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| **Year 11 - Science** | | | | | | |
| **Curriculum intent** | 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.  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. | | | | | |
| **Term** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Knowledge** | **Chemistry Topic 6 the rate and extent of chemical change** use a range of investigativetechniques to understand chemical reactions can occur at vastly different rates.  **Physics Topic 5 forces** use a range of investigativetechniques to understand that engineers analyse forces when designing a great variety of machines and instruments, from road bridges and fairground rides to atomic force microscopes.  **Biology Topic 5 homeostasis and response** use a range of investigativetechniques to understand that cells in the body can only survive within narrow physical and chemical limits. | **Biology Topic 5 homeostasis and response** use a range of investigativetechniques to understand that cells in the body can only survive within narrow physical and chemical limits.  **Chemistry Topic 7 organic chemistry** use a range of investigativetechniques to understand the chemistry of carbon compounds is so important that it forms a separate branch of chemistry.  **Physics Topic 5 forces** use a range of investigativetechniques to understand that engineers analyse forces when designing a great variety of machines and instruments, from road bridges and fairground rides to atomic force microscopes.  **Physics Topic 6 waves** use a range of investigativetechniques to understand waves carry energy from one place to another and can also carry information. | **Biology Topic 6 inheritance, variation and evolution** use a range of investigativetechniques to discover how the number of chromosomes are halved during meiosis and then combined with new genes from the sexual partner to produce unique offspring.  **Chemistry Topic 8 chemical analysis quantitative chemistry** use a range of investigativetechniques to understand analysts have developed a range of qualitative tests to detect specific chemicals.  **Physics Topic 6 waves** use a range of investigativetechniques to understand waves carry energy from one place to another and can also carry information. | **Chemistry Topic 9 chemistry of the atmosphere** use a range of investigativetechniques 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.  **Physics Topic 7 magnetism and electromagnetism** use a range of investigativetechniques to understand that electromagnetic effects are used in a wide variety of devices.  **Biology Topic 7 ecology** use a range of investigativetechniques 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. | **Chemistry Topic 10 using resources** use a range of investigativetechniques to understand industries use the Earth’s natural resources to manufacture useful products.  Revision | Revision |
| **Skills** | Modelling and simulationtechniques.  Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements. | Develop practical skills to use a microscopes to investigate scientific theories.  Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements. | Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.  Maths skills – handling data, graphs and using units.  Develop practical skills to investigate scientific theories. | Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.  Develop practical skills to investigate scientific theories.  Maths skills – handling data, graphs and using units. | Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.  Maths skills – handling data, graphs and using units.  Develop practical skills to investigate scientific theories. | Working scientifically: developing scientific attitudes, experimental skills and investigations, analysis and evaluation and using a range of measurements.  Maths skills – handling data, graphs and using units.  Develop practical skills to investigate scientific theories. |
| **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.  Biology paper 1, Chemistry paper 1 and Physics paper 1 mock exams during the Year 11 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. Mock Exams covering the modules taught.  Biology paper 2, Chemistry paper 2 and Physics paper 2 mock exams during lesson time. | End of topic tests for all topics to identify any areas of development. Mock Exams covering the modules taught. | End of topic tests for all topics to identify any areas of development. Mock Exams covering the modules taught. |
| **Curiosity** | 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>  Science in the news:  <https://www.iflscience.com/>  <https://theday.co.uk/>  <https://www.bbc.co.uk/news/science_and_environment> | | | | | |