

Definitions and Concepts for CAIE Physics A-level

Topic 2: Kinematics

Acceleration: The rate of change of velocity. It is a vector quantity and so has both a direction and a magnitude.

Displacement: The direct distance between an object's starting and ending positions. It is a vector quantity and so has both a direction and a magnitude.

Displacement-Time Graphs: Plots showing how displacement changes over a period of time. The gradient gives the velocity. Curved lines represent an acceleration.

Distance: A measure of how far an object moves. It doesn't depend on direction and is therefore a scalar quantity.

Projectile Motion: The motion of an object that is fired from a point and then upon which only gravity acts. When solving projectile motion problems, it is useful to split the motion into horizontal and vertical components.

Speed: A scalar quantity that is a measure of the rate of change of distance. The average speed is calculated by dividing the distance travelled by the speed taken.

Velocity: The rate of change of displacement. It is a vector quantity and so has both a direction and a magnitude.

Velocity-Time Graphs: Plots showing how velocity changes over a period of time. The gradient gives acceleration. Area under line gives displacement. Curved lines represent changing acceleration.

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