

Year 10 - Science

Curriculum intent	<p>All students will develop knowledge which helps them in their own lives and to understand the world in which they live. Students will be confident with their knowledge, allowing them to inform others and to problem solve through scientific enquiry. To prepare students for the future they will be curious and equipped to question and challenge information they are presented with.</p> <p>Through the curriculum, key themes of knowledge are revisited each year, with the knowledge being developed over time. The themes link to biology, chemistry and physics and are carefully sequenced in order to ensure that students have all of the powerful knowledge needed to move onto the next theme. This will ensure that students develop a secure long term memory over time with flexible knowledge that can be applied to different contexts.</p>					
Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	<p>Biology Topic 1 Cell Biology use a range of investigative techniques to explore how structural differences between types of cells enables them to perform specific functions within the organism.</p> <p>Chemistry Topic 1 Atomic Structure and the Periodic Table use a range of investigative techniques to understand the periodic table provides chemists with a structured</p>	<p>Biology Topic 2 Organisation use a range of investigative techniques to learn about the human digestive system which provides the body with nutrients and the respiratory system that provides it with oxygen and removes carbon dioxide. They will also learn how the plant's transport system is dependent on environmental conditions to ensure that leaf cells are provided with the water and carbon dioxide that they</p>	<p>Biology Topic 3 Infection and Response use a range of investigative techniques to explore how we can avoid diseases by reducing contact with them, as well as how the body uses barriers against pathogens.</p> <p>Biology Topic 4 Bioenergetics use a range of investigative techniques to explore how plants harness the Sun's energy in photosynthesis in</p>	<p>Biology Topic 3 Infection and Response use a range of investigative techniques to explore how we can avoid diseases by reducing contact with them, as well as how the body uses barriers against pathogens.</p> <p>Biology Topic 4 Bioenergetics use a range of investigative techniques to explore how plants harness the Sun's energy in photosynthesis in order to make food and all organisms use</p>	<p>Biology Topic 7 Ecology use a range of investigative techniques to understand all species live in ecosystems composed of complex communities of animals and plants dependent on each other and that are adapted to particular conditions, both abiotic and biotic.</p> <p>Chemistry Topic 5 Energy Changes use a range of investigative</p>	<p>Biology Topic 7 Ecology use a range of investigative techniques to understand all species live in ecosystems composed of complex communities of animals and plants dependent on each other and that are adapted to particular conditions, both abiotic and biotic.</p> <p>Chemistry Topic 9 Chemistry of the Atmosphere use a range of investigative techniques to understand the Earth's atmosphere is dynamic and forever changing.</p>

	<p>organisation of the known chemical elements from which they can make sense of their physical and chemical properties.</p> <p>Physics Topic 1 Energy use a range of investigative techniques to learn how physicists and engineers are working hard to identify ways to reduce our energy usage.</p>	<p>need for photosynthesis.</p> <p>Chemistry Topic 2 Bonding, Structure and the Properties of Matter use a range of investigative techniques to understand chemists use theories of structure and bonding to explain the physical and chemical properties of materials.</p> <p>Physics Topic 2 Electricity use a range of investigative techniques to understand that electrical power fills the modern world with artificial light and sound, information and entertainment, remote sensing and control.</p>	<p>order to make food and all organisms use glucose and oxygen to perform respiration.</p> <p>Chemistry Topic 3 Quantitative Chemistry use a range of investigative techniques to understand chemists use quantitative analysis to determine the formulae of compounds and the equations for reactions.</p> <p>Physics Topic 2 Electricity use a range of investigative techniques to understand that electrical power fills the modern world with artificial light and sound, information and entertainment,</p>	<p>glucose and oxygen to perform respiration.</p> <p>Chemistry Topic 4 Chemical Changes use a range of investigative techniques to understand chemical changes began when people began experimenting with chemical reactions in a systematic way and organising their results logically.</p> <p>Physics Topic 4 Atomic Structure use a range of investigative techniques to understand that ionising radiation is hazardous but can be very useful.</p>	<p>techniques to understand the interaction of particles often involves transfers of energy due to the breaking and formation of bonds.</p> <p>Chemistry Topic 9 Chemistry of the Atmosphere use a range of investigative techniques to understand the Earth's atmosphere is dynamic and forever changing. The causes of these changes are sometimes man-made and sometimes part of many natural cycles.</p> <p>Physics Topic 4 Atomic Structure use a range of investigative techniques to understand that ionising radiation is</p>	<p>The causes of these changes are sometimes man-made and sometimes part of many natural cycles.</p> <p>Physics Topic 7 Magnetism and Electromagnetism use a range of investigative techniques to understand that electromagnetic effects are used in a wide variety of devices.</p>
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			<p>remote sensing and control.</p> <p>Physics Topic 3 Particle Model of Matter use a range of investigative techniques to understand the particle model is widely used to predict the behaviour of solids, liquids and gases.</p>		<p>hazardous but can be very useful.</p> <p>Physics Topic 7 Magnetism and Electromagnetism use a range of investigative techniques to understand that electromagnetic effects are used in a wide variety of devices.</p>	
Skills	<p>Modelling and simulation techniques.</p> <p>Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.</p>	<p>Develop practical skills to use a microscopes to investigate scientific theories.</p> <p>Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.</p>	<p>Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.</p> <p>Maths skills – handling data, graphs and using units.</p> <p>Develop practical skills to investigate scientific theories.</p>	<p>Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.</p> <p>Develop practical skills to investigate scientific theories.</p>	<p>Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.</p> <p>Maths skills – handling data, graphs and using units.</p> <p>Develop practical skills to investigate scientific theories.</p>	<p>Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.</p> <p>Maths skills – handling data, graphs and using units.</p> <p>Develop practical skills to investigate scientific theories.</p>

Assessments	End of topic tests for all topics to identify any areas of development.	End of topic tests for all topics to identify any areas of development.	End of topic tests for all topics to identify any areas of development.	End of topic tests for all topics to identify any areas of development.	Biology paper 1 mock exam during the Year 10 mock exam period. End of topic tests for all topics to identify any areas of development.	End of topic tests for all topics to identify any areas of development.
Curiosity	<p>Books: CPG AQA revision guide and workbooks World of Science https://www.amazon.co.uk/World-Science-Various/dp/1842368036/ref=sr_1_1?s=books&ie=UTF8&qid=1432298879&sr=1-1</p> <p>Science in the news: https://www.iflscience.com/ https://theday.co.uk/ https://www.bbc.co.uk/news/science_and_environment</p>					