

Keyword	Definition	Topic
Absorption	transfer of wave energy to material stored energy	Waves
Acceleration	a measure of how quickly velocity is changing, formula: $a = (v - u) / t$	Forces
Accurate result	a result that is very close to the true answer	Science method
Activity (radioactive)	number of nuclei that decay per second	Nuclear
Air bags	bags in cars inflate on impact to increase impact time of passenger, reduces impact force	Forces
Air resistance	frictional force caused by air on a moving object	Forces
Alpha decay	radioactive decay, alpha particle (helium nucleus) emitted from decaying nucleus	Nuclear
Alpha particle	positively charged particle (helium nucleus), made of 2 neutrons and 2 protons, see Rutherford	Nuclear
Alternating current (AC)	electric current that is constantly changing direction	Electricity
Ammeter	measures electric current through a component, connected in series with component	Electricity
Amplitude	displacement from rest position to crest (or trough) of a wave	Waves
Analysis	part of the conclusion, useful graphs such as mean, reliability, uncertainty	Science method
Angle of incidence / refraction	angle between incident / refracted wave and normal line to boundary	Waves
Angle of reflection	angle between reflected ray and normal line to boundary	Waves
Angle of refraction	angle between refracted ray and normal line to boundary	Waves
Anomalous result	result that does not appear to fit with majority of data (see outlier)	Science method
Artificial	Man-made, e.g. artificial satellite	Space
Atmosphere	thin layer of gases (air) around the Earth	Earth
Atmospheric pressure	due to weight of air particles, due to particle collisions with surfaces	Earth
Atom	neutral particle made of protons and neutrons in central nucleus, surrounded by orbiting electrons	Nuclear
Atomic number	number of protons in nucleus of atom, also known as proton number	Nuclear
Axis of a lens	imaginary line passing through middle of lens, also called principle axis	Waves
Background radiation	radiation around us due to natural and man-made sources	Nuclear
Beta decay	radioactive decay, beta particle (fast electron) emitted from decaying nucleus	Nuclear
Beta particle	high energy, very fast electron	Nuclear
Bias	prejudice towards or against something	Science method
Big Bang theory	all matter and energy in universe was once compressed into a very small space, expanded rapidly from that single 'point'	Space
Bio-fuel	renewable energy resource, from plants and animals	Earth
Black body	object good at both absorbing and emitting electromagnetic radiation	Space
Black dwarf	remains of a star left behind when white dwarf cools	Space
Black hole	very dense mass left behind after very large supernova, even light may not escape	Space
Braking distance	distance that car travels from application of brakes to stopping	Forces
Calibrated	using reliable known values to set scale of measuring apparatus	Science method
Carbon neutral fuel	fuel that releases equal quantity of carbon dioxide during combustion as it absorbs when grown or produced	Earth
Categorical (data)	the number in a group, e.g. the number of two-winged flies	Science method
Cathode Ray Oscilloscope (CRO)	sensitive voltmeter, uses electrons to display a graph of potential difference against time	Electricity
Cause	test based on the hypothesis	Science method
Cavity wall insulation	material in gap between inner and outer wall, reduces energy transfer, usually foam plastics to trap air	Energy
Centre of mass	point at which all mass of an object appears to be concentrated	Forces
Centripetal force	force that keeps an object moving in a circle, acting towards centre	Forces
Chain reaction	reaction that keeps going without any outside input, e.g. nuclear fission where products of a decay cause increasing numbers of decay	Nuclear
Charge coupled device (CCD)	silicon chip divided into millions of pixels, detects X-rays or visible light, produces electric signals	Electricity
Circuit breaker	electric circuit safety device, breaks circuit if current too high, modern replacement for a fuse	Electricity
Closed system	where energy or mass cannot enter or leave, net change is zero	Energy
Computer model	simulation of complex science issue, used to explain contributory factors, e.g. climate change	Science method
Concave lens	thinner in the middle than the edges, refracts light to diverge away from axis, corrects short sight	Waves
Conclusion	analysis of results of experiment, graphs, tables, calculations, related to prediction and hypothesis	Science method
