

### Year 11 Curriculum Map : Physics

<b>Assessment Objectives</b>	<p><b>AO1</b> - Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures (40%)</p> <p><b>AO2</b> - Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. (40%)</p> <p><b>AO3</b> - Analyse information and ideas to: interpret and evaluate; make judgements and draw conclusions; develop and improve experimental procedures. (20%)</p>
<b>Unit Length</b>	<p><b>Topic:</b> – Forces 3 – 14/19 lessons. (Autumn term)</p>
<b>Key Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Introduction to forces</li> <li>2. Resultant forces</li> <li>3. Vector diagrams (higher and separate)</li> <li>4. Newton’s laws</li> <li>5. Weight, mass, and gravity</li> <li>6. Work done</li> <li>7. Multiple equations (higher and separate)</li> <li>8. Progress assessment</li> <li>9. Reteach and DIRT</li> <li>10. Speed and acceleration</li> <li>11. Motion graphs</li> <li>12. Acceleration required practical</li> <li>13. SUVAT</li> <li>14. Stopping distances</li> <li>15. Momentum (higher and sperate)</li> <li>16. Changes in momentum (separate only)</li> <li>17. Spring constant required practical</li> <li>18. Moments (separate only)</li> <li>19. Pressure (separate only)</li> <li>20. EOU assessment</li> <li>21. Reteach and DIRT.</li> </ol>
<b>Prior knowledge</b>	<p><b>Year 7 – Forces 1</b> All content</p> <p><b>Year 9 – Forces 2</b> All content</p>
<b>CEIAG Specific careers links</b>	<p>Crash scene investigator. Rollercoaster designer. Structural engineer.</p>

	Police officer.
<b>RRSA</b>	Article 14: Freedom of thought, belief and religion Article 24: Health and the Health services Article 28: Right to education Article 29: Goals of education Article 27: Adequate standard of living
<b>Cross curricular links</b>	Numeracy – Equations of motion, gradients, and area under the graph. Technology – CAD/CAM design. Moments, gears and levers.
<b>Useful websites/videos</b>	<a href="https://www.youtube.com/playlist?list=PL9louNCPbCxUrQkFLoPwB67nDbhw2NfAO">https://www.youtube.com/playlist?list=PL9louNCPbCxUrQkFLoPwB67nDbhw2NfAO</a> – Free science lessons <a href="https://classroom.thenational.academy/units/forces-6562">https://classroom.thenational.academy/units/forces-6562</a> - Oak National Academy
<b>Wider Reading</b>	The Highway code Forces of nature, Brian Cox.
<b>Literacy Programme</b>	<ul style="list-style-type: none"> <li>• Decode it NOW</li> <li>• Guided practice/model answers</li> <li>• Sentence Starters</li> <li>• Writing strategies</li> </ul>
<b>Independent Learning Tasks</b>	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice questions Selective reading activity Seneca quiz ILT Exam practice questions OAK National Academy/ Free science lessons revision

<b>Unit Length</b>	<b>Topic: P6 - Waves 3</b> (Autumn/Spring term)
<b>Key Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Transverse and longitudinal waves</li> <li>2. Wave properties</li> <li>3. The wave speed equation</li> <li>4. Wave speed required practical</li> <li>5. Sound (separate only)</li> <li>6. Reflection (separate only)</li> <li>7. Progress assessment</li> <li>8. Reteach and DIRT</li> <li>9. Ultrasound (separate only)</li> <li>10. Electromagnetic waves</li> <li>11. Uses of electromagnetic waves</li> <li>12. Radio and microwaves (higher and separate)</li> <li>13. Infrared required practical</li> <li>14. Visible light (separate only)</li> <li>15. Black body radiation (separate only)</li> <li>16. Lenses (separate only)</li> </ol>
<b>Prior knowledge</b>	<p><b>Year 8 – Waves 1</b> All content</p> <p><b>Year 9 – Waves 2</b> All content</p>
<b>CEIAG Specific careers links</b>	<p>Radiographer</p> <p>Nuclear physicist</p> <p>Thermal insulation surveyor</p> <p>Seismologist</p> <p>Radiotherapist</p>
<b>RRSA</b>	<p>Article 14: Freedom of thought, belief and religion</p> <p>Article 24: Health and the Health services</p> <p>Article 28: Right to education</p> <p>Article 29: Goals of education</p> <p>Article 27: Adequate standard of living</p>
<b>Cross curricular links</b>	Numeracy – Equations of motion, gradients, and area under the graph.

<b>Useful websites/videos</b>	<a href="https://www.youtube.com/watch?v=0f5iYCNCnow&amp;list=PL9IouNCPbCxX1-0Nr5_bMDJnN-9RqMuA6">https://www.youtube.com/watch?v=0f5iYCNCnow&amp;list=PL9IouNCPbCxX1-0Nr5_bMDJnN-9RqMuA6</a> – Free science lessons. <a href="https://classroom.thenational.academy/units/waves-4cef">https://classroom.thenational.academy/units/waves-4cef</a> - Oak National Academy
<b>Wider Reading</b>	Forces of nature - Brian Cox Waves – National Geographic
<b>Literacy Programme</b>	<ul style="list-style-type: none"> <li>• Decode it NOW</li> <li>• Guided practice/model answers</li> <li>• Sentence Starters</li> <li>• Writing strategies</li> </ul>
<b>Independent Learning Tasks</b>	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice questions Seneca quiz ILT Exam questions.

