# Electricity

Circuits, Currents and Components

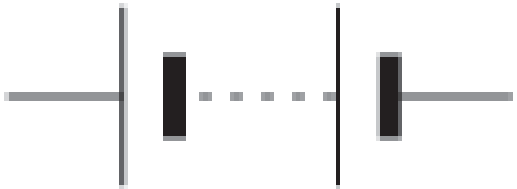
# Electric Circuits

- **Electricity** is a type of energy that can build up in one place or flow from one place to another.
- An **electric current** is the flow of electrons around a circuit.
- An **electric circuit** is a path followed by electrons. It has a generator, cable, switch and receiver.

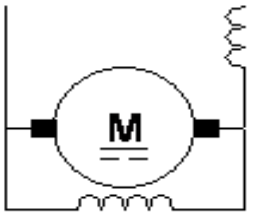
# Parts of a Circuit

- **Generator** provides energy for the electrons to circulate.
- **Switch** allows the current to flow or not to flow. Can be controles by turning it on or off.
- **Receiver** transforms electric energy into usable energy such as heat, light or movement.
- **Cable** drives the electric current from the generator to the recievers. Protects us from the electrical current.

# Generators



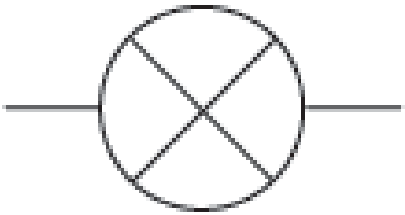
Battery




**Machine**

**Generator**

# Receivers



Lamp

Motor

Voltmeter

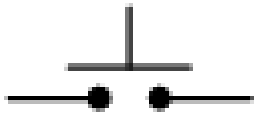
Ammeter

# Controls

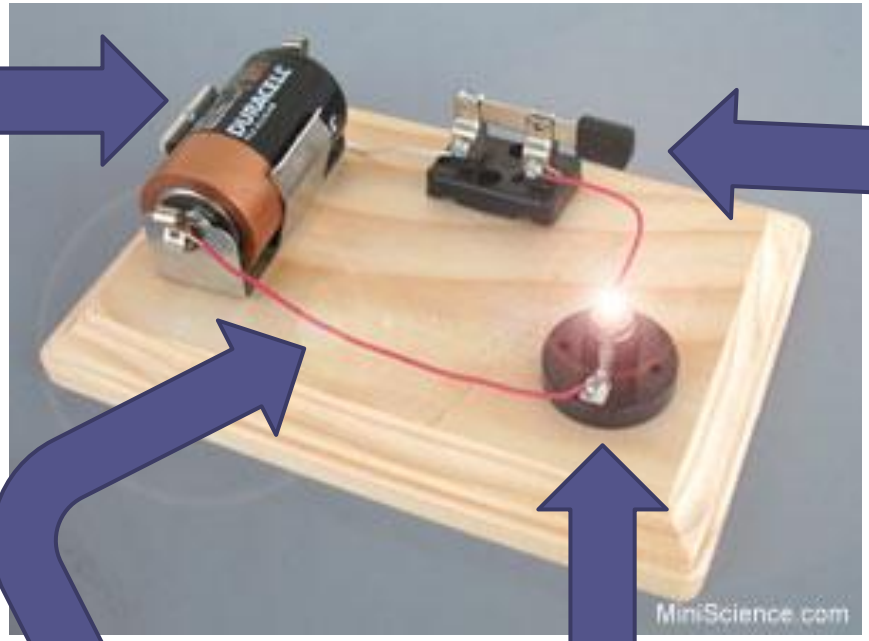
Switch

Resistor

Pushbutton switch



Switch




Generator

Cable

Receiver

# Electric Quantities

- **Voltage** is the energy that a battery or generator provides each electrons. The bigger the voltage, the more electricity. It is measure in **volts**.
- **Electric Current** is the flow of electrons that go through a conductor. The equation is I=Q:t and is measured in **amps**.
- **Electric Resistance** is the opposition of a material to the electric current flowing through it. It is measured in **ohms** .
- **Power** is the voltage times current. It is measured in **watts.**

# Ohm´s Law

- **Ohm's Law** is the relationship between voltage, current and resistance. The current and voltage are directly proportional.

- R= V/I

R= resistance

V= voltage

I= current

# Types of Currents

- **Direct current (DC)** is the movement of electrons from a region of high negative charge to a region of lower negative charge.

- **Alternating current (AC)** is current that changes the direction in which it flows very quickly. Most appliances use the AC because it can create a lot of electric energy.