



EDEXCEL COMBINED SCIENCE GCSE

CHEMISTRY

LEARNING JOURNEY

YEAR 10

START

1

KEY CONCEPTS IN CHEMISTRY



- States of matter
- Particles
- Elements, compounds and mixtures
- Atomic structure

Key Skills: Required practicals, use of microscopes, mathematical skills
Exam Focus: Calculations, command words, interpreting data

2

STATES OF MATTER AND METHODS OF SEPARATIONS



- States of matter
- Changes of state
- Pure substances
- Mixtures
- Filtration, crystallisation, distillation, chromatography

Key Skills: Planning and carrying out separations, interpreting results
Exam Focus: Structure-function links, calculations, extended responses

3

ATOMIC STRUCTURE AND THE PERIODIC TABLE

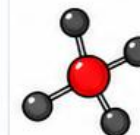


- Atomic structure
- Isotopes
- The periodic table
- Metals and non-metals

Key Skills: Interpreting data, using the periodic table
Exam Focus: Structure-function links, calculations

4

STRUCTURE AND BONDING



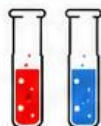
- Ionic bonding
- Covalent bonding
- Metallic bonding
- Properties of substances

Key Skills: Interpreting data, drawing structures, explaining properties
Exam Focus: Extended responses, application of knowledge

YEAR 10/11

5

ACIDS AND ALKALIS



- Properties of acids and alkalis
- pH scale
- Neutralisation
- Indicators
- Strength and concentration

Key Skills: Practical investigations, using indicators, interpreting data
Exam Focus: Calculations, data analysis, extended writing

6

ELECTROLYSIS



- Electrolysis of molten compounds
- Electrolysis of solutions
- Extraction of metals
- Half equations

Key Skills: Interpreting data, writing half equations, applying knowledge
Exam Focus: Control and regulation, extended responses

7

GROUPS IN THE PERIODIC TABLE



- Group 1 – the alkali metals
- Group 7 – the halogens
- Group 0 – the noble gases
- Trends and reactivity

Key Skills: Interpreting data, using trends to explain reactivity
Exam Focus: Structure-function links, calculations

8

RATES OF REACTIONS

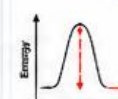


- Collision theory
- Factors affecting rate
- Measuring rate
- Rate equations

Key Skills: Planning investigations, interpreting data
Exam Focus: Graphs, calculations, evaluating methods

9

HEAT ENERGY CHANGES IN CHEMICAL REACTIONS



- Exothermic reactions
- Endothermic reactions
- Bond energies
- Reaction profiles

Key Skills: Interpreting graphs, using data, applying concepts
Exam Focus: Calculations, extended responses, application

YEAR 11

10

FUELS AND EARTH'S ATMOSPHERE



- Crude oil and fractional distillation
- Combustion and fuels
- Atmospheric pollutants
- Greenhouse gases
- Climate change

Key Skills: Interpreting data, explaining processes
Exam Focus: Evaluating impacts, extended writing, sustainability

11

REVISION



- Review key topics
- Strengthen problem-solving
- Apply knowledge
- Build confidence

Key Skills: Independent study, retrieval practice, self-assessment
Exam Focus: Mastery of content and skills, exam success

12

EXAM PREPARATION



- Command words
- Extended responses
- Data analysis
- Past paper practice

Key Skills: Exam technique, timing, structured responses
Exam Focus: All topics, applying knowledge to unfamiliar contexts

READY FOR EXAMS!



KEY CHEMISTRY SKILLS DEVELOPED THROUGHOUT GCSE



Practical Investigation



Mathematical Skills



Data Analysis



Scientific Communication



Problem Solving



Critical Thinking



Working Scientifically

LOOKING AHEAD

By the end of GCSE Chemistry, students will have developed the knowledge and skills required to progress to A Level Chemistry, Applied Science and a wide range of STEM careers including chemical engineering, medicine, pharmacy, forensic science, environmental science and laboratory research.

