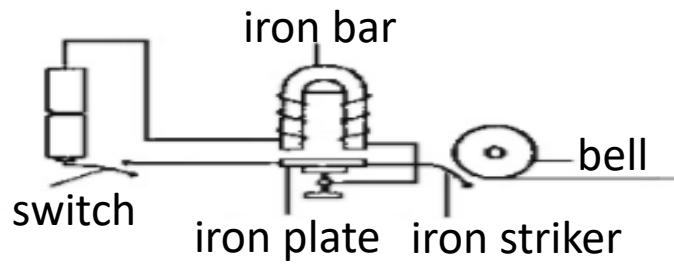
- Bulbs get dimmer when more bulbs added to series arrangement

- Batteries ↑, Bulbs get brighter
- Too many batteries → bulb blows or fuses.



Series Circuit

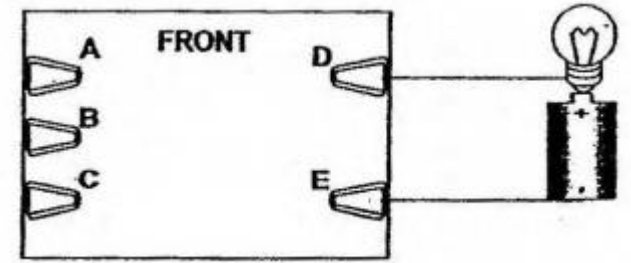
Parallel Circuit



How does an electric bell work?

When the switch is closed, electric current passed through and made the iron bar become an electromagnet. The electromagnet then attracted the iron plate which in turn caused the iron striker to move up and hit the bell.

- Allows electrical appliances to work like TV, computer and fan.



Useful to us

Electricity

Circuit tester

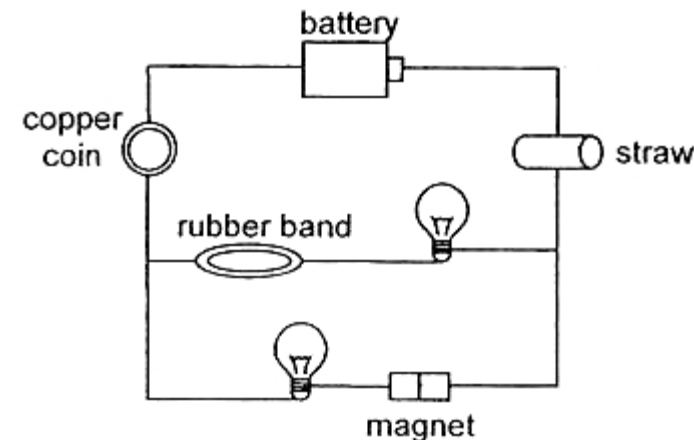
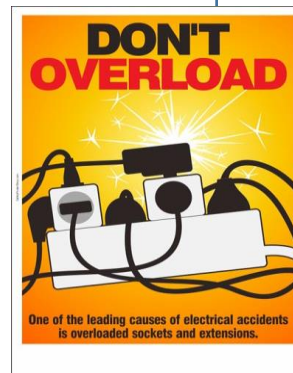
- To distinguish between electrical conductors and electrical insulators
- Metals are good conductors of electricity
- Non-metals are poor conductors of electricity

Harmful to us

- Gets electricuted if we touch switches with wet hands
- Cause fire if we overload too many plugs into one socket

From power station

- Burn fuels like coal and oil to produce electricity
- Fuels may be used up one day so we need to conserve by switching off electrical appliances when not in use.
- Fuels harms our environment



Compare!

Parallel

- If one bulb fuses, the other light bulbs can still light up.
- Use up battery faster
- Can control light bulbs independently
- Light bulb shines brighter than series' arrangement

Series

- If one bulb fuses, the other light bulbs cannot light up.
- Use up battery slower
- Cannot control light bulbs independently
- Light bulb shines dimmer than parallel's arrangement