

IGCSE Chemistry

Module 1: Foundations of Chemistry

Week 1	Introducing chemistry	Teaching
	Particles	Teaching
	Quiz: Introducing chemistry, particles	Quiz
	Lab: The solubility of sodium chloride in water	Lab
	Solubility	Teaching
	Units and Terminology	Teaching
	Particles in solids, liquids, and gases	Teaching
	Questions students ask: States of matter	Qus students ask
	The kinetic theory of matter	Teaching
	Quiz: Solubility, kinetic theory	Quiz
	Lab: The diffusion of food coloring in water (part 1)	Lab
	Change of state	Teaching
	Elements and atoms	Teaching
	Compounds, molecules, and mixtures	Teaching
	Quiz: Change of state, exploring particles	Quiz
	Lab: The diffusion of food coloring in water (part 2)	Lab
Week 2	Physical and chemical changes	Teaching
	Particles in gases	Teaching
	Separation methods	Teaching
	Questions students ask: Separating oil and water	Qus students ask
	Quiz: Physical and chemical changes, gases, separation methods	Quiz
	Lab: Separating inks using paper chromatography (part 1)	Lab
	Paper chromatography and Rf values	Teaching
	Quiz: Chromatography	Quiz
Week 3	Lab: Separating inks using paper chromatography (part 2)	Lab
	Lab: Separating sand and salt	Lab
	The structure of the atom	Teaching
	Questions students ask: The Bohr Model	Qus students ask
	Relative atomic mass	Teaching
	Relative formula mass	Teaching
	Quiz: The structure of the atom, relative mass	Quiz
	Electron configuration	Teaching
	Ions	Teaching
	Introducing the Periodic Table of the Elements	Teaching
	Exploring the Periodic Table of the Elements	Teaching
	Questions students ask: Iodine	Qus students ask
Week 4	Quiz: Electron configuration, ions, the Periodic Table	Quiz
	Isotopes	Teaching
	Introducing the noble gases	Teaching
	Uses of noble gases	Teaching
	Questions students ask: The location of electrons in transition metals	Qus students ask

	Experimental data	Teaching
	Quiz: Isotopes, noble gases, data	Quiz
	SUMMARY: Foundations of chemistry	Summary
Week 5	WORKED EXAMPLES: Foundations of chemistry (1)	Worked examples
	WORKED EXAMPLES: Foundations of chemistry (2)	Worked examples
	REVISION: Foundations of chemistry	Revision
	MODULE TEST: Foundations of chemistry	Module test
Week 6	ADDITIONAL STEP Hodder workbook Chapter 1: Principles of Chemistry 1	Additional step

Module 2: Bonding and Structure

Week 7	The mole	Teaching
	Moles and relative mass	Teaching
	Moles and empirical formulae	Teaching
	Determining empirical formulae from experimental results	Teaching
	Quiz: The mole	Quiz
	Covalent bonds	Teaching
	Questions students ask: Dihydrogen monoxide	Qus students ask
	Ionic bonds	Teaching
	Metallic bonds	Teaching
	Quiz: Covalent, ionic and metallic bonding	Quiz
	Chemical formulae of covalent molecules	Teaching
	Chemical formulae of ionic compounds	Teaching
	Chemical equations	Teaching
	Quiz: Chemical formulae, chemical equations	Quiz
Week 8	Calculating mole fractions	Teaching
	Calculating mass fractions	Teaching
	Decomposition reactions	Teaching
	Quiz: Mole and mass fractions, decomposition reactions	Quiz
	Lab: The decomposition of sodium bicarbonate	Lab
	Using chemical equations	Teaching
	Yield	Teaching
	Volume of a gas	Teaching
	Quiz: Using chemical equations, yield, gas volume	Quiz
Week 9	Lab: Observing that gases take up space	Lab
	Structure of materials	Teaching
	Giant ionic structures	Teaching
	Simple molecular structures	Teaching
	Quiz: Giant ionic and molecular structures	Quiz
Week 10	Lab: Observing crystal shapes (part 1)	Lab
	Lab: Observing crystal shapes (part 2)	Lab
	Questions students ask: The shape of the water molecule	Qus students ask
	Giant covalent structures	Teaching
	Allotropes	Teaching
	Questions students ask: Pencils	Qus students ask
	Quiz: Giant covalent structures, allotropes	Quiz
	Metallic structures	Teaching

