






YEAR 9 CURRICULUM INFORMATION – Physics

	Spring 1	Spring 2
What will students be learning?	<p><u>Conservation and Dissipation of Energy</u></p> <ul style="list-style-type: none"> • Changes in Energy Stores & Conservation of Energy • Energy and Work • Gravitational Potential Energy Stores • Kinetic and Elastic Stores • Energy Dissipation & Efficiency • Electrical Appliances • Energy and Power 	<p><u>Energy Resources</u></p> <ul style="list-style-type: none"> • Energy Demands (Non-Renewables) • Energy From Wind, Water & The Sun and The Earth (Renewables) • Energy and The Environment • Big Energy Issues
How will students be assessed?	<ol style="list-style-type: none"> 1. Milestone test at the end of the topic 2. In-class formative review each lesson 	<ol style="list-style-type: none"> 1. Milestone test at the end of the topic 2. In-class formative review each lesson
Literacy – What keywords will be taught?	Kinetic, velocity, elastic, potential, chemical, nuclear, gravitational, conservation, transfer, efficiency, mass, thermal, work done	Geothermal, pumped storage, hydroelectric, fossil fuel, nuclear fuel, renewable, non-renewable, carbon capture & storage, solar photovoltaic, base load, peak demand, start-up time
What employability skills are being developed?	<ul style="list-style-type: none"> • Numeracy (calculating energy levels for gravitational potential, work done, kinetic and elastic stores) • Literacy (logical description of energy transfers in systems with multiple components) • Extended writing (discussing how increased efficiency of appliances affects pay-back time for more expensive purchases) 	<ul style="list-style-type: none"> • Problem solving (finding solutions to intermittency issues associated with renewable energy sources) • Numeracy (calculating energy production from banks of renewable sources - i.e. wind turbines) • Literacy (reading about processes of generating electricity using various methods) • Extended writing (comparing and contrasting renewable Vs. non-renewable sources)

<p>Wider Curriculum Links?</p>	<ul style="list-style-type: none"> • PE / sport science – links of work done in exercises to calculating calories burned during an exercise programme. • Engineering – foundational knowledge and career links to engineering generally, but specifically mechanical engineering. • Business – principles of increasing efficiency to reduce costs. 	<ul style="list-style-type: none"> • Chemistry – combustion reactions driving energy release. • Global warming / climate crisis – the concepts covered here are given as the foundational basis of GCSE learning and apply directly to understanding the causes, consequences and remedies for the global climate crisis and global warming generally. • Engineering principles – basics of thermodynamics with heat engines producing motion and EM generation.
<p>What useful websites are there for this topic?</p> <p>Click links for more info</p>	<div style="display: flex; justify-content: space-around; align-items: center; text-align: center;"> <div data-bbox="689 499 835 632">  <p>Free Science Lessons</p> </div> <div data-bbox="992 499 1120 632">  <p>Primrose Kitten</p> </div> <div data-bbox="1216 491 1357 632">  <p>GCSE Pod</p> </div> <div data-bbox="1433 499 1568 632">  <p>BBC Bitesize</p> </div> <div data-bbox="1686 499 1832 632">  <p>Oak National Academy <i>Select KS4 Science (Triple)</i></p> </div> </div>	
<p>What wider reading could be done for this topic?</p> <p>Click links for more info</p>	<p>Textbook (<i>separate sciences</i>): AQA GCSE Physics Student Book (3rd Ed)</p> <p>Textbook (<i>combined science</i>): AQA GCSE Physics for Combined Science (Trilogy) Student Book (3rd Ed)</p> <p>Revision Guide (<i>separate sciences</i>): AQA GCSE 9-1 Physics All-in-One Complete Revision and Practice (<i>available on ParentPay</i>)</p> <p>Revision Guide (<i>combined science</i>): AQA GCSE 9-1 Combined Science Higher All-in-One Complete Revision and Practice (<i>available on ParentPay</i>)</p>	
<p>What else can students be doing independently to develop their understanding of this topic?</p> <p>Click links for more info</p>	<p>Exam Question Practice (<i>matches the revision guides on ParentPay</i>): Collins AQA GCSE 9-1 Physics Workbook</p> <p>Exam Question Practice (<i>Separate Higher Tier</i>): CGP GCSE Physics AQA Exam Practice Workbook - Higher</p> <p>Exam Question Practice (<i>Combined Higher Tier</i>): CGP GCSE Combined Science AQA Exam Practice Workbook – Higher</p> <p>Exam Question Practice (<i>Separate Foundation Tier</i>): CGP GCSE Physics AQA Exam Practice Workbook - Foundation</p> <p>Exam Question Practice (<i>Combined Foundation Tier</i>): CGP GCSE Combined Science AQA Exam Practice Workbook - Foundation</p>	