

Year 11 Overview of Scheme of Work for Science GCSE Chemistry

Please note that there may be some slight variation on topics taught in which weeks dependent on each class taught

Week	Topic titles	Key Assessments
1	C2.1 Covalent bonding <ul style="list-style-type: none"> • Explain how covalent bonds are formed. • Draw dot-and-cross diagrams for simple molecules. 	Structures & bonding assessment
2	C2.2 More about molecules <ul style="list-style-type: none"> • Describe covalent bonding in simple molecules. • Draw displayed formulae for simple molecules. 	Structures & bonding assessment
3	C2.3 Ionic bonding <ul style="list-style-type: none"> • Explain what ions are. • Explain how positive and negative ions are formed by electron transfer. • Use dot-and-cross diagrams to represent ions. • Describe ionic bonding. 	Structures & bonding assessment
4	C2.4 Making ionic compounds <ul style="list-style-type: none"> • Describe the reactions of the Group 1 metals with non-metal elements. • Represent the electronic structures of ions in ionic compounds. 	Structures & bonding assessment
5	C2.5 Inside metals <ul style="list-style-type: none"> • Describe metallic bonding. 	Structures & bonding assessment
6	C2.6 Molecules & properties <ul style="list-style-type: none"> • Explain how the properties of simple molecular substances are linked to their structure. 	Properties of materials assessment
7	C2.7 Properties of ionic compounds <ul style="list-style-type: none"> • Explain how the properties of ionic compounds are linked to their structure. 	Properties of materials assessment
8	C2.8 Diamond & graphite <ul style="list-style-type: none"> • Recognise the structures of diamond and graphite, and describe their properties. • Explain some of the uses of diamond and graphite. • Explain the properties of diamond and graphite in terms of their structure. 	Properties of materials assessment
9	C2.9 Bucky balls & nanotubes <ul style="list-style-type: none"> • Explain what fullerenes are, and why they are useful. • Explain the meanings of the terms nanoscience and nanoparticles. 	Properties of materials assessment

	<ul style="list-style-type: none"> • Describe some applications of nanoscience. 	
10	C2.10 Metals <ul style="list-style-type: none"> • Explain how the properties of metals are linked to their structure. • Explain why alloys have different physical properties from the elements from which they are made. • Describe the properties and uses of shape memory alloys. 	Properties of materials assessment
11	C2.11 Explaining polymer properties <ul style="list-style-type: none"> • Explain how the properties of polymers are linked to what they are made from and the conditions under which they are made. • Explain how the uses of polymers are linked to their structures. 	Properties of materials assessment
12	C2.12 Atomic structure <ul style="list-style-type: none"> • Work out the mass number and atomic number of an atom. • Explain what an isotope is. 	Quantitative chemistry assessment
13	C2.13 Masses & moles <ul style="list-style-type: none"> • Calculate the relative formula mass of a given substance. 	Quantitative chemistry assessment
14	C2.14 Chemical detectives <ul style="list-style-type: none"> • Describe how to use paper chromatography to identify food additives. • Explain how gas chromatography separates the substances in a mixture. 	Quantitative chemistry assessment
15	C2.15 Identifying chemicals <ul style="list-style-type: none"> • Explain how a combination of gas chromatography and mass spectrometry identifies the compounds in a mixture. 	Quantitative chemistry assessment
16	C2.16 Using equations <ul style="list-style-type: none"> • Calculate the percentage of an element in a compound. • Calculate empirical formulae. • Calculate masses from equations. 	Quantitative chemistry assessment
17	C2.17 Calculating yield <ul style="list-style-type: none"> • Explain why it is not always possible to obtain the calculated amount of product. • Calculate the percentage yields of reactions. • Explain what a reversible reaction is. 	Quantitative chemistry assessment
18	C2.18 How fast? <ul style="list-style-type: none"> • Explain the meaning of the term rate of reaction. • Use data, equations, and graphs to calculate reaction rates. 	Chemical reactions oil assessment

19	C2.19 Speeding up reactions - Temperature <ul style="list-style-type: none"> Recall that chemical reactions happen when particles collide. Describe and explain the effect of changing temperature on the rate of reaction. 	Chemical reactions oil assessment
20	C2.20 Speeding up reactions –Concentration <ul style="list-style-type: none"> Describe and explain the effect of changing concentration on rates of reaction. Describe and explain the effect of changing pressure on rates of reaction. 	Chemical reactions oil assessment
21	C2.21 Speeding up reactions – Surface area <ul style="list-style-type: none"> Describe and explain the effect of changing surface area on rates of reaction. 	Chemical reactions oil assessment
22	C2.22 Speeding up reactions – Catalyst <ul style="list-style-type: none"> Explain what catalysts are and what they do. Explain why catalysts are important in industry. 	Chemical reactions oil assessment
23	C2.23 Energy & Chemical reactions <ul style="list-style-type: none"> Explain what exothermic reactions are, and give examples of them. 	Chemical reactions oil assessment
24	C2.24 Energy in, energy out <ul style="list-style-type: none"> Recall that, in chemical reactions, energy can be transferred from or to the surroundings. Explain what endothermic reactions are, and give examples of them. Recall that if a reaction is exothermic in one direction it is endothermic in the opposite direction. 	Chemical reactions oil assessment
25	Controlled assessment - Planning	<i>GCSE Controlled assessment</i>
26	Controlled assessment - Reporting on the planning research Assessment	<i>GCSE Controlled assessment</i>
27	Controlled assessment - Practical work	<i>GCSE Controlled assessment</i>
28	Controlled assessment - Processing primary data	<i>GCSE Controlled assessment</i>
29	Controlled assessment - Analysing results Assessment	<i>GCSE Controlled assessment</i>
30	C2.25 Acids & bases <ul style="list-style-type: none"> Explain what makes solutions acidic or alkaline. Explain what happens in neutralisation reactions. 	Salts assessment
31	C2.26 Making soluble salts - 1 <ul style="list-style-type: none"> Explain what a salt is. Describe how to make soluble salts from acids and metal oxides. 	Salts assessment

32	C2.27 Making soluble salts - 2 <ul style="list-style-type: none"> • Describe how to make soluble salts from acids and metals, and acids and alkalis. • Suggest methods to make a soluble salt. 	Salts assessment
33	C2.28 Precipitation reactions <ul style="list-style-type: none"> • Suggest the substances needed to make an insoluble salt. • Give examples of how precipitation reactions are useful. 	Salts assessment
34	C2.29 Electrolysis <ul style="list-style-type: none"> • Describe what happens at the electrodes in electrolysis. • Use half equations to represent reactions at electrodes. 	Salts assessment
35	C2.30 Electroplating <ul style="list-style-type: none"> • Explain how electroplating works. • Give reasons for electroplating objects. 	Salts assessment
36	C2.31 Using electrolysis – 1 <ul style="list-style-type: none"> • Describe and explain how aluminium is extracted from its ore by electrolysis. 	Salts assessment
37	C2.32 Using electrolysis – 2 <ul style="list-style-type: none"> • Predict the electrolysis products if there is a mixture of ions. • Name and give uses of the products of the electrolysis of sodium chloride solution. 	Salts assessment
38	GCSE Revision	
39	GCSE Revision	