**Chemistry Unit C1: Structures, Trends, Chemical Reactions, Quantitative Chemistry and Analysis**

**C1.9 Chemical Analysis**

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| **Content - CCEA Double Award Chemistry 1 – Fort Hill Integrated College** | Got it | Nearly | Haven’t a clue |
| **C1.9 Chemical Analysis** | | | |
| **Assessing purity and separating mixtures** |  |  |  |
| Can you recall that a pure substance is a single element or compound not mixed with any other substance; |  |  |  |
| Can you demonstrate recall that pure elements and compounds melt and boil at specific temperatures and melting point and boiling point can be used to distinguish pure substances from mixtures; |  |  |  |
| Can you demonstrate knowledge and understanding that a formulation is a mixture that has been designed as a useful product and is formed by mixing together several different substances in carefully measured quantities to ensure the product has the required properties, for example alloys, medicines and fertilisers; |  |  |  |
| Can you identify and define the terms soluble, insoluble, solute, solvent, solution, residue, filtrate, distillate, miscible, immiscible, evaporation and condensation; |  |  |  |
| investigate practically how mixtures can be separated using filtration, crystallisation, paper chromatography, simple distillation or fractional distillation (including using fractional distillation in the laboratory to separate miscible liquids, for example ethanol and water); |  |  |  |
| Can you describe paper chromatography as the separation of mixtures of soluble substances by running a solvent (mobile phase) through the mixture on the paper (stationary phase), which causes the substances to move at different rates over the paper; and  Can you interpret a paper chromatogram **including calculating Rf values**. |  |  |  |
| Can you analyse given data on mixtures to make judgements on the most effective methods of separation and plan experiments to carry out this separation; |  |  |  |
| Can you describe how to use anhydrous copper(II) sulfate to test for water; |  |  |  |
| **Tests for ions** |  |  |  |
| Can you describe how to carry out a flame test using nichrome wire and concentrated hydrochloric acid to identify metal ions; |  |  |  |
| Can you recall the flame colours of different metal ions:   * lithium (crimson); * sodium (yellow/orange); * potassium (lilac); * calcium (brick red); and * copper(II) (blue–green/green–blue); and |  |  |  |
| Can you describe how to *identify the ions in an ionic compound using flame tests*  *(****Prescribed Practical C2****).* |  |  |  |