



RGS Physics Department: Course Summaries 2014-15

	Third Form	Fourth Form*	Fifth Form	Sixth Form	Seventh form
Autumn Term	<p><b>Motion:</b> Speed equation Distance time graphs Velocity time graphs Acceleration</p> <p><b>Electricity:</b> Flow of charge Static electricity Electrical safety Electrical power Heating effect of current a.c. vs. d.c.</p> <p><b>Waves:</b> Wave basics</p>	<p><b>Forces, movement, shape and astronomy:</b> Scalars and vectors Newton's laws Terminal velocity Stopping distance Moments Orbits</p> <p><b>Energy and potential differences in circuits:</b> Series and parallel circuits Component characteristics Resistance Voltage equation Charge equation</p>	<p><b>Solids, liquids and gases:</b> Particle arrangements Changes of state Brownian motion Kelvin temperature scale Boyles law Pressure law</p> <p><b>Magnetism and Electromagnetism:</b> Magnetic field lines and patterns Electromagnets Motor effect Electromagnetic induction Transformers</p>	<p><b>PH1.1 BASIC PHYSICS</b></p> <p><b>PH1.2 KINEMATICS</b></p> <p><b>PH1.3 ENERGY CONCEPTS</b></p> <p><b>PH1.4 CONDUCTION OF ELECTRICITY</b></p> <p><b>PH1.5 RESISTANCE</b></p> <p><b>PH1.6 D.C. CIRCUITS</b></p>	<p><b>PH4.3 THERMAL PHYSICS</b></p> <p><b>PH4.4 ELECTROSTATIC AND GRAVITATIONAL FIELDS OF FORCE</b></p> <p><b>PH4.5 APPLICATION TO ORBITS IN THE SOLAR SYSTEM AND THE WIDER</b></p> <p><b>PH5.1 CAPACITANCE</b></p> <p><b>PH5.2 B-FIELDS</b></p> <p><b>PH5.4 RADIOACTIVITY AND RADIOISOTOPES</b></p>
Spring Term	<p><b>Waves:</b> Diffraction Electromagnetic spectrum</p> <p><b>Energy:</b> Types of energy Efficiency Conduction, convection and radiation Insulation</p> <p><b>Solids, liquids and gases:</b> Particle arrangements Changes of state</p>	<p><b>Light and sound:</b> Reflection Refraction Total internal reflection Analogue and digital Sound waves Oscilloscopes</p> <p><b>Radioactivity:</b> Atomic structure Ionising radiation Nuclear equations Half life Uses and dangers of ionising radiation</p> <p><b>Work and power:</b> Work done equation Gravitational potential energy Kinetic energy Energy interchanges Power equation</p>	<p><b>Mock Exam</b></p> <p><b>Radioactivity:</b> Structure of the atom Types of ionising radiation Nuclear equations Half life Uses of radiation Nuclear fission</p> <p><b>Forces and Motion:</b> Momentum Review 3<sup>rd</sup> form material</p>	<p><b>PH2.1 WAVES</b></p> <p><b>PH2.2 REFRACTION OF LIGHT</b></p> <p><b>PH2.3 PHOTONS</b></p> <p><b>PH2.4 MATTER, FORCES AND THE UNIVERSE</b></p> <p><b>PH2.5 USING RADIATION TO INVESTIGATE STARS</b></p> <p><b>PH3 PRACTICAL EXAM</b></p>	<p><b>PH5.3 ELECTROMAGNETIC INDUCTION</b></p> <p><b>PH5.5 NUCLEAR ENERGY</b></p> <p><b>PH5 OPTIONS</b></p> <p><b>PH6 PRACTICAL EXAM</b></p>
Summer Term	<p><b>Solids, liquids and gases:</b> Pressure Density</p> <p><b>End of year exams</b></p> <p><b>Practical investigations:</b></p>	<p><b>Magnetism:</b> Attraction and repulsion Magnetic field shapes Magnetic materials</p> <p><b>Electromagnetism:</b> Construction of electromagnets Electromagnetic field shapes Fleming's left hand rule Motors and speakers</p> <p><b>End of year exams</b></p> <p><b>Practical investigations:</b></p>	<p><b>Revision</b></p> <p><b>IGCSE exams</b></p>	<p><b>REVISION</b></p> <p><b>AS EXAMS</b></p> <p><b>PH4.1 VIBRATIONS</b></p> <p><b>PH4.2 MOMENTUM CONCEPTS</b></p>	<p><b>REVISION</b></p> <p><b>PH4 &amp; 5 EXAMS</b></p>

\* New Fourth Form scheme from Sept 2014. The order of lessons have been adjusted for the new 4<sup>th</sup> form which is why the same topics appear in 4<sup>th</sup> and 5<sup>th</sup> form columns. The 5<sup>th</sup> form scheme will continue to run as it has done previously.