



Year 13 Physics Curriculum Map

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| Overview | <p>The earlier study of mechanics is further advanced through a consideration of circular motion and simple harmonic motion (the harmonic oscillator). A further section allows the thermal properties of materials, the properties and nature of ideal gases, and the molecular kinetic theory to be studied in depth.</p> <p>The concept of field is one of the great unifying ideas in physics. The ideas of gravitation, electrostatics and magnetic field theory are developed within the topic to emphasise this unification. Many ideas from mechanics and electricity from earlier in the course support this and are further developed. Practical applications considered include: planetary and satellite orbits, capacitance and capacitors, their charge and discharge through resistors, and electromagnetic induction. These topics have considerable impact on modern society.</p> <p>This section builds on the work of Particles and radiation to link the properties of the nucleus to the production of nuclear power through the characteristics of the nucleus, the properties of unstable nuclei, and the link between energy and mass. Students should become aware of the physics that underpins nuclear energy production and also of the impact that it can have on society.</p> | | | | |
| Year 13 | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 & 2 |
| Topic | SHM Thermal Physics & gases | Gravitational fields Capacitors | Electric and magnetic fields Electromagnetic induction | Options topic Radioactivity | Revision |
| Knowledge | 3.6.1 Periodic motion 3.6.2 Thermal physics | 3.7.1 Fields 3.7.4 Capacitance | 3.7.3 Electric fields 3.7.5 Magnetic fields | 3.12 Turning points in physics 3.8.1 Radioactivity | |
| Skills | Correctly use appropriate apparatus to carry out investigations. Carry out procedures methodically, identify practical issues and make adjustments when necessary. Selects appropriate equipment and measurement strategies. | Correctly follow instructions to carry out experimental procedures. Identify and control significant quantitative variables. Carry out procedures methodically, identify practical issues and make adjustments when necessary. | Identify hazards and assess risks in the field and laboratory. Make safety adjustments as necessary. Use appropriate safety equipment to minimise risk | Use appropriate software to process data, research and report findings. Cite sources of information to support planning and conclusions. | |