Science

Intent

What are the aims of this subject?	What are the broad areas of knowledge and skills being developed in this subject?
Students gain an understanding and knowledge of the world around them and beyond which leads to greater independences and opens opportunities for further education and employment.	The science curriculum provides students with a broad and balanced learning experience developed through the key skills of scientific enquiry and a knowledge of Biology, Chemistry and Physics, all based around the National Curriculum. **Key Skills** **Scientific Enquiry** - Questioning leading to Predicting. Using Equipment leading to Comparative and fair tests. Observing leading to Identifying and classifying. Recording Data leading to Displaying and interpreting data. Concluding leading to Using scientific evidence to answer questions.

Implementation

How is this subject delivered/taught to students?	How is formative and summative assessment used in this subject to improve student's skills and knowledge?
Key Stage 3 In year 7-9 Science is taught using the Science Programme of study in the National Curriculum. A broad range of science is covered in Biology, Chemistry and Physics. **Key Stage 4** In Year 10 and 11 GCSE Chemistry is taught only. The decision was taken to study Chemistry only, due to time constraints and the nature of the students. GCSE Science (Double Award) could not be delivered effectively. The subject content in AQA GCSE Chemistry Specification has been ordered in order to take in account ease of concept/topic, so that where possible less demanding concepts are introduced in Year 10 (see Year 10 + 11 pathway). GCSE Chemistry is very content heavy so the priority is building knowledge through Key Stage 4 in order that students are prepared for their exams. This is complemented by giving students experience of different exam questions eg. data analysis style questions. In Year 11 experience of answering 6 mark questions is introduced.	Students are baselined using a scripted assessment, assessing knowledge. Teachers are able to use the baseline to assess prior knowledge, judge ability and to plan the students' learning. Formative assessment: All work is marked for accuracy and understanding. This allows for adjustments in learning to be made and to ensure learning outcomes are achieved. Formative assessment allows you to measure and track students' progress in real time and change the course curriculum and instruction as necessary. Oral answers also inform on student progress and understanding. Summative assessment: Throughout each unit, students carry out knowledge and skills-based activities which are used to inform progress and identify next steps within the learning. Periodically at the end of a topic or section of work practice questions are set and/or checkpoint/vocabulary builder questions which are marked. In year 11 mock exams are set in December to inform on progress and to re-assess predicted GCSE grades.

How is enrichment (e.g. residentials, clubs) implemented to enhance the components of this subject?	How are spiritual, moral, social and cultural values developed in this subject?
The aim of this subject is for students to gain an understanding and knowledge of the world around them. It is vital that they see science in action in their everyday lives. The enrichment of the components of science is seen across many subject areas and in STEM projects. Enrichment days support science e.g. The Big Bang Show at the NEC. The Green Power Car project and Car Maintenance support the delivery of STEM using the Bond St site. STEM is also supported by using the LEGO room at Burton College.	**Spiritual** - Students have an opportunity to reflect on their opinions in relation to for example, evolution and space. **Moral** - Students are taught to take responsibility and show respect for their environment and their own health and bodies, and to understand moral issues on climate change. **Social** - Students use a range of social skills to work together on tasks and communicate in class discussions. **Cultural** - Students have opportunities to discuss medicines and diet choices in respect of cultural views and values.

Impact – Top 5!

1
Progress in KS3 is strong, because of the consistent level of delivery to all students, facilitating students to remember more and know more.

2
By the end of KS4 students are able to apply their knowledge as part of summative assessment to achieve qualifications that reflect excellent progress from their starting points.

3
Teacher understanding of the components and implementation of the Science curriculum is strong which supports the quality of implementation and sequence of learning.

4
Results in GCSE Chemistry are good with the majority of students achieving a grade which reflects good progress.

5
STEM projects are embedded and supporting students' enjoyment of science, and widening their experiences at school.