SP1: **Motion** (Paper 1)

Lesson	Objectives Tracker Sheet	Date covered	I know this well	I need to do more work on this
SP1a Vectors and scalars	P2.1 Explain that a scalar quantity has magnitude (size) but no specification direction.			
	P2.2 Explain that a vector quantity has both magnitude (size) and a specific direction.			
	P2.3 Explain the difference between vector and scalar quantities.			
	P2.4 Recall vector and scalar quantities including: (a) displacement/distance (b) velocity/speed (c) acceleration (d) force (e) weight/mass (f) momentum (g) energy.			
	P2.5 Recall that velocity is speed in a stated direction.			
SP1b Distance/time graphs	P2.6 Recall and use the equations: (average) speed (metre per second, m/s) = distance (metre, m) / time (second, s) (b) distance travelled (metre, m) = average speed (metre per second, m/s) × time (second, s).			
	P2.7 Analyse distance/time graphs including determination of speed from the gradient			
	P2.11 Describe a range of laboratory methods for determining the speeds of objects such as the use of light gates			
	P2.12 Recall some typical speeds encountered in everyday experience for wind and sound, and for walking, running, cycling and other transportation systems.			
SP1c Acceleration	P2.8 Recall and use the equation: acceleration (metre per second squared, m/s2) = change in velocity (metre per second, m/s) / time taken (second, s); a = (v – u) / t.			
	P2.9 Use the equation: (final velocity)2 ((metre/second)2 , (m/s)2) – (initial velocity)2 ((metre/second)2 , (m/s)2) = 2 × acceleration (metre per second squared, m/s2) × distance (metre, m); v 2 – u 2 = 2 × a × x			
	P2.13 Recall that the acceleration, g, in free fall is 10 m/s2 and be able to estimate the magnitudes of everyday accelerations			
SP1d Velocity/time graphs	P2.10 Analyse velocity/time graphs to: (a) compare acceleration from gradients qualitatively (b) calculate the acceleration from the gradient (for uniform acceleration only) (c) determine the distance travelled using the area between the graph line and the time axis (for uniform acceleration only).			