	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Theme/Big Idea	**C10 – Organic reactions** Hydrocarbons; fractional distillation of crude oil; burning hydrocarbon fuels; cracking hydrocarbons; alkenes; alcohols; carboxylic acids and esters. **C11 – Polymers** Addition polymerisation; condensation polymerisation; natural polymers; DNA; properties and uses of polymers. **C12 – Chemical analysis** Pure substances and mixtures; formulations; chromatography; testing for gases; tests for positive and negative ions; instrumental analysis.	**C12 – Chemical analysis** Pure substances and mixtures; formulations; chromatography; testing for gases; tests for positive and negative ions; instrumental analysis. **C13 – The Earth's atmosphere** History of Earth's atmosphere; greenhouse gases; global climate change; atmospheric pollutants and their effects.	**C13 – The Earth's atmosphere** History of Earth's atmosphere; greenhouse gases; global climate change; atmospheric pollutants and their effects. **C14 – The Earth's resources** Finite and renewable resources; water for drinking; treating waste water; extracting metals from ores; life cycle assessments; reducing, reusing and recycling. **C15 – Using our resources** Rusting and corrosion; useful alloys; properties of polymers, glass, ceramics and composites; the Haber process; ammonia and fertiliser production; economics of the Haber process.	**Revision and exams – Year 11 consolidation** Retrieval, application and examination practice across the Year 11 specification.	**Revision – Year 11 consolidation** Targeted revision of specification content and misconceptions.	**External Exams – GCSE examinations** Final external examinations for the separate science qualification.

Content What are they learning? (including keywords)	**C10 – Organic reactions** Hydrocarbons; fractional distillation of crude oil; burning hydrocarbon fuels; cracking hydrocarbons; alkenes; alcohols; carboxylic acids and esters. **Keywords:** hydrocarbon, alkane, alkene, crude oil, fraction, fractional distillation, combustion, cracking, alcohol, carboxylic acid, ester **C11 – Polymers** Addition polymerisation; condensation polymerisation; natural polymers; DNA; properties and uses of polymers. **Keywords:** polymer, monomer, addition polymerisation, condensation polymerisation, repeat unit, polymer, functional group, DNA	**C12 – Chemical analysis** Pure substances and mixtures; formulations; chromatography; testing for gases; tests for positive and negative ions; instrumental analysis. **Keywords**: pure substance, mixture, formulation, chromatography, Rf value, precipitate, ion, cation, anion, flame test, spectroscopy **C13 – The Earth's atmosphere** History of Earth's atmosphere; greenhouse gases; global climate change; atmospheric pollutants and their effects. **Keywords:** atmosphere, greenhouse gas, carbon dioxide, methane, greenhouse effect, climate change, pollutant, sulfur dioxide, nitrogen oxides, carbon monoxide	**C13 – The Earth's atmosphere** History of Earth's atmosphere; greenhouse gases; global climate change; atmospheric pollutants and their effects. **Keywords:** atmosphere, greenhouse gas, carbon dioxide, methane, greenhouse effect, climate change, pollutant, sulfur dioxide, nitrogen oxides, carbon monoxide **C14 – The Earth's resources** Finite and renewable resources; water for drinking; treating waste water; extracting metals from ores; life cycle assessments; reducing, reusing and recycling. **Keywords:** finite resource, renewable resource, potable water, filtration, sedimentation, sewage, ore, extraction, life cycle assessment, recycling	**Revision and exams – Year 11 consolidation** Revision of key content, required practicals, mathematical skills and exam technique. **Keywords:** retrieval, application, practical, calculation, data, evaluation, command word	**Revision – Year 11 consolidation** Retrieval practice, required practicals, equations, data and extended responses. **Keywords:** retrieval, application, calculation, practical, data, evaluation	**External Exams – GCSE examinations** Final revision and examination preparation. **Keywords:** retrieval, application, calculation, data, practical, evaluation