Conduction	method of energy transfer through a solid by particle vibration, heated particles gain kinetic energy so vibrate more, colliding with neighbouring particles.	Energy
Conductor (electrical)	material with charges free to move, e.g. metals have free electrons	Electricity
Conductor (thermal)	material in which heat energy can easily transfer, metals are good thermal conductors due to free electrons	Energy
Conservation of momentum principle	total momentum is conserved during a collision, or explosion, in a closed system	Forces
Contamination (radioactivity)	radioactive particles on or inside something or someone	Nuclear
Continental drift	movement of the Earth's continents	Earth
Continuous (data)	the number on a scale, such as the length of a fly in millimetres	Science method
Control group	similar group, independent variable not altered, same control variables	Science method
Control variable	variable in experiment that is kept the same, to make a fair test	Science method
Convection	energy transfer through liquids and gases (fluids) by flow due to differences in densities, hotter fluid is less dense so rises, cooler fluid more dense so sinks, convection currents	Energy
Converging lens	convex lens that refracts incident light rays to focus at a point	Waves
Conversion factor	a number that, when multiplied or divided, changes one unit of measurement to another	Science method
Convex lens	thicker in the middle than the edges, converges light towards the axis, corrects long sight	Waves
Core	innermost layer of the Earth, thought to be made of solid iron and nickel	Earth
Correlation	relationship or link between two variables	Science method
Cosmic microwave background	uniformly transmitted from all parts of universe, evidence for Big Bang theory	Space
Cosmic rays	electromagnetic radiation from space	Space
Cost-effective (insulation)	shorter payback time equals more cost-effective insulation	Energy
Critical angle	angle of incidence above which light will undergo total internal reflection, see optical fibre	Waves
Crumple zone	parts of a car designed to deform on impact to increase impact time and reduce impact force on occupants	Forces
Crust	thin outer layer of the Earth, the bit we live on	Earth
CT Scan	Computerised axial Tomography scan, medical imaging using X-rays	Electricity
Current	flow of charge in a conductor, usually electrons, measured in amperes (A)	Electricity
Decommissioning	process of shutting down power station safely, reducing risk to environment	Nuclear
Density	amount of matter per unit volume, density = mass / volume, units kg / m ³	Forces
Dependent variable	variable that is measured	Science method
Diffraction	waves spread out through narrow gap or around obstacle	Waves
Diffusion (light)	light waves scattered in different directions, not uniformly, e.g. reflection from matt surface	Waves
Diode	electrical component, only allows current to flow in one direction, modern diodes are semi-conductors	Electricity
Direct current (DC)	electric current only travels in one direction, cells and batteries produce d.c.	Electricity
Directly proportional	straight line graph through origin, equation, $y = kx$, e.g. Hooke's law	Science method
Discrete data	data in chunks, not continuous, e.g. number of people, cannot be halves	Science method
Displacement	vector quantity, distance and direction from a known point	Forces
Displacement (waves)	distance that a particle in a wave has moved from its rest position	Waves
Distance-time graph	distance is the dependent variable (y), time is the independent variable (x), gradient equals the speed	Forces
Diverging lens	concave lens refracts incident light so it appears to travel from an imaginary focal point	Waves
Doppler effect	change in observed frequency and wavelength of wave emitted by source moving towards or away from observer	Waves

Double glazing	windows made of two layers of glass or plastic, separated by a layer of air, reduces energy transfer by conduction	Energy
Double-insulated appliance	extra plastic insulation around live and neutral wires in cable, no earth wire	Electricity
Drag	frictional force due to fluid (gas or liquid) around a moving object	Forces
Dwarf planet	very small planet, orbits a star	Space
Dynamo	device to transfer kinetic energy to DC electrical energy	Electricity
Ear drum	transfers air vibrations in outer ear to 3 solid bones in middle ear	Waves
Earth wire	in household electric circuit, protects appliances from overheating, connected to copper rod in ground, green/yellow	Electricity