	Alloys Electricity and electrical properties of materials Quiz: Metals, electrical properties of materials	Teaching Teaching Quiz
Week 11	Introducing electrolysis Exploring electrolysis Electrolysis of dilute sulfuric acid Uses of electrolysis Quiz: Electrolysis Lab: Electrolysis of water	Teaching Teaching Teaching Teaching Quiz Lab
Week 12	SUMMARY: Bonding and structure WORKED EXAMPLES: Bonding and structure (1) WORKED EXAMPLES: Bonding and structure (2) WORKED EXAMPLES: Bonding and structure (3) WORKED EXAMPLES: Bonding and structure (4)	Summary Worked examples Worked examples Worked examples Worked examples
Week 13	REVISION: Bonding and structure MODULE TEST: Bonding and structure	Revision Module test
Week 14	ADDITIONAL STEP Hodder workbook Chapter 2: Principles of Chemistry 2	Additional step

Summary of Modules 1- 2

Week 15	SUMMARY MODULES 1-2: Foundations of chemistry SUMMARY MODULES 1-2: Bonding and structure WORKED EXAMPLES: Modules 1-2	Summary Summary Worked examples
Week 16	REVISION: Modules 1-2 SUMMARY TEST: Modules 1-2	Revision Summary test

Module 3: Inorganic Chemistry

Week 17	Introducing acids, bases and salts The pH scale Using indicator paper Acid strength and concentration Using acid concentration Quiz: Acids, bases and salts Reactions of acids Electrolysis of acids Questions students ask: Salts and hydration Neutralization reactions Titration Questions students ask: Cleaning products Quiz: Acid reactions	Teaching Teaching Teaching Teaching Teaching Quiz Teaching Teaching Qus students ask Teaching Teaching Qus students ask Quiz
Week 18	Lab: Investigating the pH of household substances Lab: The impact of concentration on pH	Lab Lab
Week 19	Salts Preparing insoluble salts Preparing soluble salts Worked examples: Acids, alkalis, bases and salts (1) Worked examples: Acids, alkalis, bases and salts (2)	Teaching Teaching Teaching Worked examples Worked examples

	Questions students ask: Salt on roads Quiz: Salts and how to prepare them The air Oxygen Quiz: Air, oxygen	Qus students ask Quiz Teaching Teaching Quiz
Week 20	Lab: Measuring the percentage of oxygen in air (part 1) Oxides of metals Oxides of non metals Oxidation and reduction Exploring REDOX reactions Quiz: Oxides, REDOX reactions Lab: Measuring the percentage of oxygen in air (part 2) Properties and uses of carbon dioxide Making and testing for carbon dioxide Quiz: Carbon dioxide Lab: The impact of oxygen on combustion Lab: The impact of carbon dioxide on combustion	Lab Teaching Teaching Teaching Teaching Quiz Lab Teaching Teaching Quiz Lab Lab
Week 21	Introducing halogens Halogen displacement reactions Halogen containing compounds and their uses Quiz: Halogens Lab: Testing for iodine in salts Group 1 metals Group 2 metals Reactions of metals Questions students ask: Metals and food Quiz: Metals Rusting Lab: The conditions required for rusting (part 1)	Teaching Teaching Teaching Quiz Lab Teaching Teaching Teaching Teaching Qus students ask Quiz Teaching Lab
Week 22	Lab: The conditions required for rusting (part 2) Preventing iron from rusting Quiz: Rusting Lab: Inhibiting rust formation (part 1) Extracting metals from raw materials Metals and their uses Quiz: Extracting metals, uses of metals	Lab Teaching Quiz Lab Teaching Teaching Quiz
Week 23	Lab: Inhibiting rust formation (part 2) Chemical tests 1: Testing for gases Chemical tests 2: Testing for water Questions students ask: Hard and soft water Chemical tests 3: Testing for positive and negative ions Questions students ask: Flame colors Quiz: Chemical tests	Lab Teaching Teaching Qus students ask Teaching Qus students ask Quiz
Week 24	SUMMARY: Inorganic chemistry (1) SUMMARY: Inorganic chemistry (2) SUMMARY: Inorganic chemistry (3) WORKED EXAMPLES: Inorganic chemistry (1) WORKED EXAMPLES: Inorganic chemistry (2)	Summary Summary Summary Worked examples Worked examples

