Curriculum Map: Chemistry year 9

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content Declarative knowledge 'I Know'	Topic C1 – Atomic Structure and the Periodic Table. Define the key words element, compound, atom, isotope and molecule Know that elements are sorted into groups and periods of the periodic table Know how the structure of the periodic table has changed over time Know the structure of the atom Know the law of conservation Know how the model of the atom has changed over time Know some trends in the groups and periods Know some properties and the reactivity of elements from groups 1, 7, 0, metals and non-metals, and transition elements.		Topic C2 – Structure and Bonding Know the different states of matter Know that molecules are formed from covalent, ionic or metallic bonding. Know how bonding links to properties Know the structure of common giant structures		Topic C4 – Chemical Changes and electrolysis Know how some metals react with oxygen, water, and acid. Know uses of metals know examples of acids, bases and salts know the order of the reactivity series define strong/weak/concentrated/dilute acid know how the concentration of H+ relates to pH know the components of electrolysis define oxidation and reduction using oxygen and electrons describe what happens to ions during electrolysis describe the electrolysis of aluminium oxide	
Skills Procedural Knowledge 'I know how to'	Know how to find information about an element on the periodic table Know how to use particle diagrams to represent atoms, elements, mixtures, and compounds Know how to name compounds using their chemical formulae Know how to use formulae to write chemical equations Know how to calculate formula mass, moles and relative atomic mass Know how to represent electronic structure		Know how to use the information on the periodic table to determine ion formation Know how to draw dot and cross diagrams Know how to use structure to explain properties and uses Know how to compare nano dimensions to typical dimensions Know how to calculate surface area: volume		Know how to write equations for metal reactions with oxygen/water/ acid. Know how to write displacement/reduction/ionic equations Know how to use experimental information to predict reactivity Know how to use the reactivity series to predict the reaction of metals and their extraction method. Know how to prepare pure dry crystals of a named salt Know how to identify acids, bases, alkalis and salts Know how to use the pH scale and indicators to determine acids and bases. Know how to determine products of electrolysis Know how to represent products of electrolysis using half equations Know how to calculate concentration	
Strategies Conditional Knowledge 'I know when to'	Deduce the elements present in a compound from its name Deduce the elements present, and the relative proportions of each element in a compound from its formula Evaluate a given model Balance a chemical equation		Know when to use the appropriate bonding Know when to balance a chemical formula Evaluate a given model Evaluate nanoparticle technology		Know when oxidation/displacement reactions occur. Know when certain products are formed When substances can be electrolysed	

Key Questions	What are atoms and elements? What are the patterns in the periodic table and how do they link to the structure of the atom?		What is ionic/covalent/metallic bonding? What are the properties of ionic/giant covalent/simple covalent/metals? What is the structure of ionic/giant covalent/metallic? What are nanoparticles and could they impact our technological development?		What are acids and alkalis? What are the products of metal/base reactions? How are pure dry crystals formed? What are the products of electrolysis?	
Assessment topics	At the end of term. Midpoint assessment after atomic structure content.		At the end of term. Midpoint assessment. Midpoint assessment after types of bonding.		At the end of the term. Midpoint assessment after metal and acid reactions.	
Cross curricular links/Character Education	History – notable discoveries Maths – graphs, sig figs, unit conversion, power of ten		Biology – surface area Physics – states and conduction		Geography – extraction of metals Food technology – acids and alkalis	

(*C3 quantitative chemistry has been split between all the topics)