

<b>Yr9 (ALL)</b>	<b>Topic Area</b>	<b>Key knowledge/skills (what <u>has</u> to be learnt)</b>	<b>Examples of required practicals for students</b>	<b>Resources/support at home</b>
C1	Atomic Structure	Understanding the key developments in our development of a model for the structure of the atom and how atoms bond to each other to form compounds. Describing and explaining separation techniques.		Kerboodle Google classroom BBC Bitesize
C2	The Periodic Table	Understanding how the Periodic Table was developed based on the trends and patterns of reactions between elements. Understanding how the properties of the different groups are related to their electronic structure with particular focus on groups 1 and 7.	Displacement Reactions	Kerboodle Google classroom BBC Bitesize
C3	Structure and Bonding	Explaining the difference between metals and non-metals in terms of structure and bonding of atoms.	Cooling curves Testing conductivity	Kerboodle Google classroom BBC Bitesize

<b>Yr10 SEPARATE</b>	<b>Topic Area</b>	<b>Key knowledge/skills (what <u>has</u> to be learnt)</b>	<b>Examples of key compulsory practicals for students</b>	<b>Resources/support at home</b>
C4	Chemical Change	How to carry out calculations using balanced symbol equations to predict the amounts of reactants and products in a reaction	RP2 Titration	Kerboodle Google classroom BBC Bitesize My GCSE Science
C5	Chemical calculations	How to represent neutralisation as an ionic equation and calculate the number of hydrogen ions in a solution given its pH number Calculate unknown concentrations from experimental results	RP1 Preparation of salt	Kerboodle Google classroom BBC Bitesize My GCSE Science

C6	Electrolysis	Identify and describe oxidation and reduction reactions in terms of electron transfer	RP3 Electrolysis RP4 Temperatures changes	Kerboodle Google classroom BBC Bitesize My GCSE Science
C7	Energy Changes	Use bond energy values to calculate approximate energy change in reactions		Kerboodle Google classroom BBC Bitesize My GCSE Science
C8	Rates of Reaction	Use the particle model and collision theory to explain changing reaction rates. Explain how catalysts can affect the rates of reaction in terms of activation energy.	RP5 Rates of reaction (concentration)	Kerboodle Google classroom BBC Bitesize My GCSE Science
C9	Crude Oil	How fractional distillation can be used to separate crude oil into useful fractions. How the properties and usefulness of these fractions relate to their molecular structure. Understanding the process and importance of cracking. Describing complete and incomplete combustion of hydrocarbons with balanced symbol equations.		Kerboodle Google classroom BBC Bitesize My GCSE Science

<b>Yr11 SEPARATE</b>	<b>Topic Area</b>	<b>Key knowledge/skills (what <u>has</u> to be learnt)</b>	<b>Examples of key compulsory practicals for students</b>	<b>Resources/support at home</b>
C9	Crude Oil	How fractional distillation can be used to separate crude oil into useful fractions. How the properties and usefulness of these fractions relate to their molecular structure. Understanding the process and importance of cracking. Describing complete and incomplete combustion of hydrocarbons with balanced symbol equations.		Kerboodle Google classroom BBC Bitesize My GCSE Science
C10	Organic Reactions	The structure and reactions of alkanes, alkenes, esters		Kerboodle

		and carboxylic acids.		Google classroom BBC Bitesize My GCSE Science
C11	Polymers	The different types of bonding between monomers and how this affects the properties of the polymer.		Kerboodle Google classroom BBC Bitesize My GCSE Science
C12	Chemical analysis	Identifying unknown gases and ions using a wide range of tests and explaining why instrumental analysis is used in many applications.	RP Calculating Rf values  RP Chemical tests	Kerboodle Google classroom BBC Bitesize My GCSE Science
C13	Earth's Atmosphere	How the composition of the Earth's atmosphere developed over its history, how climate change is caused by greenhouse gases and this needs to be addressed.		Kerboodle Google classroom BBC Bitesize My GCSE Science
C14	Earth's resources	How to analyse data on diminishing finite resources and carrying out Life Cycle Assessments to judge the impact of making new materials.	RP Purifying water	Kerboodle Google classroom BBC Bitesize My GCSE Science
C15	Using our resources	How to explain the properties of ceramics, polymers and composites in terms of chemical structure. The use of biological methods to extract some metals, such as copper, from low grade deposits of ores.		Kerboodle Google classroom BBC Bitesize My GCSE Science