Effective (insulation)	more money saved annually on energy bills equals more effective insulation	Energy
Efficiency	proportion of input energy (or power) transferred into useful output energy (or power), $(\text{useful} / \text{total}) \times 100\%$	Energy
Elastic	returns to original shape or size after stretching or compressing	Forces
Elastic potential energy	energy stored in elastic object due to work done by stretching or compressing force	Energy
Electric field	area in which an electric (electrostatic) force can be detected	Electricity
Electricity	energy transfer via charged particles, usually the movement of electrons in conducting wires	Electricity
Electrolysis	process of breaking down a substance using electricity	Electricity
Electrolyte	liquid used in electrolysis to conduct electricity between two electrodes	Electricity
Electromagnet	magnet made of wire coil around a soft iron core, switched on when a current flows	Electricity
Electromagnetic induction	transfer of energy via a changing magnetic field	Electricity
Electromagnetic spectrum	continuous range of all the possible wavelengths of electromagnetic waves	Waves
Electron	subatomic particle with a relative charge of -1 , electrons are located in energy levels (shells) around nucleus	Nuclear
Electronic structure	number of electrons in an atom (or ion) of an element, how they are arranged	Nuclear
Electrostatic force	non-contact force between positive and negative charged particles, like charges repel, unlike charges attract	Electricity
Endoscope	thin tube containing (glass) optic fibres to transfer images and light data	Waves
Energy level	region of atom that contains electrons, also known as electron shell	Nuclear
Energy store	ability to do work, e.g. gravitational potential, chemical, electrostatic charge, spring potential, ...	Energy
Equilibrium	a state of balance	Forces
Evaluation	overview of the experiment, comparisons with peers, method, validity, further work, improvements	Science method
Fair test	controlled experiment where only one independent variable is changed, all other variables kept constant	Science method
Far point	furthest distance an eye can focus on comfortably, usually infinity	Waves
Fleming's Left Hand Rule	shows direction of motor effect force, thumb for Motion, Forefinger for Field, Centre finger for Current, mutually orthogonal	Electricity
Fluid	either state of liquid or gas, free to flow	Forces
Focal length of a lens	distance from centre of lens to principal focus, in metres	Waves
Force	push or a pull, product of mass and acceleration, measured in newtons	Forces
Fossil fuel	coal, oil or gas, remnants of living things buried in rock, millions of years old, non-renewable	Earth
Free body diagram	force arrow diagram, length of arrow proportional to size of force	Forces
Frequency	number of complete waves passing a point per second, units hertz, Hz, formula: $f = 1/T$	Waves
Frequency density	frequency divided by class width, vertical axis on histogram	Science method
Friction	force that opposes motion when two objects rub together	Forces
Fuse	thin wire designed to heat, melt and break a circuit if current too high	Electricity
Fusion	joining together, change of state from liquid to solid	Nuclear
Gamma decay	radioactive, high energy gamma ray emitted from decaying nucleus	Nuclear
Gamma wave (ray)	high frequency, high energy, short wavelength electromagnetic radiation	Nuclear
Gear	toothed wheel used to transfer and change a rotational force	Forces
Geiger counter	measuring device for nuclear radiation, invented by Geiger and Muller	Nuclear
Generator effect	a moving conductor in a magnetic field creates a potential difference, used by power stations	Electricity
Geothermal energy	heat from hot rocks underground, hot steam and water rise up in volcanic areas, used to generate electricity	Earth
Global dimming	decrease in sunlight reaching Earth due to increase in particulate carbon in atmosphere	Earth
Global warming	increase in average surface temperature of the Earth	Earth
Gradient (of graph)	the slope of a straight line, formula: $m = (y_2 - y_1) / (x_2 - x_1)$	Science method
Gravitational potential energy	stored energy due to an object's mass and height about the earth, formula: $E = mgh$	Energy
Greenhouse effect	thermal radiation from Sun absorbed by 'greenhouse gases' in atmosphere, more heat absorbed than radiated back to space	Earth
Half-life	time for activity to reduce by one half, or time for number of original nuclei to decay by one half	Nuclear
