Curriculum Intent

Science
Mrs H. Perera

Curriculum Vision and Aims
The curriculum at Q3 Academy Great Barr is underpinned by the values that we hold as an institution. The curriculum will challenge, support and inspire all students in order to achieve appropriate and individualised progression beyond the Academy, preparing them for their future lives. We understand the importance of engaging parents/carers with their children's learning and therefore opportunities for home/Academy interaction will be integrated to build relationships, particularly at Key Stage 3. The curriculum will be well-sequenced and challenging to ensure that all students, regardless of any previous or current disadvantage, are given every opportunity to be successful, following our Trust ethos: life to the full in pursuit of what is good, right, and true. The curriculum should support students to: ✓ Achieve excellence, making excellent progress from their starting points ✓ Explore a range of subject areas and apply these in challenging situations ✓ Accept challenge and develop strategies to be successful in challenge ✓ Develop a life-long love of literacy and reading ✓ Use cross-curricular literacy, numeracy and computing skills fluently ✓ Understand their contribution to the wider World and how the World around them is changing ✓ Understand how to maintain their own, and others', physical and mental wellbeing ✓ Be creative and develop their own ideas and thinking ✓ Understand their responsibility within the Fundamental British Values and how to be good citizens, particularly demonstrating mutual respect and tolerance for others ✓ Understand and value history, heritage and traditions of communities ✓ Have access to appropriate careers and progression advice to ensure that they continue to be successful after they leave Q3 Academy Great Barr ✓ Be Ready, Respectful and Responsible for themselves and others around them.

Department Vision
To develop students' enjoyment and curiosity of science and the natural world. Equip them with the practical skills of scientific inquiry to explore questions, discover answers and make informed judgements on the application of science in society.

Subject Intent		
Key Stage 3 Develop students' scientific knowledge and conceptual understanding of all areas of the National Curriculum whilst equipping students with the practical and mathematical skills required to be successful at GCSE and beyond.	**Key Stage 4** Develop students' scientific knowledge and conceptual understanding of all areas of the AQA Science Specifications whilst equipping them with the practical and mathematical skills required to be successful at GCSE and beyond.	**Key Stage 5** Develop students' scientific knowledge and conceptual understanding of all areas of the AQA Science Specification whilst equipping them with the practical and mathematical skills required to be successful at A-Level and beyond.
Wider Curriculum Contribution		

Our approach to supporting learning	Our approach and opportunities to stretch and challenge students
All lessons will be adapted appropriately to suit the individual learner's needs. LSA and LSPs will be directed appropriately by the members of staff.	Extra challenges and learning opportunities are available throughout each area of study.
Our contribution to Careers Education, Information and Guidance	**Our contribution to Literacy and Reading Development**
Careers and wider issues related to the subject are introduced through disciplinary reading activities, designed to encourage students to think about the implications of scientific advancements on the environment and society. Career posters are displayed in class. Visitors attend to run STEM projects with students. Students are given the opportunities to participate in National Science week and BP Stem Challenge.	Students across both Key Stages 3 and 4 make use of disciplinary reading to enrich the curriculum. This focuses on the use of Tier 2 and 3 words which are pre-taught using the Frayer model. Students are given regular opportunities to read out loud and contribute to discussion to develop aural skills.
Our contribution to Environment and Sustainability	**Our contribution to Safeguarding and Prevent**
We look at the environment and the human impact on it in topics in Year 7, 8 and 9 and 10 including use of finite resources, energy futures and pollution. Students will be taught that there is always a potential impact on individuals, society and the environment when there are developments in Science.	Students across KS3 and 4 discuss sensitive topics and students are signposted to the relevant support systems. Open discussions are encouraged in safe support learning environments where students show respect to one another and differing views.
Our contribution to Social, Moral, Spiritual and Cultural development	**Our contribution to Character Education (Citizenship)**
• Opportunities to promote social consideration and respect towards others and moral standpoints through the consideration of topics including: blood transfusions, organ donation, stem cell research, drug trails and many more. Some of these topics are explore in more detail during disciplinary reading lessons to encourage greater discussion and debate. • enable students to develop social skills such as team work. • Students share and take turns with equipment, along with supporting each other in using equipment.	• Through appropriately designed Curriculum at all key stages, students are provided with appropriate challenge to encourage and build resilience and problems solving. • Opportunities for the development of Cultural Capital which gives them opportunities and confidence in wider society through selecting scientists prominent in the local area, careers and case studies of sites of scientific interest. • Opportunities to promote consideration and respect towards others through the consideration of topics including: blood transfusions, organ donation, stem cell research, drug trails and many more. Some of these topics are explore in more detail during disciplinary reading lessons to encourage greater discussion and debate. • Science curriculum is designed to focus on the development of problem solving, individual and team skills through practical work. • Students are taught to be 'Responsible' when working in laboratory settings. • Students are taught to be 'Respectful' when participating in class discussions and debates
Our Contribution to Digital Literacy Development	**Our contribution to Numeracy Development**
• Students in KS3 complete weekly Independent Learning on Century Learning Tech. Students in KS4 also have access. • Students in KS5 are encouraged to use software to produce practical write ups including graphing and modelling software. • Students have access to data loggers for relevant practicals.	• Students utilise equations, rearranging as appropriate. • Students express answers in standard form, ratios, percentages and fractions rounding as appropriate to significant figures or decimal places. • Students develop graphing skills moving to independence.