Biology

Equation	Units	Notes
Microscope magnification = Magnification of Objective lens x Magnification of eyepiece lens	Express as Nx (Where N is the calculated magnification)	
Magnification = $\frac{\text{Size of image}}{\text{Size of object}}$	Ensure that the units of the image size are the same as the units for the object size. Magnification is expressed as Nx where N is the calculated magnification (e.g. 100x)	

Chemistry

Equation	Units	Notes
Neutrons = Atomic mass - Atomic number	None	Find atomic mass and atomic number on periodic table
Protons = Atomic number	None	Find atomic number on periodic table
Electrons in an atom = Atomic number	None	Find atomic number on periodic table.
Relative atomic mass = $\frac{\text{(\% isotope 1 x mass) + (\% isotope 2 x mass)}}{100}$	None	Mass refers to the mass of the individual isotopes.
Relative formula mass = sum of mass of all atoms in a compound	None	
Moles = $\frac{\text{Mass}}{\text{Relative formula mass}}$	Moles = moles Mass = g	
Concentration = $\frac{\text{mass}}{\text{volume}}$	Concentration = g/dm^3 Mass = g Volume = dm^3	To convert cm^3 to dm^3, divide by 1000
Concentration = $\frac{\text{moles}}{\text{volume}}$	Concentration = $mols/dm^3$ Moles = mols Volume = dm^3	To convert cm^3 to dm^3, divide by 1000
Change in energy = (Bond energy of products) - (Bond energy of reactants)	kJ/mol	If the result is negative, the reaction is exothermic. If the result is positive, the reaction is

		endothermic.
Rate of reaction = $\frac{\text{Change in quantity}}{\text{time}}$	Units depend on the experiment. E.g. if change = mols and time = seconds, then rate is in mols/second	
Formula of an alkane = C_nH_{2n+2}	n = number of carbon atoms	
Formula of an alkene = C_nH_{2n}	n = number of carbon atoms	
R_f = $\frac{\text{Distance moved by substance}}{\text{Distance moved by solvent}}$	Distances - Any distance unit	Make sure the units for distance are the same for substance and solvent.

Prefixes

Prefix	**Symbol**	**Multiplying factor**
Giga	G	10^9
Mega	M	10^6
Kilo	k	10^3
Deci	d	10^{-1}
Centi	c	10^{-2}
Milli	m	10^{-3}
Micro	μ	10^{-6}
Nano	n	10^{-9}

Unit definitions

Unit	**Definition**
Watt (W)	1 Watt = 1 Joule of energy transferred per second
Amperes (A)	1 Ampere = 1 Coulomb of charge moving past a point in the circuit per second
Volts (V)	1 Volt = 1 Joule of energy stored per Coulomb of charge
Hertz (Hz)	1 Hertz = 1 wave passing a point per second