Hazard	something with potential to cause harm	Science method
Heat radiation	transfer of heat (thermal) energy by infra-red electromagnetic radiation	Energy
Histogram	column chart, frequency density (y) against class width (x), area of column = frequency, $f = fd \times cw$	Science method
Hot water tank jacket	insulation material around a hot water tank, reduces heat loss by conduction and radiation, traps air	Energy
Hydroelectric power station	falling water makes turbine spin so rotating generator, gravitational potential energy transfers to electric energy	Electricity
Hypothesis	proposed explanation, prediction	Science method
Independent variable	variable that is changed in an experiment	Science method
Induced	made to happen, e.g. induced current	Electricity
Inelastic	material deforms when force applied, does not return to original shape	Forces
Inertia	property of an object to oppose a change in motion	Forces
Infrared (IR) radiation	type of electromagnetic wave continually emitted and absorbed by all objects, observed as heat / thermal	Waves
Instantaneous	at a particular moment in time	Forces
Insulator (electrical)	material with charges not free to move, e.g. plastics have few free electrons	Electricity
Insulator (thermal)	material in which thermal (heat) energy cannot easily move, trapped air is a good insulator, plastics with few free electrons	Energy
Intensity	power per unit area, formula $I = P / A$, units watts / square metre	Waves
Internal energy	total kinetic and potential (stored) energy of particles	Energy
Ion	charged particle, one or more electrons lost or gained from atom or molecule	Nuclear
Ionising radiation	alpha, beta, gamma, X-ray and UV all strip electrons off atoms, so creating ions (charged particles)	Nuclear
Irradiation	exposure to radiation from external sources	Nuclear
Isotope	atom with same number of protons but different number of neutrons, same element	Nuclear
IV characteristic	graph of current against potential difference, used to identify components	Electricity
Kilowatt-hour	amount of electrical energy used by 1 kilowatt appliance left on for 1 hour	Electricity
Kinetic energy	energy of a moving object	Energy
Kinetic theory	theory that explains different states of matter (solid, liquid and gas) by arrangement and energies of their particles	Energy
Laser	intense, narrow beam of light due to ordered nature of the light waves	Waves
Laser eye surgery	use of a laser to vaporise part of the cornea in order to change its power of refraction	Waves
Latent heat	energy used to change state of a material whilst temperature remains constant	Energy
Law of reflection	angle of incidence is equal to angle of reflection, angles measured to line normal to surface	Waves
LDR	Light Dependent Resistor, electronic component that decreases in resistance as temperature increases	Electricity
LED	Light Emitting Diode, electronic component that emits light as current flows in forward direction	Electricity
Lever	device that uses the principle of moments to change the applied force	Forces
Limit of proportionality	point at which an elastic object stops obeying a proportional relationship between force and extension (Hooke's Law)	Forces
Line of action (of a force)	imaginary line in direction of a force, passing through point of action, drawn as an arrow	Forces
Line of best fit	straight line or smooth curve, follows trend of data plots on graph	Science method
Linear relation	straight line graph, mathematical equation: $y = mx + c$	Science method
Live wire	brown wire in mains circuit, carries 230V alternating current, dangerous	Electricity

Loft insulation	fibreglass or air-trapping material laid on loft floors to reduce heat transfer by conduction and radiation (if aluminium foil layer used)	Energy
Long sight	vision defect, incident light is focussed behind retina, correct with convex lens	Waves
Longitudinal wave	wave in which vibrations are parallel to direction of energy transfer	Waves
Lubricant	material that reduces friction between two surfaces, e.g. oil	Forces
Magnetic field	area in which a magnetic force can be detected	Electricity
Magnetic flux density	number of magnetic field lines (flux) per unit area, symbol B, units tesla T	Electricity
Magnetic material	iron, steel, cobalt, nickel, affected when inside another field	Electricity
Magnification	ratio of size of image to size of object	Waves
Main sequence (star)	star in stable phase of life, e.g. Sun, outward fusion pressure balances inward pressure of gravity	Space
