CC9 Calculations involving masses

CC9a Masses and empirical formulae

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| Step | Learning outcome | Had a look | Nearly there | Nailed it! |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L8.jpg | Calculate the relative formula mass of a substance from relative atomic masses. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L8.jpg | Calculate the empirical formula of a compound from the masses of the elements it contains. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L8.jpg | Explain the difference between an empirical formula and a molecular formula. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L7.jpg | Deduce the empirical formula from a molecular formula. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L8.jpg | Deduce the molecular formula for a compound from its empirical formula and its relative formula mass. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L7.jpg | Describe an experiment to determine the empirical formula for a compound. |  |  |  |

CC9b Conservation of mass

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| Step | Learning outcome | Had a look | Nearly there | Nailed it! |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L6.jpg | Explain the law of conservation of mass in a closed system. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L6.jpg | Explain the law of conservation of mass in a non-enclosed system. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L8.jpg | Calculate the mass of product formed from a given mass of reactant, using a balanced equation. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L8.jpg | Calculate the mass of a reactant needed to produce a given amount of product, using a balanced equation. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L6.jpg | Calculate the concentration of a solution in g dm–3. |  |  |  |

CC9c Moles **H**

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| Step | Learning outcome | Had a look | Nearly there | Nailed it! |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L6.jpg | H Describe what is meant by a mole of particles. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L8.jpg | H Calculate the number of moles of particles in a given mass of a certain substance and vice versa. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L9.jpg | H Calculate the number of particles in a given number of moles or mass of a substance and vice versa. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L7.jpg | H Explain that the mass of a product formed in a reaction is controlled by the mass of reactant that is not in excess. |  |  |  |
| C:\Users\bhuiya_f\Downloads\Steps icons\Steps icons\Progression_icon_L9.jpg | H Deduce the balanced equation for a reaction from the masses of reactants and/or products. |  |  |  |