



## Year 12 Curriculum Grid

# Chemistry

Unit order will vary during 20/21 due to maternity leave

Year/Term	Unit	Intent
Curriculum purpose		To inspire students, nurture a passion for Chemistry, lay the groundwork for further study in Chemistry related courses whilst providing numerous opportunities to use practical experiences to link theory to reality and equip students with the essential practical skills they need for future scientific study
Autumn	Atomic Structure	<ul style="list-style-type: none"> <li>Describe the use of Mass Spectrometry</li> <li>Give the electron configuration of elements in spdf notation</li> </ul>
	Amount of Substances	<ul style="list-style-type: none"> <li>Complete calculations relating to moles, concentration and gases</li> <li>Carry out titrations and the related calculations (RP)</li> </ul>
	Bonding	<ul style="list-style-type: none"> <li>Relate a compounds chemical and physical properties to the types of chemical bonds and intermolecular forces it has</li> <li>Determine the shapes of molecules and bond angles</li> </ul>
	Organic Chemistry	<ul style="list-style-type: none"> <li>Be able to name compounds using the IUPAC and Cahn-Ingold priority rules</li> </ul>
	Alkanes	<ul style="list-style-type: none"> <li>Write equations for the combustion and chlorination of alkanes</li> </ul>
	Haloalkanes	<ul style="list-style-type: none"> <li>Draw reaction mechanisms for elimination and nucleophilic substitution reactions</li> <li>Use equations to show their effect on the ozone layer</li> </ul>
	Alkenes	<ul style="list-style-type: none"> <li>Relate the properties of alkenes to their structure</li> <li>Draw mechanisms for alkenes</li> </ul>
	Kinetics	<ul style="list-style-type: none"> <li>Explain the effect of temperature, pressure, concentration changes and catalysts on reaction rates (RP)</li> </ul>
Spring	Energetics	<ul style="list-style-type: none"> <li>Determine the enthalpy change of a reaction (RP)</li> <li>Use Hess' law</li> </ul>
	Equilibria	<ul style="list-style-type: none"> <li>Use Le Chatelier's principle</li> <li>Complete calculations using the equilibrium constant Kc</li> </ul>
	Redox	<ul style="list-style-type: none"> <li>Determine oxidation states of elements and compounds and use them to write half equations and overall redox equations</li> </ul>
	Inorganic Chemistry	<ul style="list-style-type: none"> <li>Explain the trends in properties of group 2 elements</li> <li>Describe the uses and reactions of some group 2 elements</li> <li>Explain the trends of electronegativity and oxidising nature of group 7 elements and describe related reactions</li> </ul>
	Alcohols	<ul style="list-style-type: none"> <li>Compare methods of alcohol production</li> <li>Carry out the oxidation of alcohols (RP) and the elimination reaction of alcohols (RP)</li> </ul>
	Organic Analysis	<ul style="list-style-type: none"> <li>Determine the structure of an organic sample using practical results, mass spectrometry and infrared spectroscopy (RP)</li> </ul>
Summer	Revision	<ul style="list-style-type: none"> <li>To provide an opportunity to recap the Year 12 content</li> <li>To provide students with good examination technique</li> </ul>