

Motion

| Specification reference | Checklist questions | |
|-------------------------|--|--------------------------|
| 3.1.1 a | Can you define displacement, instantaneous speed, average speed, velocity, and acceleration? | <input type="checkbox"/> |
| 3.1.1 b | Can you interpret graphical representations of displacement, speed, velocity, and acceleration? | <input type="checkbox"/> |
| 3.1.1 c | Can you draw displacement–time graphs and calculate velocity from the gradient? | <input type="checkbox"/> |
| 3.1.1 d | Can you interpret velocity–time graphs, where acceleration is the gradient and displacement is the area under the graph? | <input type="checkbox"/> |
| 3.1.2 a i | Can you use the equations of motion for constant acceleration in a straight line, including motion of bodies falling in a uniform gravitational field without air resistance? | <input type="checkbox"/> |
| 3.1.2 a ii | Can you list and describe techniques and procedures used to investigate the motion and collisions of objects? | <input type="checkbox"/> |
| 3.1.2 b i | Can you define acceleration g of free fall? | <input type="checkbox"/> |
| 3.1.2 b ii | Can you list and describe techniques and procedures used to determine the acceleration of free fall using a trapdoor and electromagnet arrangement or light gates and a timer? | <input type="checkbox"/> |
| 3.1.2 c | Can you define what is meant by reaction time and thinking distance; and calculate braking distance and stopping distance for a vehicle? | <input type="checkbox"/> |
| 3.1.3 a | Can you explain the independence of the vertical and horizontal motion of a projectile? | <input type="checkbox"/> |

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|-------------------------|---|--------------------------|
| 3.1.3 b | Can you describe the two-dimensional motion of a projectile with constant velocity in one direction and constant acceleration in a perpendicular direction? | <input type="checkbox"/> |