

LITERACY
ACROSS THE
CURRICULUM

SUBJECT TERMINOLOGY FOR PHYSICS



The
Appleton
School

Absorb To soak up or take in

AC The abbreviation for Alternating Current - current switches between positive and negative values

Accelerate To get faster - an increase in velocity.

Acceleration The rate of change of velocity

Acid rain When rain falls and is acidic rather than neutral.

Air resistance A force that acts against anything moving through air

Alpha A type of ionising radiation. The nucleus of a helium atom.

Alpha particle A type of ionising radiation. The nucleus of a helium atom.

Alpha radiation A type of ionising radiation. The nucleus of a helium atom.

Alpha scattering experiment An experiment done in the early 20th Century that provided evidence for atoms being made of electrons orbiting a central, positive nucleus.

Alternating Current AC stands for this - current switches between positive and negative values

Aluminium A low density metal (symbol Al)

Ammeter A device that is used to measure current in Amps

Amp The unit for current.

Ampere The unit for current.

Amplitude The height of a wave

Angle of incidence The angle between the incident ray and the normal

Angle of reflection The angle between the reflected ray and the normal

Angle of refraction The angle between the refracted ray and the normal

Asteroid A rock that orbits a star

Atom The smallest particle of an element that can exist

Background radiation Radiation that is all around you all of the time.

Balanced forces When the forces acting on an object cancel out - the resultant force is zero.

Battery A source of electrical power - they give out Direct Current (DC) only

Becquerel A unit of radioactivity equal to 1 count per second

Beta particle A type of ionising radiation. A high energy electron from the nucleus

Beta radiation A type of ionising radiation. The nucleus of a helium atom.

Big Bang theory A theory about how the universe started.

Billion One thousand million

Biofuel A fuel derived from plants

Biomass The cellular mass of living or recently dead organisms.

Black hole the most concentrated state of matter, from which even light cannot escape

Boiler A part of a power station where a fuel is burned in order to turn water into steam.

Bq The abbreviation for Becquerel, a unit of radioactivity

Braking distance The distance a car travels in the time it takes the car to stop AFTER the driver has put their foot on the brake.

C The unit for charge - it stands for "coulomb"

Cable grip The part of a plug that keeps the cable in place.

Calibrate Check that an instrument is measuring correctly, by comparing against a standard.

Carbon dioxide A greenhouse gas produced when most fuels burn - it helps cause global warming.

Carbon dioxide (in Physics) A greenhouse gas produced when most fuels burn - it helps cause global warming.

Cell (in Physics) A source of electrical energy. Two or more of these put together make up a battery.

Centre of mass The point of an object that all of its mass can be thought as being centred on.

Chain reaction This occurs when one nuclear fission reaction produces neutrons that start the next fission reaction.

Charge An electrical property of a particle - can be positive or negative. It is measured in Coulombs (C).

Circuit breaker A device that switches off a circuit if there is too much current.

Circuit diagram A diagram that shows how to set up an electrical circuit.

Circuit symbols A diagram that shows you which electric device to use.

CMBR Cosmic Microwave Background Radiation - One of the main sources of evidence for the Big Bang Theory.

Coal-fired power station A power station that burns coal in order to generate electricity.

Component (electrical) A device used in an electric circuit, e.g. a bulb or a cell.

Concave lens Also called a "diverging lens", a lens that spreads rays of light outwards.

Conduction (electrical) The flow of electricity through a conductor.

Conduction (thermal) The flow of heat energy through a solid. The energy moves from hot areas to cold areas in the solid.

Conductivity How well a material conducts heat or electricity.

Conductor A substance that allows electricity or thermal (heat energy) to pass through it easily.

Conservation (of energy) When energy is conserved during a process.

Conservation (of momentum) Momentum is conserved in any collision or explosion, as long as there are no external forces.

Conservation of energy When energy is conserved during a process.

Conservation of momentum Momentum is conserved in any collision or explosion, as long as there are no external forces.

Contact force A force between two objects that arises when they are in contact with each other.

Control rods Rods that are used in a nuclear power station to control how much energy is generated.

Convection When heat rises through a liquid or a gas due to a change in density.

Convection current (in Physics) This current is formed when heat rises through a liquid or a gas due to a change in density.

