


Department	SCIENCE (chemistry)	 <b>HeathPark</b> EVERY PUPIL ALWAYS IN FOCUS
Key Stage	KEY STAGE 4- Year 9	
Course Level	GCSE	
Exam Board	AQA	

Unit	Title	Weighting	Examination Method
1-4	Paper 1	50%	External written exam
5-7	Paper 2	50%	External written exam

Dates Delivered	Unit Title	End Points	Substantive Knowledge What will they learn about in this topic?	Disciplinary Knowledge What subject concepts will be developed through this topic?	Assessment Method	Key Course Guides & Reading
Autumn 1	Atomic Structure	<p>Students should be able to describe the difference between elements, compounds and mixtures. Also, how different mixtures are separated.</p> <p>Students will be able to describe how the history of the atom changed over time.</p> <p>Students will be able to calculate Relative Atomic Mass</p> <p>Students will be able to explain the properties of elements in different</p>	<p>Atoms, elements, compounds and mixtures.</p> <p>History of the atom.</p> <p>Relative atomic mass</p> <p>History of The Periodic Table and The Modern Periodic Table</p>	<p>Drawing electronic structure</p> <p>Application of knowledge to novel situations</p> <p>Graph and data analysis</p> <p>Linking topics</p> <p>Identification of control variables in experimental design</p> <p>Use of formula to calculate relative atomic mass</p>	<p>End of topic tests at the end of topic (identified in substantive knowledge)</p> <p>Assessed in year 9 end of year assessments</p>	<p>AQA website for unit</p> <p><a href="#">GCSE Chemistry Specification Specification for first teaching in 2016 (aqa.org.uk)</a></p>

groups of the periodic table.

For full breakdown see link to spec

Dates Delivered	Unit Title	End Points	Substantive Knowledge What will they learn about in this topic?	Disciplinary Knowledge What subject concepts will be developed through this topic?	Assessment Method	Key Course Guides & Reading
Autumn 2	Bonding, Structure and properties of matter	<p>Students will be able to explain how ionic bonds form. They will also be able to explain the properties of ionic bonding.</p> <p>Students will be able to explain how covalent bonds are formed. They will also be able to explain the properties of covalent bonding.</p> <p>Students will be able to predict the state of substances based on data.</p> <p>Students will be able to describe the properties of alloys.</p>	<p>Ionic bonding and properties of ionic compounds</p> <p>Covalent Bonding and properties of covalent compounds</p> <p>The three states of matter</p> <p>Metallic bonding and Properties of alloys compared to pure metals.</p>	<p>Application of knowledge to novel situations</p> <p>Graph and data analysis</p> <p>Linking topics</p> <p>Identification of control variables in experimental design</p> <p>Analysing practical data to make conclusions</p> <p>Surface area and volume ratio calculations.</p> <p>Limitations of models</p> <p>Writing and balancing equations</p>	<p>End of topic tests at the end of topic (identified in substantive knowledge)</p> <p>Assessed in year 9 end of year assessments</p>	<p>AQA website for unit</p> <p><a href="#">GCSE Chemistry Specification for first teaching in 2016 (aqa.org.uk)</a></p>

	<p>Students will be able describe the structure and bonding of allotropes of carbon and how this relates to their properties.</p> <p>For full breakdown, please see exam board link</p>	<p>Structure and bonding in Diamond, Graphite and Graphene and properties of nanoparticles.</p>	<p>Visual representation of different types of bonding.</p>	
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Dates Delivered	Unit Title	End Points	Substantive Knowledge What will they learn about in this topic?	Disciplinary Knowledge What subject concepts will be developed through this topic?	Assessment Method	Key Course Guides & Reading
Spring 1/start of Spring 2	Quantitative Chemistry	<p>Students are able to prove that mass is conserved in a reaction.</p> <p>Students will be able to calculate relative</p>	<p>Conservation of mass and balanced chemical equations Mass changes when a reactant or product is a gas.</p> <p>Relative formula mass/ Uncertainty</p>	<p>Application of knowledge to novel situations</p> <p>Graph and data analysis</p> <p>Calculations to calculate quantities.</p>	End of topic tests at the end of topic (identified in substantive knowledge)	<p>AQA website for unit</p> <p><a href="#">GCSE Chemistry Specification for first teaching in</a></p>

formula mass and uncertainty.

Students will also be able to calculate reacting masses using a balanced equation.

Students will be able to use moles to balance equations

Students will also be able to identify limiting reactants through calculations

Students should be able to calculate concentration calculations and volume of gases calculations

Learning about the importance of having a high percentage yield and atom economy and also to calculate them.

For full breakdown see link to spec

Use of amount of substance in relation to masses of pure substances  
Moles (HT only)  
Concentration/Titration calculations

Calculations that require multi steps.

Linking topics

Identification of control variables in experimental design

Assessed in year 9 end of year assessments

[2016 \(aqa.org.uk\)](https://www.aqa.org.uk)

Dates Delivered	Unit Title	End Points	Substantive Knowledge What will they learn about in this topic?	Disciplinary Knowledge What subject concepts will be developed through this topic?	Assessment Method	Key Course Guides & Reading
		Students will be able to understand what is meant by oxidation and reduction in terms of oxygen and reduction.	REACTIVITY OF METALS			
Spring 2	Chemical Changes	<p>Students will be able to deduce the order of reactivity or describe how the order could be found out.</p> <p>Students will understand how carbon is used to extract metals from their ores.</p> <p>Students will understand reaction of acids and products produced from these reactions.</p> <p>Students will understand neutralisation reactions</p>	REACTIONS OF ACIDS	<p>Application of knowledge to novel situations</p> <p>Graph and data analysis</p> <p>Linking topics</p> <p>Identification of control variables in experimental design</p>	<p>End of topic tests at the end of topic (identified in substantive knowledge)</p> <p>Assessed in year 9 end of year assessments</p>	<p>AQA website for unit</p> <p><a href="#">GCSE Chemistry Specification for first teaching in 2016 (aqa.org.uk)</a></p>

and how soluble salts are made. Can define strong/weak acids and concentrated/dilute acids

Students should be able to identify products at the anode and cathode.

Students should be able to write half equations for the reactions happening at the electrodes.  
For full breakdown see link to spec

### ELECTROLYSIS

Dates Delivered	Unit Title	End Points	Substantive Knowledge What will they learn about in this topic?	Disciplinary Knowledge What subject concepts will be developed through this topic?	Assessment Method	Key Course Guides & Reading
Summer 1/2	ENERGY CHANGES	Students should be able to: <ul style="list-style-type: none"> <li>distinguish between exothermic and endothermic reactions on the basis of the temperature change of the surroundings</li> </ul>	Exothermic and endothermic reactions	Application of knowledge to novel situations		AQA website for unit

- evaluate uses and applications of exothermic and endothermic reactions given appropriate information.

Students should be able to:

- draw simple reaction profiles (energy level diagrams) for exothermic and endothermic reactions showing the relative energies of reactants and products.

Students should be able to calculate the energy transferred in chemical reactions using bond energies supplied.

Students should be able to interpret data for relative reactivity of different metals and evaluate the use of cells

Students should be able to:

- evaluate the use of hydrogen fuel cells in comparison with

Energy profile diagrams

Energy changes in reactions

Cells and Batteries and Fuel Cells

Graph and data analysis

Linking topics

Identification of control variables in experimental design

Assessed in year 9 end of year assessments

[GCSE Chemistry Specification for first teaching in 2016 \(aqa.org.uk\)](#)

rechargeable cells and  
batteries

- (HT only) write the  
half equations for the  
electrode reactions in  
the hydrogen fuel cell.
