

CSEC Physics – Derived Quantities

The table below lists the main derived quantities you will encounter throughout the CSEC Physics syllabus. You will learn the formulas as the course progresses. Fill in the table with the missing information.

Derived Quantity	Common Symbol	Formula	Constituent SI Base Units	SI Unit Name	SI Unit Symbol (if different from base constituents)
	ρ	$\rho = \frac{m}{V}$ <ul style="list-style-type: none"> • ρ = density (usually in kg/m^3 or g/cm^3) • m = mass (kg or g) • V = volume (m^3 or cm^3) 		Kilogram per cubic metre	
Velocity (or speed – sometimes interchangeable)	v	$v = \frac{\Delta d}{t}$		metre per second	
Acceleration	a	$a = \frac{\Delta v}{t}$		metre per second squared	
Force	F	$F = ma$	kg m s^{-2}		
Work (or energy)	W	$W = Fd$	$\text{kg m}^2 \text{s}^{-2}$		
Power	P	$P = \frac{W}{t}$	J s^{-1}		

Pressure	P	$P = \frac{F}{A}$			Pa
Moment	M	$M = Fd$	$\text{kg m}^2 \text{s}^{-2}$		
	p	$p = mv$	kg m s^{-1}	Kilogram metre per second	kg m s^{-1}
Charge	Q	$Q = It$	As		C
Voltage	V	$V = \frac{W}{Q}$	JC^{-1}	Volt	
	R	$R = \frac{V}{I}$	VA^{-1}	Ohm	Ω
Frequency	f	$f = \frac{1}{T}$		Hertz	Hz
Radioactivity	A	$A = \frac{N}{t}$	s^{-1}		Bq