	C12 – Chemical analysis Pure substances and mixtures; formulations; chromatography; testing for gases; tests for positive and negative ions; instrumental analysis. **Keywords:** pure substance, mixture, formulation, chromatography, Rf value, precipitate, ion, cation, anion, flame test, spectroscopy		**C15 – Using our resources** Rusting and corrosion; useful alloys; properties of polymers, glass, ceramics and composites; the Haber process; ammonia and fertiliser production; economics of the Haber process. **Keywords:** corrosion, rusting, alloy, polymer, ceramic, composite, Haber process, ammonia, fertiliser, NPK, equilibrium			
Skills How are they learning it?	**C10 – Organic reactions** Represent organic molecules using formulae; write balanced combustion equations; interpret fractional-distillation data; explain cracking; identify functional groups and compare organic reactions. **Required practical:** No AQA required practical specified.	**C12 – Chemical analysis** Carry out and interpret chromatography; calculate and use Rf values; identify gases and ions from observations; analyse chromatograms; evaluate instrumental methods and data. **Required practical:** Use paper chromatography to separate substances and identify components. Use chemical tests to identify ions in unknown ionic compounds.	**C13 – The Earth's atmosphere** Interpret atmospheric data; explain changes in atmospheric composition; evaluate evidence about climate change; identify sources and effects of pollutants; assess strategies to reduce emissions. **Required practical:** No AQA required practical specified.	**Revision and exams – Year 11 consolidation** Use retrieval practice, exam questions, data interpretation and practical evaluation.	**Revision – Year 11 consolidation** Plan and complete targeted revision; use exam questions and feedback to improve responses.	**External Exams – GCSE examinations** Apply knowledge, practical skills and mathematical reasoning under examination conditions.

	C11 – Polymers Draw monomers and repeat units; identify addition and condensation polymerisation; interpret polymer structures; relate structure to properties and uses; evaluate environmental issues. **Required practical:** No AQA required practical specified. **C12 – Chemical analysis** Carry out and interpret chromatography; calculate and use Rf values; identify gases and ions from observations; analyse chromatograms; evaluate instrumental methods and data. **Required practical:** Use paper chromatography to separate substances and identify components. Use chemical tests to identify ions in unknown ionic compounds.	**C13 – The Earth's atmosphere** Interpret atmospheric data; explain changes in atmospheric composition; evaluate evidence about climate change; identify sources and effects of pollutants; assess strategies to reduce emissions. **Required practical:** No AQA required practical specified.	**C14 – The Earth's resources** Interpret resource-use data; explain water-treatment stages; compare metal-extraction methods; evaluate life cycle assessments; assess environmental and economic trade-offs. **Required practical:** Analysis and purification of water samples from different sources, including pH, dissolved solids and distillation where appropriate. **C15 – Using our resources** Explain corrosion and prevention; compare material properties; interpret Haber-process conditions; evaluate industrial compromises; use data to assess resource efficiency and sustainability. **Required practical:** No AQA required practical specified.			

Key Questions	**C10 – Organic reactions** Why are hydrocarbons useful? How does fractional distillation separate crude oil? Why is cracking needed? How do alkenes, alcohols and carboxylic acids react? **C11 – Polymers** How are polymers made from monomers? What is the difference between addition and condensation polymerisation? How does polymer structure affect properties? **C12 – Chemical analysis** How can mixtures be separated and identified? How can gases and ions be tested? Why are instrumental methods useful in chemical analysis?	**C12 – Chemical analysis** How can mixtures be separated and identified? How can gases and ions be tested? Why are instrumental methods useful in chemical analysis? **C13 – The Earth's atmosphere** How has Earth's atmosphere changed? How do greenhouse gases affect climate? What are the sources and effects of atmospheric pollutants?	**C13 – The Earth's atmosphere** How has Earth's atmosphere changed? How do greenhouse gases affect climate? What are the sources and effects of atmospheric pollutants? **C14 – The Earth's resources** How can water be made potable? How are metals extracted sustainably? How does life cycle assessment help compare products? How can resource use be reduced? **C15 – Using our resources** How can corrosion be prevented? Why are alloys and composites useful? How does the Haber process produce ammonia? Why are industrial conditions a compromise?	**Revision and exams – Year 11 consolidation** Can I apply my knowledge to unfamiliar contexts and explain practical evidence?	**Revision – Year 11 consolidation** Which areas do I need to revisit and how can I improve my exam responses?	**External Exams – GCSE examinations** Can I apply the full specification confidently in the external examinations?
Assessment	C10: End of topic assessment	C12: End of topic assessment	C13: End of topic assessment	**Revision and exams**	**Revision** **Marking Milestone**	**External Exams** **Marking Milestone**

(specific assessed piece(s); milestone(s))	C11: End of topic assessment C12: End of topic assessment **Marking Milestone**	C13: End of topic assessment **Marking Milestone**	C14: End of topic assessment C15: End of topic assessment **Marking Milestone**	**Marking Milestone**		