	WORKED EXAMPLES: Inorganic chemistry (3)	Worked examples
Week 25	REVISION: Inorganic chemistry	Revision
	MODULE TEST: Inorganic chemistry	Module test
Week 26	ADDITIONAL STEP Hodder workbook Chapter 3: Inorganic chemistry	Additional step

Summary of Modules 1-3

Week 27	SUMMARY MODULES 1-3: Foundations of chemistry	Summary
	SUMMARY MODULES 1-3: Bonding and structure	Summary
	SUMMARY MODULES 1-3: Inorganic chemistry (1)	Summary
	SUMMARY MODULES 1-3: Inorganic chemistry (2)	Summary
	SUMMARY MODULES 1-3: Inorganic chemistry (3)	Summary
	WORKED EXAMPLES: Modules 1-3 (1)	Worked examples
	WORKED EXAMPLES: Modules 1-3 (2)	Worked examples
Week 28	REVISION: Modules 1-3	Revision
	SUMMARY TEST: Modules 1-3	Summary test

Module 4: Organic Chemistry

Week 29	Introducing organic chemistry	Teaching
	Fractional distillation of crude oil	Teaching
	Catalytic cracking	Teaching
	Burning fossil fuels and air quality	Teaching
	Air pollution and the environment	Teaching
	Questions students ask: Oil reserves	Qus students ask
	Quiz: Fractional distillation, catalytic cracking, air quality	Quiz
	Lab: Distillation	Lab
	Introducing alkanes	Teaching
	Exploring alkanes	Teaching
	Isomers	Teaching
	Alkenes	Teaching
	Quiz: Alkanes, isomers, alkenes	Quiz
Week 30	Alcohols	Teaching
	Manufacturing ethanol	Teaching
	Questions students ask: Sourdough bread	Qus students ask
	Carboxylic acids	Teaching
	Esters	Teaching
	Preparing an ester	Teaching
	Quiz: Alcohols, carboxylic acids, esters	Quiz
	Introducing polymers	Teaching
	Addition polymerization	Teaching
	Condensation polymerization	Teaching
	Quiz: Polymers	Quiz
Week 31	Lab: Making a bioplastic from cornstarch	Lab
	SUMMARY: Organic chemistry	Summary
	WORKED EXAMPLES: Organic chemistry (1)	Worked examples
	WORKED EXAMPLES: Organic chemistry (2)	Worked examples
	WORKED EXAMPLES: Organic chemistry (3)	Worked examples

Week 32	REVISION: Organic chemistry MODULE TEST: Organic chemistry	Revision Module test
Week 33	ADDITIONAL STEP Hodder workbook Chapter 5: Organic chemistry	Additional step

Summary of Modules 1-4

Week 34	SUMMARY MODULES 1-4: Foundations of chemistry SUMMARY MODULES 1-4: Bonding and structure SUMMARY MODULES 1-4: Inorganic chemistry (1) SUMMARY MODULES 1-4: Inorganic chemistry (2) SUMMARY MODULES 1-4: Inorganic chemistry (3)	Summary Summary Summary Summary Summary
Week 35	SUMMARY MODULES 1-4: Organic chemistry WORKED EXAMPLES: Modules 1-4 (1) WORKED EXAMPLES: Modules 1-4 (2)	Summary Worked examples Worked examples
Week 36	REVISION: Modules 1-4 SUMMARY TEST: Modules 1-4	Revision Summary test

