

Culcheth High School Key Stage 4 Curriculum Map 2023 - 2024

Subject: Physics Year 11

Exam Board: AQA




**CULCHETH
HIGH SCHOOL**
THE BEST THAT WE CAN BE

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Key Concepts	Topic 5 and 6 Forces and Waves	Topic 6 and 7 Waves, magnetism and electromagnets	Topics 7 magnetism and electromagnets	Topics 7 magnetism and electromagnets Topic 8 – Space (triple only)	Revision	Revision
Themes	<p>Topic 5 - Forces</p> <ul style="list-style-type: none"> Forces and motion Momentum <p>Topic 6 – Waves</p> <ul style="list-style-type: none"> Waves and their properties Wave speed Reflection Electromagnetic waves and, properties and uses Refraction <p>Triple Science also covers</p> <ul style="list-style-type: none"> Sound waves Earthquakes Ultrasound Refractions Lenses 	<p>Topic 6 – Waves</p> <ul style="list-style-type: none"> Waves and their properties Wave speed Reflection Electromagnetic waves and, properties and uses Refraction <p>Topic 7</p> <ul style="list-style-type: none"> Permanent and induced magnets Electromagnetism Motors Flemings left-hand rule <p>Triple Science also covers</p>	<p>Topic 7</p> <ul style="list-style-type: none"> Permanent and induced magnets Electromagnetism Motors Flemings left-hand rule <p>Triple Science also covers</p> <ul style="list-style-type: none"> Speakers and microphones Induced potential, transformers and the national grid <p>Required practicals will be covered within the lesson content</p>	<p>Topic 7</p> <ul style="list-style-type: none"> Permanent and induced magnets Electromagnetism Motors Flemings left-hand rule <p>Topic 8 - triple only</p> <ul style="list-style-type: none"> Solar system Life cycle of a star Centre of mass Centripetal force Red shift Big bang theory <p>Triple Science also covers</p> <ul style="list-style-type: none"> Speakers and microphones 	Revision	Revision

	<ul style="list-style-type: none"> • Visible light • Black body radiation • Moments and levers • Pressure • Changes in momentum <p>Required practicals will be covered within the lesson content</p>	<ul style="list-style-type: none"> • Sound waves • Earthquakes • Ultrasound • Refractions • Lenses • Visible light • Black body radiation • Speakers • Induced potential, transformers and the national grid <p>Required practicals will be covered within the lesson content</p>		<ul style="list-style-type: none"> • Induced potential, transformers and the national grid <p>Required practicals will be covered within the lesson content</p>		
<p>Writing whole school literacy focus</p>	<p>Scientific writing:</p> <ul style="list-style-type: none"> • Writing a plan • Drawing a conclusion • Evaluating a method • Presenting findings • Spelling and using scientific vocabulary in the correct context • Understanding the different Prefixes and Suffixes of scientific vocabulary • Use of capital letters and full stops 					
<p>Spiritual, Moral, Social and Cultural theme (SMSC) Fundamental British Values</p>	<p>In Physics in Year 11 we deal with SMSC and British values in the following areas:</p> <ul style="list-style-type: none"> • Effects of global warming and evidence for global warming in terms of heat radiation • Stopping distances – consequences of poor driving and disregard for stopping distance. • Spiritual - Different viewpoints on the origins of the universe. • Spiritual - Awe and wonder moments across the Physics curriculum including learning about the theories of the universe, life cycle of stars, structure and make-up of atoms including fundamental particles. • Cultural - Theories of the universe, how did the universe begin? • Social - Students are taught to be respectful of all religions and faiths across all topics. For example when discussing the origins of the Universe. • Spiritual - Magnetism super example of invisible power. How does magnetism work? What are the limits, and why is it only between certain kinds of materials or is it • Social - EM spectrum uses and dangers of different radiations • The use of digital and analogue signal 					

	<ul style="list-style-type: none"> ● Radiation as a means of communication ● Spiritual - The impact of waves (Tsunamis and Earthquakes) in Physics ● Listening to the viewpoints of different scientific groups and politicians ● How science is portrayed in the media ● Science in the news ● Spiritual - Mass conservation. If there is conservation of mass, what happens to particles ● Spiritual - Electrical safety, respect for the amazing and terrible power of nature ● Spiritual - Conservation of energy. How (and why?) is there conservation of energy? What does this mean for nature? ● Spiritual – The Big Bang Theory 					
Key Assessment Foci, suggested Assessments and Feedback week	See QMA calendar	See QMA calendar	See QMA calendar	See QMA calendar		
Special Events		Moon Watch 11th November		13-22 nd March National Science and Engineering Week		
Possible Visits			Science Live Trip			
CEIAG - Possible Employer Engagement Activities	<p>Careers communication / Oracy</p> <ul style="list-style-type: none"> ● Research and presentation in Space topic (Autumn term 2) and Energy resources topic (summer term 2) ● QWC science exam questions ● Science skills sheets <p>Teamwork</p> <ul style="list-style-type: none"> ● Practicals ● Oracy presentations ● Range of group activities throughout course e.g. think pair share, snowballing, debating, project-based learning, talking triads, card sorts <p>Negotiation and persuasions</p> <ul style="list-style-type: none"> ● During practical activities and presentations <p>Problem solving – working individually and with others to find solutions to problems. E. g</p> <ul style="list-style-type: none"> ● Practical skills ● Data analysis, ● Comparison/Evaluate exam questions <p>Leadership</p> <ul style="list-style-type: none"> ● During practical activities and presentations <p>Organisation</p> <ul style="list-style-type: none"> ● Practical skills – planning, equipment list, implementation, time management ● Exam technique – time management ● Presentations – time management <p>Perseverance and motivation</p>					

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- Data analysis
 - Evaluate exam questions
 - Presentation
- Ability to work under pressure
- Timed activities
 - QMAs
 - PPE

AQA Exam Board – Triple Students will be awarded 3 separate numerical GCSE Science grades one for each Science. 6 exams 1r 45 mins long, 28 assessed pieces of practical work.

AQA Exam Board – Trilogy Students will be awarded 2 numerical GCSE Science grades based on an average of the 3 sciences e.g. 3,4 or 4,5. 6 exams 1r 15 mins long, 21 assessed pieces of practical work.