

Subject	Year	Term
Physics	12	1
Topic		
Topic 5 Waves		
Content (Intent)		
Prior Learning (Topic) 10P2 Waves		
<p>Graphs representing transverse and longitudinal waves. Wavefronts, coherence, path difference and phase Principle of superposition and interference Stationary wave demonstrations.</p>		
<p>Patterns of nodes and antinodes for stretched strings and open and closed air columns</p> <p>Speed of a transverse wave on a string: <math>v = \sqrt{\frac{T}{\mu}}</math></p> <p>Diffraction: single slit water wave diffraction demonstration. Width of central maximum linked to relative sizes of wavelength and slit. the diffraction grating, <math>n\lambda = d\sin\theta</math>.</p> <p><math>I = \frac{P}{A}</math> Waves meeting an interface between two media, pulse echo techniques</p> <p>Refraction, refractive index and Snell's law Critical angle and total internal reflection. Lenses, including the lensmaker's equation Wave-particle duality, Wave properties of free electrons Electron diffraction demonstration. Photon model: <math>E = hf</math> Energy level 'ladder' diagrams. Ground &amp; 'excited' states, choice of routes back → photons emitted, <math>hf = E_1 - E_2</math>. The photoelectric effect Work function and the photoelectric equation</p>		
How will knowledge and skills be taught? (Implementation)	How will your understanding be assessed & recorded (Impact)	
<p>Demonstrate standing waves on strings. Ripple tank demonstration for water wave diffraction Demonstration using UV and a zinc plate on a coulombmeter. Demonstration of image formation by converging and diverging lenses.</p>	<p>Homework Booklet 5 marked and written feedback given Test 5 marked, graded and feedback given</p>	
How can parents help at home?		
Check that the homework booklet 5 is completed		
Helpful further reading/discussion		
<p><b>Reading</b> <b>Advanced Physics for you chapter 10,11,12,23</b></p>	<p><b>Vocabulary Lists</b> <i>See front of homework booklet</i></p>	<p><b>Careers Links</b></p>