Module 5: Physical Chemistry

Week 37	Exothermic and endothermic reactions Enthalpy Enthalpy changes and bond energy Quiz: Exothermic and endothermic reactions, bond energy Lab: Investigating enthalpy changes Specific heat capacity Using specific heat capacity Finding enthalpy changes Quiz: Specific Heat Capacity Lab: Calculating the specific heat capacity of a metal	Teaching Teaching Teaching Quiz Lab Teaching Teaching Teaching Quiz Lab
Week 38	Reaction rates Collision theory Impact of temperature on reaction rate Impact of surface area on reaction rate Impact of concentration and pressure on reaction rate Questions students ask: Fireworks Quiz: Reaction rates Lab: The impact of temperature on reaction rate Lab: The impact of surface area on reaction rate	Teaching Teaching Teaching Teaching Teaching Qus students ask Quiz Lab Lab
Week 39	Activation energy Catalysts Questions students ask: Coke and Mentos Quiz: Activation energy, catalysis Lab: The catalysis of hydrogen peroxide decomposition	Teaching Teaching Qus students ask Quiz Lab
Week 40	Reversible reactions Questions students ask: Rusting Dynamic equilibrium Exploring equilibrium Questions students ask: Swimming pools Quiz: Reversible reactions, equilibrium	Teaching Qus students ask Teaching Teaching Qus students ask Quiz

	The impact of pressure on the equilibrium position Other variables which impact equilibrium position Quiz: Equilibrium position SUMMARY: Physical chemistry	Teaching Teaching Quiz Summary
Week 41	WORKED EXAMPLES: Physical chemistry (1) WORKED EXAMPLES: Physical chemistry (2)	Worked examples Worked examples
Week 42	REVISION: Physical chemistry MODULE TEST: Physical chemistry	Revision Module test
Week 43	ADDITIONAL STEP Hodder workbook Chapter 4: Physical chemistry	Additional step

Summary of Modules 1-5

Week 44	SUMMARY MODULES 1-5: Foundations of chemistry SUMMARY MODULES 1-5: Bonding and structure SUMMARY MODULES 1-5: Inorganic chemistry (1) SUMMARY MODULES 1-5: Inorganic chemistry (2) SUMMARY MODULES 1-5: Inorganic chemistry (3) SUMMARY MODULES 1-5: Organic chemistry SUMMARY MODULES 1-5: Physical chemistry	Summary Summary Summary Summary Summary Summary Summary
Week 45	WORKED EXAMPLES: Modules 1-5 (1) WORKED EXAMPLES: Modules 1-5 (2) WORKED EXAMPLES: Modules 1-5 (3) WORKED EXAMPLES: Modules 1-5 (4)	Worked examples Worked examples Worked examples Worked examples
Week 46	REVISION: Modules 1-5	Revision
Week 47	SUMMARY TEST: Modules 1-5 Concepts (i) SUMMARY TEST: Modules 1-5 Concepts (ii) SUMMARY TEST: Modules 1-5 Calculations SUMMARY TEST: Modules 1-5 Lab work	Summary test Summary test Summary test Summary test

Module 6: Revision and Exam Preparation

Week 48	Read the question: What are you being asked to do? Read the question: Common confusions Quiz: Read the question Memorization Quiz: Memorized facts	Revision Revision Quiz Revision Quiz
Week 49	Writing equations Drawing graphs Quiz: Equations and graphs Foundational calculations Quiz: Foundational calculations	Revision Revision Quiz Revision Quiz
Week 50	Basic calculations with moles Molar concentration calculations Quiz: Calculations with moles Calculations with empirical formulae Quiz: Calculations with empirical formulae	Revision Revision Quiz Revision Quiz
Week 51	Energy and enthalpy calculations Bond energy calculations Quiz: Calculations in thermodynamics	Revision Revision Quiz

	Quiz: Mixed calculations	Quiz
Week 52	Questions about experiments	Revision
	Lab equipment	Revision
	Key Labs: Foundations of chemistry	Revision
	Key Labs: Bonding and structure	Revision
	Key Labs: Inorganic chemistry (1)	Revision
	Key Labs: Inorganic chemistry (2)	Revision
	Key Labs: Inorganic chemistry (3)	Revision
	Key Labs: Organic chemistry	Revision
	Key Labs: Physical chemistry	Revision
	Designing experiments	Revision
	Questions about safety	Revision
Week 53 to exams	REVISION: Key labs	Revision
	Quiz: Lab questions	Quiz
	Preparing for exam style questions	Revision
	The exam	Revision
	Axiom chemistry conclusion	Revision
	Revision and exam preparation	Revision