Converging lens A lens that converges (brings together) rays of light.

Convex lens A lens that converges (brings together) rays of light.

Cooling tower A part of a power station where steam is cooled back into liquid water.

Copper The best (common) conductor of electricity.

Cosmic microwave background radiation One of the main sources of evidence for the Big Bang Theory.

Cosmic radiation A source of background radiation.

Cost effective When something is able to pay for itself, e.g. a cheap but effective form of house insulation.

Coulomb The unit for charge - symbol C.

Count rate The amount of radioactivity being detected every second (measured in Bq).

Critical angle If light hits a boundary at an angle greater than the critical angle it will undergo total internal reflection.

Current The rate of flow of charge

DC The abbreviation for Direct Current - current flows in the same direction.

Decay (radioactive) When the nucleus of an unstable atom emits either alpha, beta or gamma radiation.

Decelerate When an object slows down.

Delocalised electrons Electrons that are free to move around and carry current or heat

Density Mass divided by volume

Diffraction When a wave spreads out around a corner or obstacle.

Diffuse reflection A type of reflection where waves are reflected in many different directions.

Diode An electrical component that only lets current flow in one direction.

Direct Current DC stands for this - current flows in the same direction.

Displacement An element which is more reactive can displace a less reactive element.

Dissipate To "spread out". For example, when energy spreads out into the surroundings it can be described as "dissipating".

Distance How far you have gone.

Distance-time graph A graph that shows an object's distance against time.

Diverging lens Also called a "concave lens", a lens that spreads rays of light outwards.

Doppler Effect An apparent change in wavelength of a wave emitted by an object that is moving.

Double glazing A form of insulation

Drag A force that acts against anything moving through a gas or a liquid

Driving force A force that propels an object like a car forwards

Earth wire One of the three wires in a plug - coloured green and yellow

Efficiency How much useful energy you get from a device compared to the energy that went into it

Efficient A device that doesn't waste much energy

Elastic deformation When a spring is stretched and returns to its original shape.

Elastic potential energy The energy stored in a stretched elastic band or spring

Electric current The rate of flow of charge

Electromagnetic radiation Radiation that travels in waves - for example, light, radio waves and X rays

Electromagnetic spectrum This is the different forms of electromagnetic radiation arranged in order of wavelength.

Electron The negatively charged particle in an atom

Emit The process of giving out radiation

Energy The ability of an object to do work. Measured in Joules.

Energy source Something that you can use to generate energy, e.g. coal, wind power

Evaporation When a substance changes from a liquid to a gas

Extension (of a spring) How much a spring changes in length by when a force is applied.

Filament lamp A light bulb - it works by heating up a small "filament" (wire) inside the bulb

Filtration An insoluble solute is separated from a solvent using filtration

Fission A process that splits the nucleus of an atom into smaller nuclei and releases energy

Fluid A general name for a liquid or a gas

Fluorescent When a substance can absorb radiation and then re-emit it as light, such as fluorescent paint

Focal length The distance between the focus and the point where the converging rays meet.

Focus The point a converging lens will focus parallel rays of light onto.

Force A push or a pull

Free electrons Electrons that are free to move around and carry current or heat

Freezing When a substance changes from a liquid to a solid.

Frequency The number of waves or events per second

Friction A force that opposes motion

Fuel A substance that can be grown and then burnt to release energy, e.g. wood

Fuse A safety device in a plug that melts if the current through it is too high

Galaxy A group of billions of stars

Gamma radiation One of the three forms of ionising radiation, along with beta and alpha

Gas One of the three states of matter, along with solid and liquid

Gas-fired power station A power station that burns gas (a fossil fuel) in order to generate electricity

Geiger counter A device used to measure the amount of radiation given out by a radioactive substance

Geiger-Muller tube A device used to measure the amount of radiation given out by a radioactive substance

Generator A device used to generate electricity when it turns

Geothermal energy A source of energy - when hot rocks underneath the Earth are used to heat water

Giga An abbreviation meaning "1,000,000,000"

Gravitational potential energy The potential energy an object has due to the action of gravity on it

Gravitational field strength The strength of a planet's gravitational field - symbol g

Gravitational potential energy The potential energy an object has due to the action of gravity on it

Gravity A force that pulls objects together

Half life The time it takes for half of the isotopes in a sample to decay or for the radioactivity of a sample to halve.

