

Science – Curriculum Statement

Students are admitted to Endeavour Academy at various points during Key Stage 4, and therefore different students are with us for different periods of time. Many students have missed large amounts of time in school prior to their admission, consequently our timetables need to be flexible and personalised with all courses offering a variety of qualification routes and supporting pathways to post 16 learning.

Intent

At Endeavour Academy we believe that fostering an understanding of the world around us is a vital part of a young person's development and education. As the last couple of years in particular have taught us, science is fast-changing and vital to our well-being. It is important that young people develop an appreciation of the relevance of science in society and the everyday in preparation for life in an increasingly scientific and technological world. We aim to build scientific understanding for all our pupils regardless of their background or starting point to inspire them to continue to use science in their everyday life, future education and careers.

Science Course

Students follow the AQA Science Curriculum

Foundation Learning	AQA Unit Scheme Awards (USAs). USAs provide a wide range of units in science which are differentiated, making accreditation accessible to all pupils regardless of their ability. They offer learners the opportunity to have their achievements formally recognised with a certificate each time a short unit of learning is successfully completed. USAs are completed according to the needs and interests of individual students.
Entry Level Learning	AQA Entry Level Certificate. Students are entered for either single or dual award. The course consists of 6 components, 2 from each of biology, chemistry, and physics. Single Award: students submit 6 pieces of work; 3 externally set assignments – one from each of biology, chemistry and physics- and 3 internally set assignments one from each of biology, chemistry and physics. The externally set assignments and teacher devised assignments do not need be from the same component. Dual Award: students submit 12 pieces of work (6 externally set assignments and 6 internally set assignments), 1 externally set assignment and 1 teacher

	devised assignment from each biology, chemistry and physics component.
GCSE Grades 1 to 5	<p>AQA Combined Science Trilogy, Foundation Level. Students are assessed via the completion of 6 papers (2 biology, 2 chemistry, 2 physics) at the end of year 11. Each paper lasts 1h 15min.</p> <p>Students receive two GCSE grades for combined science. Grades at Foundation level range from 1-1 to 5-5</p>
GCSE Grades 5+	<p>AQA Combined Science Trilogy, Higher Level. Students are assessed via the completion of 6 papers (2 biology, 2 chemistry, 2 physics) at the end of year 11. Each paper lasts 1h 15min.</p> <p>Students receive two GCSE grades for combined science. Grades at Higher level range from 4-3 to 9-9</p>

Learning Content Entry Level Certificate

The specification has 6 components. Each component has 2 assignments, one externally set (question paper) and one internally set (practical activity).

Biology

Component 1 -Biology: The human body
Component 2- Biology: Environment, evolution, and inheritance

Chemistry

Component 3 -Chemistry: Elements, mixtures, and compounds
Component 4- Chemistry: Chemistry in our world

Physics

Component 5 -Physics: Energy, forces, and the structure of matter
Component 6- Physics: Electricity, magnetism, and waves

Learning Content GCSE Combined Science

Biology

1. Cell biology
2. Organisation
3. Infection and response
4. Bioenergetics
5. Homeostasis and response
6. Inheritance, variation and evolution
7. Ecology

Chemistry

1. Atomic structure and the periodic table
2. Bonding, structure, and the properties of matter
3. Quantitative chemistry
4. Chemical changes
5. Energy changes
6. The rate and extent of chemical change
7. Organic chemistry
8. Chemical analysis
9. Chemistry of the atmosphere
10. Using resources

Physics

1. Energy
2. Electricity
3. Particle model of matter
4. Atomic Structure
5. Forces
6. Waves
7. Magnetism and electromagnetism

Implementation

Science lessons are planned to build on the prior knowledge and skills of students, regardless of point of entry, to equip students with a strong foundation in key fundamental scientific concepts. These skills are then built upon and developed according to the needs of individual students. We adopt a creative approach to learning to enable us to challenge students' previous experiences and pre-conceived ideas of science in order to include all students in science learning. A particular emphasis is placed on the development of practical science skills to encourage student curiosity and engagement. In addition, we incorporate outdoor learning into teaching wherever possible to highlight the relevance of science in the world around us.

Assessment

On admission, all students complete a baseline assessment to allow teachers to identify starting points, track progress and apply interventions where necessary. End of topic assessments and mock exams using past papers are part of our summative assessment procedures. Feedback and opportunities for students to discuss their learning form part of our planning and marking procedures.

In every lesson, formative assessments take place in the shape of multiple-choice quizzes, discussions, and true and false questioning. This information helps form our planning which can change to accommodate any gaps identified.

Impact

Baseline assessment information is used to evaluate progress from point of entry to point of leaving year 11. Our main goal is for our students to be able to clearly explain what they have learned and demonstrate these skills across the curriculum and outside of the classroom setting. We aim for students to leave:

- With an appreciation of the relevance of science in the world around them.
- Equipped with a knowledge of the range of scientific careers available to them.
- Equipped with the relevant scientific skills, knowledge and qualifications to allow them to succeed on their chosen path.
- Equipped with the scientific knowledge to make informed choices about scientific issues they will encounter throughout their lives

Core curriculum links

Maths	English
Calculating Graph skills Predicting Problem solving Estimating	Vocabulary Justifying Speaking Listening Questioning

Careers in Science

Jobs which science skills will be beneficial.

Medical	Animals	Education	Leisure
<ul style="list-style-type: none"> • Doctor • Nurse • Paramedic • Pharmacist • Midwife • Care assistant • Physiotherapist • Dentist • Dental Lab Assistant • Doctor's receptionist 	<ul style="list-style-type: none"> • Vet • Veterinary nurse • Vet receptionist • Animal care assistant • Farmer 	<ul style="list-style-type: none"> • School Teacher • Sixth Form Teacher • College Tutor • University Lecturer 	<ul style="list-style-type: none"> • Hairdresser • Personal Trainer • Florist • YouTuber • Dance instructor • Food scientist • Market researcher
Engineering	Armed Forces		
<ul style="list-style-type: none"> • Engineer • Electrician • Engineering apprentice • Lab technician 	<ul style="list-style-type: none"> • Army • Navy • Airforce 		

Link to the AQA website for further information.

<https://www.aqa.org.uk/subjects/science>

Extension tasks and revision programmes can be found by accessing:

Seneca Online Learning Platform:

<https://senecalearning.com/en-GB/>

BBC Bitesize Revision Pages:

Combined Science- Biology

<https://www.bbc.co.uk/bitesize/topics/zthssrd>

Combined Science- Chemistry

<https://www.bbc.co.uk/bitesize/topics/z88jty>

Combined Science- Physics

<https://www.bbc.co.uk/bitesize/topics/zqw77p3>

How parents can help develop science skills:

You can support the work we are doing by attending parent events, keeping up to date by regularly accessing our website and enquiring about what your child is doing in school.

Parents/carers can also sign up to Seneca online with a parent/carer account to access the same learning as your child.

<https://senecalearning.com/en-GB/>

If you would like further information about how to access and create an online Seneca account, please contact school.