



Science Learning Area

An overview of the Science Learning Area

I am Mr Hall, the Head of Learning Area for Science. We have 12 staff in our Learning Area which is housed on the second floor of the Carroll Building. The Learning Area has 5 laboratories. Each laboratory includes the scientific equipment needed to undertake practical investigations.

Subjects

Subjects taught in the Science Learning Area include:

- KS3 Science
- Combined Science – Trilogy at KS4
- Biology, Chemistry and Physics at KS4
- BTEC Health and Social Care at KS4
- Entry Level Science at KS4

Curriculum

KS3 Science: the scheme of work aims for development of fundamental concepts for GCSE Biology, Chemistry and Physics following the AQA KS3 specification. Students have four lessons per week.

BTEC: in Year 11, some of the students in set seven follow the AQA Entry Level Certificate with an external assessment at the end of Year 11. Students have six lessons per week.

In Year 9 students can select to study Health and Social Care Level 1/2 BTEC Tech (Edexcel) as one of their option subjects; students study the course from Year 9 – 11. Health and Social Care is taken for two lessons per week in Year 9, and for 3 lessons per week in both Years 10 and 11.

GCSE: the AQA specification is taught over three years (Years 9 – 11). Set 1 follows the Separate Science specification (Biology, Chemistry and Physics). Sets 2 – 4 follow the Combined Trilogy Higher specification and sets 5 – 7 follow the Combined Trilogy Foundation specification. Students take two lessons per week for each science, making six in total.

Setting

Students are set by ability from Year 7, with 7 sets across each year group. Science sets are reviewed throughout the year and set changes are made based on formative and summative assessments, with parents prior to any changes made.

Assessment

Students in KS3 & 4 are regularly assessed to closely monitor progress in their science subjects. Students complete a formal summative assessment each term and are regularly assessed through formative tests. In the final half-term of the academic year, students in all year groups sit formal exams. Students predominantly receive formative feedback through teacher marking; however, where an assessment replicates an exam they also receive summative feedback.



Homework

Each student in Science is set one homework every 4-6 lessons for each subject. Students are also set weekly self-testing homework, using an online revision tool called Tassomai.

Extra-curricular Activities

The Learning Area offers a variety of extra-curricular activities:

- Science club: a weekly club where Y8 students are provided with opportunities to conduct scientific investigations outside of the normal curriculum
- British Science Week: a national event with a series of scientific lectures on engaging topics, practicals and demonstrations during lunch time, and the opportunity for students to showcase their own investigations at the MVPA Science fair

GCSE Achievement

GCSE results in Science have been excellent since the academy opened. The headlines from the June 2020 series are:

- Combined Science: 60% grade 5-5 to 9-9
- Biology: 100% grade 5 to 9
- Chemistry: 100% grade 5 to 9
- Physics: 100% grade 5 to 9

A number of our students move on to prestigious post-16 institutions, including MCA, and pursue their scientific studies at A-Level.

Commonly asked questions

1. What is the difference between Combined Science and Separate Science (Biology, Chemistry and Physics)?
 - a. Separate Science covers more breadth of content in the same amount of time, and as such the demands with the course are higher. In Separate Science there are six 1 hour 45 minute exams whereas in Combined Science there are six 1 hour 15 minute exams. The science pathways allocated for our students offer the most enjoyment and success at GCSE.
2. Can a student change between Combined Science and Separate Science?
 - a. Yes. The decision as to which course the student wants to pursue is taken in the first term of Y10. Due to the demanding nature of the Separate Science course, students must originally be in the top 2 sets to be eligible to take the course. Movements between the courses after this juncture are rare, but are possible, although this is made at the HOLA's discretion.



3. What is the grading system for Separate Science compared to Combined Science?
 - a. Separate Science students receive a GCSE in Biology, Chemistry and Physics on a 9 point scale from 9 to 1. The top grades achieved in Separate Science are therefore a 9 in Biology, Chemistry and Physics. GCSE Combined Science students will receive a double grade from their 6 exams. This is on a 17-point scale, from 9-9 to 1-1. This double award is worth two GCSEs, and is made up of two equal or adjacent grades. There are 17 possible grade combinations, for example, (9-9), (9-8), (8-8), (8-7) – through to (1-1).
4. Can a student following the Combined Science pathway join the MCA Sixth Form College?
 - a. Yes. We have many students who have achieved a grade 7-7 or above in Combined Science and a 7 in Maths (required) who are at the MCA Sixth Form.