

Culcheth High School Key Stage 3 Curriculum Map 2021 - 2022

Subject: Science Year 9 Long Term Plan

Exam Board: 25% Working Scientifically; 25% Biology, 25% Physics, and 25% Chemistry



**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
			The transition to KS4 content occurs at this point. The 3 KS4 topics below will be taught on a rotation basis across the spring and summer terms.			
Key Concepts	Chemistry	Space and Investigation Skills	Topic 1 Cell Biology	Topic 1 – Atomic Structure	Topic1 - energy and 3 - particle model of matter	Topic1 - energy and 3 - particle model of matter
Themes	Acids, Alkalis and reactions of metals and the reactivity series	Space, Earth, Solar system, days, months, years, exploring space. Investigation skills – seed dispersal, resistance and fuels.	Topic 1 Cell structure Cell differentiation Microscopy Cell division Cell division Stem cell Transport in cells Culturing microorganism Required practicals will be covered within the lesson	Topic 1 Atoms, elements and compounds Development of the model of the atom Relative atomic mass Electronic structure Periodic table Group 0,1, 7 Properties of transition metals Required practicals will be covered within the lesson content	Topic 1 Energy stores and systems Efficiency Specific Heat capacity Topic 3 Density of materials Changes of state Specific latent heat Particle Motion in gases Triple science also covers Pressure Static electricity	Topic 1 Energy stores and systems Efficiency Specific Heat capacity Topic 3 Density of materials Changes of state Specific latent heat Particle Motion in gases Triple science also covers Pressure Static electricity

					Required practicals will be covered within the lesson content	Required practicals will be covered within the lesson content
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 ● Use of capital letters and full stops <p>This is broken down in the following way:</p> <p>Experimental skills and investigations</p> <ul style="list-style-type: none"> ● 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 <p>Analysis and evaluation</p> <ul style="list-style-type: none"> ● 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 <p>Measurement</p> <ul style="list-style-type: none"> ● 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	<p>Social and cultural – how scientific ideas and evidence have changed people's beliefs over time are discussed.</p>	<p>Spiritual – pupils will explore space and reflect on the extent and nature of the universe and its relationship to it.</p>	<p>In Biology in Year 9 we deal with SMSC and British values in the following areas:</p> <ul style="list-style-type: none"> ● Stem cells – Moral and social arguments for and against the use of Embryonic Stem cells. ● Impact of Non-communicable diseases – Diabetes, Heart disease and Cancer. ● Developing new drugs – The need for animal testing in preclinical drug trials. ● Monoclonal Antibodies – The use of Mice in the production of Monoclonal Antibodies. ● Spread of Malaria – Understanding of low Socio-economic areas have fewer resources to stop the spread. ● The publication by a doctor that the MMR vaccine is linked to autism without rigorous scientific testing and the implications of this on the health of a generation of children in the UK. 			

			<ul style="list-style-type: none"> • The use of NHS money to fund treatment associated with obesity and drug/alcohol abuse • The legal aspects of drug abuse • The use of stem cells in reproductive research and the cure for inherited diseases • Embryo selection • The morality of blood transfusion etc. <p>In Chemistry in Year 9 we deal with SMSC and British values in the following areas:</p> <ul style="list-style-type: none"> • Celebrate the British scientists involved with the discovery of the structure of the Atom. • Cultural development - the periodic table • Cultural development – the importance of collaboration <p>In Physics in Year 9 we deal with SMSC and British values in the following areas:</p> <ul style="list-style-type: none"> • Listening to the viewpoints of different scientific groups and politicians • How science is portrayed in the media • 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?
Key Assessment Focuses, suggested Assessments and Feedback week	Chemistry QMA Skills sheets See QMA calendar	End of KS3 PPE Skills sheets See QMA calendar	QMAs will be completed on a rotation see QMA calendar Biology KS4 content QMA Chemistry KS4 content QMA Physics KS4 content QMA
	After each QMA, pupils will have an opportunity to improve their answers and correct them with a 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 Homework set weekly		
Special Events		Moon Watch 11th November Planetarium 10 th November	National Science and Engineering Week 11 th – 20 th March
Possible Visits			