

SCIENCE DEPARTMENT CURRICULUM STATEMENT – 2021-22

INTENT:

To spark a curiosity in all our students about the world around them and arm them with the practical, analytical and research skills with which to make their own discoveries. Science is a practical subject and will be taught as such; students will carry out purposeful lab and field experiments and investigations. Students will be explicitly taught the literacy, numeracy and research skills necessary for a successful career in science at school and beyond. Students will collaborate with each other in most lessons and there will be the opportunity to collaborate with students from other schools at least once a year.

Our teaching provides an understanding for young people of both the problems and opportunities that science presents to the world and how they can contribute to solving these problems and take advantage of the opportunities.

We are passionate in our support of the school's overarching vision; for students to be ACE. We focus on Attainment, supporting students to make rapid progress from each starting point; on Care, encouraging students to lead happy, safe and successful lives – particularly through their understanding of the ethical and environmental challenges faced in the modern world as a result of scientific advancements; and on Excellence, supporting students to be truly aspirational and to achieve more than they first thought possible.

Key Stage 3

Our Key Stage 3 provision is allied to the National Curriculum in England; students will develop a deeper understanding of a range of scientific ideas in the subject disciplines of biology, chemistry and physics. Schemes of learning are based on the 'big ideas' underpinning scientific knowledge and understanding as well as being rooted in 'working scientifically'.

We aim also to prepare students for success at GCSE and beyond. As such, students are challenged to respond to GCSE style questions from the very beginning of KS3 and will receive advice and guidance about how to improve their written answers in line with GCSE success criteria.

In addition, the Science department is committed to supporting whole school Enterprise Skills. We have planned into our schemes of learning explicit teaching of 'Skillsbuilder' steps across years 7-11 in Presenting (Speaking) but will cover all six skills throughout and aim to sign-post these for students as they arise.

Key Stage 4

Students will follow the AQA GCSE Combined Science (Trilogy) or AQA GCSE Biology, Chemistry and Physics which all build on the foundation of our KS3 schemes of learning. Both GCSE pathways provide clear progression to A Level. Where necessary, the implementation of the curriculum may involve extra bespoke intervention sessions for students who are not making expected progress.

Key Stage 5

A-levels are offered in AQA Biology, AQA Chemistry and AQA Physics.

A-level Biology is a stepping-stone for future study of the biological sciences; developed in consultation with universities. It will nurture students' passion for Biology and inspire them to go onto further study in subjects such as zoology, genetics, environmental studies and medicine.

A-Level Chemistry- is a practical subject which develops skills for further studies or for real world applications. The content inspires and nurtures a passion for Chemistry, leading to courses such as Chemistry, Medicine and Pharmacy.

The A-level Physics course is interesting, exciting and relevant to the real world. It will inspire students, nurture a passion for physics and lay the groundwork for further study in science or engineering. The focus upon practical

work, and the range of optional topics available for year 13, make this a particularly attractive specification for teaching and learning.

IMPLEMENTATION:

Schemes of learning are designed to outline what we teach to ensure the intent of our curriculum is delivered across each key stage. Our schemes of learning include:

Long term overviews:

- Clear links to prior learning (Y7 linked to KS2, Y7 to Y7 and so on)
- Topic outline summarising key content

Medium term plans:

- Root enquiry and key enquiry questions
- Key Knowledge, Skills and Understanding (delivered through know, apply, extend learning objectives/outcomes)
- Duration
- Planned assessment of student progress and impact of taught curriculum
- Assessment and improvement opportunities (DIRT)
- SMSC
- Literacy and Numeracy
- Opportunities to extend learning
- Enterprise skills
- Appropriate challenge and differentiation opportunities

IMPACT:

ONGOING TEACHER ASSESSMENT

In KS3, Low-stakes end of topic quizzes provide regular information to teachers on how students are progressing and our schemes of learning have an emphasis on Directed Improvement and Reflection Time (DIRT) following these. Verbal and written feedback is given in-line with the school policy. In KS4/5, exam-style questions are used to prepare students for more formal assessments

INTERNAL EXAMINATION RESULTS

Students undertake three key assessments against GCSE success criteria in each year 7-8. At KS4 and 5, assessments are termly. On each occasion, teaching staff evaluate the impact of the curriculum by assessing student progress against stated learning objectives. Formal cumulative exams are conducted at the end of each year. These three assessment windows allow us to assess student progress and make judgements about the impact of the taught curriculum.

EXTERNAL EXAMINATION RESULTS

At KS4 and 5, our results in national examinations will be a clear measure of the impact of the curriculum. These results will be the culmination of a data trail tracking from a student's first term at GWA as part of the school's annual data collection and reporting of progress cycle. Our first A-level results were ALPS 2/3

ENTERPRISE SKILLS

In line with the whole school drive on Enterprise skills, the explicit teaching against 'Skillsbuilder' steps is measured through students evidencing progress within their tracking tool. In science, we assess *Speaking* but teach all six skills

IMPACT

WORK REVIEWS

We learn from the 3 annual school work reviews and conduct our own moderation of exercise books and assessments in a clear cycle of department meetings throughout the year.

DESTINATIONS

The eventual destinations of students, and the extent to which they are able to lead happy, successful lives, will be the ultimate measure of curriculum impact.

MODERATION

Summative assessments are standardised before use and then moderated within the department once students have sat them (3 times a year)

Where possible (and appropriate) opportunities for external moderation with other high performing schools are sought.

CAREERS

We identify and make explicit links to scientific careers whenever appropriate in lessons

ENRICHMENT

We offer a range of scientific enrichments that go beyond the National Curriculum to

