

SP1a Vectors and scalars

Word	Pronunciation	Meaning
acceleration	<i>ack-sell-er-ay-shun</i>	A measure of how quickly the velocity of something is changing. It can be positive if the object is speeding up or negative if it is slowing down. Acceleration is a vector quantity.
displacement		The distance travelled in a particular direction. Displacement is a vector, distance is not.
distance		How far something has travelled. Distance is a scalar, and has no direction.
force		At the simplest level a force is a push, pull or twist. Forces acting on an object can cause it to accelerate. Force is a vector quantity.
magnitude	<i>mag-nee-tyood</i>	The size of something, such as the size of a force or the measurement of a distance.
mass		A measure of the amount of material that there is in an object. Mass is a scalar quantity.
momentum	<i>mO-men-tum</i>	A measure of motion, mass multiplied by velocity. Momentum is a vector quantity.
scalar quantity	<i>skay-lar</i>	A quantity that has a magnitude (size) but not a direction. Examples include mass, distance, energy and speed.
speed		A measure of the distance an object travels in a given time. Usually measured in metres per second (m/s). It is a scalar quantity.
vector quantity		A quantity that has both a size and a direction. Examples include force, velocity, displacement, momentum and acceleration.
velocity		The speed of an object in a particular direction. Usually measured in metres per second (m/s). Velocity is a vector, speed is not.
weight		The force pulling an object downwards, it depends upon the mass of the object and the gravitational field strength. Weight is a vector.

SP1b Distance/time graphs

Word	Pronunciation	Meaning
average speed		The speed worked out from the total distance travelled divided by the total time taken for a journey. $\text{speed} = \frac{\text{distance travelled}}{\text{time}}$
distance/time graph		A graph of the distance travelled against time for a moving object. The gradient of a line on a distance/time graph gives the speed.
instantaneous speed		The speed at one particular moment in a journey.
gradient		A way of describing the steepness of a line on a graph in numbers. It is calculated by taking the vertical distance between two points and dividing by the horizontal distance between the same two points.

SP1c Acceleration

Word	Pronunciation	Meaning
deceleration	<i>dee-sell-er-ay-shun</i>	When an object is slowing down.

SP1d Velocity/time graphs

Word	Pronunciation	Meaning
velocity/time graph		A graph of velocity against time for a moving object. The gradient of a line on the graph gives the acceleration and the area under the graph gives the distance travelled.