Mantle	layer of Earth between crust and core, properties of a solid but can flow very slowly	Earth
Mass number	total number of protons and neutrons in an atom	Nuclear
Mathematical model	simulation of complex science issue using equations to simplify the problem	Science method
Mean	average calculated by sum of data divided by number of data points	Science method
Mechanical wave	wave that needs a medium to travel in	Waves
Median	average calculated by the middle data point when all data placed in order	Science method
Medical tracers	radioactive isotopes injected or injected inside body, external detector monitors radiation emitted	Nuclear
Medium	substance that a wave can travel through	Waves
Microwave	waves in electromagnetic spectrum, uses – communications, heating food	Waves
Mode	average calculated by the most common data out of the set of data	Science method
Model	a way to explain something	Science method
Moment	turning effect, product of force and perpendicular distance from pivot to line of action, $T = F \times d$, also called torque	Forces
Momentum	product of mass and velocity, units kg m/s	Forces
Moon	natural satellite that orbits a planet	Space
Motor effect	current carrying wire in a magnetic field experiences a force, how electric motors work	Electricity
National Grid	network that distributes electricity from power stations to consumers	Electricity
Near point	nearest point to which a human eye can focus, approximately 25cm, if normal-sighted	Waves
Nebula	cloud of dust and gas in space, material to form new star	Space
Negative correlation	relationship where, as one variable increases, the other decreases, $y = -kx$	Science method
Negative ion	particle with negative charge, formed when one or more electrons are gained	Nuclear
Neutral wire	blue wire in a mains circuit, should remain at 0 volts	Electricity
Neutron	subatomic particle with a relative charge of 0 and a relative mass of 1, neutrons located in nucleus of an atom	Nuclear
Neutron star	very dense star, remains of a super red giant following a supernova explosion	Space
Newton's 1st Law	an object will continue in its state of motion or rest unless acted upon by an unbalanced force	Forces
Newton's 2nd Law	$F = ma$, the acceleration of an object is directly proportional to the force applied	Forces
Newton's 3rd Law	to every action (force) there is an equal but opposite reaction (force)	Forces
Non-contact force	not touching surfaces, e.g. magnetic, electrostatic forces	Forces
Non-renewable energy resource	an energy resource that will run out one day	Earth
Normal (line)	imaginary line perpendicular (90°) to surface at point of incidence of wave to surface	Waves
Nuclear fission	atomic nucleus splits up and forms two smaller (daughter) nuclei	Nuclear
Nuclear fusion	two nuclei join to form a larger nucleus	Nuclear
Nuclear model	description of atom as a small, central, dense nucleus surrounded by empty space then orbiting electrons	Nuclear
Nucleus (atom)	central part of atom or ion, made up of protons and neutrons	Nuclear
Ohm's Law	$V = IR$, current is directly proportional to potential difference, provided temperature is constant	Electricity
Optical fibre	very thin glass or plastic strand, carries light information /data by total internal reflection	Waves
Parallel circuit	every component has a separate connection to the power source, homes are wired like this	Electricity
Partial reflection	some light energy is reflected and some refracted at a boundary	Waves
Payback time	time taken for money saved to equal cost of appliance or energy-saving measure	Electricity
Peak demand	times when use of electricity is highest, usually around meal times	Electricity
Peer review	results and ideas checked and verified by fellow scientists	Science method
Period (of a wave)	time for one complete oscillation (cycle), symbol T, units seconds, formula: $T = 1/f$	Waves
Planet	large natural object orbiting a star	Space
Plum pudding model	historic description of atom, uniform sphere of positive charge contained isolated negative electrons	Nuclear
Positive correlation	relationship where one variable increases as the other increases	Science method
Positive ion	particle with a positive charge, formed when one or more electrons are lost	Nuclear
Potential difference (p.d.)	energy available per unit charge between two points in a circuit, units volts V, often called voltage, $V = E/Q$	Electricity
Power	rate of energy transfer, units watts W, formula: $P = E/t$	Energy
