

# Curriculum Rationale

# Science



William Hulme's Grammar School  
The best in everyone™  
Part of United Learning

## Intent

The purpose of the science curriculum is to develop children's scientific understanding so they can be scientifically informed citizens and, if they wish, pursue careers in science or that require some scientific understanding. To be scientifically informed requires a broad knowledge of scientific ideas, an appreciation of how experimentation and observation develop this knowledge, and an ability to think rationally and analytically when applying this knowledge in new contexts.

Our aim is to provide an excellent science education for all our students. Developing students that can process, understand and question the scientific ideas that are both part of the curriculum and those they are exposed to in daily life.

Our curriculum is designed to provide children with a high level of core scientific knowledge and the ability to apply this across familiar and unfamiliar situations. We aim to deliver a high quality of education and engage students who want to continue with science into further education and beyond. We strive to ensure that students can make informed decisions with scientific information presented to them and understand how science impacts on their daily lives including their health and wellbeing.

The curriculum is designed to promote mastery of scientific ideas, with key concepts being regularly revisited and extended. This enables students to link ideas across the topics and between the scientific disciplines. Throughout the curriculum key skills in working scientifically, numeracy and literacy are embedded.

Co-curricular clubs and activities including science club, STEM activities and Chemistry Olympiad allow students to develop skills beyond the curriculum and promote the love and intrigue of science.

## Implementation

Lessons are based around Rosenshine's principles. Scaffolds are provided to support students in their learning and challenge activities are embedded to stretch students of all abilities. The faculty has a key focus on the use of correct scientific language. Regular reviews, interleaving of ideas and the retention and recall of knowledge is designed to support students in their retention for external, or internal, assessments.

## Impact

Students undertake common United Learning assessments in Year 7 and 8. This allows us to compare student performance across a large cohort. This improves the accuracy of predictions in KS4 and allows for improved targeting and intervention of students by identifying knowledge and skills gaps.

As a result of our delivery students should be confident in recalling key knowledge across all three sciences, linking their understanding within and between subjects. Students should be accomplished in processing, analysing and interpreting data in a range of forms and context.

By the end of KS4 we strive that the students pursuing A-levels and future careers in science have a high level of knowledge, the ability to apply their knowledge to unfamiliar situations and to link ideas from across the sciences as a result of highest possible progress and attainment. For all students we aim to have developed learners that can confidently assess and question the scientific ideas that will be presented to them in their daily lives. We hoped to have developed and understanding of our impact on the world and that they make informed choices from this.

Many students choose to continue studying sciences at A Level with us at WHGS. Studying science at Key Stage 5 opens a huge range of possible degree choices, from aerospace engineering to zoology. Each will require a different transition from Key Stage 5 to degree and a range of reasons to study, depending on the ambitions of individual students. The UCAS website is a good source of information on the different destinations for Key Stage 5 scientists and can be used as a reference point for both teachers and students.