Culcheth High School Key Stage 3 Curriculum Map 2023 - 2024
Science Year 7 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	Lab equipment and safety, Energy and kinetic theory.	Cells and forces.	Forces and solutions	Cell processes and circuits	Circuits and revision	Separation techniques, adaptation and race to the line project.
Themes	**<u>If 1 teacher:</u>** **Topic 1: Welcome to Science** Lab equipment and safety in the lab **Topic 2: Energy** Energy stores and transfers **Topic 3: Kinetic theory** Solids, liquids and gases, kinetic theory and changes of state, presenting ideas, gas pressure and diffusion. **<u>If 2 teachers:</u>** <u>Teacher 1:</u> **Topic 1: Welcome to Science** Lab equipment and safety in the lab **Topic 3: Kinetic theory** Solids, liquids and gases, kinetic theory and changes of state, presenting ideas, gas pressure and diffusion.	**<u>If 1 teacher:</u>** **Topic 4: Cells** Life processes, organ systems, cells, microscopes and diffusion. **Topic 5: Forces** Forces, resultant forces, weight, friction, friction investigation and upthrust. **<u>If 2 teachers:</u>** <u>Teacher 1:</u> **Topic 3: Kinetic theory** Solids, liquids and gases, kinetic theory and changes of state, presenting ideas, gas pressure and diffusion. **Topic 5: Forces**	**<u>If 1 teacher:</u>** **Topic 5: Forces** Forces, resultant forces, weight, friction, friction investigation and upthrust. **Topic 6: Elements, compounds and solutions** Elements, mixtures, compounds and solutions **<u>If 2 teachers:</u>** <u>Teacher 1:</u> **Topic 5: Forces** Forces, resultant forces, weight, friction, friction investigation and upthrust. **Topic 6: Elements, compounds and solutions**	**<u>If 1 teacher:</u>** **Topic 6: Elements, compounds and solutions** Elements, mixtures, compounds and solutions **Topic 7: Cell processes** Respiration, photosynthesis and plants- structures and reproduction. **<u>If 2 teachers:</u>** <u>Teacher 1:</u> **Topic 6: Elements, compounds and solutions** Elements, mixtures, compounds and solutions **Topic 8: Circuits**	**<u>If 1 teacher:</u>** **Topic 8: Circuits** Circuit symbols, circuits, current, potential difference, power, bills, magnets and electromagnets **Revision for end of Year 7 Exam** **<u>If 2 teachers:</u>** <u>Teacher 1:</u> **Topic 8: Circuits** Circuit symbols, circuits, current, potential difference, power, bills, magnets and electromagnets **Revision for end of Year 7 Exam**	**<u>If 1 teacher:</u>** **Topic 9: Separation techniques** Solutions, filtration, evaporation, distillation, chromatography **Race to the Line STEM Project** **Topic 10: Adaptation and Competition** Competition, adaptation, variation, food chains and webs, and bioaccumulation. **<u>If 2 teachers:</u>** <u>Teacher 1:</u> **Topic 9: Separation techniques** Solutions, filtration, evaporation, distillation, chromatography **Both teachers – Race to the Line STEM Project**

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	Teacher 2: **Topic 1: Welcome to science** – microscopes only **Topic 2: Energy** Energy stores and transfers	Forces, resultant forces, weight, friction, friction investigation and upthrust. Teacher 2: **Topic 4: Cells** Life processes, organ systems, cells, microscopes and diffusion.	Elements, mixtures, compounds and solutions Teacher 2: **Topic 4: Cells** Life processes, organ systems, cells, microscopes and diffusion.	Circuit symbols, circuits, current, potential difference, power, bills, magnets and electromagnets Teacher 2: **Topic 7: Cell processes** Respiration, photosynthesis and plants- structures and reproduction.	Teacher 2: **Topic 7: Cell processes** Respiration, photosynthesis and plants- structures and reproduction.	Teacher 2: **Topic 10: Adaptation and Competition** Competition, adaptation, variation, food chains and webs, and bioaccumulation. **Both teachers – Race to the Line STEM Project**
Writing Whole school literacy focus	Scientific writing: ● 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 ● 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					

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<table>
<tr><td></td><td colspan="6">

- 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

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<tr><td>Spiritual, Moral, Social and Cultural theme (SMSC) Fundamental British Values</td><td>Social and cultural – how scientific ideas and evidence have changed people's beliefs over time are discussed (kinetic theory)

Social and cultural – how technologies and ideas have changed the processes used in society e.g. use of different energy resources.</td><td>Social and cultural – how scientific ideas and evidence have changed people's beliefs over time are discussed (cell theory)</td><td>Moral and social – how developments in technology have changed people lives e.g. sports equipment</td><td>Social and cultural – how technologies and ideas have changed the processes used in society e.g. electricity.

Cultural - Through discussion surrounding plant reproduction and food security</td><td>Social and cultural – how technologies and ideas have changed the processes used in society e.g. electricity.

Social and cultural – how scientific ideas and evidence have changed people's beliefs over time are discussed.</td><td>Moral and Social through the effects of bioaccumulation surroundings microplastics and mercury.</td></tr>
<tr><td>Key Assessment Focuses, Suggested Assessments and Feedback Week</td><td colspan="6">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.
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.</td></tr>
<tr><td>Special Events</td><td>Moon watch 19th October 2023</td><td></td><td></td><td>National Science and Engineering Week 11th – 15th March 2024</td><td></td><td>1st and 2nd July 2024 Race to the Line Rocket Car Challenge</td></tr>
<tr><td>CEIAG Employability Strands</td><td colspan="6">Careers communication / Oracy

- Research and presentation in, topic 3 chemistry kinetic theory (autumn term 1), Race to the line (Summer 2)
- Conclusions for science experiments – using evidence to draw a conclusion.</td></tr>
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- Science skills sheets – identifying and managing risks, systematically recording data and observations, writing a conclusion, evaluating evidence.

Team work
- Practicals
- Oracy presentations
- Range of group activities throughout course e.g. think pair share, snowballing, debating, project based learning, talking triads, card sorts

Negation and persuasions
- During practical activities and presentations

Problem solving – working individually and with others to find solutions to problems. E.g.
- Practical skills
- data analysis,
- Comparison/Evaluate exam questions

Leadership
- 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