Precise	result very close to the expected mean, similar to 'accurate'	Science method
Prediction	test based on the hypothesis	Science method
Pressure	force per unit area, $P = F/A$, units pascal (Pa) or N/m^2	Forces
Principle focus (lens)	ray lines parallel to principal axis refract through this point on the axis	Waves
Principle of conservation of energy	energy transfers usefully from one form to another, stored or dissipated, never created or destroyed	Energy
Proton	subatomic particle with relative charge of +1 and relative mass of 1, protons located in central nucleus of atom	Nuclear
Proton number	number of protons in nucleus of atom, also known as atomic number	Nuclear
Protostar	first stage in birth of star, clouds of gas and dust attract and compress, nuclear fusion begins	Space
Pumped storage	storing surplus energy using 'spare' electricity to pump water into high reservoir, falling water drives turbines connected to generator	Electricity
Radiation dose	measure of energy absorbed by a body, measured in joules per kg	Nuclear
Radio wave	part of electromagnetic spectrum, uses include communication, low energy end of spectrum	Waves
Radioactive decay	random process where larger nuclei split into smaller nuclei, releasing particles and energy	Nuclear
Radiotherapy	medical use of ionising radiation to, say, kill cancer cells	Nuclear
Random error	small differences in experimental results, usually caused by humans taking measurements (see systematic)	Science method
Range	difference in data between largest and smallest	Science method
Ray diagram	drawing shows how light from an object forms an image, drawn with straight lines	Waves
RCCB	Residual Current Circuit Breaker, safety device detects current 'leakage', turns off mains circuit	Electricity
Reaction force (normal)	force perpendicular to surface at point of contact, in opposite direction to original force, (see Newton III)	Forces
Reaction time	time between seeing an incident and taking action, e.g. applying brakes in car	Forces
Real image	image formed when light rays focus on a point	Waves
Red giant	stage of star life cycle, star the size of our Sun expands as it runs out of hydrogen	Space
Red super giant	stage of life cycle, as hydrogen used up, star much bigger than our Sun expands	Space
Red-shift	change in observed wavelength and frequency of light source, moving away from observer, towards red end of electromagnetic spectrum	Space
Reflection	a wave bounces back as it meets a boundary between two media	Waves
Refraction	a wave changes direction as it crosses a boundary between two media	Waves
Refractive index	ratio of speed of light in vacuum to speed of light in medium, e.g. 1.5 for glass, speed reduces in glass	Waves
Regenerative brakes	vehicle braking system, transfers kinetic energy to electrical, stores energy in cells or capacitors	Energy
Reliable	result that is repeatable and reproducible	Science method
Renewable energy resource	energy resource will not run out, however much we use it, e.g. the sun	Energy

Repeatable	result will be the same if the same person carries out the same experiment	Science method
Reproducible	result will be the same if a different person carries out a similar experiment	Science method
Resistance	opposition to flow of current in electrical circuit, measured in ohms, see Ohm's Law, $V = IR$	Electricity
Resolution	smallest change that can be detected by a measuring instrument	Science method
Resultant force	one single force that has the same effect as a number of separate forces acting at a point	Forces
Results	tables of data showing units, uncertainties, repeats, calculations such as mean	Science method
Right hand rule (magnets)	place right thumb in direction of current, curled fingers show direction of magnetic field around a wire	Electricity
Ripple tank	wave experiment using shadows created by water waves, useful model for all wave properties	Waves
Risk	possibility of harm due to a hazard	Science method
Risk assessment	method of comparing risks, identifying the greatest risks, reducing those risks	Science method
Rutherford scattering experiment	alpha particles fired at gold atoms were deflected, evidence for modern nuclear model of atom	Nuclear
Sankey diagram	diagram uses arrows of different thicknesses to show energy transfers in a device, displays efficiency	Energy
Satellite	object in orbit, e.g. the Moon about the Earth, Hubble space telescope about the Earth	Space
Scalar	a quantity with magnitude (size) only, e.g. mass	Forces
