Westcliff High School for Boys
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Careers across the curriculum
in CHEMISTRY

Soft Skills Development (these are the skills we are committed to developing in the Careers Department)	
All Years	We develop **communication and teamwork** using collaboration during practical activities and in the writing of practical reports. We develop an understanding of chemical language used in everyday life and teach the importance of the clear explanation of abstract concepts in both verbal and written form. The results of practical work are scrutinised and presented, drawing comparisons with those of other groups, and the correct use of scientific terminology is insisted upon when responding to questions.
Years 8, 9, Middle School and Sixth Form	We develop **time management** skills by completing practicals to obtain sufficiently accurate results within time limits and by planning multi-step practicals efficiently.
Year 9, Middle School and Sixth Form	We develop **creative thinking** by applying knowledge to real-world and unfamiliar scenarios, by designing experiments and visualising abstract structures.
In Middle School	We develop **problem solving** by interpreting data and graphs, solving calculation questions and predicting the outcomes of reactions.
In Sixth Form	We develop **networking** by students participating in the Cambridge Race competition enabling them to interact with students from different schools across the country and by engaging with outreach universities, specifically UEA.

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Development of Subject Specific Skills which are Relevant to Next Steps / the Workplace

Analytical Thinking
Students learn to interpret data, identify patterns, and apply chemical principles to unfamiliar scenarios. This is nurtured through examination-style questions, practical investigations, and structured problem-solving activities where students must explain their reasoning. This skill is highly relevant to next steps, particularly in Higher Education and careers such as Engineering, Medicine, Environmental Science, and Laboratory Research, where complex problems must be approached logically and systematically.

Practical Laboratory Competence
Students develop the ability to safely use equipment, follow procedures, and make accurate measurements. At GCSE, this begins with guided experiments, while at A-Level, students take on more independent investigations, refining precision and technique. These skills are directly applicable to laboratory-based careers, including Pharmaceuticals, Chemical Engineering, and Forensic Science, where accuracy and adherence to safety protocols are critical.

Data Handling and Evaluation
Students learn to record results effectively, process data (including calculations and graphing), and critically evaluate the reliability and validity of their findings. This is nurtured through Required Practicals at GCSE and Core Practicals at A-level. In the workplace, this translates to the ability to assess evidence, make informed decisions, and produce reliable reports, skills valued across scientific and non-scientific professions alike.

Scientific Communication
Students are taught to use appropriate terminology, write clear methodical explanations, and present arguments logically in both written and verbal forms. This is developed through extended writing tasks, presentations, and examination responses. Such communication skills are essential in any professional context, enabling individuals to convey complex information clearly to colleagues, clients or stakeholders.

Independent Learning and Research Skills
Particularly at A-Level, students are encouraged to take responsibility for their own learning, using textbooks, academic resources, and digital tools to deepen their understanding. This prepares them for Higher Education, where self-directed study is crucial, and for workplaces that require initiative and continuous professional development.

Attention to detail and accuracy
Whether balancing chemical equations, carrying out titrations, or interpreting results, students must work carefully and precisely. This skill is vital in many careers, especially those where small errors can have significant consequences, such as Healthcare, Manufacturing, and Quality Control.

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Extra-curricular Opportunities	
Step into NHS Competition	Encourages students to look into careers within the NHS, particularly with a focus on careers of which they may not have heard. They have to research their chosen career, including the skills needed to pursue this career and then design a job advertisement. They can choose to work in a group of up to 4 pupils, developing their teamwork and communication skills.
RSC Chemistry Olympiad (Year 13)	The RSC Chemistry Olympiad ensures budding chemists will develop critical problem-solving skills, learn to think more creatively and get a chance to test their knowledge in new, real-world situations in the workplace.
Cambridge Chemistry Race (Year 13)	The Cambridge Chemistry Race is a team-based chemistry competition for students in Year 13. Teams of 3 to 5 students compete to solve challenging and unusual chemistry problems, with points awarded for correct solutions. The competition emphasises understanding of chemical principles rather than memorisation, and all non-electronic resources, including notes and literature, are allowed. A select number of students have the opportunity to compete against other schools to solve a series of questions in a timed format, which nurtures their problem solving and network skills.
C3L6 Cambridge Challenge (Year 12)	The Cambridge Challenge is designed to be accessible to Year 12 students but will take them significantly beyond the syllabus and encourage them to think about science in the way they would at university or in a science-based career.
UEA Chemistry Trip (Year 12)	Students use problem solving skills to complete a practical based activity, collaborating with their partners, and it is also an opportunity to network with students from other schools.
Science Live (Year 12)	Students listen to topical lectures to inspire their creative thinking and encourage them to opt for a career in science.

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National Science Challenge (Year 10)	Pupils problem solve by applying knowledge in a competition format.
Salters Festival of Chemistry Discovery Day (Year 10)	Pupils network with those of the same age from other schools across the country. They then build on their communication and teamwork skills by working to synthesise aspirin, typically an A-Level practical. The day also includes a careers panel, where pupils have the opportunity to ask questions.
Junior Chemistry Challenge (Years 9-11)	Pupils complete a 45-minute challenge that bridges the gap between GCSE and A Level Chemistry. This allows them to develop their problem solving and time management skills and encourages pupils to progress to the further study of Chemistry.
Science Enrichment Day (Year 8)	Pupils develop their communication and teamwork skills by working in small groups to complete forensic science style practical experiments. They further develop their time management skills by ensuring that they complete the practical on-time and achieve sufficient results within a given time frame.