Heat transfer The flow of heat energy from a hotter area to a colder area

Hertz The unit of frequency - 1 Hz is equal to "1 event per second"

Hooke's Law A law that states that, for any material being stretched, the extension of the material is proportional to the applied force.

Hydroelectricity Electricity that is generated using water falling through a dam - a renewable energy source

Hz The unit of frequency - 1 Hz is equal to "1 event per second"

Induced magnet A temporary magnet that has been "made" using a permanent magnet

Inelastic deformation When a material is stretched so that, when the force is removed, it no longer returns to its original shape.

Inertia The property of a body that means it wants to keep doing what it was doing.

Inertial mass Force divided by acceleration.

Infra red An electromagnetic wave that transfers heat energy

Insulation A material that is poor at conducting heat or electricity

Insulator A material that is poor at conducting heat or electricity

Ionisation A process where an atom gains or loses an electron to form an ion

Ionising radiation Alpha, beta or gamma radiation or any radiation (e.g. X-rays) that can cause ionisation.

J Short for the unit "Joule", the unit for energy

Joule The unit for energy

Kilo An abbreviation meaning "1,000"

Kilowatt 1,000 Watts

Kilowatt hour A unit for measuring electricity, sometimes simply called "units"

Kinetic energy Also called movement energy - the energy an object has when it is moving

KW An abbreviation for kilowatt. $1\text{KW} = 1,000\text{ Watts}$

KWh An abbreviation for "kilowatt hour", a unit for electrical energy

Life cycle of a star The cycle a star goes through from its formation to its death.

Light Dependent Resistor (LDR) An electrical component whose resistance decreases as the light hitting it increases

Light ray narrow beam of light

Light year The distance light travels in one year

Limit of proportionality The point when Hooke's Law is no longer obeyed.

Liquid One of the three states of matter, along with solid and gas

Live wire The wire in a plug that carries the current

Longitudinal wave A wave where the displacement causing the wave is in the same direction as the movement of energy of the wave

Magnet An object that can attract anything made from iron, steel, nickel or cobalt

Main sequence The main, stable part of a star life cycle.

Mains electricity The electricity that is supplied to our homes

Mains supply The electricity that is supplied to our homes

Mass The amount of stuff that something is made from

Medium A general name for a material that a wave is passing through.

Mega An abbreviation meaning "1,000,000"

Melting point The temperature at which a solid turns into a liquid

Metal A substance containing delocalised (free) electrons - they are good conductors of heat and electricity

Microwaves Part of the electromagnetic spectrum with a wavelength just below radio waves

Momentum Any moving object that has mass has momentum

Mutation A random change in DNA

N A unit to measure force in

National Grid A system of transformers and cables that sends electricity around the UK

Nebula A collection of dust and gas. The first stage in the life cycle of a star.

Neutral wire The blue wire inside a plug

Neutron A particle found inside the nucleus of an atom

Neutron star A type of star that comes after the supernova of a red supergiant.

Newton A unit to measure force in

Newton's 1st Law An object will stay stationary or move with constant velocity unless an unbalanced force acts on it.

Newton's 2nd Law An unbalanced force will cause a body to accelerate in proportion to the force.

Newton's 3rd Law Every action has an equal and opposite reaction force.

Noise pollution Unwanted noise that can be annoying

Non-contact force A force that exists between two bodies without them needing to be in contact with each other.

Non-ohmic Non-ohmic behaviour is when the voltage across a device is not proportional to the current through a device.

Non-renewable Supplies of a non renewable substance will eventually run out eg fuels like petrol and diesel

Normal A line at 90 degrees to a surface that is used to help construct ray diagrams.

North pole A part of a permanent magnet that will be attracted to the Earth's south pole

North-seeking pole A part of a permanent magnet that will be attracted to the Earth's north pole

Nuclear fission A type of nuclear reaction that splits a nucleus to release energy

Nuclear fuels Non-renewable sources of nuclear energy. They are radioactive and used in nuclear fission reactions.

