



Science Learning Area

An overview of the Science Learning Area

I am Mr Hawkins, the Head of Learning Area for Science. We have 23 staff in our Learning Area which is housed in the West Wing of the academy.

The Learning Area has nine laboratories and a dedicated computer room. Each laboratory includes the scientific equipment that students will need 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 and BTEC Animal Care at KS4
- At KS5 we offer Biology, Chemistry and Physics

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 9, students in set nine follow the AQA Entry Level Certificate with an external assessment at the end of Year 9. Students have four lessons per week.

In Years 10 and 11 students on this course progress to studying Animal Care Level 1/2 BTEC (Edexcel).

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). Sets 1 -2 follow the Triple Science specifications (Biology, Chemistry and Physics). Sets 3 – 5 follow the Combined Trilogy Higher specification and sets 6 – 8 follow the Combined Trilogy Foundation specification.

Students take two lessons per week for each subject, making six in total.

A-level: Biology follows the AQA A-level specification, whilst A-level Chemistry and Physics follow the Edexcel specifications. Students do not sit external AS exams. Students will attend five lessons per week.

For a detailed overview of the curriculum offer for subjects please see our curriculum maps for the subjects taught in the Science Learning Area.



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Setting

Students are set by ability from Year 7, with 9 sets across each year group. Science sets are reviewed following each summative assessment and parents are notified about set changes.

Assessment

Students in KS3-5 are regularly assessed to closely monitor progress in 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 per week 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 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, practical and demonstrations during lunch time, and the opportunity for students to showcase their own investigations at the MCA Science fair
- Trips: Science museum trip to the WonderLab



Science Learning Area

GCSE & A-level Achievement

GCSE and A-level results in Science have consistently improved over the course of the last five years. The headlines from the June 2020 series are:

A-level:

- Biology: 97% A*-C
- Chemistry: 97% A*-C
- Physics: 94% A*-C

GCSE:

- Across all sciences: 57% grade 7 to 9
- Combined Science: 71% grade 5 to 9
- Biology: 100% grade 5 to 9
- Chemistry: 100% grade 5 to 9
- Physics: 100% grade 5 to 9

BTEC

- Health and Social Care: 59% grade 5 to 9 (equivalent)
- Animal Care: 100% Level 1 pass

A number of our students either continue the study of their science at university or take a linked degree in subjects such as medicine, dentistry or engineering. Students attend universities spanning Oxbridge, the Russell and Red Brick groups.



Science Learning Area

Commonly asked questions

1. What is the difference between Combined Science and Triple Science (Biology, Chemistry and Physics)?

Triple Science covers more breadth of content in the same amount of time, and as such the demands with the course are higher. In Triple 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 Triple Science?

Yes. If a student is excelling in Combined Science assessments and a move to a set following Triple Science is recommended by the HOLA.

3. What is the grading system for Triple Science compared to Combined Science?

Triple Science students receive a GCSE in Biology, Chemistry and Physics on a 9 point scale from 9 to 1. The top grades achieved in Triple 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?

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.

5. Can Animal Care be chosen as an option?

No. Only students in set 9 follow the Animal Care BTEC course.