

## UoB School Curriculum Outline –PHYSICS 2017/2018

	Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Yr 7	<p><b>Core skills</b> Carry out practical experiments independently and safely, recording your results in a table and drawing graphs.</p>	<p><b>Electricity</b> Connect electrical components in series and parallel, and draw circuit diagrams. Describe the motion of electrons (current) in different circuits.</p> <p><b>Energy</b> Identify the different ways energy is stored, and the ways this can be changed.</p>	<p><b>Energy</b> (continued) Measure how powerful you, and various appliances are.</p> <p><b>Thermal physics</b> Investigate how objects change when they are heated, and how heat energy can be transferred.</p>	<p><b>Practical project</b> Tour the school's rooftop solar panels and heating systems. Investigate a key design feature over several weeks in the lab, just as a real scientist or engineer would. Prepare a professional written report and presentation.</p>	<p><b>Practical project</b> (continued)</p>	<p><b>Space physics</b> Discover the past and future of the solar system and Universe, the causes of days and seasons, and how humans have explored space.</p>
Yr 8	<p><b>Wave properties &amp; sound</b> Learn how sound and other waves travel, how they are detected and how we can measure them. Discover what makes different sounds sound different from each other.</p>	<p><b>Light &amp; the electromagnetic (EM) spectrum</b> Investigate shadows, reflection and refractions, and draw ray diagrams. Discover types of light that are invisible to humans, such as UV and microwaves.</p>	<p><b>Atoms and static electricity</b> Learn about the arrangement of electrons, protons and neutrons inside atoms. Make objects move and levitate without touching, and explain the physics behind these tricks. Experience mild electric shocks from a Van de Graaf generator, if you dare!</p>	<p><b>Magnetism &amp; electromagnetism</b> Build your own compass, and learn about the Earth's magnetic field. Investigate the magnetic effects of electricity, and how this is used in everyday devices such as bells, motors and electronic locks.</p>	<p><b>Forces</b> Identify the types of force (such as friction and tension) acting in a range of situations. Draw force diagrams. Calculate the resultant (overall) force acting on an object.</p>	<p><b>Elasticity and pressure</b> In this highly practical topic, you will perform several experiments investigating the behaviour of rubber bands and springs, and understanding why wearing different shoes affects how easily you sink in mud!</p> <p><i>(NB, in 2018, year 8 will study Space this half term)</i></p>
Yr 9	<p><b>Maths for GCSE Physics</b> Develop the calculation, algebra and graphing skills necessary to confidently and successfully tackle GCSE Physics.</p>	<p><b>Motion</b> Describe motion using precise Physics language. Measure and calculate speed and acceleration in a range of situations, including the use of light gates with dataloggers. Analyse motion graphs.</p>	<p><b>Newton's laws</b> Apply Newton's famous laws to a range of situations, using your knowledge of forces and motion. Describe the motion of a skydiver and a care doing an emergency stop in more detail.</p>	<p><b>Circuit electricity</b> Develop a more advanced understanding of electricity, experiment with light and temperature sensors, and find out about the ingenious safety features in our homes.</p>	<p><b>Circuit electricity</b> (continued)</p>	<p><b>Introduction to GCSE required practicals</b> You will complete your first real GCSE required practical and write-up, with plenty of support.</p>
Yr 10	<p><b>AQA Trilogy GCSE Science or AQA GCSE Physics, section 4.1 energy</b></p>	<p><b>4.3 particle model of matter</b></p>	<p><b>4.4 atomic structure</b></p>	<p><b>4.2 electricity</b></p>	<p><b>4.2 electricity</b> (continued)  <b>Revision</b></p>	<p><b>4.5 forces</b></p>

<b>Yr 11</b>	<b>4.5 forces, continued</b>		<b>4.6 Waves</b>	<b>4.7 magnetism &amp; EM</b>  <b>4.8 space physics</b> (only for separate science students)	<b>Revision</b>	
<b>Yr 12</b>	<b>Electricity</b>		<b>Waves</b>	<b>Quantum physics</b>	<b>Revision</b>	<b>Simple Harmonic Motion</b>
	<b>Nuclear &amp; particle physics</b>	<b>Statics</b> (forces on stationary objects)	<b>Kinematics</b> (motion)  <b>Dynamics</b> (forces on accelerating objects)	<b>Energy, momentum &amp; materials</b>	<b>Revision</b>	<b>Circular motion</b>
<b>Yr 13</b>	<b>Thermal physics</b>	<b>Thermal &amp; short option</b>	<b>Option topic</b>	<b>Nuclear physics</b>	<b>Revision</b>	
	<b>Gravitational fields</b>  <b>Electric fields</b>	<b>Electric fields</b> (continued)  <b>Capacitors</b>	<b>Magnetic fields</b>  <b>Electromagnetic induction</b>	<b>EM induction</b> (continued)  <b>Alternating currents</b>	<b>Revision</b>	