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**LANGDON PARK SIXTH FORM**

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| **Subject: Chemistry** | **Year: Y12** | **Topic: 3.3.4 Alkenes** |

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| ***What does the topic contain and why study the contents***?  In alkenes, the high-electron density of the carbon–carbon double bond leads to attack on these molecules by electrophiles. In this section teaching and learning will be focused on: introducing the physical and chemical properties of alkenes; how the high electron density of the carbon–carbon double bond leads to attack on these molecules by electrophiles; the mechanism of addition to the double producing addition polymers, which are commercially important and have many uses in modern society. |

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| **Key terms**  Alkenes  combustion  p-orbitals  pi-orbitals  position isomers | Geometrical isomers  Stereo isomers  Reaction mechanisms  Electrophiles  Electrophilic addition  Asymmetrical alkenes | Addition polymers  Biodegradability  Mechanical recycling  Feedstock recycling |  |

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| **Success criteria** | **Pre-reading** | **Application and Assessment (date)** | **Independent learning** | **Extension – Cultural Capital and Reading** |
| **3.3.4.1 Structure, bonding and reactivity**   * I can draw alkenes * I can show the understanding that the double bond is an area of high electron density.   **3.3.4.2 Addition reactions of alkenes**   * I can write equations and mechanisms for reactions of alkenes with HBr, H2SO4 and HBr * I can explain the potential formation of major and minor products in these reactions.   **3.3.4.3 Addition polymers**   * I can describe what a polymer is * I am able to identify the repeating unit of an addition polymer given the monomer structure and vice versa * I can name polymers from the name of the monomer * I can explain how polymers have developed over time * I can state some uses of PVC and how plasticisers can change its properties * I can explain why addition polymers are unreactive * I can explain the nature of the intermolecular forces between polyalkene molecules. | AQA Chemistry 2nd Edition – Oxford University press: Haloalkane.  Study the Chem Sheets information  **Videos**    **Websites**  RSC resource of misconceptions about mechanisms: <http://www.rsc.org/learn-chemistry/resource/res00001107/reaction-mechanisms>  Mechanism animations <http://science.jbpub.com/organic/movies/>  RSC Polymers resource <http://www.rsc.org/learn-chemistry/resource/res00000846/polymers>  Nuffield Practical Chemistry method to polymerise phenylethene <http://www.nuffieldfoundation.org/practical-chemistry/addition-polymerisation> | Using molecular models to make the double bond and understand the restriction in rotation.  Fortnightly mini-mock    Complete all set home work | Use molymods  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 | | |

**Revision planning**

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