

# Year 11: ASK Yourself!

## Subject: Physics Unit: 5 - Forces

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
<b>S</b> kills				
	<p>To be able to know that forces are vectors and have magnitude and direction.</p> <p>To be able to explain the significance of the gradient of a distance-time graph.</p>	<p>To be able to explain the difference between contact and non-contact forces.</p> <p>To be able to interpret a journey represented on a distance-time graph.</p> <p>To be able to explain the significance of the gradient of a velocity-time graph.</p>	<p>To be able to represent vector quantities by arrows.</p> <p>To be able to determine the instantaneous speed from the tangent to a distance-time graph of an accelerating object.</p> <p>To be able to interpret a journey represented on a velocity-time graph.</p>	<p>To be able to determine the components of a force using a vector arrow diagram.</p> <p>To be able to determine total distance travelled from a velocity-time graph.</p> <p>To be able to interpret a graph that relates speed to stopping distance for different vehicles.</p>
<b>K</b> nowledge				
	<p>To be able to apply Newton's first law to a stationary object and an object moving in a straight line at a constant speed.</p> <p>To be able to recall the equation for uniform motion.</p> <p>To be able to state Newton's second law and recall the equation <math>F = ma</math>.</p> <p>To be able to explain what is meant by momentum.</p> <p>To be able to describe how a fluid exerts a pressure on a surface.</p> <p>To be able to describe how pressure varies with depth in a fluid.</p>	<p>To be able to link Newton's first law to the idea of a zero resultant force.</p> <p>To be able to calculate the resultant force acting on an object.</p> <p>To be able to apply the equation for uniform motion.</p> <p>To be able to use <math>F = ma</math> to determine force, mass or acceleration.</p> <p>To be able to explain the difference between weight and mass.</p> <p>To be able to state Newton's third law.</p> <p>To be able to calculate pressure at any depth in a fluid and explain what</p>	<p>To be able to explain what is meant by inertia.</p> <p>To be able to select and apply the appropriate equation for uniform motion.</p> <p>To be able to explain what is meant by inertial mass.</p> <p>To be able to apply Newton's third law to simple equilibrium situations.</p> <p>To be able to relate measures to increase road safety to ideas about forces and kinetic energy, and to rate of change of momentum.</p> <p>To be able to explain how a partially (or totally) submerged object experiences</p>	<p>To be able to rearrange the equations for uniform motion.</p> <p>To be able to relate the ideas of weight and mass to Newton's second law.</p> <p>To be able to explain how Newton's third law applies.</p> <p>To be able to explain vehicle safety features in terms of the rate at which momentum is reduced.</p> <p>To be able to apply the principle of conservation of momentum to collisions.</p> <p>To be able to describe the</p>

	<p>To be able to explain that a moment is the turning effect of a force.</p>	<p>causes atmospheric pressure. To be able to calculate the size and direction of a moment.</p>	<p>upthrust and why atmospheric pressure decreases with height. To be able to explain how gears and levers transmit the rotational effect of a force.</p>	<p>factors which influence floating and sinking. To be able to apply the idea of moments to contexts such as the balancing of a seesaw.</p>
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