

# Science

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**Curriculum Intent:** To ensure students maintain and develop their curiosity and excitement about the natural world. To develop all to be 'scientists' by embedding a culture of confidence and mastery underpinned by scientific enquiry. To develop their ability to see connections between science subject areas and become aware of some of the big ideas for understanding the world and to provide a high challenge, high quality science education for all our learners

|        | Core Knowledge                                                                                                                                                                                                         | Procedural Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Autumn | <p><b>Topics:</b></p> <p>Work like a Scientist - practical skills.</p> <p>Biology: Health and lifestyle and biological processes.</p> <p>Chemistry: The Periodic table.</p> <p>Physics: Electricity and magnetism.</p> | <p><b>Students will:</b></p> <p>Select, plan, and carry out the most appropriate scientific enquiries to test predictions.</p> <p>Identify independent, dependent and control variables.</p> <p>Use appropriate techniques, apparatus and materials during field work and lab work, paying attention to health and safety.</p> <p>Pay attention to objectivity and concern for accuracy, precision, repeatability, reproducibility.</p> <p>Explain data in relation to predictions and hypotheses.</p> <p>Understand that scientific theories are modified to take account of new evidence.</p> <p>Understand importance of publishing results and peer review.</p> |
| Spring | <p><b>Topics:</b></p> <p>Biology: Ecosystems and adaptation.</p> <p>Chemistry: Separation techniques.</p> <p>Physics: Energy.</p>                                                                                      | <p><b>Students will:</b></p> <p>Select, plan, and carry out the most appropriate scientific enquiries to test predictions.</p> <p>Identify independent, dependent and control variables.</p> <p>Use appropriate techniques, apparatus and materials during field work and lab work, paying attention to health and safety.</p> <p>Pay attention to objectivity and concern for accuracy, precision, repeatability, reproducibility.</p> <p>Explain data in relation to predictions and hypotheses.</p> <p>Understand that scientific theories are modified to take account of new evidence.</p> <p>Understand importance of publishing results and peer review.</p> |

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| <p><b>Summer</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>Topics:</b></p> <p>Biology: Inheritance.</p> <p>Chemistry: Metals and other materials and the Earth.</p> <p>Physics: Motion and Pressure</p> | <p><b>Students will:</b></p> <p>Select, plan, and carry out the most appropriate scientific enquiries to test predictions.</p> <p>Identify independent, dependent and control variables.</p> <p>Use appropriate techniques, apparatus and materials during field work and lab work, paying attention to health and safety.</p> <p>Pay attention to objectivity and concern for accuracy, precision, repeatability, reproducibility.</p> <p>Explain data in relation to predictions and hypotheses.</p> <p>Understand that scientific theories are modified to take account of new evidence.</p> <p>Understand importance of publishing results and peer review.</p> |
| <p><b>Homework:</b></p> <p>Students will receive homework for every six hours that they are taught.</p> <p>Science homework will be set using Educake, an online learning platform designed to support students in developing their knowledge and understanding of science.</p> <p>Students will be set quizzes based on what they are learning in lessons or on topics that they need to revise for an assessment.</p> <p>The quizzes are automatically marked giving students instant feedback so they can see where they have done well and where they need to improve.</p> <p>This will reinforce what they have learnt in lessons, identify gaps in their knowledge early, build confidence through regular practice and prepare effectively for assessments and exams.</p> <p>Students can log into Educake using their school email and password and can complete their work on any internet-enabled device (computer, tablet, or smartphone).</p> |                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>Assessment:</b></p> <p>To assess learning students will also have in class End of Unit assessments throughout the year</p> <p>There will be two more formal assessments.</p> <p>Autumn Term: Exam on health and lifestyle and the Periodic table.</p> <p>Summer Term: Exam on all content covered in Y8.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>Links to Personal Development:</b></p> <p>Enabling students to recognise risks to their own wellbeing.</p> <p>Social development: Practise using a range of social skills in different situations.</p> <p>Confidence, Resilience and Knowledge: Mentally healthy, physically healthy, active lifestyle, healthy relationships.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><b>How is my knowledge further developed in Year 9?</b></p> <p>Students will build upon the scientific principles learnt in both Year 8 and at KS2, as well as covering brand new content in all three sciences in more detail. Practical skills will be refined as more experiments are carried out and written up in a scientific format. There will be a focus on exam technique and students will regularly receive feedback after assessments.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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| Summer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Half Term One</b><br><br>Edwardian Britain.   | <b>Students will:</b><br><br>Assess the reliability and purpose of contemporary sources.<br><br>Use contemporary sources to support/ challenge a historical argument.<br><br>Evaluate change over time.                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Half Term Two</b><br><br>The First World War. | Explain why events happened (causation).<br><br>Describe the key features of historical events / periods.<br><br>Recognise and compare historical interpretations.<br><br>Understand why historical interpretations have changed over time. |
| <b>Homework:</b><br>Homework is set on Bromcom for every six taught hours.<br>In the Autumn term, homework will comprise of an online quiz; a revision task to help to prepare for the assessment; a Fight for Power menu; and revision of glossary terms for an in-class test<br>In the Spring term, students can expect further Revision of class learning using an online quiz; homework relating to the abolition of slavery, a homework on Industrial women of Sheffield.<br>In the final term of Y8 homework will comprise assessment preparation via a revision task; revision of glossary terms for an in-class test; and research on First World War memorials in Sheffield. |                                                  |                                                                                                                                                                                                                                             |
| <b>Assessment:</b><br>In the Autumn Term, Assessment 1: On aspects of Year 7 learning, plus the Fight For Power (medieval unit). This will assess knowledge retention; description skills; ability to evaluate a historical source; comparison of historical interpretations; and use of evidence to support/ challenge a viewpoint.<br>In the summer term, Assessment 2: On aspects of Fight for Power; Edwardian Britain; and the Transatlantic slave trade. This will assess chronological understanding/ change over time; knowledge retention; explanation/ causation; use of contemporary sources to support/ challenge viewpoints.                                             |                                                  |                                                                                                                                                                                                                                             |
| <b>Links to Personal Development:</b><br>British Values: Democracy, individual liberty, rule of law, mutual respect and tolerance<br>Promoting inclusivity and diversity of all protected characteristics<br>Prepare learners for future success in education, employment and training<br>Moral development: Recognise the difference between right and wrong<br>Cultural development: Understanding the wide range of cultural influences that shape individuals                                                                                                                                                                                                                     |                                                  |                                                                                                                                                                                                                                             |
| <b>How is my knowledge further developed in Year 9?</b><br>Studies of mass protest groups such as the Chartists, NUWSS and WSPU are referred to in the Y9 civil rights course for comparison<br>The same underpinning of substantive and disciplinary knowledge, historical scholarship and historical evidence are to the forefront, although students will be further challenged in relation to these things.                                                                                                                                                                                                                                                                       |                                                  |                                                                                                                                                                                                                                             |