

# 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 learner

|          | Core Knowledge             |                    |                                                   | Procedural Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------|----------------------------|--------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | Biology                    | Chemistry          | Physics                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Autumn 1 | Cells and microscopy       | Atomic Structure   | Molecules and matter                              | <b>Students will:</b><br><br>Select, plan, and carry out the most appropriate scientific enquiries to test predictions.<br><br>Identify independent, dependent and control variables.<br><br>Use appropriate techniques, apparatus and materials during field work and lab work, paying attention to health and safety.<br><br>Pay attention to objectivity and concern for accuracy, precision, repeatability, reproducibility.<br><br>Explain data in relation to predictions and hypotheses.<br><br>Understand that scientific theories are modified to take account of new evidence.<br><br>Understand importance of publishing results and peer review. |
| Autumn 2 | Transport across membranes | Atomic Structure   | Energy transfer by heating                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Spring 1 | Cell cycle                 | The Periodic Table | Radioactivity                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Spring 2 | Digestion and enzymes      | Chemical Analysis  | Radioactivity                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Summer 1 | Transport in animals       | Chemical Analysis  | Energy resources                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Summer 2 | Transport in animals       | Chemical Analysis  | Energy resources<br>[Introduction to electricity] |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## Homework:

Students will receive homework for every six hours that they are taught. Science homework will be set using Educake, an online learning platform designed to support students in developing their knowledge and understanding of science. Students will be set quizzes based on what they are learning in lessons or on topics that they need to revise for an assessment. The quizzes are automatically marked giving students instant feedback so they can see where they have done well and where they need to improve. 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. 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).

**Assessment:**

Several Low Stake Assessments (LSAs) across the year. These will consist of approximately 15 marks of past exam questions.

There are also two assessment weeks.

The November assessment will cover the Biology topic on Cells and Microscopy, the Chemistry topic on Atomic Structure and the Physics topic on Molecules and matter.

The June assessment will cover the Biology topic(s) on Cells, Microscopy, Transport across membranes and Digestion, the Chemistry topics on Atomic Structure, The periodic table and testing for gases and the Physics topics on Molecules and matter, Energy transfer by heating and Radioactivity.

**Links to Personal Development:**

The KS3 Science curriculum contributes significantly to students' personal development by fostering curiosity about the natural world and developing their ability to think and work scientifically. Through practical enquiry and the study of key scientific ideas, students learn to evaluate evidence, understand risk, and communicate their reasoning clearly.

The curriculum supports moral, social, and environmental awareness by exploring the impact of science on society, including issues such as sustainability and resource use. By making connections across scientific disciplines and applying their knowledge to real-world contexts, students develop confidence, resilience, and the ability to engage critically with the world around them.

**How is my knowledge developed further at GCSE?**

The Science curriculum is a spiral. Every topic is revisited and built upon. All ultimate knowledge from one year or key stage becomes the proximal knowledge for the next year or key stage.