West Kirby Grammar School

Curriculum Map – Year 9 – Chemistry (2026-27)

Topic name	Term	Skills developed	Link to NC subject content and beyond	Prior knowledge	Next link in curriculum
Introduction to Energy and Rates of Reaction	*Autmn*	• Estimating risks • Test hypotheses • Collecting data • Presenting data • Draw conclusions • Constructing explanations • Justifying opinions • Draw conclusions • Construct explanations	• How energy transferred in a chemical reaction. • What is an exothermic reaction • What is an endothermic reaction • What is collision theory • How do we measure rate of reaction • What factors affect rate of reaction • How do we plan an investigation to determine what affects the rate of a reaction • What are the variables considered in an investigation	**Prior Knowledge from KS3** **Y7 Investigative Skills** - Drawing Tables - Variables - Drawing Graphs - Conclusions and evaluations. **Y7 Particles** - Particle Theory - Particle Diagrams **Y8 and 9 Chem Reactions (PART 1)**	Links to GCSE Topic 5 – **Energy Changes** **Year 11:** • Endothermic and Exothermic reactions • Catalysts Links to GCSE Topic –4.5 Energy Changes and 4.6 Rates of Reaction **Year 11:** • Exo and Endo • Collision Theory • Rate Graphs • Rates practicals.
Chemical Reactions (Part 2)	*Autumn*	• Estimating risks • Test hypotheses • Collecting data • Presenting data • Draw conclusions • Constructing explanations	• Representing chemical reactions using formulae and using equations • The chemical properties of metal and non-metal oxides with respect to acidity • Exothermic and endothermic chemical reactions • Reactions of acids with metals to produce a salt plus hydrogen • Making clean, dry soluble salts • Reactions of metal compounds with acid	**Prior Knowledge from KS2** Students should be able to: Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.	• Y9 Spring: **The Earth & Materials** Links to GCSE Topic 3 – **Quantitative Chemistry** **Year 10:** • Conservation of mass Links to GCSE Topic 4 – **Chemical Changes** **Year 10:** • Reactions of metals and acids

		• Justifying opinions • Draw conclusions • Construct explanations	• The tests for oxygen, carbon dioxide and hydrogen gas	Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. **Prior Knowledge from KS3** Y8 Separating Mixtures • Filtration • Evaporation Y8 Atoms, Elements & Compounds	**Year 11:** • Strong and weak acids • Titrations Links to GCSE Topic 8 – **Chemical Analysis** **Year 10:** • Testing for gases Links to GCSE Topic 9 – **Year 11: Chemistry of the Atmosphere** • Combustion
The Periodic Table and an Introduction to Chemical Bonding	*Autumn/Spring*	• Justify opinions • Review theories • Draw conclusions • Make observations • Construct explanations • Discuss limitations • Collecting data • Analyse patterns • Draw conclusions • Estimate risks	• Why do elements react? • How can we identify a chemical reaction? • Types of Chemical bond • Representing Ionic bonds • Representing Covalent bonds • Representation of compounds using Chemical and Ionic formulae • The principles underpinning the Mendeleev periodic table	**Prior Knowledge from KS3** Y8 Atoms, Elements & Compounds topic: • Structure of the atom and the properties of the subatomic particles • Electron Configuration • Structure of the atom and the properties of the subatomic particles • Electron Configuration	Links to GCSE Topic 1 – **Atomic structure & the Periodic Table** **Year 10:** • Atomic structure • Atoms, Elements, Mixtures & Compounds • Group 1, 7 & 0 Links to GCSE topic 2 – **Structure & Bonding**

		• Plan variables • Test hypotheses •	• The periodic table: periods and groups; metals and non-metals • How patterns in reactions can be predicted with reference to the periodic table • Trends in physical properties • Explaining trends in reactivity in group 1, 7, and 0 •		**Year 10:** • Why do elements react? • Ionic Bonding • Covalent bonding •
Material Science	*Summer*	• Analyse patterns • Review theories • Discuss limitations • Draw conclusions • Construct explanations • Collect data • Present data • Communicate Ideas • Justify Opinions • Estimate risks	• The identification of pure substances • Carbon is recycled through natural processes in the atmosphere, ecosystems, oceans and the Earth's crust (such as photosynthesis and respiration) as well as human activities (burning fuels). • Crude oil is a mixture of hydrocarbons resources that are used as a fuel and to make other materials. The burning of hydrocarbons releases carbon dioxide • Greenhouse gases reduce the amount of energy lost from the Earth through radiation and therefore the temperature has been rising as the concentration of those gases has risen.	**Prior Knowledge from KS2** Students should be able to: Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter. Identify the part played by evaporation and condensation in the water cycle and associate	Links to GCSE Topic 9 – **Chemistry of the Atmosphere** **Year 10:** • Combustion • Composition of the atmosphere • Climate change • Greenhouse effect Links to GCSE Topic 10 – **Using resources** **Year 11:** • Finite resources • Crude oil • Materials

		• Examine consequences • Review theories	• Scientists have evidence that global warming caused by human activity is causing changes in climate. • Sedimentary, igneous and metamorphic rocks can be inter converted over millions of years through weathering and erosion, heat and pressure, and melting and cooling.	the rate of evaporation with temperature.	