# Highworth Warneford School
# Department Curriculum Intent Statement

**Curriculum Intent, Implementation and Impact Statement**

**Highworth Warneford School: Science Department**

**Introduction –**

In Science we aspire for all students demonstrate the school values of integrity, challenge and excellence as they develop a love for learning and a deeper understanding of our world and our place in the universe. We aim to support students in learning key knowledge and skills that will allow them to reflect with integrity on the role humans have in looking after our environment and all the living things in it, protecting it for future generations. We aim to challenge students to know more and do more as they prepare to demonstrate what they have learnt in their final GCSE exams, so that they can achieve excellence in their examinations to progress and follow pathways in science if they wish at college, university or in future careers

**Department implementation with the HWS 5 Keys to Curriculum Success**

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| **Knowledge, skills and mastery** | The Science department provides high quality lessons which engage students with the core concepts of Biology, Chemistry and Physics. We ensure students experience then full National Curriculum through a wide range of scientific topics that develops their practical skills to prepare them for exams and future careers. Our curriculum is a spiralled five-year-curriculum which is outlined in depth within our curriculum maps. At KS4 all students study at least two GCSE's in combined science, with some selected to study triple science.<br><br>Science classes are taught in mixed ability in year 7, 8 and 9 with the additional of a challenge class in year 9 which links into the school development focus of aspiration for higher prior attainers. In KS4 classes are grouped by the expected tier of entry for the GCSE examinations, allowing lessons to focus on the core content and knowledge needed to be successful in the final GCSE exams.<br>By allowing all students to access the combined or triple qualifications they are also all enabled to access the English Baccalaureate. To support transition, we have strong links with our local feeder primary schools in Year 4, 5, and 6. This enables us to enhance their KS2 science curriculum using the lab environment and further challenge of subject application to create a foundation for KS3.<br><br>Within science we promote independent learning with our pupils. Through their 5-year journey there is retrieval of prior learning and a focus of key scientific processes to ensure all experiments are accurate and build to the GCSE core practical expectations. Every unit of work has a knowledge organiser which allows students to review the core aims of the unit, tier 3 keywords and assessment review checklists guiding their personal reflection and signposting additional independent learning.<br><br>Assessment is facilitated through formal mid and end of unit assessment which are designed in the style of the GCSE questions. Every lesson starts with a do now activity which links to short, mid- and long-term retrieval. |
| **Literacy and numeracy** | Literacy and numeracy are pivotal to developing good outcomes for our pupils in all science disciplines. At the start of each unit of work learning starts with an extended reading task. This could be a scientific journal, newspaper article or key text. From this student understanding is tested though comprehension questions which students need to complete using extended written response frameworks. The use of key texts allows students to develop a baseline understanding of the unit's content as well as broadening horizons of text types.<br><br>Each classroom in the science department has a dedicated display board focusing on the exam command words and their meanings. Command words are used and reviewed in every lesson as part of the whole school learning intention strategy. The exploration of command words also links to assessment and examination preparation ensuing students understand the command terminology and what this is asking of them. Keywords are also exposed in lessons in order to apply and assess pupil understanding. |

Curriculum Leader: Richard Blake

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| | Each classroom has displays with examples of prefixes and suffixes to help students understand how to interpret many of the tier 3 words used in science.<br><br>Numeracy concepts are mapped within the curriculum model and have all been cross reference to the maths curriculum for consistency of approach. Within science there are key formula equations for all strands (Physics, Chemistry and Biology) these are displayed in classrooms for student and staff reference. |
| **Entitlement and engagement** | In Science, we echo the school's vision of Integrity, Challenge and Excellence through providing students with stimulating lessons where science comes to life and is a real in the moment experience. To demonstrate this, students have regular practical science lessons throughout KS3 and KS4, building up skills and instilling a love of science. Big picture links are built into the science curriculum, challenging students to link their learning to the outside world, job prospects, broadening their understanding and deepening their engagement with the subject.<br><br>All our classrooms are equipped with the specialist resources and equipment needed to support our challenging curriculum, along with visualizers, whiteboards and screens to supplement a range of teaching strategies. It is of vital importance that all students who attend the school can access our curriculum, feel supported and challenged within their lessons regardless of their starting points. In lessons the science staff will target pupil premium pupils with wave 1 classroom interventions, such as targeted questioning, to ensure that they receive a high quality and personalised education. Scaffolding is put into place for our SEND students to make lessons and tasks within them accessible to all. These are adapted and targeted to the individual learner needs. |
| **Aspiration and wellbeing** | Science is a key to unlock the understanding of the world around us and with a better understanding of our environment we can think more deeply about our world and the people within it. Here at Highworth Warneford School we are keen for pupils to have inquisitive minds, question the world we live in and have opportunities to investigate all viewpoints to ensure a holistic approach.<br><br>At Highworth Warneford School the majority of students study the Combined Science course at GCSE. This course opens doors to all A-level science subjects and future careers. The triple science course bridges the gap between the Combined Science course and the A-level content. Regardless of which GCSE pathway students' study we aim to raise the aspirations of all. Pupil premium pupils are supported and encouraged to aim high, to be resilient and reflective. These students are targeted regularly with questions to build their self-esteem, confidence and communication in the subject. Staff have high expectations of the students within their lessons, regularly challenging them and pushing their thinking and encouraging them to aspire to achieve the highest outcomes possible.<br><br>We aim to provide students with the transferable skills required to progress to their next steps. We ensure they are equipped for everyday life by adapting our teaching to both scientific advances and cultural shifts, as well as, including SMSC and British Values. Within our curriculum we cover a series of topics which include concepts of health and wellbeing, such as how a physical disease can lead to poor mental health and how various risk factors increase our chances of developing disease. We are also responsive to medical developments allowing students to discuss and explore topics of interest. Our teachers use this as an opportunity for class discussions, educating them on relevant issues surrounding health and wellbeing and linking to PSHCE and RSE. |

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| **Community, respect and enrichment** | All teachers working in the science department are subject specialists. The department regularly partakes in specific science education reflection and CPD both within the school and with the trust. In order to ensure consistency of assessment outcomes pre-moderation CPD is completed each year with the full science team to check marking is within tolerance and responsive to the summer examiners reports and feedback to centre. All staff are TEEP level 1 trained and are applying the core aspects of CREATE which is the whole school T&L foci.<br><br>Students have the opportunity to take part in a wide range of learning experiences outside of the classroom. For example, our trips include the aerospace museum in Bristol, conducting an ecological survey in a nearby woodland, Cheltenham Science Festival and student participation in stem challenges across the year including the engineering challenge run by Lockheed Martin as part of RIAT. To complement our enrichment further we also have links with post 16 providers for students to experience KS5 science as well as CPD for staff to increase challenge from KS4 – KS5 to raise student aspiration. |

Curriculum implementation

- KS3 – 6 lessons per fortnight.
- KS4 (Year 10) – 12 lessons per fortnight,
- KS4 (Year 11)– Combined Science – 9 lessons per fortnight.
- KS4 (Year 11) – Triple Science – 14 lessons per fortnight.

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