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**LANGDON PARK SIXTH FORM**

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| **Subject: Chemistry** | **Year: Y12** | **Topic: Periodicity, Groups 2, 7 and Uses of chlorine and Chlorate(I)** |

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| ***What and Why*** The Periodic Table provides chemists with a structured organisation of the known chemical elements from which they can make sense of their physical and chemical properties. The historical development of the Periodic Table and models of atomic structure provide good examples of how scientific ideas and explanations develop over time. |

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| **Key terms**  Orbitals  First ionization energy  Second ionization energy  Electronic configuration | Trends  Bond strength  Reactivity  Melting points  Solubility trends | Anion (-)  Cation (+)  Barium sulfate (Barium meals)  Displacement  Disproportionation |  |

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| **Specification point** | **Pre-reading** | **Application and Assessment (date)** | **Home learning** | **Extension – Cultural Capital and Reading** |
| **3.2.1.1**  Classification- I can classify elements as s, p, d or f block according to its position in the Periodic Table,  **3.2.1.2** Physical properties of P3 elements- I can explain the trends in atomic radius and first ionisation energy. I can explain the melting point of the elements in terms of their structure and bonding.  **3.2.2** Group 2, the alkaline earth metals- I can explain the trends in atomic radius and first ionisation energy and I can explain the melting point of the elements in terms of their structure and bonding.  **3.2.3.1** Group 7, the halogens- I can explain the trend in electronegativity. I can explain the trend in the boiling point of the elements in terms of their structure and bonding.  I can explain why:   * silver nitrate solution is used to identify halide ions * the silver nitrate solution is acidified * ammonia solution is added.   **3.2.3.2** Uses of Chlorine and Chlorate(I)- I can describe the reaction of chlorine with water to form chloride ions and chlorate(I) ions.  I can describe the reaction of chlorine with water to form chloride ions and oxygen.  I can assess the advantages and disadvantages when deciding if chemicals should be added to water supplies. | Consult your issued textbooks in the first instance, then look at other textbooks in the library for alternative diagrams, other examples or further explanations. For more specialised books, ask for advice or use the keyword system in the library.  **Videos**  Amount of a substance calculations – Eliot Rintoul  **Websites**  [www.rsc.org](http://www.rsc.org)  [www.chemguide.com](http://www.chemguide.com) | Required Practical 1:  Make up a volumetric solution and carry out a simple acid–base titration.  Mini test 1 on 3/10/19    Carry out test-tube reactions of solutions of the halogens (Cl2, Br2, I2) with solutions containing their halide ions (eg KCl, KBr, KI).  Carry out tests for halide ions using acidified silver nitrate, including the use of ammonia to distinguish the silver halides formed.  Required practical 4:  Carry out simple test-tube reactions to identify:•cations – Group 2, NH4+•anions – Group 7 (halide ions), OH–, CO32–, SO4 | Write up practicals  Make notes on each topic  Research task  Class extensions  [www.seneca.co.uk](http://www.seneca.co.uk)  [www.rsc.org](http://www.rsc.org)  Periodic Table of Videos by Martyn Poliakoff [www.youtube.com](http://www.youtube.com)  Students could Research the use of BaSO4 in medicine. | ***Books***  The Pleasure of Finding Things Out -Richard Feynman  Periodic Tales -Hugh Aldersey-Williams  The Disappearing Spoon -Sam Kean  Uncle Tungsten -Oliver Sachs  The Shocking History of Phosphorus: A Biography of the Devil’s Element -John Emsley  ***Places of interest***  Royal Society of Chemistry -Burlington Arcade, Regents Street London  Science Museum, London  Museum of the History of Science, Oxford  Curie Museum, Paris |

**Pre-assessment content review**

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| I feel secure in | I need to focus on | My action plan |

**Pre-assessment skills review**

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| I feel secure in | I need to focus on | My action plan |

**Post-assessment review**

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| Weaknesses in content knowledge | Skills I need to focus on | My action plan |
| Retest / review – teacher and student comment | | |

**Revision planning**

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| Spec point | Notes complete | Revision materials | Past paper Qs | Timed conditions |
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