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**LANGDON PARK SIXTH FORM**

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| **Subject: Chemistry** | **Year: Y12** | **Topic: 3.3.3 Haloalkanes** |

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| ***What does the topic contain and why study the contents***?  Halogenoalkanes are much more reactive than alkanes. They have many uses, including as refrigerants, as solvents and in pharmaceuticals. The use of some halogenoalkanes has been restricted due to the effect of chlorofluorocarbons (CFCs) on the atmosphere. In this topic the structures, physical & chemical properties and the nucleophilic substitution reactions with particular focus on reaction mechanisms are studied in some details. |

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| **Key terms**  Functional groups  Haloalkanes  IUPAC nomenclature  Bond polarity  Bond enthalpies | Nucleophiles  Reaction mechanisms  isomers  Transition state |  |  |

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| **Success criteria** | **Pre-reading** | **Application and Assessment (date)** | **Independent learning** | **Extension – Cultural Capital and Reading** |
| **3.3.3.1 Nucleophilic substitution**   * I can draw and name halogenoalkanes * I can write equations and mechanisms for reactions of halogenoalkanes with OH-‑, CN– and NH3 * I can explain the relative rate of reaction of halogenoalkanes   **3.3.3.2 Elimination**   * I can write equations and mechanisms for elimination reaction of halogenoalkanes using OH– * I understand the concurrent nature of elimination and substitution when halogenoalkanes react with OH– * I understand the different roles of the OH– in these reactions.   **3.3.3.3 Ozone depletion**   * I can show my understanding of the role of ozone in the atmosphere * I can state how chlorine free radicals can be formed in the atmosphere from compounds such as CFCs * I can describe the mechanism for the depletion of ozone by chlorine free radicals * I can evaluate the role of chemists in the introduction of legislation to ban the use of CFCs and to find replacements. | AQA Chemistry 2nd Edition – Oxford University press: Haloalkane.  Study the Chem Sheets information  *Chemistry Review* article: Do ants destroy the ozone layer (Volume 20, edition 4)  *Chemistry Review* article: Thomas Midgley (Volume 15, edition 2)  *Chemistry Review* article: The Antarctic ozone hole (Volume 17, edition 2)  **Videos**    **Websites**  RSC mechanisms resource: <http://www.rsc.org/learn-chemistry/resource/res00000638/curly-arrows-and-stereoselectivity-in-organic-reactions>  RSC AfL task on nucleophilic substitution <http://www.rsc.org/learn-chemistry/resource/res00000115/afl-nucleophilic-substitution-reaction-mechanisms>  Mechanism animations <http://science.jbpub.com/organic/movies/>  Interactive mechanisms <http://www.chem.ox.ac.uk/vrchemistry/iom/>  RSC mechanisms resource: <http://www.rsc.org/learn-chemistry/resource/res00000638/curly-arrows-and-stereoselectivity-in-organic-reactions>  Mechanism animations <http://science.jbpub.com/organic/movies/>  Interactive mechanisms <http://www.chem.ox.ac.uk/vrchemistry/iom/> | Using molecular models to make different haloalkane.  Fortnightly mini-mock    Complete all set home work | Attempt chapter end summery questions  Practicing past exam questions | ***Chemistry Review*** |

**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 | | |