



Physics Units and Symbols Glossary

GCSE Physics Higher Tier

Quantity	Symbol	Definition	Unit
acceleration	a	The change in velocity of an object over time, measured in metres per second squared.	m/s^2
activity	-	The rate at which a source of unstable nuclei decays, measured in becquerels.	Bq
area	A	The amount of space taken up by a 2D shape, measured in metres squared.	m^2
charge	Q	A property of a particle that causes it to experience a force in an electric field, measured in coulombs.	C
current	I	The flow of electrical charge, measured in amperes (amps).	A
density	ρ	The mass per unit volume of a substance, measured in kilograms per metre cubed.	kg/m^3
displacement	d	The distance an object moves, measured in a straight line from the start point to the finish point and the direction of that straight line, measured in metres. It is a vector quantity.	m
distance	s	How far an object moves, or the length between two points, measured in metres. It is a scalar quantity.	m
elastic potential energy	E_e	The energy stored when an object has been stretched or compressed, measured in joules.	J
energy	E	The ability of an object to do work, measured in joules.	J
extension	e	The increase in the length of a material when stretched, measured in metres.	m
final velocity	v	The speed of an object in a given direction at the end of an event, measured in metres per second.	m/s
force	F	A push or pull that acts on an object due to the interaction with another object, measured in newtons.	N
frequency	f	The number of waves passing a point each second, measured in hertz.	Hz
gravitational field strength	g	The gravitational force exerted per unit mass, measured in newtons per kilogram.	N/kg

Quantity	Symbol	Definition	Unit
gravitational potential energy	E_p	The energy stored in an object lifted in a gravitational field, measured in joules.	J
height	h	The length of something from base to top or the vertical distance between two points, measured in metres.	m
initial velocity	u	The speed of an object in a given direction at the start of an event, measured in metres per second.	m/s
kinetic energy	E_k	The energy stored in a moving object, measured in joules.	J
length	l	The measurement or extent of something from end to end measured in metres. (Note: the symbol is a lower case 'L').	m
magnetic flux density	B	The force acting on a wire placed at right angles to the magnetic field, measured in tesla.	T
mass	m	The amount of matter in an object or substance, measured in kilograms.	kg
moment of a force	M	The turning effect of a force, measured in newton-metres.	Nm
momentum	p	The product of the mass of an object and its velocity, measured in kilogram metres per second.	kg m/s
period	T	The time taken for a wave to complete one vibrational cycle, measured in seconds.	s
potential difference	V	A measure of the work done or the energy transferred to a component by each coulomb of charge that passes through it, measured in volts.	V
power	P	The rate at which energy is transferred or the rate at which work is done, measured in watts.	W
pressure	p	The force per unit cross-sectional area for a force acting at right angles to a surface, measured in pascals.	Pa
radiation dose	–	A measure of the risk of harm resulting from exposure to radiation, measured in sieverts.	Sv
resistance	R	The degree to which a component opposes the flow of electrical charge, measured in ohms.	Ω

Quantity	Symbol	Definition	Unit
specific heat capacity	c	The amount of energy required to raise the temperature of one kilogram of a substance by one degree Celsius, measured in joules per kilogram per degree Celsius.	J/kg °C
specific latent heat	L	The amount of energy required to change the state of one kilogram of a substance with no change in temperature, measured in joules per kilogram.	J/kg
speed	v	The distance travelled by an object in a specific time, measured in metres per second. It is a scalar quantity.	m/s
spring constant	k	A measure of the stiffness of a spring, measured in newtons per metre.	N/m
temperature	θ	The average kinetic energy of the particles in a substance, measured in degrees Celsius.	°C
time	t	How long it takes for an event to occur, measured in seconds.	s
velocity	v	The speed of an object in a given direction, measured in metres per second. It is a vector quantity.	m/s
volume	V	The amount of space occupied by a substance or object, measured in metres cubed.	m ³
wave speed	v	The speed at which energy is transferred (or at which a wave moves) through a medium, measured in metres per second.	m/s
wavelength	λ	The distance from a point on one wave to the equivalent point on the adjacent wave, measured in metres.	m
weight	W	The force acting on an object due to gravity, measured in newtons.	N
work done	W	The transfer of energy from one energy store to another, measured in joules.	J

Unit	Unit Symbol	Quantity
ampere	A	electrical current
becquerel	Bq	activity of a radioactive substance
coulomb	C	charge flow

Unit	Unit Symbol	Quantity
degree Celsius	°C	temperature
hertz	Hz	frequency of a wave
joule	J	energy, work done
joule per kilogram	J/kg	specific latent heat
joule per kilogram per degree Celsius	J/kg°C	specific heat capacity
kilogram	kg	mass
kilogram metre per second	kg m/s	momentum
kilogram per metre cubed	kg/m ³	density
metre	m	distance, displacement, height, length, wavelength
metre cubed	m ³	volume
metre per second	m/s	speed, velocity, initial velocity, final velocity, wave speed
metre per second squared	m/s ²	acceleration
metre squared	m ²	area
newton	N	force, weight
newton-metre	Nm	moment of a force
newton per kilogram	N/kg	gravitational field strength
newton per metre	N/m	spring constant
ohm	Ω	resistance
pascal	Pa	pressure
second	s	time, period of a wave
sievert	Sv	radiation dose
tesla	T	magnetic flux density
volt	V	potential difference
watt	W	power