|  |  |  |
| --- | --- | --- |
| **What will we be learning?**  **C3 – Quantitative Chemistry** | **Why this? Why now?**  **Previous Learning**  Atomic structure, bonding and structure  **What other GCSE Science units does this unit relate to?**  Chemistry – Bonding and Structure, Chemical Changes, Energy Changes  Biology - none  Physics - All – maths skills and equations | **Key Words:**  Conservation of mass  Reactant  Product  Thermal decomposition  Oxidation  Balanced equation  Relative formula mass  Mole  Avogadros constant  Reacting ratio  Limiting reactant  Excess  Yield  Percentage yield  Atom economy  Gas volume  Concentration  Mol/dm3  g/dm3  Titration  Concordant results |
| **What will we learn?**   * Chemical measurements, conservation of mass and the quantitative interpretation of chemical equations * Use of amount of substance in relation to masses of pure substances * Yield and atom economy of chemical reactions * Using concentrations of solutions in mol/dm3 * Use of amount of substance in relation to volumes of gases   **Useful equations/formulae/maths skills for this unit:**  n = m / Mr % yield = (actual/theoretical) x 100 rearranging equations  n = c x v % AE = (desired product/all reactants) x 100 conversion of units  n = V / 24 significant figures and standard form  **Misconceptions in this topic**  Conservation of mass Moles  Balancing equations Volume conversion cm3 to dm3  Relative atomic mass Limiting reactants and excess  Relative formula mass Concordant results | |
| **What opportunities are there for wider study?**  **If you are interested in this unit, what careers does it relate to?**  Industrial chemistry Research chemist Chemical engineer  Analytical chemistry Make-up chemist Materials chemist  Drug manufacturing Formula 1 technician – fuels and energy | |
| **How will I be assessed?**  **End of topic assessment** | |