

Year 7: Curriculum Map : Physics			
	Autumn	Spring	Summer
Assessment Objectives	AO1 - Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures (40%) AO2 - Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. (40%) AO3 - Analyse information and ideas to: interpret and evaluate; make judgements and draw conclusions; develop and improve experimental procedures. (20%)		
Unit Length	Topic: P1 Forces 1 – 17 lessons	Topic: P2 Energy 2 – 14 lessons.	Topic: P3 Electricity and Magnetism – 15 lessons
Key Learning Outcomes	1) What are forces? 2) What are the different variables and why are they important? 3) How do we display different types of data? 4) What would happen to an object when balanced or unbalanced forces are exerted on it? 5) Progress assessment 6) Reteach and DIRT 7) Who was Isaac Newton and how did he contribute to Physics? 8) What is gravity and how does it influence an object's weight? 9) What is our solar system? 10) What is speed and how is it calculated? 11) What is acceleration and how is it calculated? 12) How do we interpret distance-time graphs? 13) Revision 14) End of Unit assessment. 15) Reteach and DIRT.	1) What are the different energy stores? 2) How is energy transferred from one store to the other? 3) How do we convert the joule into kilojoules e.t.c? 4) How much energy is found in our food? 5) How can we plan a healthy diet which contains the right amount of nutrients and calories? 6) What are the impacts of having too much energy in the food we eat? 7) Progress assessment 8) Reteach and DIRT 9) What is the difference between useful and wasted energy? 10) How can energy be transferred via conduction? 11) How can energy be transferred via convection? 12) Revision 13) End of Unit assessment 14) Reteach and DIRT.	1) What is the difference between conductors and insulators? 2) What are electrical circuits, and what is the difference between series and parallel circuits? 3) What is current, and how does it behave differently in series and parallel circuits? 4) What is potential difference? 5) How does potential difference behave differently in series and parallel circuits? 6) Progress assessment 7) Reteach and DIRT 8) What are magnets? 9) How can we plot magnetic field lines? 10) How can we create an electromagnet? 11) How can we change the strength of electromagnets? 12) How can we test electromagnets and their strength? 13) Revision 14) End of Unit assessment 15) Reteach and DIRT
Prior knowledge	SCIENCE Working Scientifically Skills:	1/2/3b) Processes that involve energy transfer: change motion, dropping an object, completing an	Electric Current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and as flow of charge

	<p>S1: Hypothesising: use scientific knowledge to predict the trend in results incline or mass affects the speed of an object.</p> <p>Safety: risk assessment made</p> <p>S2: Observations: collecting reliable data, using apparatus given</p> <p>S3: Present data in a suitable form i.e. tabulate data, line graph Identify patterns in data and write relevant conclusions.</p> <p>S4: Use peers data to compare against for evaluation of data.</p> <p>Scientific content: <u>YEAR 5</u> Is able to describe how some forces act upon stationary and moving objects (e.g. friction, air resistance, water resistance etc.) Is beginning to understand how levers, pulleys and gears allow a small force to have a greater effect.</p> <p><u>YEAR 3</u> Can demonstrate an understanding of how different surfaces affect how objects move across them. Demonstrates an understanding of friction as a force acting between two objects in contact and magnetic force as a force acting at a distance.</p> <p><u>YEAR 2</u> Shows an understanding in the difference between push and pull forces. Is able to describe the direction of</p>	<p>electrical circuit, stretching a spring, metabolism of food, burning fuels</p> <p>3/4) Comparing the starting with the final conditions of a system and describing increases and decreases in the amount of energy associated with movements, temperatures, changes in positions in a field, in elastic distortions and in in chemical compositions.</p> <p>Using physical processes and mechanisms, rather than energy, to explain the intermediate steps that bring about such changes</p>	<p>Magnetic poles, attraction and repulsion Magnetic fields by plotting with compass, representation by field lines Earth's magnetism, compass and navigation The magnetic effect of a current, electromagnets, D.C. motors (principles only)</p>
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	<p>movement associated with push and pull forces. Shows an understanding of the effect of gravity on objects. Is beginning to understand friction as a force that acts to slow down a moving object.</p> <p>Maths: Using units, rearranging equations and graph skills</p>		
CEIAG Specific careers links	<p>Scientific research Engineering Architecture Astrophysicist</p>	<p>Renewable energy research Electrician Dietician</p>	<p>Electrician Engineer</p>
RRSA	<p>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</p>	<p>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</p>	<p>Article 14: Freedom of thought, belief and religion Article 28: Right to education Article 29: Goals of education Article 27: Adequate standard of living</p>
Cross curricular links	<p>Maths – speed distance time graphs</p>	<p>Numeracy- Maths Energy in food – food technology</p>	<p>Conductors and insulators – technology Circuits – PE Numeracy 0 Maths</p>
Useful websites/ videos	<p>https://www.bbc.co.uk/bitesize/topics/z4brd2p/articles/zs3896f - introduction to forces</p> <p>https://classroom.thenational.academy/units/forces-and-motion-b426 - oak academy forces lessons</p>	<p>https://www.bbc.co.uk/bitesize/topics/zc3g87h - introduction to energy</p> <p>https://classroom.thenational.academy/units/energy-0b08 - oak academy energy lessons</p>	<p>https://www.bbc.co.uk/bitesize/topics/zgy39j6 - introduction to electricity?</p> <p>https://classroom.thenational.academy/units/electricity-and-magnetism-ab64 - oak academy electricity lessons</p>

Wider Reading	Reading: https://mathshistory.st-andrews.ac.uk/Biographies/Newton/ - who is Isaac Newton? https://news.softpedia.com/news/Why-Cheetah-is-the-Fastest-Land-Animal-69322.shtml Spine of a Cheetah https://www.edgarsnyder.com/car-accident/cause-of-accident/cell-phone/cell-phone-statistics.html - Car accident	https://healthyeating.sfgate.com/benefits-eating-healthy-vs-unhealthy-7680.html - healthy vs unhealthy eating https://www.energy-uk.org.uk/energy-industry/renewable-generation.html#:~:text=Renewables%20produce%20more%20than%2020,strategy%20to%20reduce%20carbon%20emissions. – renewable energy in the UK	https://www.designnews.com/electronics/15-semiconductor-electronic-innovations-2021 - innovations with electronics and conductors.
Literacy Programme	<ul style="list-style-type: none"> • Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies 	<ul style="list-style-type: none"> • Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies 	<ul style="list-style-type: none"> • Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies
Independent Learning Tasks	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice Questions. Selective reading activity. Points grid ILT.	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice Questions. Selective reading activity. Points grid ILT.	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice Questions. Selective reading activity. Points grid ILT.