

Alternating Current	An electric current that first moves one direction, then the opposite direction with a regular frequency	Device that measures current when connected in series in a circuit	Unit of electric current
A.C.	Alternating current	Ammeter	Ampere (Amp)
Unlike charges give negative potential energy (attractive force). Unlike charges attract one another	Measure of a capacitor's ability to store charge	Device that stores electric charge on two oppositely charged plates	Positive to negative terminal (opposites)
Attraction of Electric Charges	Capacitance	Capacitor	Cell
When a capacitor gains a charge causing a potential difference across its plates	Conducting path from to positive terminal of a power source to the negative terminal of a power source	Diagram using symbols to represent an electrical circuit	Turns of electric wire around an object(e.g. Iron core)
Charging	Circuit	Circuit diagram	Coil

Materials that allow electric charges to flow through them easily	Current flows from positive to negative terminal	Unit used to measure quantity of electric charge	A flow of electricity through a conductor
Conductors	Conventional Current	Coulomb	Current
The continuous flow of electrons through a conductor	Proportion by which the capacitance increases when an insulator is placed between the plates of a capacitor	An electrical current that always moves in one direction	When a capacitor loses a charge causing a potential difference across its plates
Current Electricity	Dielectric constant	Direct current	Discharging
Consists of a voltage source and a continuous conducting path for a current to follow	The flow of electric charge electric field force field produced by an electrical charge	The field around charged particles that exerts a force on other charged particles.	A map of an electric field representing the direction of the force that a positive charge would experience
Electric circuit	Electric current	Electric Field	Electric field lines

Size of electric field	The product of a surface area and the component of the electric field perpendicular to the surface	A Mechanical device that uses wire loops rotating in a magnetic field to generate electricity	The difference in electrical charge between two points in a circuit expressed in volts (AKA potential difference)
Electric field strength	Electric Flux	Electric generator	Electric Potential
Potential energy due to the position of a charge near other charges	Materials that have electrons that are free to move throughout the material; for example, metals	A form of energy from electromagnetic interactions	A fundamental force that results from the interaction of electrical charge
Electric potential energy	Electrical conductors	Electrical energy	Electrical force
Electrical nonconductors, or materials that obstruct the flow of electric current	The property of opposing or reducing electric current	A magnet formed by a solenoid that can be turned on and off by turning the current on and off	One of four fundamental forces; the force of attraction or repulsion between two charged particles
Electrical insulators	Electrical resistance	Electromagnet	Electromagnetic force

Current is induced by moving a loop of wire in a magnetic field or by changing the magnetic field	The pressure, or force, that causes electric current to flow.	Opposite to conventional current; electron current flows from the negative terminal to the positive terminal	Voltage across a power supply when no current is drawn
Electromagnetic induction	Electromotive Force (EMF)	Electron current	EMF
The induced voltage in a coil is the sum of the number of loops and the rate at which the magnetic field changes	Produces electricity from the rotation of a coil inside a magnetic field	Combination of resistance and reactance in an AC circuit	Voltage created by the combination of movement and a magnetic field
Faraday's Law	Generator	Impedance	Induced voltage
The effect in a circuit when a changing current causes an opposing induced voltage	Conversion of kinetic energy to electrical energy using a magnetic field	Produces opposing voltage when current-magnetic field changes	Materials that are poor conductors of electricity
Inductance	Induction	Inductor	Insulators

Resistance inside a battery/power supply	Total current entering a junction = total current leaving a junction	The total of all the voltages in a closed loop is equal to zero	The direction of the induced current creates a force that opposes the change that produces it
Internal resistance	Kirchhoff's current law	Kirchhoff's voltage law	Lenz's law
Magnet with two poles (North & South); all magnets are made up of dipoles	Region where ferromagnetic materials (iron, cobalt, nickel) and magnets experience a force	Invisible lines that map out the magnetic field around a magnet	The lines of force surrounding a permanent magnet or a moving charged particle
Magnetic Dipole	Magnetic field	Magnetic Field Lines	Magnetic Flux
Amount of flux density in a fixed area	The ends, or sides, of a magnet about which the force of magnetic attraction seems to be concentrated	The flipping of polarity of the earth's magnetic field	The force of repulsion or attraction between poles of magnets
Magnetic flux density	Magnetic poles	Magnetic reversal	Magnetism

Changing current in one coil induces a voltage in another coil	One of the two types of electric charge; repels other negative charges and attracts positive charges	Unit of resistance equivalent to volts/amps	The law that states that resistance is equal to voltage divided by current ($R=V/I$)
Mutual Inductance	Negative electric charge	Ohm	Ohm's Law
Circuits electric circuits with two or more paths through which charge can flow	Proportion by which the capacitance increases when an insulator is placed between the plates of a capacitor	Anti- clockwise rotating vector used to help draw sine graphs	One of the two types of electric charge; repels other positive charges and attracts negative charges
Parallel	Permittivity	Phasor	Positive electric charge
Difference in voltage between two points	The rate of doing work is called power	$P = IV = I^2R = V^2/R$	Ability of a capacitor or inductor to limit current in an A.C. circuit
Potential Difference	Power	Power Dissipated by a Resistor	Reactance

A material's opposition to the flow of electric current, measured in ohms	Objects that allow charge to flow at a reduced rate (change into heat or light)	Coil of wire in which the voltage in the primary coil is stepped up or down by way of electromagnetic induction	Electrical connection of components in such a manner that current flows first through one and then through the other
Resistance	Resistors	Secondary coil	Series
A circuit that has only one pathway for electricity to flow through	A cylindrical coil of wire that becomes electromagnetic when a current runs through it	Battery, generators, solar cells	Some materials in which, under certain conditions, the electrical resistance approaches zero
Simple Circuits	Solenoid	Sources of EMF	Superconductors
Ends of a battery that a circuit is connected to	Unit of Magnetic field strength	Time for voltage/current to change by 63%	A device that transfers electricity from one circuit to another, by means of electromagnetic induction
Terminals	Tesla	Time constant	Transformers

An electric field of constant strength where field lines are parallel and equally spaced	Measure of energy per unit charge (W/Q)	Graphical representation of voltage against current for a particular component	The electric potential difference across a resistor or other part of a circuit that consumes power
Uniform electric field	Voltage	Voltage - current characteristics	Voltage drop
Device that measures voltage and is connected in parallel to a component			
Voltmeter			