Nuclear fusion A nuclear reaction that happens in stars when small nuclei (usually hydrogen) are combined to form larger nuclei (i.e. helium)

Nuclear power station A type of power station that uses nuclear fission reactions to generate electricity.

Ohm The unit for electrical resistance

Ohmic Ohmic behaviour is when the voltage across a device is proportional to the current through a device.

Opaque An object that does not allow light to go through it.

Optical Fibre A device that transmits light using the process of total internal reflection.

Orbit The path an electron follows around the nucleus of an atom or the path a planet follows around the sun.

Oscilloscope A device that can be used to display signals or waves on a screen, e.g. an Alternating Current (AC) electrical supply

P wave A type of seismic wave that is longitudinal

P waves A type of seismic wave that is longitudinal

P.d. An abbreviation for "potential difference", also called voltage. It is defined as "work done per unit charge" and is measured in volts.

Parallel An arrangement in an electric circuit where components are placed "in parallel" with each other so that the current has a "choice" of which component to go through

Parallel circuit An arrangement in an electric circuit where components are placed "in parallel" with each other so that the current has a "choice" of which component to go through

Particle A general name for a very small thing (e.g. an atom or molecule) that everything is made of

Pay back time The time it takes something to pay for itself by saving you money

Period The amount of time it takes for something (e.g. whole wave to pass by) to happen

Permanent magnet A magnet that will permanently retain its magnetism, e.g. the classic red and blue bar magnets

Planet A large body of mass that orbits a sun

Plastic deformation When a spring is stretched and does not return to its original shape.

Plug A British plug contains three wires - earth, live and neutral

Plum pudding model An old model of atomic structure that stated that atoms were balls of positive charge with negative electrons dotted around inside them, like raisins in a plum pudding.

Plutonium A fuel used in nuclear power stations

Positive charge The electrical charge on a proton (+1).

Potential difference P.d., also called voltage. It is defined as "work done per unit charge" and is measured in volts.

Potential energy A type of stored energy that a device can have. Potential energy is usually elastic or gravitational potential energy.

Power Defined as "the rate of doing work" and measured in Watts.

Power station A building that generates electrical energy

Proton One of the the sub atomic particles found in the nucleus. Protons have a positive charge.

Protostar Early stage in star life cycle before the process of fusion begins.

Radiation A term to describe either electromagnetic radiation (light, infra red etc) or ionising radiation (alpha, beta and gamma)

Radiation (thermal) A form of heat transfer where heat is transmitted through infra red waves.

Radiation dose The amount of radiation a person has absorbed.

Radio waves Long wavelength electromagnetic waves that are used to carry signals.

Radioactive A substance that is capable of emitting alpha, beta or gamma radiation is called "radioactive".

Radioactive decay When a radioactive substance gives out a form of radioactivity (e.g. alpha, beta particles) in order to become more stable.

Radioisotope An isotope that is radioactive, i.e. capable of emitting radiation.

Reaction time The time it takes someone to react to a stimulus

Real image An image that can be formed on a screen.

Red giant Red giants are formed when a smaller main sequence star runs out of fuel, cools and expands.

Red shift An apparent change in wavelength of light emitted by something that is moving away from us.

Red supergiant Red supergiants are formed when a massive star runs out of fuel, cools and expands.

Reflect When a wave bounces back from a surface

Reflection The process of a wave bouncing back from a surface.

Refraction When a wave slows down or speeds up due to travelling in a more or less dense medium.

Renewable Supplies of a renewable substance will not run out for example biofuels

Repel The action of pushing something away, for example, a north pole repels another north pole.

Resistance A property of a device that "resists" the flow of electric current through it

Resistor A device that resists an electric current going through it.

Resultant force The total effect of all of the forces acting on an object, simplified to one force.

Rutherford scattering experiment An experiment done in the early 20th Century that provided evidence for atoms being made of electrons orbiting a central, positive nucleus.

S wave A type of seismic wave that is transverse.

S waves A type of seismic wave that is transverse.

Satellite An object that orbits another object, e.g. the moon orbiting the Earth.

Scalar quantity A quantity that only consists of a size.

Series An arrangement in an electric circuit where components are placed next to each other

Series circuit A circuit where components are placed next to each other

Solar A renewable energy source that involves turning sunlight into electrical energy

Solar panels Devices that convert light energy into electrical energy.

