IB physics glossary and definitions 2016

Unit	AHL ?	Term	IB definition or description as required by the syllabus	Further description
1		Accuracy		How close a measurement or an experimental result is to the literature / commonly accepted value. A single measurement is accurate if its value is close to the true value. A set of measurements is accurate if the true value lies within the experimental error range. e.g. A measurement of $g = 9.3 \pm 0.7$ m s^{-2} is accurate because the true value of g of 9.81 m s^{-2} lies within 9.3 ± 0.7 m s^{-2}.
1		Precision		How close a set of measurement is compared to each other / the number of sig fig for a single measurement / the standard deviation for a set of measurements. A single measurement is precise if it has many sig-figs or has a small % error. A set of measurements is precise if the set has a small standard deviation or range.
1		Systematic error	An error that results in all measurements deviating from the true value by the same amount	Systematic errors usually lead to low accuracy.
1		Random error	Random deviation of measurements from the true values	Random errors usually lead to low precision. Random errors can be reduced by taking repeated readings.
1		Order of magnitude		The power of 10 in the standard form-expression of a figure.
1		Fundamental units	The following 6 are defined to be SI fundamental units: kg (mass), m (length), s (time), mole (amount of matter), Kelvin (temperature) and Ampere (current).	Even though Ampere (current) is defined to be a fundamental unit, "Charge", measured in Coulombs, is used way more often as a fundamental quantity in electrostatic applications. [Finally, the "candela" is the fundamental unit for light intensity.]
1		Derived units	Units derived from fundamental units	For example, 1 Newton = 1 kg m s^{-2}, and 1 Watt = 1 kg m^{2} s^{-3}.

1		Absolute uncertainty, fraction uncertainty, percentage uncertainty		Fraction uncertainty = absolute uncertainty / "main figure". Percentage uncertainty = fraction uncertainty x 100%
1		Vector	A quantity that has both a magnitude (value) and a direction in space	Examples include velocity, force, and field.
1		Scalar	A quantity that has only a magnitude but no direction in space.	Examples include temperature, pressure, speed, distance and Zayn. Some quantities, such as current (clockwise or anticlockwise), or "change in energy" (gain or loss) can be mathematically interpreted as vectors during calculations, but formally speaking, they are not vectors.
1		Resolving vectors		Using trigonometry to express a vector, which is diagonal with respect to two chosen, perpendicular axes, as a sum of two vectors along each chosen axis. For example, travelling 10 meters northeast is equivalent as travelling $10\cos45^{\circ}$ = 7.1 m East and then $10\sin45^{\circ}$ = 7.1 m North.
2		Displacement	Change in position	
2		Distance		length of path travelled. "Distance between two points" is the same as the magnitude of the displacement.
2		Speed	Change in distance per unit time	
2		Velocity	Change in displacement per unit time	
2		Acceleration	Change in velocity per unit time	
2		Instantaneous velocity	Rate of change of displacement (of a particle) AT a particular time	Graphically this is obtained by drawing a tangent line on a displacement-time curve, and graphically estimating the gradient of this tangent line (rise over run using the contact point + one other point on the tangent).
2		Instantaneous acceleration	Rate of change of velocity (of a particle) AT a particular time	Graphically this is obtained by drawing a tangent line on a velocity-time curve, and graphically estimating the gradient of this tangent line (rise over run using the contact point + one other point on the tangent).
2		Average velocity	Rate of change of displacement (of a particle) OVER a given period of time	Graphically this is obtained by drawing a "chord" that connects the starting and final times on a displacement-time curve, and graphically estimating the gradient of this chord using the "gradient = rise-over-run" formula.
2		Average acceleration	Rate of change of velocity (of a particle) OVER a given period of time	Graphically this is obtained by drawing a "chord" that connects the starting and final times on a velocity-time curve, and estimating the gradient of this chord using the "gradient = rise-over-run" formula.