

Yr1 - 1st half term	<p>Measurements and their errors</p> <ul style="list-style-type: none"> <li>• The uses of SI units and their prefixes</li> <li>• Limitations of physical measurements</li> <li>• Estimation of physical quantities</li> </ul> <p>Particles and radiation</p> <ul style="list-style-type: none"> <li>• Constituents of the atom</li> <li>• Stable and unstable nuclei</li> <li>• Particles, antiparticles and photons</li> <li>• Particle interactions</li> <li>• Classification of particles</li> <li>• Quarks and antiquarks</li> <li>• Applications of conservation laws</li> <li>• The photoelectric effect</li> <li>• Collisions of electrons with atoms</li> <li>• Energy levels and photon emission</li> <li>• Wave-particle duality</li> </ul>
Yr 1 - 2 <sup>nd</sup> half term	<p>Waves</p> <ul style="list-style-type: none"> <li>• Progressive waves</li> <li>• Longitudinal and transverse waves</li> <li>• Principle of superposition of waves and formation of stationary waves</li> <li>• Interference</li> <li>• Diffraction</li> <li>• Refraction at a plane surface</li> </ul>
Yr1 - 3 <sup>rd</sup> half term	<p>Mechanics and materials</p> <ul style="list-style-type: none"> <li>• Scalars and vectors</li> <li>• Moments</li> <li>• Motion along a straight line</li> <li>• Projectile Motion</li> <li>• Newton's laws of motion</li> <li>• Momentum</li> <li>• Conservation of energy</li> <li>• Work, energy and power</li> <li>• Bulk properties of solids</li> <li>• The Young modulus</li> </ul>
Yr 1 4 <sup>th</sup> half term	<p>Electricity</p> <ul style="list-style-type: none"> <li>• Basics of electricity</li> <li>• Current-voltage characteristics</li> <li>• Resistivity</li> <li>• Circuits</li> <li>• Potential divider</li> <li>• Electromotive force and internal resistance</li> </ul>
Yr 1 5 <sup>th</sup> half term	<p>Further mechanics and thermal physics</p> <ul style="list-style-type: none"> <li>• Circular motion</li> <li>• Simple harmonic motion</li> <li>• Simple harmonic systems</li> <li>• Forced vibrations and resonance</li> <li>• Thermal energy transfer</li> <li>• Ideal gases</li> <li>• Kinetic theory model</li> </ul>

Yr 1 – 6 <sup>th</sup> half term	<p>Fields and their consequences</p> <ul style="list-style-type: none"> <li>• Newton's law</li> <li>• Gravitational field strength</li> <li>• Gravitational potential</li> <li>• Orbits</li> <li>• Coulomb's law</li> <li>• Electric field strength</li> <li>• Electric potential</li> </ul>
Yr 2 1 <sup>st</sup> half term	<p>Fields and their consequences</p> <ul style="list-style-type: none"> <li>• Parallel plate capacitor</li> <li>• Energy stored by a capacitor</li> <li>• Capacitor charge and discharge</li> <li>• Magnetic flux density</li> <li>• Moving charges in a magnetic field</li> <li>• Magnetic flux and flux linkage</li> <li>• Electromagnetic induction</li> <li>• Alternating currents</li> <li>• The operation of a transformer</li> </ul>
Yr2 2 <sup>nd</sup> half term	<p>Nuclear physics</p> <ul style="list-style-type: none"> <li>• Rutherford scattering</li> <li>• Alpha, beta and gamma radiation</li> <li>• Radioactive decay</li> <li>• Nuclear instability</li> <li>• Nuclear radius</li> <li>• Mass and energy</li> <li>• Induced fission</li> <li>• Safety aspects</li> </ul>
Yr2 3 <sup>rd</sup> half term	<p>Optional Unit - Engineering Physics</p> <ul style="list-style-type: none"> <li>• Rotational Inertia</li> <li>• Rotational Kinematics</li> <li>• Torque/Work/Power</li> <li>• Angular Momentum</li> <li>• P-V Diagrams</li> <li>• Engine Cycles</li> <li>• Reverse Heat Engines</li> </ul>
Yr 2 4 <sup>th</sup> & 5 <sup>th</sup> half terms	Revision