Seat belts	stretch during an accident, increases impact time, reduces impact force	Forces
Seismic wave	earthquake vibrations, primary P longitudinal, secondary S transverse	Waves
Series circuit	every component is connected together, end to end, in a single loop	Electricity
Short sight	vision defect, incident light is focussed in front of retina, correct with concave lens	Waves
SI units	Système Internationale, standard units accepted by scientists all around the world, e.g. kg is the SI unit of mass	Science method
Side impact bars	safety feature in car doors to protect occupants	Forces
Significant figures	digits counted from the left of a number, excluding leading zeros, ignoring decimal point	Science method
Solar cell	device that generates electricity directly from the Sun's radiation, also called photovoltaic	Electricity
Solenoid	electrical component, coil of wire, uses include electromagnets, radios	Electricity
Sound wave	transfer of energy by particle vibrations, longitudinal, faster in denser materials	Waves
Spark	conduction of electrons across air gap due to ionisation of air molecules	Electricity
Specific heat capacity	energy (in joules) needed to raise temperature of 1 kg of a material by 1°C (or kelvin), formula: $c = E/(mT)$	Energy
Specific latent heat	energy required to change state without changing temperature of a material	Energy
Specular reflection	uniform reflection off a smooth surface	Waves
Speed	rate of change of distance, $\text{speed} = \text{distance} / \text{time}$, units m/s, scalar quantity.	Forces
Split ring commutator	sliding electric motor contacts, change of current direction every half turn	Electricity
Standard (index) form	multiplier between 1 and 10, power of 10, e.g. 2.998×10^8	Science method
Start-up time	time to get a power station up and running from scratch	Electricity
State of matter	solid, liquid, gas, (also plasma)	Forces
Static charge	not moving, electrons defined as negative charge, absence of electrons defined as positive	Electricity
Stopping distance	sum of thinking distance + braking distance of a car	Forces
Straight line graph	the dependent variable is proportional to the independent variable, equation: $y = mx + c$	Science method
Subatomic particle	particle smaller than an atom, protons, neutrons and electrons are all subatomic particles	Nuclear
Supernova	massive explosion of a red giant star	Space
Surface area to volume ratio	ratio of surface area to volume of an object, ratio correlates with rate of energy transfer	Energy
System	group of objects, any size, large or small	Forces
Systematic error	all data shifted in one uniform direction, common when taking measurements	Science method
Tangent	straight line touching a curve	Science method
Tectonic plates	huge chunks of crust and upper mantle layers that 'float' on viscous mantle below	Earth
Terminal velocity	maximum velocity of an object when drag balances the forward (or downward) force	Forces
Temperature	measure of how hot an object is, human scale measure of kinetic energy of microscopic particles	Energy
Theory	consensus (general opinion) of scientific community	Science method
Thermal	heat	Energy
Thermistor	resistor that decreases in resistance as temperature increases, semi-conductor device	Electricity
Thinking distance	distance a car travels between observation of incident and application of brakes	Forces
Three core cable	electric cable containing live (brown), neutral (blue) and earth (yellow and green) copper wires	Electricity
Tidal barrage	dam built across a river estuary, water flows through turbines inside dam, generators make electricity	Electricity
Time period	time in seconds for one complete oscillation (wave)	Waves
Total internal reflection	all incident light reflects, none refracts, dense to less dense media boundary	Waves
Transformer	device that changes voltage (p.d.) of electricity supply, step-up increase voltage, step-down decrease	Electricity
Transmission	wave that travels from one media to another across a boundary	Waves
Transverse wave	vibrations perpendicular to direction of energy transfer, e.g. electromagnetic waves	Waves
Trial run	quick experiment to test ranges of variables and method, before full experiment	Science method
Two core cable	electric cable containing live (brown) and neutral (blue) copper wires	Electricity
U-value	measure of insulation of material, lower U-value = better insulator	Energy
Ultrasound	high frequency sound waves above human hearing range (>20 000 hertz)	Waves
