

Year 10, C4, Quantitative Chemistry – Science Faculty

Rationale and Context of Unit:	Core curriculum content:	Tier 2 & Tier 3 vocabulary explicitly taught:
<p><i>Pupils build upon their understanding of the structures of atoms and subatomic particles (unit: C1) to understand relative mass and relative formula mass and the use of the mass number on the periodic table (unit: C3).</i></p>	<ul style="list-style-type: none"> <li>• Relative mass and moles</li> <li>• Equations and calculations</li> <li>• From masses to balanced equations</li> <li>• The yield of a chemical reaction</li> <li>• Atom economy</li> <li>• Expressing concentrations</li> <li>• Titrations (separate science)</li> <li>• Titration calculations (separate science)</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Relative atomic mass</i></li> <li>• <i>Relative formula mass</i></li> <li>• <i>Mole</i></li> <li>• <i>Neutralisation (Separate science)</i></li> </ul>
Challenge and Support:	World wide learning/ links to 21 <sup>st</sup> century:	Cultural capital/ Industry/ Enrichment:
<ul style="list-style-type: none"> <li>• Work is built up from simple to more complex examples, using scaffolding for difficult concepts, like reacting masses, where required.</li> <li>• Higher tier pupils will need to relate their work to the mole and Avagadro’s constant, use moles to balance symbol equations and calculate reacting masses.</li> </ul>	<ul style="list-style-type: none"> <li>• How do food companies determine how much of a chemical (for example vitamin C) is in a product to display this on a food label?</li> <li>• How can scientists quantify things that are so small we can’t see them?</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Links to chemical industry: predicting the yields of chemicals from reactions, performing titration calculations.</i></li> <li>• <i>Pharmaceuticals</i></li> </ul>
Historical, Social, Moral, Spiritual, Cultural context:	Cross curricular links/ literacy/numeracy:	Common misconceptions:
<ul style="list-style-type: none"> <li>• Can we trust drug companies to make the correct dosage for our medicines?</li> </ul>	<ul style="list-style-type: none"> <li>• Links to maths: rearranging equations</li> <li>• Links to maths/biology/physics: unit conversions</li> </ul>	<ul style="list-style-type: none"> <li>• <i>The strength of a chemical solution determines its reactivity.</i></li> </ul>
Assessment timeline:		
<ul style="list-style-type: none"> <li>• <i>regular EPPQs</i></li> <li>• <i>end of unit test</i></li> <li>• <i>EPPQ homework task</i></li> <li>• <i>in lesson questioning and other progress checks</i></li> </ul>		
Home learning		
<ul style="list-style-type: none"> <li>• <i>.EPPQ homework booklet</i></li> </ul>		

**Feedback**

- *Students self/peer mark homework booklets and set revision goals based on understanding.*
- *Feedback based on the end of the unit test.*

**Length of unit (duration indicated in lessons)**

C4.1	C4.2	C4.3	C4.4	C4.5	C4.6	C4.7	C4.8	C4 test
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**Unit: C4, Quantitative Chemistry**