**YEAR 10 SCIENCE: CHEMISTRY**

**Half Term 1**

# MAGHULL HIGH SCHOOL – CURRICULUM MAP

| | | | |
|---|---|---|---|
| Unit: **Quantitative Chemistry**<br>**LESSONS** | 1. Conservation of mass<br>2. Balancing chemical equations<br>3. Relative formula mass<br>4. Chemical measurements | 5. Moles<br>6. Amounts of substance in chemical equations<br>7. Limiting reactants | 8. Concentrations of solutions<br>9. **Percentage yield**<br>10. **Atom economy**<br>11. **Concentrations in mol/dm$^3$**<br>12. **Volumes of gases** |
| **Knowledge & Skills Development** | • Understanding of how mass in conserved in all chemical reactions even when a gas is formed<br>• Balancing chemical equations for a variety of reactions<br>• Calculating relative formula mass for different molecules<br>• Calculate uncertainty using the range of a set of repeat readings<br>• Using moles as a measure of the amounts of a substance<br>• Calculating the masses of reactants and products from the balanced symbol equation and the mass of a given reactant or product | • Knowledge of using excess in chemical reactions and limiting reactants limit the amount of product made<br>• Recall, use and rearrange the equation for concentration of a chemical<br>• **Understand the terms percentage yield and atom economy and recall and use equations to calculate them**<br>• **Calculate and use concentration values in the units mol/dm$^3$**<br>• **Use balanced symbol equations to determine the volume of gas at standard temperature and pressure** | |
| **Assessment / Feedback Opportunities** | **Formative Assessment**<br>Teacher questioning<br>Quizzes<br>Exam style questions | **Summative assessment**<br>End of topic assessment<br>Exam questions in future end of topic assessments to assess recall | |
| **Key Vocabulary** | Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest<br><br>Conservation, Mass, Atom, Particle, Molecule, Reaction, Reactant, Product, Relative, Uncertainty, Range, Mean, Mole, Limiting, Concentration, Volume, Yield, Percentage, Economy | | |
| **Literacy/Reading Opportunities** | Subject specific vocabulary introduced before reading of related texts<br>Word etymology from Latin and Greek roots<br>Reading of simple and complex sentences, paragraphs, articles<br>Scientific writing including structuring methods, comparisons and evaluations | | |
| **Cross Curricular Themes** | Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators | | |

| | |
|---|---|
| **Personal Development (Including British Values, RSE, Citizenship)** | None |
| **Career Opportunities** | Chemist, Pharmacist, Drugs developers, Chemical manufacturers (e.g. cleaning products) |