

Culcheth High School Key Stage 3 Curriculum Map 2023 - 2024

Science Year 8 Long Term Plan 2023-2024

25% Working Scientifically; 25% Biology, 25% Physics, and 25% Chemistry



	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Key Concepts	Recap – Kinetic theory and energy transfers. Convection, conduction, and radiation. Chemical reactions.	Chemical reactions. Food and digestion. Waves.	Waves. Environmental chemistry.	Environmental chemistry. Reproduction. Speed, sound, and the ear	Speed, sound, and the ear. Revision for end of year 8 QMA Sports Science.	Sports Science. Catalysts investigation, Ceramics, alloys, Polymers. Rocks
Themes	<p>Topic 1: Recap Kinetic theory, energy and energy transfers</p> <p>Topic 2: Thermal energy transfers Conduction, convection, radiation and static electricity.</p> <p>Topic 3: Chemical reactions Recap of atoms, elements and compounds, acids, alkalis, reactions of metals and reactivity series</p>	<p>Topic 3: Chemical reactions Recap of atoms, elements and compounds, acids, alkalis, reactions of metals and reactivity series</p> <p>Topic 4: Food and digestion Nutrients, balanced and unbalanced diet, digestive system and enzymes.</p> <p>Topic 5: Waves Reflection, refraction, colour, eye and lenses.</p>	<p>Topic 5: Waves Reflection, refraction, colour, eye and lenses.</p> <p>Topic 6: Environmental Chemistry Atmosphere, combustion, carbon cycle, fuels, alternative fuels and recycling.</p>	<p>Topic 7: Reproduction Reproductive systems, games, fertilisation, pregnancy and birth</p> <p>Topic 8: Speed, sound and the ear Speed, calculating speed using equations and graphs. Waves recap, sound waves, how the ear works and uses of sound waves.</p>	<p>Topic 8: Speed, sound and the ear Speed, calculating speed using equations and graphs. Waves recap, sound waves, how the ear works and uses of sound waves.</p> <p>Revision for End of year 8 QMA.</p>	<p>Topic 9: Sport Science The respiratory system, aerobic and anaerobic respiration, skeletal system, bones, muscles, biomechanics, effects of exercise on respiration and drugs. Fermentation, and factors that affect it.</p> <p>Topic 10: Catalysts, Composites, Alloys, Polymers and Rocks Catalysts investigation, composites, ceramics, alloys, polymers, and rocks.</p>
Writing Whole school literacy focus	<p>Scientific writing:</p> <ul style="list-style-type: none"> • Writing a plan, presenting findings, drawing a conclusion and evaluating a method • Spelling and using scientific vocabulary in the correct context • Understanding the different Prefixes and Suffixes of scientific vocabulary 					

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- Use of capital letters and full stops

This is broken down in the following way:

Experimental skills and investigations

- ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
- make predictions using scientific knowledge and understanding
- make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements

Analysis and evaluation

- apply mathematical concepts and calculate results
- present observations and data using appropriate methods, including tables and graphs
- interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
- present reasoned explanations, including explaining data in relation to predictions and hypotheses
- evaluate data, showing awareness of potential sources of random and systematic error
- identify further questions arising from their results

Measurement

- understand and use SI units and IUPAC (International Union of Pure and Applied Chemistry) chemical nomenclature
- Use simple equations to represent reactions

Spiritual, Moral,
Social and Cultural
theme (SMSC)
Fundamental British
Values

Social and cultural – how scientific ideas and evidence have changed people’s beliefs over time are discussed.

Social and cultural –ideas about nutrition and food have changed are discussed and the nutrients in food investigated.

Moral and social – how developments in technology have changed people life e.g. different types of glasses

Social and cultural – how technologies and ideas have changed the processes used in society e.g. pregnancy.

Moral and social – how developments in

Moral and social – how developments in technology have changed peoples lives e.g. hearing aids and ultrasound.

Moral – pupils will look the effects of different types of drugs

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			Social through the effects of global warming and alternative fuels	technology have changed peoples lives e.g. hearing aids and ultrasound.		
Key Assessment Focuses, Suggested Assessments and Feedback Week	<p>One QMt (quality marked test) in each unit. QMA assessments for Autumn and Spring term will be average QMt scores. One end of year QMA at the end of Summer term 1 assessing all year 7 content covered. After each QMt individual feedback will be given and pupils will have an opportunity to act on feedback, improve their answers and correct them with red pen.</p> <p>Skills sheets will be code marked by referring to success criteria. 2 stars and a wish will also be given as feedback. Pupils will respond in red pen. Educake and revision homework set throughout each topic. Assessments will be based on content all classes have covered in line with each other. See QMA calendar for specific dates.</p>					
Special Events	Moon watch 19 th October 2023			National Science and Engineering Week 11 th – 15 th March 2024		
CEIAG Employability Strands	<p>Careers communication / Oracy</p> <ul style="list-style-type: none"> • Research and presentation in environmental chemistry (Spring 1) and the sports science project (Summer 1/2) • Conclusions for science experiments – using evidence to draw a conclusion. • Science skills sheets – identifying and managing risks, systematically recording data and observations, writing a conclusion, evaluating evidence. <p>Team work</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>Negation 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>					

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- During practical activities and presentations

Organisation

- Practical skills – planning, equipment list, implementation, time management
- Exam technique – time management
- Presentations – time management

Perseverance and motivation

- Data analysis
- Evaluate exam questions
- Presentation

Ability to work under pressure

- Timed activities
- QMt's
- QMAs