Electrical Current

The rate of electron flow

$$I = \frac{Q}{\Delta t}$$

Q is in Coulombs ($6.2 \cdot 10^{-18}$ electrons)
I = is Amperes (A)

A current of 1A means over 6 billion electrons moving past a point each second.

Conventional Current	Electron Flow
When scientists first began studying circuits, **they assumed that positive charges** flowed through the wires in a circuit	After scientists learned more about the structure of atoms, they concluded that **current consists of electrons (negative charges)**

Direct Current

Current flows in only one direction.

Used in all electrical equipment that is powered by a battery.

Alternating Current

Current changes direction periodically - the charges move back and forth over the same spot and do not actually move from one terminal to another.

Used in all electrical equipment plugged into an outlet.

Ammeter

Used to measure electrical current. Must be connected in **series** so that all electrons flowing through the wire also have to flow through the ammeter

Kirchhoff's Current Law

In a closed circuit, the amount of current entering a junction is equal to the amount of current exiting a junction.