IGCSE Physics (9-1) Specification 1(b)

(b) Movement and position

Students should:

1.3 plot and explain distance−time graphs

1.4 know and use the relationship between average speed, distance moved and time taken:

$$average = \frac{\text{distance moved}}{\text{time taken}}$$

1.5 **practical:** investigate the motion of everyday objects such as toy cars or tennis balls

1.6 know and use the relationship between acceleration, change in velocity and time taken:

$$acceleration = \frac{\text{change in velocity}}{\text{time taken}}$$

$$a = \frac{(v-u)}{t}$$

1.7 plot and explain velocity-time graphs

1.8 determine acceleration from the gradient of a velocity−time graph

1.9 determine the distance travelled from the area between a velocity−time graph and the time axis

1.10 use the relationship between final speed, initial speed, acceleration and distance moved:

$$(\text{final speed})^2 = (\text{initial speed})^2 + (2 \times \text{acceleration} \times \text{distance moved})$$

$$v^2 = u^2 + (2 \times a \times s)$$

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