



VCE Chemistry Implementation Workshop May 06
Activity 1

Unit 1 The big ideas of chemistry
Area of study 1 The Periodic Table

Key knowledge	Activity	Key skills	Assessment
The Periodic Table			
Atomic theory			
The mole concept including empirical and molecular formulas, percentage composition, Avogadro's constant			
Interpretation of data from Mass spectrometry			

Area of study 2 Materials

Key knowledge	Activity	Key skills	Assessment
Models of bonding to explain observed properties including melting temperature, electrical conductivity, chemical reactivity, shape, polarity of bonds, intermolecular forces			
Limitations of the bonding models			
Properties and systematic naming of alkanes and alkenes up to C ₆			
Structural isomers of C ₄ H ₁₀			
Behaviour of surfaces and the application of surface chemistry in nanotechnology			
Addition polymers			



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Activity 2

Examples of an extended experimental investigation

Activity	Key knowledge	Key skills	Examples of report formats that might be used
Investigate transition metals and why this group sits 'separately' in the Periodic Table for example, make transition metal complexes, oxidation states of vanadium, or magnetic properties (Unit 1)			
Preparation and collection of an ester (Unit 1)			
Determine salinity in water samples by precipitation or colorimetric procedures and rate as drinkable, or usable for garden (Unit 2)			
Laboratory preparation and testing of a gas. Compare results to published data (Unit 2)			



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Activity 3

Examples of a summary report including annotations of three practical activities

Practical activities	Key knowledge	Key skills	Possible annotations
Flame colours of selected metals, solubility of some ionic salts in water and conductivity of some ionic salts. Annotations that illustrate or explain <ul style="list-style-type: none">• how the main features of the model for ionic bonding are related;• how the properties of ionic substances result from a combination of the features;• that not all ionic substances behave in exactly the same manner (Unit 1)			
Titration to determine concentration of an acid, measure the pH of a variety of acids and determine which substances are amphoteric. Results and calculations provide the annotations that build a profile, definition, description of acids, neutralisation (Unit 2)			

Practical activities	Key knowledge	Key skills	Possible annotations
<p>Using 2 main group and 2 transition metals, explore their reaction with water, magnetic properties, oxidation states or complex ions. Results provide differences and similarities between main group and transition metals. Annotations then link reactivity/properties to position in the Periodic Table. (Similarly using the oxides of Period 3) (Unit 1)</p>			
<p>Properties and reactions of substances that contribute to either the carbon or nitrogen cycle. The annotations show how the cycle works.</p>			