

Year 12 Physics

Learning Programme 5

<p>The LORIC skill focus for this LP is: COMMUNICATION.</p> <p>The Moral Virtues focus for this LP are: COURAGE and HUMILITY.</p> <p>Courage - Acting with bravery and overcoming fears.</p> <p>Humility - Having a modest view of oneself.</p> <p>What will I be learning about in this Learning Programme?</p> <p>The particulate nature of electromagnetic radiation,, the photo electric effect and use Einstein's equation. Thermal equilibrium and how to calculate the specific heat capacity of a substance.</p> <p>Where have I seen this learning before?</p> <p>electromagnetic spectrum and waves in LP3, specific heat capacity and internal energy at KS4.</p> <p>What could I use it for?</p> <p>Module 5 in Yr13 looking at cosmology.</p>		<p>Literacy:</p> <ul style="list-style-type: none"> • Capital letters must be used at the start of sentences and for the first letter of proper nouns • Full stops must be used at the end of a sentence • Question marks must be used at the end of a question • Apostrophes should only be used for possession or omission • Days of the week and months must be spelled correctly • Key words must be spelled correctly
<p>In LP5.1, I will know:</p> <p>how to explain the particulate nature (photon model) of electromagnetic radiation; how to explain the photoelectric effect; how to explain Einstein's photoelectric equation $hf = \phi + K_{max}$.</p>	<p>13/05/24 - (WK 1)</p> <p>Key Vocabulary</p> <p>Photon</p>	<p>Homework</p> <p>Quantum physics booklet - photons questions.</p>
<p>In LP5.2, I will know:</p> <p>How to describe that the maximum kinetic energy of the photoelectrons is independent of the intensity of the incident radiation; how to explain electron diffraction. PAG 6.1 how to determine the Planck constant using different coloured LEDs.</p>	<p>20/05/24 - (WK 2)</p> <p>Key Vocabulary</p> <p>diffraction</p>	<p>Homework</p> <p>Quantum physics booklet - Wave-particle duality questions.</p>
<p>In LP5.3, I will know:</p> <p>How to explain wave-particle duality Completion of Waves practical activities - e.g. wave on a wire/string, light practical's Revision for exams</p> <p>Extended Task.</p>	<p>03/06/24 - (WK 1)</p> <p>Key Vocabulary</p> <p>photoelectric</p>	<p>Homework</p> <p>completion of quantum physics booklet.</p>
<p>In LP5.4, I will know:</p> <p>PAG 12 research project; how to define temperature and convert between Celsius and kelvin scales. How to explain thermal equilibrium; how to describe the kinetic theory model and explain Brownian motion. How to use the concept of internal energy to explain changes in temperature and phase change.</p>	<p>10/06/24 - (WK 2)</p> <p>Key Vocabulary</p> <p>equilibrium</p>	<p>Homework</p> <p>PAG 12 independent research project.</p>
<p>In LP5.5, I will know:</p> <p>how to describe internal energy as the sum of kinetic and potential energy, and absolute zero; how to define and calculate specific heat capacity and determine it via investigation; Revise for exams</p>	<p>17/06/24 - (WK 1)</p> <p>Key Vocabulary</p> <p>kelvin</p>	<p>Homework</p> <p>Thermal Physics - temperature questions.</p>
<p>In LP5.6, I will know:</p> <p>how to define, calculate and investigate specific latent heat. How to combine slh and shc in calculations; PAG 11 investigation how to describe the assumptions made in developing the kinetic model for an ideal gas.</p> <p>Extended Task.</p>	<p>24/06/24 - (WK 2)</p> <p>Key Vocabulary</p> <p>Specific heat capacity</p>	<p>Homework</p> <p>SHC practical write up.</p>
<p>In LP5.7, I will know:</p> <p>how to describe and investigate the gas laws; how to define root mean square speed. How to explain the Maxwell-Boltzmann distribution; how to describe the assumptions made in developing the kinetic model for an ideal gas.</p>	<p>01/07/24 - (WK 1)</p> <p>Key Vocabulary</p> <p>Boyle's law</p>	<p>Homework</p> <p>Thermal Physics - Gas laws questions.</p>
<p>In LP5.8, I will know:</p> <p>How to describe and investigate the gas laws; PAG 8 how to define root mean square speed. How to explain the Maxwell-Boltzmann distribution; how to use the Boltzmann constant to describe the relationship between absolute temperature and mean kinetic energy.</p>	<p>08/07/24 - (WK 2)</p> <p>Key Vocabulary</p> <p>Maxwell-Boltzmann</p>	<p>Homework</p> <p>Completion of Thermal Physics booklet.</p>
<p>Resources to support learning:</p> <p>Knowledge organiser, Microsoft TEAMS, https://www.physicsandmathstutor.com/physics-revision/a-level-ocr-a/</p>		
<p>FFET Award Challenge for this Learning Programme:</p> <p>Assist the science department in an after school club or work with the lab technician to gain experience of working in a lab.</p>		

PRT Task 1

PRT Task 2