

# SCIENCE



The science curriculum intent at Weald of Kent Grammar School is to deliver a high-quality science education that provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics.

Developments in science have helped shape our world and continuing scientific developments are vital to the world's future prosperity, so all students need to be taught essential aspects of the knowledge, methods, processes and uses of science to enable them to understand the plethora of science developments beyond the curriculum.

Through building up a body of key foundational knowledge and concepts in all three sciences, students are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They are encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Practical work is a core component of the curriculum for biology, chemistry and physics, allowing students to link their theoretical knowledge with their observations, and strengthen their understanding.

Literacy is regularly challenged with the use of scientific vocabulary and students are taught how to write scientific reports and research scientific concepts, culminating in investigative report writing with referencing at Key Stage Five, preparing students for both scientific careers and further study at university.

**Biology:** The biology curriculum is built around the core concepts of Cells; Structure and Function of Body Systems; Inheritance; Health and Disease; and Ecosystems. The foundations of these topics are developed at Key Stage Three from what they have studied at primary school and are then revisited, building on these concepts with more complex knowledge as students move into Key Stage Four and Five. Students build their mathematical knowledge from being able to draw graphs to being able to calculate rate of reaction from the gradient of a line and then using more complex statistical tests at Key Stage five.

**Chemistry:** The chemistry curriculum is built around the core concepts of Particles; The Periodic Table and Bonding; Chemical Reactions; the Earth; and Acids and Alkalis. The foundations of these topics are developed at Key Stage Three from their studies in primary school and then revisited, building on these concepts with more complex knowledge as students move into Key Stage Four and Five. Students build their mathematical knowledge from basic equations to more complex quantitative chemical analysis.

**Physics:** The physics curriculum is built around the core concepts of Forces; Energy; Space; Electricity and Magnetism. The foundations of these topics are developed at Key Stage Three from what they have studied at primary school and then revisited, building on these concepts with more complex knowledge as students move into Key Stage Four and Five. Students build their mathematical skills from basic equations such as calculating speed to then being able to rearrange formulae and then solving more complex equations and mathematical concepts at Key Stage Five.