Wymondham College Science Department

Curriculum Intent:

The Science curriculum is designed to enthuse students with a love for science delivered by subject specialists that are passionate about science education; it improves student confidence, independent thinking and their desire to enquire whilst developing an appreciation of the world around them. High academic expectations complemented by a passion for science is nurtured through independent learning, creativity and outstanding practice to ensure every student is able to achieve their full potential.

The curriculum incorporates an extensive range of practical tasks across the 7-year curriculum, building on the knowledge learnt at KS2, regardless of starting points and individual needs, as the curriculum is adapted for individuals.

An extensive extra-curricular programme enriches students' experience in science by providing an outlet for naturally enquiring minds. Students are challenged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. This enables students to realise the connections that science has to every other subject taught across the school. Enrichment complements the taught curriculum and supports careers education, including the Excel science exhibition, Lectures held at the John Innes Centre at the UEA, Webinars, the annual 'Peel Lecture' and visiting speakers as well as students subject leaders and science society. As a result, many students go onto study the sciences at A Level and Undergraduate including veterinary, medicine and engineering.

How the curriculum fits in to the College's FABRIC
Focused – regularly evaluated for improvement. Reacts to what students know/don't know and can / can't do The sequence of the Y7-Y13 curriculum was developed over a six-year period, ensuring it is progressive, teaches the components of the curriculum to support student to be able to access the next stages of their learning and opportunities to revisit and recall learning and address any gaps. The department's subject specialists collaborated to develop the sequence, continuously reviewed considering feedback from those that were teaching the individual elements and the response from the students. The sequence is supported by resources to aid student progress so that the curriculum is accessible to all through STIR Slides, key terms and concepts for each topic, Prep booklets, Tests, Key core practicals.

Both disciplinary and substantive knowledge have been mapped across the year groups. The Science department worked with the Maths department to map key mathematical disciplinary knowledge across the curriculum, to ensure consistency of terminology and appropriate levels of mathematical challenge as students progress through the curriculum.

Recent evaluation of the curriculum offer has led to a 'Triple Only' curriculum offer for students. This exposes students to a broader range of science, allowing all students equality of opportunity in terms of the learning that they can receive.

Appropriate

Knowledge and skills are mapped across the curriculum, with key ideas building as they are revisited each year. Assessments are built to reflect the increasing knowledge and understanding. Assessment is via end of topic tests, which are common across all students. Assessments include aspects of previously taught content.

From Y10 upwards, students are selected for a Foundation or Higher Triple programme of study. The decision is based on use of different data sets (KS2 score, CAT data, test tracking data). Student progress is tracked through Y10 and Y11 via internal assessments and student

Broad and balanced

The Science curriculum incorporates three subjects, all taught by specialists. This allows students to experience teachers who have a real depth of knowledge. The strength of the department at A Level means that students receive strong subject knowledge and consistently strong outcomes.

Technical staff are all specialists, with knowledge of working in industry. This allows the teaching staff access to true technical support and Practical work to be adapted to meet the needs of the students and teaching staff.

Rigorous

Inbuilt retrieval activities (STIR slides, prep booklets and assessments) allow students time to practice what they have learnt and to receive feedback on it. These are designed to test students' understanding of both recent and less recent topics.

A thirteen-week revision schedule is published each year, in the run up to the Easter holidays. Each teacher uses the resources to review key topics studied across Y9-Y11. Resources are sent to parents/carers and Heads of House to further embed good revision with Y11 students.

Integrated

Learning is mapped across the 7 year curriculum with a shared understanding across all teaching staff. Learning is cumulative and student progress is regularly reviewed through topic assessments. This is done both formally and informally. The progress of cohorts is then reviewed as a department and aids the more formal aspects of the review process.

Coherent

Each topic has a central theme. There are clear Biology/Chemistry/Physics topics, but there are also clear themes within each topic. Schemes of work are shared across the department to ensure the students' learning journey is both coherent and progresive.

How we assess learning	**Key Vocabulary**
- STIR Slides (used at the start of each lesson) - Prep booklets (used at regular intervals throughout each topic) - End of topic assessments	There is a huge range of technical vocabulary. For this reason, Topic Support Sheets have been developed to allow students to review learning as they move through topics and at the end of each topic. The etymology of words is studied to support students understanding and application of vocabulary.
Enrichment	**Careers Education prepares our students to make informed choices about their futures**
- Science Club for younger year groups - Dr Karl Q&A session - Guest speakers invited in (in-person or online) - Peel Lecture every year - Students taken to Inaugural Lectures (when available) at UEA - Trips out to e.g. New Scientist Live - Involvement with Biology, Chemistry and Physics Olympiads - Involvement with Salters Festival of Chemistry	- Guest speakers invited in (in-person or online) - Peel Lecture every year - Students taken to Inaugural Lectures (when available) at UEA - Trips out to e.g. New Scientist Live - Students taken to Women of the Future conference - Students encouraged to apply to John Innes Centre Summer Camp - Relevant MOOCs shared with students - Attendance at JIC RSSV Accessible Science talks

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Our curriculum is underpinned by our values and are expressed through our curriculum

Pride: We have high standards for students. We expect them to be engaged in their learning and make use of the College's Rewards and Sanctions processes to communicate how well students are meeting those expectations.

Passion: Students are given many opportunities to explore the wider world of Science around them. Trips are run to explore opportunities around us and speakers are invited in, in person and via video link, to engage students and allow them a greater understanding of Science beyond the classroom

Positivity: Students are encouraged to think about Science as something that affects them in their every day lives and as relevant to their world. Topics are regularly revisited, allowing them to review their learning, and to avoid feeling 'left behind'. The department was one of the first to engage with feeding back to students in terms of progress against target, rather than receiving a raw score. This has enabled learners to feel more positive about the progress they are making as an individual.