

Key Stage 4 – Science

Intent

The KS4 Science curriculum aims to deepen students' knowledge of biology, chemistry and physics, building on KS3 foundations while developing practical, analytical and problem-solving skills. Pupils learn to apply scientific understanding to unfamiliar contexts, think critically, and evaluate evidence, preparing them for GCSE assessments and further study. The curriculum also fosters resilience, curiosity and independent learning, supporting personal development, real-world application, and potential STEM careers. Success is seen in confident, scientifically literate students who can apply knowledge beyond the classroom and are well-prepared for KS5 and lifelong learning.

Implementation

KS4 Science builds on KS3 foundations, delivering a structured curriculum across biology, chemistry and physics that prepares pupils for GCSE examinations. Lessons combine theory, practical investigations, data analysis, and real-world applications, using a variety of teaching approaches including modelling, discussion, digital resources, and exam-style practice. Content is sequenced to reinforce prior knowledge while gradually introducing more complex concepts, ensuring progression and knowledge retention.

Impact

Evidence of impact is seen in GCSE results, improved analytical and problem-solving abilities, and students' ability to link science across subjects or use it in everyday life. Success looks like pupils demonstrating critical thinking, resilience, and curiosity, applying scientific understanding both inside and outside the classroom, and being well-prepared for further study, careers in STEM, and lifelong learning.

Assessment

Assessment is continuous through formative quizzes, practical tasks, and summative end-of-topic tests, with feedback guiding improvement. Pupils are supported through scaffolding, literacy and numeracy aids, and targeted interventions, while higher-attaining students are challenged through extension activities, problem-solving tasks, and independent research projects.