**Colton Hills Community School medium term planning**

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| **Topic title:**.. C3 Quantitative | **Year:** … 10**Term:** …Autumn | **Why we teach this:**… To understand how Chemistry is used in industry to make the  | **Why we teach this here:**… This builds on our understanding of elements and chemical reactions so that we can start to look at the chemical reactions on an industrial scale. |
| **Big questions:**1. What affects the rate of chemical reaction?
2. How do we calculate chemical amounts?
3. What is conservation of mass?
4. What is atom economy?
5. What is percentage yield?
 | **Builds on previous topics:**… KS3 Chemistry, C1 Atoms, C2 Bonding | **Links to future topics:**… C4, C5, C6, C7, C8, C9, C10  |
| **Key knowledge Triple*** Conservation of mass
* Relative formula mass
* Changes in mass
* Uncertainty
* Moles HT ONLY
* Calculating masses HT ONLY
* Calculating ratios HT ONLY
* Limiting reactants HT ONLY + solutions
* Percentage yield
* Atom economy
* Concentration HT ONLY
* Gas volumes HT ONLY
 | **Key knowledge Combined:*** Conservation of mass
* Relative formula mass
* Changes in mass and uncertainty
* Moles HT ONLY
* Calculating masses HT ONLY
* Calculating ratios HT ONLY
* Limiting reactants HT ONLY and measuring solutions
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| **Skills developed:**Researching information, make predictions using scientific knowledge and understanding, analyse observations and data using tables and graphs, select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent, and control variables where appropriate.Application of knowledge, making links, ethical debate, critical evaluation |
| **Mini/Interim assessments:*** Multiple choice questions
* Retrieval questions

**Termly summative assessment:*** End of topic test
 | **Independent study tasks/resources:*** Oak Triple <https://teachers.thenational.academy/units/quantitative-chemistry-4db7>
* Oak Combined H <https://teachers.thenational.academy/units/quantitative-chemistry-ht-7363>
* Oak Combined F <https://teachers.thenational.academy/units/quantitative-chemistry-ft-0499>
* Triple H <https://app.senecalearning.com/classroom/course/e39e7f70-d100-11e7-9b85-bbf8589a9044/section/5210c220-d123-11e7-bce0-9d60619a6a6b/session>
* Triple F <https://app.senecalearning.com/classroom/course/55c3c9d0-1be7-11e8-8a14-e5ed980bc25f/section/58eec660-1c68-11e8-a4e1-65dc649a7558/session>
* Combined F <https://app.senecalearning.com/classroom/course/9cc79e80-0731-11e8-91ec-b17b7b8a21b8/section/771531b0-073c-11e8-b824-274a5fea8773/session>
* Combined H <https://app.senecalearning.com/classroom/course/4c2bb850-1d46-11e8-840a-ed991cd3461d/section/e0b57f10-1e09-11e8-9c3c-ada0d86b7563/session>
 | **Key vocabulary 1:**ConcentrationVolumeMolesProductReactionsCalculationFormula MassAtom economyPercentage yieldSolutions | **Key vocabulary 2:**Molar massRatioReactantProductGas volumeUncertaintyAtomsElementsCompoundsConservation of mass |
| **Cultural capital opportunities:** … Research chemicals, as they range from neurotransmitters in our brain to ammonia in fertilisers. Careers. | **Whole school Curricular Concept links:**… precious planet and civic responsibility |

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| **Week/Phase** | **Key Features** |
| 1 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
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| 2 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
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| 3 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
| **Week/Phase** | **Key Features** |
| 4 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
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| 5 | **Small Questions:** … |
| **Key Activities/Resources:**… | **Retrieval focus:**…**Independent study:**… |
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| 6 | **Small Questions:** … |
| **Key Activities/Resources:** … | **Retrieval focus:**…**Independent study:**… |