Help with the 'Relationship sheet' – National 5 Physics

Understanding quantities, symbols and units

	Symbol	Quantity	Unit	
	a	acceleration	ms^{-2}	metres per second per second
1	*A*	activity	Bq	becquerels
	A	area	m^2	metres squared
	c	specific heat capacity	$J\ kg^{-1}\ °C^{-1}$	joules per kilogram per degree Celsius
	d	distance (or displacement)	m	metres
	D	absorbed dose	Gy	grays
	E	energy	J	joules
	E_h	heat energy	J	joules
	E_k	kinetic energy	J	joules
	E_p	potential energy	J	joules
	E_W	work done	J	joules
	f	frequency	Hz	hertz
	F	force	N	newtons
	g	gravitational field strength	$N\ kg^{-1}$	newtons per kilogram
	h	height	m	metres
	H	equivalent dose	Sv	sieverts
	$\dot{H}$	equivalent dose rate	$Sv\ s^{-1}$ etc...	(many possible units)
	I	current	A	amps
	l	specific latent heat	$J\ kg^{-1}$	joules per kilogram
	m	mass	kg	kilograms
2	*N*	Number of radioactive nuclei decaying		(no units)
	N	Number of waves		(no units)
	p	pressure	Pa	pascals
	P	power	W	watts
	Q	charge	C	coulombs
	R	resistance	Ω	ohms
	R_T	total resistance	Ω	ohms
	s	distance (or displacement)	m	metres

Help with the 'Relationship sheet' – National 5 Physics

Understanding quantities, symbols and units

	t	time	s	seconds
3	T	period	s	seconds
	T	temperature	K	kelvin
	ΔT	change in temperature	°C	degrees Celsius
	u	initial velocity	$\mathrm{ms^{-1}}$	metres per second
	v	velocity (or final velocity)	$\mathrm{ms^{-1}}$	metres per second
	$\bar{v}$	average velocity	$\mathrm{ms^{-1}}$	metres per second
4	V	voltage	V	volts
	V	volume	$\mathrm{m^3}$	metres cubed
	V_s	supply voltage	V	volts
	W	weight	N	newtons

λ	wavelength	m	metres
ω_R	radiation weighting factor		(no units)

Symbols used in more than one equation:

1

$$A = \frac{N}{t}$$

activity → A; number of nuclei decayed → N; time → t

or…

$$p = \frac{F}{A}$$

pressure → p; force → F; area → A

2

$$A = \frac{N}{t}$$

activity → A; number of nuclei decayed → N; time → t

or…

$$f = \frac{N}{t}$$

frequency → f; number of waves → N; time → t

3

$$T = \frac{1}{f}$$

period → T; frequency → f

or…

$$\frac{pV}{T} = \text{constant}$$

pressure → p; volume → V; temperature → T

as well as…

$$\frac{p_1}{T_1} = \frac{p_2}{T_2} \qquad \frac{V_1}{T_1} = \frac{V_2}{T_2}$$

4

$$\frac{pV}{T} = \text{constant}$$

pressure → p; volume → V; temperature → T

as well as…

$$\frac{V_1}{T_1} = \frac{V_2}{T_2} \qquad p_1V_1 = p_2V_2$$

or…

$$V = IR$$

voltage → V; current → I; resistance → R

as well as…

$$P = IV \qquad P = \frac{V^2}{R} \qquad \frac{V_1}{V_2} = \frac{R_1}{R_2}$$