



Curriculum Plan year 10 physics combined curriculum  
2016

Autumn Term	Spring Term	Summer Term
<p><u>Matter</u> 4.6.1.1 How to determine the density of a material. <b>Required practical: Use appropriate apparatus to make and record the measurements needed to determine the densities of regular and irregular solid objects and liquids.</b> 4.6.1.1 The particle model of matter. 4.6.1.2 Changing the state of materials. 4.6.2.1 Internal energy of materials. 4.6.2.2 Specific heat capacity. 4.3.2.3 Changes of heat and specific latent heat 4.3.3.1 Particle motion in gases <b>Required practical: investigation to determine the specific heat capacity of one or more materials.</b></p>	<p><u>Electricity</u> 4.4.1.1 How to draw circuit symbols. 4.4.1.2 Making an electric current flow. 4.4.1.3 How the resistance of a component affects the current flowing through it. <b>Required practical activity: use circuit diagrams to construct appropriate circuits to investigate the I-V characteristics of a variety of circuit elements, including a filament lamp, a diode and a resistor at constant temperature.</b></p>	<p><u>Atomic structure and radioactivity</u> 4.7.1.1 The size and structure of an atom. 4.7.1.2 How to represent atoms. 4.7.1.3 Scientific models of the atom and how these models have changed. 4.7.2.1 The radioactive decay of an unstable element and radiation. Alpha, beta and gamma. 4.7.2.2 Nuclear decay equations for alpha and beta decay. 4.7.2.3 The randomness of radioactive decay. 4.7.2.3 Determination of half-life using calculations and graphical methods. 4.7.2.4 How to handle radioactive sources safely to avoid contamination. 4.7.2.4 The process and uses of irradiation.</p>
<p><b>HALF TERM</b></p>		
<p><u>Energy</u> 4.1.1.1 Energy stores and systems 4.1.1.2 Changes in energy 4.1.1.3 Energy changes in systems 4.1.1.4 Power 4.1.2 Conservation and dissipation of energy 4.1.2.1 Energy transfers in a system 4.1.2.2 Efficiency 4.1.3 National and global energy resources  <b>Required practical Investigate the effectiveness of different materials as thermal insulators and the factors that may affect the thermal insulation properties of a material.</b></p>	<p><b>Required practical activity: Use circuit diagrams to set up and check appropriate circuits to investigate the factors affecting the resistance of electrical circuits.</b> 4.4.1.4 Ohm's law and the conditions needed for it to apply. 4.4.2 Resistors in circuits 4.4.3.1 Alternating and direct current. 4.4.3.2 The name, colour and function of each wire in a three core electrical cable. Electric shocks 4.4.3.3 Earthing, fuses and circuit breakers as safety measures with electrical circuits. 4.4.4.1 Electrical power and how it is calculated. The national Grid</p>	<p>CONTINUED</p>

Bishop Milner Catholic College

