

# Stage 1 Physics: Overview Semester 2 2017

Teacher: Kathy Keenan

Term 3	Topic	Assessment
<p><b>Weeks 1-8</b></p>	<p><b>Waves – The Physics of Sight</b></p> <ul style="list-style-type: none"> <li>• Electromagnetic Spectrum</li> <li>• Transverse Waves</li> <li>• Amplitude, wavelength, frequency and period</li> <li>• <math>v = f\lambda</math></li> <li>• Reflection and refraction</li> </ul> <p><b>-The Physics of Hearing</b></p> <ul style="list-style-type: none"> <li>• Longitudinal Waves</li> <li>• Natural frequency</li> <li>• Resonance</li> <li>• Echoes</li> <li>• Superposition</li> <li>• Standing Waves</li> </ul> <p><b>-The Physics of Speech</b></p> <ul style="list-style-type: none"> <li>• Sound spectrum created by the human vocal chords</li> </ul> <p><b>-Medical Imaging – Ultrasound and X-Rays</b></p> <ul style="list-style-type: none"> <li>• Doppler effect</li> <li>• Total Internal Reflection</li> <li>• Lasers</li> </ul>	<p><b>Folio 1- SIS Practical Investigation Report</b> – Investigating hearing or vision using computer or phone apps (maximum of 1000 words for the introduction, analysis, evaluation and conclusion sections of the report.)</p> <p><b>SAT 1 – Medical Imaging</b> using waves Animation (max 6 minutes)</p>
<p><b>Weeks 9 &amp; 10</b> <b>Term 4</b> <b>Week 1-3</b></p>	<p><b>Nuclear Models – Nuclear Medicine</b></p> <ul style="list-style-type: none"> <li>• Structure of the atom</li> <li>• Isotopes</li> <li>• Nuclear force</li> <li>• Stable and unstable nuclei</li> <li>• Radioactive Decay</li> </ul> <p><b>-Isotopes in Medicine</b></p> <ul style="list-style-type: none"> <li>• Alpha decay</li> <li>• Beta minus and beta plus decay</li> <li>• Gamma decay</li> </ul> <p><b>- Radiation and the human body</b></p> <ul style="list-style-type: none"> <li>• Ionised atoms</li> <li>• Effects of ionising radiation</li> </ul>	<p><b>Folio 2 – SHE Nuclear Medicine Radiotracers</b> Research a radiotracer used in medical imaging. (maximum of 1000 words, if written, 6 minutes for an oral presentation).</p> <p><b>SAT 2 – Waves and Nuclear Models Test</b> 50 minutes</p>

<p><b>Weeks 4 - 7</b></p>	<p><b>Energy and Momentum – Momentum</b></p> <ul style="list-style-type: none"><li>• Momentum in 1D</li><li>• Rockets</li><li>• <math>p = mv</math></li><li>• Impulse</li></ul> <p><b>-Working and Living in Space</b></p> <ul style="list-style-type: none"><li>• Solar radiation</li><li>• Weightlessness</li></ul> <p><b>-Spaceflight</b></p> <ul style="list-style-type: none"><li>• History of spaceflight</li><li>• Future of spaceflight</li></ul> <p><b>-Energy</b></p> <ul style="list-style-type: none"><li>• Different forms of energy</li><li>• Energy transfers</li><li>• Kinetic energy <math>K = \frac{1}{2} mv^2</math></li><li>• Potential Energy <math>E = mgh</math></li><li>• Conservation of energy</li><li>• Work</li></ul>	
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