

## CURRICULUM OFFER 2023- 2024

<b>Subject</b>	Science
<b>Intent</b>	<p>We study science because science means discovery of how the world works, our place, impact and the role and the responsibilities we have in society. We challenge thinking and explore through enquiry and experimentation, whilst providing a safe and inclusive learning environment. We encourage scientific interest and help develop invaluable skills that are relevant for future employment opportunities and their lives going forward.</p>
<b>Implementation</b>	<p>We aim is to enthuse our KS3 students and allow them to discover how things work. We support students for return, back to school, by providing a grounding in Biology, Chemistry and Physics. We use play in a science context to develop skills that promote a love a learning and we provide opportunities to practise and build their skills, the golden thread that runs through all our curriculum. Problem solving, critical thinking and good communication are at the heart of science. We show how science topics interweave and give students the 'big picture' and how science relates to the world around them.</p> <p>Those students that remain with us into KS4 benefit from good continuity as we continue their study for GCSE Biology. The AQA Biology Foundation GCSE is a two-year programme of study that starts in Year 10, with final assessment by two papers, at the end of year 11. Students can achieve grades 1 – 5. We have a structured exam strategy that develops confidence and prepares students, through regular assessment and a series of Mock exams across the programme.</p> <p>The Higher Biology qualification is also available for those students able attain grades 5-9. Additionally, we can support students to sit exams for AQA GCSE Chemistry or Physics, if they are prepared to independent, home study for these qualifications.</p> <p>For our AQA GCSE Biology (foundation), the topics are:          Topics 1-4: Cell biology; Organisation; Infection and response; and Bioenergetics (Paper 1).          Topics 5-7: Homeostasis and response; Inheritance, variation and evolution; and Ecology (Paper 2).</p> <p>We are committed to adaptive learning for students with additional needs. We use a range of strategies and personalise support to meet individual needs. For</p>

	<p>example, we sometimes use 'micro-practical' experiments, that limit the safety risk when handling hazardous chemicals and equipment, so experimentation is accessible, safe but sufficiently challenging for good progress.</p> <p>When appropriate, we can also offer a virtual teaching timetable via Microsoft TEAMS.</p>
<p><b>Impact</b></p>	<p>We aim to provide a science education that influences choices made by young people towards a positive, working future, and a better understanding of themselves. We help them develop transferable skills that are needed for most work opportunities and careers – analysing data, presenting results, problem solving, critical thinking and fact-finding based on research-based evidence, to name a few.</p> <p>A qualification in science is desired by colleges and apprenticeships, even when not directly specified by courses, and is an admired addition to any CV for many other employment opportunities. For those students pursuing potential careers in science, our qualification is useful within industries such as Engineering, the Sports Industry, Health and Social Care, the Education Sector and Animal Care.</p> <p>We listen to feedback from our students. Students tell us that they enjoy the 'hands on' experience in the classroom. Some students say that science is not relevant to their post-16 aspirations, so we help educate students about issues that may impact them in years to come (e.g., global warming and climate change, increased application of Artificial Intelligence in society, mental and physical health, food production and sustainable living).</p> <p>Students' feedback tells us that they enjoy science lessons, like our lively discussions and feel comfortable and safe. Many students report that they like science because of the positive relationships that they form with our science teachers and that they look forward to their lessons. They enjoy our trips and visitors to our Centres too!</p>
<p><b>Accreditations</b></p>	<p>AQA GCSE Biology Foundation (Single Award) Grades 1 - 5</p>
<p><b>Safeguarding</b></p>	<p>We are committed to the safety and protection of the students and include areas of safeguarding in our teaching plans. These include discussion in health and hygiene topics, e.g., causes and treatment of infection, communicable disease; the effects of drugs to our body systems (e.g., opportunities to discuss</p>

	<p>tobacco smoking and cannabis and mental health); we will also discuss ethics in a science context, e.g., rights for/against abortion, genetic testing and human rights.</p> <p>Staff work hard to build relationships with students and their families to ensure the safety and inclusivity of all students and offer pastoral support when needed. We encourage discussion about the issues facing our young people and support them to make the right life choices.</p>
<p><b>Reading and literacy</b></p>	<p>We have stimulating displays in the classroom, with opportunities to read and engage, as well as a selection of new books to stimulate interest. Reading is an essential part of our lessons, and we target specific science words so that we can support the vocabulary. We decipher and decode words and encourage students to use the correct vocabulary for science knowledge and comprehension. Oracy and the ability of our students to verbally communicate their work and question their knowledge are key skills that we regularly use. We encourage expression of opinions and the right to challenge them with scientific evidence. Reading to students and encouraging them to produce written work are also invaluable tools for creating a positive reading culture in our subject.</p>
<p><b>Number and numeracy</b></p>	<p>This is an integral part of science education:</p> <ul style="list-style-type: none"> <li>• Taking measurements</li> <li>• Reading scales</li> <li>• Developing tables and graphs</li> <li>• Calculating averages</li> <li>• Scale factors</li> <li>• Simple equations</li> <li>• Reading and interpreting data</li> <li>• Using a calculator</li> <li>• Understanding units</li> <li>• Rounding numbers</li> <li>• Significant figures</li> </ul> <p>For the GCSE, 10% of the marks are maths skills and therefore is an essential part of our curriculum.</p>
<p><b>Enrichment opportunities (including SMSC)</b></p>	<p>We provide a number of enrichment opportunities throughout the year. These include but are not exclusive to trips to Colchester Zoo, The Science Museum, The Natural History Museum, Escape rooms, British Science Week event (March 2021), inviting in External Speakers, and Science shows (from latest</p>

	<p>science STEM shows to in-school animal handling experiences!). We do outdoor learning days too, such as at Layer Marney outdoor learning centre, and other places where we can interweave our cross curricular projects.</p> <p>We also recommend ways to support your child with their learning by the following:</p> <ul style="list-style-type: none"> <li>• Use BBC bitesize website, which provides a range of online tools, animations, videos and quizzes, to help learning.</li> <li>• Ask your child to explain what they have learnt today.</li> <li>• Choose an article from the BBC about Science and discuss it with your child.</li> <li>• Help students engage with GCSE revision guides and/or workbooks that we provide students for home learning.</li> </ul>
<p><b>Career and employment links</b></p>	<p>Our teachers regularly promote awareness of our curriculum links to post-16 employment. We have identified several key points in the year where we can highlight and advertise potential careers that may be of interest to our young people. We work with PSHE to identify ways to develop interest through workshops, visits and invite speakers and we listen to our students and tailor our careers information to their interests and abilities.</p>
<p><b>Digital Literacy (including e-safety)</b></p>	<p>Students are taught how to keep themselves safe online. Any inappropriate content is automatically blocked, and students are supervised during e-learning sessions in lessons. We ensure that students learn how to engage with the digital world in a responsible way. We support students to understand that not all information is from reliable sources, and they should understand that facts should be evidence-based and unbiased. We teach students to challenge and question online sources. We are developing an understanding of the role of artificial intelligence in society. We encourage students to engage with social media platforms in a safe and responsible way and we will be supporting this by getting creative on Tiktok in an educational context. We use different APPS so that their creativity is encouraged, and learning is supported in Science.</p>