

# ANNUAL LESSON PLAN FOR PHYSICS, KEY STAGE 5, YEAR 13 (2021-22)

		<b>Key Concepts</b> 	
<b>Term 1, September – December</b>	Mechanics. Matter and Materials	<ul style="list-style-type: none"> <li>• Stress. Strain. Young Modulus. Material Types</li> <li>• Energy and collision</li> <li>• Momentum.</li> <li>• Circular motion</li> <li>• Centripetal force</li> </ul>	20
	Electric and magnetic fields	<ul style="list-style-type: none"> <li>• Electric fields</li> <li>• Radial electric field</li> <li>• Coulomb's law</li> <li>• Capacitors</li> <li>• Electromagnetic effect</li> </ul>	50
	Nuclear and Particle physics	<ul style="list-style-type: none"> <li>• Probing matter</li> <li>• Particle accelerators and detectors</li> <li>• The particle zoo</li> <li>• Particle reactions</li> </ul>	50
<b>Term 2, January – March</b>	Thermodynamics	<ul style="list-style-type: none"> <li>• Heat and temperature</li> <li>• Heat transfer</li> <li>• Internal energy</li> <li>• Ideal gas behaviour</li> </ul>	25
	Radioactivity	<ul style="list-style-type: none"> <li>• Diagnostic test/review of previous knowledge</li> <li>• Simple Atom Model</li> <li>• Radiation</li> <li>• Alpha, Beta, Gamma Decays</li> <li>• Fundamental particles</li> <li>• Standard Model</li> <li>• Nuclear radiation</li> <li>• Rate of radioactivity</li> <li>• Fission and fusion</li> </ul>	40
	Waves and Oscillations	<ul style="list-style-type: none"> <li>• Simple harmonic motion</li> <li>• SHM Mathematics</li> <li>• SHM energy</li> <li>• Resonance and Damping</li> </ul>	23
<b>Term 3, April – June</b>	Astrophysics and cosmology	<ul style="list-style-type: none"> <li>• Gravitational fields</li> <li>• Space</li> <li>• Stellar classification</li> <li>• The age of the universe</li> </ul>	30
	Review and revision	<ul style="list-style-type: none"> <li>• Past Papers</li> <li>• Practicing time management for the exam</li> <li>• Key points for Paper 3</li> <li>• Key points for Paper 1</li> <li>• Key points for Paper 2</li> </ul>	74