	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Theme/Big Idea	**C4 – Chemical calculations** Relative masses and moles; equations and calculations; balanced equations; concentrations; titrations; gas calculations. **C5 – Chemical changes** Reactivity series; displacement; extraction of metals; salts; neutralisation and pH; strong and weak acids.	**C5 – Chemical changes** Reactivity series; displacement; extraction of metals; salts; neutralisation and pH; strong and weak acids. **C6 – Electrolysis** Introduction to electrolysis; changes at electrodes; extraction of aluminium; electrolysis of aqueous solutions.	**C6 – Electrolysis** Introduction to electrolysis; changes at electrodes; extraction of aluminium; electrolysis of aqueous solutions. **C7 – Energy changes** Exothermic and endothermic reactions; energy transfers; reaction profiles; bond energy calculations; chemical cells and batteries; fuel cells.	**C7 – Energy changes** Exothermic and endothermic reactions; energy transfers; reaction profiles; bond energy calculations; chemical cells and batteries; fuel cells. **C8 – Rates, equilibrium and organic chemistry** Rates of reaction; collision theory; surface area; temperature; concentration and pressure; catalysts; reversible reactions; dynamic equilibrium.	**C8 – Rates, equilibrium and organic chemistry** Rates of reaction; collision theory; surface area; temperature; concentration and pressure; catalysts; reversible reactions; dynamic equilibrium.	**Exams – Year 10 consolidation** Retrieval and application of Year 10 Separate Science content; equations; required practical knowledge; data interpretation; graph skills and exam technique. **C9 – Crude oil and fuels** Hydrocarbons; fractional distillation of oil; burning hydrocarbon fuels; cracking hydrocarbons.
Content What are they learning? (including keywords)	**C4 – Chemical calculations** Relative masses and moles; equations and calculations; balanced equations; concentrations; titrations; gas calculations. **Keywords:** relative formula mass, mole, concentration, equation, titration, mol/dm^3, gas volume	**C5 – Chemical changes** Reactivity series; displacement; extraction of metals; salts; neutralisation and pH; strong and weak acids. **Keywords:** reactivity series, displacement, extraction, salt, acid, base, neutralisation, pH, strong acid, weak acid	**C6 – Electrolysis** Introduction to electrolysis; changes at electrodes; extraction of aluminium; electrolysis of aqueous solutions. **Keywords:** electrolysis, electrolyte, electrode, cathode, anode, ion, oxidation, reduction	**C7 – Energy changes** Exothermic and endothermic reactions; energy transfers; reaction profiles; bond energy calculations; chemical cells and batteries; fuel cells. **Keywords:** exothermic, endothermic, energy transfer, reaction profile, activation energy,	**C8 – Rates, equilibrium and organic chemistry** Rates of reaction; collision theory; surface area; temperature; concentration and pressure; catalysts; reversible reactions; dynamic equilibrium. **Keywords:** rate, collision theory, activation energy, catalyst, reversible reaction, equilibrium,	**Exams – Year 10 consolidation** Retrieval and application of Year 10 Separate Science content; equations; required practical knowledge; data interpretation; graph skills and exam technique. **Keywords:** retrieval, application, calculation, data, graph, practical, evaluation, evidence,