Solar system A part of space that contains one or more stars and the planets that orbit those stars.

Solid One of the three states of matter, along with liquid and gas

Source of energy Something that can be used to generate energy, e.g. burning wood

South pole A part of a permanent magnet that will be attracted to the Earth's north pole

South-seeking pole A magnetic pole that will point towards the south pole

Specific latent heat of fusion The amount of energy needed to turn 1kg of a substance from a solid into a liquid.

Spectrum A range of frequencies; for example, the electromagnetic spectrum

Specular reflection A type of reflection where waves are reflected back at the same angle.

Speed Distance divided by time

Speed of light 300,000,000m/s - the speed all electromagnetic waves travel at through a vacuum.

Speed-time graph A graph that represents an object's speed over different periods of time.

Star A body in space that uses nuclear fusion to emit radiation

Static electricity When electrical charges "stand still", as opposed to "move around" (which is called an electric current)

Step down A type of transformer that DECREASES voltage

Step up A type of transformer that INCREASES voltage

Stopping distance The distance a car travels in the time it takes the car to stop, including both the thinking distance and the braking distance.

Sublimation When a solid changes directly into a gas without becoming a liquid first.

Sulfur dioxide A gas released when coal is burned; it causes acid rain.

Supernova An explosion of a massive star.

Telescope A device used to see distant objects such as stars and planets.

Terminal velocity The final speed a moving object will reach due to its inability to overcome resistive forces.

Thermal energy Also called heat energy

Thermal radiation Also called infra red radiation - a form of radiation that is given out by hot objects.

Thermistor An electrical device whose resistance decreases when it gets hotter.

Thinking distance The distance a driver covers while reacting to a danger.

Tidal barrage A power station that uses tidal power. Usually built across an estuary.

Total internal reflection A process when light is reflected inside a material by striking the boundary at an angle greater than the material's critical angle

Tracer A general name for any radioisotope that is used to track the movement of a chemical.

Transformer A device that can be used to increase voltage (step up transformer) or decrease voltage (step down transformer)

Translucent An object that partially lets light through - you can see light coming through but can't see specific shapes.

Transmit When a substance allows waves or radiation to pass through it.

Transparent When an object allows enough light through it so that shapes and objects can be made out

Transverse wave A wave where the displacement causing the wave is at right angles to the direction of the movement of energy of the wave

Turbine A device in power stations that is turned by steam or water. It is connected to a generator.

U value A measure of how effective insulation is in keeping heat energy in.

Ultra violet radiation Electromagnetic radiation with a wavelength slightly shorter than violet light.

Unit Also called a "kilowatt hour" - a unit of electricity

Universe The whole of space, made of billions of galaxies each containing billions of stars

Uranium An element and a fuel used in nuclear power stations

V Short for Volts, the unit of potential difference

Vacuum An area from which particles such as air has been removed.

Vector quantity A quantity that has both size AND direction.

Velocity Speed in a given direction.

Velocity-time graph A graph that represents an object's velocity over different periods of time.

Virtual image An image from which rays of reflected or refracted light appear to diverge.

Visible light A section of the electromagnetic spectrum that we can see with the naked eye.

Visual pollution A term used to describe something being ugly to look at.

Volt The unit of potential difference.

Voltage Also called "potential difference" (P.d). It is defined as "work done per unit charge" and is measured in volts.

Voltmeter A device used to measure voltage or potential difference.

Volume The amount of space an object takes up.

W An abbreviation for "Watts".

Wasted energy Energy that is wasted by a process and is usually transferred to the surroundings in the form of heat.

Watt The unit for power. Power = energy/time.

Wave A movement of energy

Wave equation Speed of a wave = frequency x wavelength

Wave power A source of energy where energy is generated from the movement of waves.

Wave speed The speed a wave moves with

Wavelength The distance between two corresponding points on a wave

Weight The force that an object's is pulled downwards with.

White dwarf A star that has undergone gravitational collapse.

Wind farm Lots of wind turbines in one place.

Wind turbine A device that transfers kinetic energy from the wind to electrical energy in the generator inside it.

Work done The transfer of energy by a device

X ray A type of electromagnetic radiation used to see bone fractures and in CT scans.