Ultraviolet radiation (UV)	type of electromagnetic wave, more energy than visible light, classed as A,B,C, higher energies cause cancers	Waves
Uncertainty	half the smallest increment of the measuring device, sometimes given as a percentage of the reading	Science method
Upthrust	resultant upwards force on object in liquid due to pressure differences	Forces
Valid	repeatable, reproducible, answers prediction	Science method
Vaporisation	change of state from liquid to gas	Forces
Variable	something that can be changed	Science method
Vector	a quantity with both magnitude and direction	Forces
Velocity	speed in a given direction, vector quantity, units m/s	Forces
Velocity-time graph	velocity on y axis, time on x axis, area under graph equal to distance travelled	Forces
Virtual image	light rays appear to have come from one point, but actually come from another	Waves
Viscosity	resistance to flow, how thin and runny or thick and slow a substance is, e.g. treacle has high viscosity	Forces
Visible light	type of electromagnetic wave detected by human eye, 400 to 700 nano metre wavelength, rainbow spectrum	Waves
Voltage	common name for potential difference	Electricity
Voltmeter	measuring instrument for potential difference, connected in parallel to component	Electricity
Wasted energy	energy dissipated, lost to surroundings, often as heat	Energy
Wave	vibration that transfers energy without transferring any matter	Waves
Wavefront	line on wave diagram representing crests of waves, perpendicular to direction of energy transfer	Waves
Wavelength	length of full cycle of wave, crest to crest or trough to trough, formula: $v = f \lambda$	Waves
Weight	force on a mass due to gravity, $W = mg$, units newtons N	Forces
White dwarf	star that is small and very hot, follows red giant phase in star cycle	Space
Work done	energy transferred when a force is applied over a distance, formula: $W = Fd$	Forces
X-ray	high energy, high frequency electromagnetic radiation, uses include medical imaging	Nuclear
X-ray image	radiation transmits through body then detected, dense bone absorbs more, soft tissue absorbs less	Nuclear
Zero error	where measuring apparatus scale does not start at exact zero	Science method

Absorption	transfer of wave energy to material store
Amplitude	displacement from rest position to crest (or trough) of a wave
Angle of incidence	angle between incident wave and normal line to boundary
Angle of reflection	angle between reflected ray and normal line to boundary
Axis of a lens	imaginary line passing through middle of lens, also called principle axis
Converging lens	convex lens that refracts incident light rays to focus at a point
Critical angle	angle of incidence above which light will undergo total internal reflection, see optical fibre
Diffraction	waves spread out through narrow gap or around obstacle
Displacement (waves)	distance that a particle in a wave has moved from its rest position
Diverging lens	concave lens refracts incident light so it appears to travel from an imaginary focal point
Doppler effect	change in observed frequency and wavelength of wave emitted by source moving towards or away from observer
Electromagnetic spectrum	continuous range of all the possible wavelengths of electromagnetic waves
Endoscope	thin tube containing (glass) optic fibres to transfer images and light data
Far point	furthest distance an eye can focus on comfortably, usually infinity
Focal length of a lens	distance from centre of lens to focal point, in metres
Frequency	number of complete waves passing a point per second, in hertz, Hz
Infrared (IR) radiation	type of electromagnetic wave continually emitted and absorbed by all objects, observed as heat / thermal
Laser	intense, narrow beam of light due to ordered nature of the light waves
Laser eye surgery	use of a laser to vaporise part of the cornea in order to change its power of refraction
Long sight	vision defect in which incident light is focussed behind retina, requires convex lens to correct this
Longitudinal wave	wave in which vibrations are parallel to direction of energy transfer
Magnification	ratio of size of image to size of object
Mechanical wave	wave that needs a medium to travel in
Medium	substance that a wave can travel through
Near point	nearest point to which a human eye can focus, approximately 25cm, if normal-sighted
Normal	imaginary line perpendicular (90°) to surface at point of incidence of wave to surface
Optical fibre	very thin glass or plastic strand, carries light information /data by total internal reflection