

HOE VALLEY SCHOOL

Chemistry

The Chemistry curriculum gives students a deep understanding of the atom as the fundamental building block of matter, including knowledge of subatomic particles, isotopes, and electronic structures. Through practical lessons, students will be able to explain and predict the outcomes of a wide range of chemical reactions, such as combustion, displacement, and redox, using balanced chemical equations and an understanding of reactivity trends in the periodic table. We encourage students to confidently analyse experimental data, apply scientific models to explain observations, and solve problems involving unfamiliar contexts.

"Discover the unseen, master the complex"

KS3

By the end of KS3 students will be able to describe atoms, elements, compounds, and mixtures, explain particle behaviour and changes of state, and carry out practical methods to separate mixtures. They will investigate chemical reactions such as combustion and neutralisation, identifying signs of change, while developing safe handling, accurate measurement, and recording skills.

KS4

By the end of KS4 students will be able to explain energy changes, rates of reaction, quantitative chemistry, and chemical changes through theory and practical work. They will apply their knowledge to electrolysis, organic chemistry, chemical analysis, and the chemistry of the atmosphere, while developing strong practical and analytical skills.

KS5

By the end of KS5 students will have a deep understanding of electronic structure, bonding, and the properties of groups and transition elements. They will confidently apply advanced analytical techniques such as TOF mass spectrometry, IR, HNMR, and CNMR, and explore the structure and role of polymers and DNA. This equips them with the theoretical knowledge, practical competency, and critical thinking skills needed for further study or scientific careers.



Topics with the WR logo are directly linked to the Hoe Valley School Work Ready Agenda.

