Science

Our intent

Our intent is to create a Science curriculum that engages learners and stimulates their scientific curiosity, whilst furnishing them with the skills and knowledge required for their life beyond the school gates. All students will study the Science course, which is scaffolded to enable them to experience success. They should be able to gather, interpret and interrogate data and understand how a scientific investigation is carried out. They should gain the knowledge required to become scientifically literate members of the community and develop the ability to work collaboratively or individually to problem solve and investigate. We aim to encourage learners to see the links between the science they learn in school and the wider world, and to make explicit links between science and careers. We also aim for them to become able to make considered opinions and choices about socio-scientific issues by interrogating the evidence available.

Our 'why'

Across the Science curriculum, we create opportunities to cultivate the natural curiosity of our students and to develop their knowledge and understanding, so that they are able to make informed decisions by:

- Understanding what scientific knowledge is relevant
- Determining how evidence was generated
- Evaluating the reliability of the evidence
- Identifying the limitations of the evidence.

Additionally, our curriculum is designed to develop the core scientific knowledge and understanding required to enable learners to progress to further scientific study and related careers.

We want our learners to develop their cultural capital and awareness of other cultures and the contributions they have made to our scientific understanding.

Our 'how'

Curriculum and schemes of work are organised to provide progression of conceptual understanding and breadth and depth of knowledge in each of the 'Big Ideas' themes, covering the National curriculum . Schemes of work provide opportunities for students to problem solve, both practically and through written work. Real life examples (e.g. MMR debate, nuclear power) are utilised in lessons to promote debate and unpicking of quality of evidence. Assessment is built into schemes of work to develop learners and to ensure recall and recap of prior knowledge, including through the use of low stakes testing.

There is a focus on the learning and embedding of tier 2 and 3 vocabulary and teachers model both oral and written answers to students. Learners are encouraged to use correct scientific vocabulary and fully describe or explain in their spoken answers, in order to then develop their written answers.

Practical work is included in greater than 50% of lessons in the scheme of work. This serves to enable students to experience concrete examples of concepts, prior to moving on to the conceptual idea, develop investigative skills and practise the language associated with these, in order to develop their ability to access exam questions about practicals, practise interrogating evidence to develop the skills that will enable them to make scientifically sound judgements about socio-scientific issues as adults.

Everyday and lesser known examples of the use of science will be incorporated into science lessons and these will draw upon examples from technology, engineering, science and the Arts in order to increase cultural capital. The history of some scientific discoveries will be discussed, including the social and cultural situations leading to some discoveries not being immediately accepted.

We will seek to increase opportunity by organising workshops and/or trips and visits, to widen the students' experiences. Lessons will include current science in the news, in order to increase the relevance to students' lives.