	C5 – Chemical changes Reactivity series; displacement; extraction of metals; salts; neutralisation and pH; strong and weak acids. **Keywords:** reactivity series, displacement, extraction, salt, acid, base, neutralisation, pH, strong acid, weak acid	**C6 – Electrolysis** Introduction to electrolysis; changes at electrodes; extraction of aluminium; electrolysis of aqueous solutions. **Keywords:** electrolysis, electrolyte, electrode, cathode, anode, ion, oxidation, reduction	**C7 – Energy changes** Exothermic and endothermic reactions; energy transfers; reaction profiles; bond energy calculations; chemical cells and batteries; fuel cells. **Keywords:** exothermic, endothermic, energy transfer, reaction profile, activation energy, bond energy, cell, battery, fuel cell	bond energy, cell, battery, fuel cell **C8 – Rates, equilibrium and organic chemistry** Rates of reaction; collision theory; surface area; temperature; concentration and pressure; catalysts; reversible reactions; dynamic equilibrium. **Keywords:** rate, collision theory, activation energy, catalyst, reversible reaction, equilibrium, dynamic equilibrium, concentration	dynamic equilibrium, concentration	conclusion, command word **C9 – Crude oil and fuels** Hydrocarbons; fractional distillation of oil; burning hydrocarbon fuels; cracking hydrocarbons. **Keywords:** hydrocarbon, crude oil, fraction, fractional distillation, alkane, cracking, combustion, fuel
Skills How are they learning it?	**C4 – Chemical calculations** Balance equations; calculate moles, masses and concentrations; interpret titration data; apply quantitative equations. **Required practical:** Determination of reacting volumes by titration (Chemistry only). **C5 – Chemical changes** Predict reactions;	**C5 – Chemical changes** Predict reactions; prepare salts; write equations; interpret pH data; evaluate methods. **Required practical:** Preparation of a pure, dry sample of a soluble salt from an insoluble oxide or carbonate. **C6 – Electrolysis** Set up electrolysis safely; identify products; interpret observations; write ionic/half equations where required. **Required practical:**	**C6 – Electrolysis** Set up electrolysis safely; identify products; interpret observations; write ionic/half equations where required. **Required practical**: Investigate what happens when aqueous solutions are electrolysed using inert electrodes. **C7 – Energy changes** Measure	**C7 – Energy changes** Measure temperature changes; calculate energy changes; interpret reaction profiles; use bond-energy calculations; evaluate cells and fuel cells. **Required practical:** Investigate variables affecting temperature changes in reacting solutions.	**C8 – Rates, equilibrium and organic chemistry** Measure reaction rates; control variables; plot and interpret rate data; explain collision theory; investigate catalysts; interpret equilibrium changes. **Required practical:** Investigate how concentration affects the rate of a reaction.	**Exams – Year 10 consolidation** Retrieve knowledge; apply equations; interpret data and graphs; answer practical-method questions; evaluate conclusions and improvements; practise extended responses. **Required practical:** Revisit all required practicals taught during Year 10, including methods, variables, measurements,

	prepare salts; write equations; interpret pH data; evaluate methods. **Required practical:** Preparation of a pure, dry sample of a soluble salt from an insoluble oxide or carbonate.	Investigate what happens when aqueous solutions are electrolysed using inert electrodes.	temperature changes; calculate energy changes; interpret reaction profiles; use bond-energy calculations; evaluate cells and fuel cells. **Required practical:** Investigate variables affecting temperature changes in reacting solutions.	**C8 – Rates, equilibrium and organic chemistry** Measure reaction rates; control variables; plot and interpret rate data; explain collision theory; investigate catalysts; interpret equilibrium changes. **Required practical:** Investigate how concentration affects the rate of a reaction.		errors, conclusions and improvements. **C9 – Crude oil and fuels** Interpret fractionating-column data; represent hydrocarbons; write combustion equations; explain cracking; evaluate fuels and environmental impacts. **Required practical:** No AQA required practical specified.
Key Questions	**C4 – Chemical calculations** • How can chemical quantities be calculated? How do moles connect mass, equations and concentration? **C5 – Chemical changes** • How does the reactivity series predict reactions? How can pure salts be prepared?	**C5 – Chemical changes** • How does the reactivity series predict reactions? How can pure salts be prepared? **C6 – Electrolysis** • What happens at each electrode during electrolysis? How is electrolysis used industrially?	**C6 – Electrolysis** • What happens at each electrode during electrolysis? How is electrolysis used industrially? **C7 – Energy changes** • What happens to energy during chemical reactions? How can energy changes be measured?	**C7 – Energy changes** • What happens to energy during chemical reactions? How can energy changes be measured? **C8 – Rates, equilibrium and organic chemistry** • What affects reaction rate? How does collision theory explain reactions? What is dynamic equilibrium?	**C8 – Rates, equilibrium and organic chemistry** • What affects reaction rate? How does collision theory explain reactions? What is dynamic equilibrium?	**Exams – Year 10 consolidation** • Can I apply Year 10 knowledge to unfamiliar contexts? Can I interpret practical data and evaluate methods? **C9 – Crude oil and fuels** • How can crude oil be separated? Why are hydrocarbons useful as fuels? Why is cracking important?
Assessment (specific assessed piece(s);	C4: End of topic assessment C5: End of topic assessment	C5: End of topic assessment C6: End of topic assessment	C6: End of topic assessment C7: End of topic assessment	C7: End of topic assessment C8: End of topic assessment	C8: End of topic assessment	Exams: End of topic assessment C9: End of topic assessment

milestone(s))						