<b>Unit Length</b>	<b>Topic:</b> P7 – Magnetism – 7/12 lessons (Spring/summer term)
<b>Key Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Magnets</li> <li>2. Magnetic fields</li> <li>3. Electromagnetism</li> <li>4. Electromagnets investigation</li> <li>5. Electromagnets results</li> <li>6. The motor effect (higher and separate only)</li> <li>7. Magnetic flux density (higher and separate only)</li> <li>8. The generator effect (separate only)</li> <li>9. Magnetic appliances (separate only)</li> <li>10. Transformers (separate only)</li> <li>11. End of Unit Assessment</li> <li>12. Reteach and DIRT</li> </ol>
<b>Prior knowledge</b>	<b>Year 7 – Electricity and magnetism 1</b> All content <b>Year 8 – Electricity and magnetism 2</b> All content
<b>CEIAG Specific careers links</b>	Semiology Electricity generation and National Grid

<b>RRSA</b>	<p>Article 14: Freedom of thought, belief and religion</p> <p>Article 24: Health and the Health services</p> <p>Article 28: Right to education</p> <p>Article 29: Goals of education</p> <p>Article 27: Adequate standard of living</p>
<b>Cross curricular links</b>	Numeracy – Multiple equations and unit conversions.
<b>Useful websites/videos</b>	<p><a href="https://classroom.thenational.academy/units/magnetism-bf8d">https://classroom.thenational.academy/units/magnetism-bf8d</a> - Oak National Academy</p> <p><a href="https://www.youtube.com/watch?v=sRyy7-jEu3Q&amp;list=PL9louNCPbCxVean2cWoznpfC5PxYbs9TX">https://www.youtube.com/watch?v=sRyy7-jEu3Q&amp;list=PL9louNCPbCxVean2cWoznpfC5PxYbs9TX</a> – Free science lessons</p>
<b>Wider reading</b>	The importance of the Earth's magnetic field – NASA.Gov
<b>Literacy Programme</b>	<ul style="list-style-type: none"> <li>• Decode it NOW</li> <li>• Guided practice/model answers</li> <li>• Sentence Starters</li> </ul> <p>Writing strategies</p>
<b>Independent Learning Tasks</b>	<p>Mind-map revision homework</p> <p>Retrieval practice homework</p> <p>Knowledge Organiser practice questions</p> <p>Selective reading activity</p> <p>Seneca quiz ILT</p> <p>Exam practice questions</p> <p>OAK National Academy/ Free science lessons revision</p>

<b>Unit Length</b>	<b>Topic:</b> P8 – Space – 4 lessons. (Spring/summer term)
<b>Key Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Solar systems and galaxies</li> <li>2. Life cycle of a star</li> <li>3. Red- shift</li> <li>4. Orbits</li> <li>5. Big bang theory</li> <li>6. Progress check and reteach</li> </ol>
<b>Prior knowledge</b>	<p><b>Year 7 Forces 1</b></p> <ul style="list-style-type: none"> <li>- The solar system, weight mass and gravity</li> </ul> <p><b>Year 9 Forces 2</b></p> <ul style="list-style-type: none"> <li>- Pressure in space</li> </ul> <p><b>Year 11 Forces 3</b></p> <ul style="list-style-type: none"> <li>- Acceleration and velocity</li> </ul> <p><b>Year 11 Waves 3</b></p> <ul style="list-style-type: none"> <li>- Wavelengths of light</li> </ul>
<b>CEIAG Specific careers links</b>	<p>Astronaut</p> <p>Materials specialist</p> <p>Research and development of pressurised materials</p> <p>Aeronautical engineer</p>
<b>RRSA</b>	<p>Article 14: Freedom of thought, belief and religion</p> <p>Article 24: Health and the Health services</p> <p>Article 28: Right to education</p> <p>Article 29: Goals of education</p> <p>Article 27: Adequate standard of living</p>
<b>Cross curricular links</b>	<p>Numeracy –unit conversions.</p> <p>RE – The origins of the universe.</p>
<b>Useful websites/videos</b>	<p><a href="https://classroom.thenational.academy/units/space-physics-only-a558">https://classroom.thenational.academy/units/space-physics-only-a558</a> - Oak National Academy</p> <p><a href="https://www.youtube.com/watch?v=mndRVjMovQk&amp;list=PL9IouNCPbCxUGMXZ4ubg_ttcNboQa-Ptl">https://www.youtube.com/watch?v=mndRVjMovQk&amp;list=PL9IouNCPbCxUGMXZ4ubg_ttcNboQa-Ptl</a> – Free science lessons.</p>
<b>Wider reading</b>	<p>The planets – Brian Cox</p> <p>The Martian – Andy Wier</p>

	Astrophysics for people in a hurry – Neil Degrasse Tyson Universe – Brian Cox
<b>Literacy Programme</b>	<ul style="list-style-type: none"><li>• Decode it NOW</li><li>• Guided practice/model answers</li><li>• Sentence Starters</li></ul> Writing strategies
<b>Independent Learning Tasks</b>	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice questions Selective reading activity Seneca quiz ILT