

## Year 11 Physics (separate) Learning Programme 2

<p>The LORIC skill focus for his LP is: ORGANISATION The Moral Virtues focus for this LP are: COMPASSION and HONESTY Compassion - the quality of feeling pity and concern for the sufferings or misfortunes of others. Honesty - the quality of being truthful.</p> <p><b>What will I be learning about in this Learning Programme?</b> Forces and their effects</p> <p><b>Where have I seen this learning before?</b> You have explored basic forces and motion at KS3 and in primary school. During LP1 we began to study forces and we will be further developing this understanding.</p> <p><b>What could I use it for?</b> Understanding forces is crucial for mechanical and civil engineering, sport, building/construction, astrophysics and architecture.</p>		<p><b>Literacy:</b></p> <ul style="list-style-type: none"> <li>• Capital letters must be used at the start of sentences and for the first letter of proper nouns</li> <li>• Full stops must be used at the end of a sentence</li> <li>• Question marks must be used at the end of a question</li> <li>• Apostrophes should only be used for possession or omission</li> <li>• Days of the week and months must be spelled correctly</li> <li>• Key words must be spelled correctly</li> </ul>
<p><b>In LP2.1, I will know:</b> 21/10/24 - (WK 2)</p> <p>how to describe a moment as the turning effect of a force and to use the equation <math>M = Fd</math>, where <math>d</math> is the perpendicular distance from the line of action of the force to the pivot; how to define centre of mass, and how to explain how to find the centre of mass of irregular objects; how to explain how levers and gears transmit the rotational effects of forces.</p>	<p><b>Key Vocabulary</b></p> <p>Moment</p>	<p><b>Homework</b></p> <p>Moments worksheet</p>
<p><b>In LP2.2, I will know:</b> 04/11/24 - (WK 1)</p> <p>how to define pressure, and to use the equation <math>p = F/A</math>; how explain changes in atmospheric pressure or a column of liquid, and use the equation <math>p = h\rho g</math>; how to define upthrust and describe the factors which influence floating and sinking.</p>	<p><b>Key Vocabulary</b></p> <p>Pressure</p>	<p><b>Homework</b></p> <p>Fluid pressure worksheet</p>
<p><b>LP2 RLW, I will:</b> 11/11/24 - (WK 2)</p> <p>review my learning, recalling and applying key knowledge, and focus on closing any gaps in my knowledge.</p>		
<p><b>In LP2.3, I will know:</b> 18/11/24 - (WK 1)</p> <p>how to distinguish between distance and displacement, and speed and velocity; how to calculate speed and velocity; how to define and calculate acceleration; how to analyse motion graphs, including distance-time and velocity-time graphs. Extended Task.</p>	<p><b>Key Vocabulary</b></p> <p>Displacement Velocity Acceleration</p>	<p><b>Homework</b></p> <p>Acceleration worksheet</p>
<p><b>In LP2.4, I will know:</b> 25/11/24 - (WK 2)</p> <p>How to explain Newton's Laws and recognise examples of Newton's 1st and 3rd law in action; how to describe the relationship between Force, mass and acceleration = Newtons 2nd Law; how to explain why an object reaches terminal velocity in terms of the forces involved and acceleration; LP2 summative assessment.</p>	<p><b>Key Vocabulary</b></p> <p>Terminal velocity</p>	<p><b>Homework</b></p> <p>Terminal velocity exam question</p>
<p><b>In LP2.5, I will know:</b> 02/12/24 - (WK 1)</p> <p>how to investigate the acceleration of an object by varying the force or mass; How to describe and explain the factors that affect both thinking distance and braking distance. Describe an experiment used to estimate reaction times; my strengths and areas for developments following the LP2 summative assessment and PRT.</p>	<p><b>Key Vocabulary</b></p> <p>Reaction</p>	<p><b>Homework</b></p> <p>acceleration required practical exam question</p>
<p><b>In LP2.6, I will know:</b> 09/12/24 - (WK 2)</p> <p>how to interpret graphs of stopping distances. Estimate the forces required to produce a deceleration on a typical road, and the distance required for road vehicles to stop in an emergency; how to define momentum, apply and rearrange the equation <math>p=mv</math> and describe the conservation of momentum in closed systems (collisions or explosions). Extended Task.</p>	<p><b>Key Vocabulary</b></p> <p>Collision</p>	<p><b>Homework</b></p> <p>Collisions exam question</p>
<p><b>In LP2.7, I will know:</b> 16/12/24 - (WK 1)</p> <p>how to explain when a force acts on an object that is moving a change in momentum occurs by relating the equation <math>F = (mv-mu)/t</math>; LP2.2 formative assessment my strengths and areas for developments following the LP2.2 formative assessment and PRT.</p>	<p><b>Key Vocabulary</b></p> <p>Momentum</p>	<p><b>Homework</b></p> <p>Revision</p>
<p><b>Resources to support learning:</b> Knowledge organiser, topic booklet, GCSE BBCbitesize, www.physicsandmathstutor.com</p>		
<p><b>FFET Award Challenge for this Learning Programme:</b> LP2 Year11 Science: Complete a practice paper independently</p>		

