**LANGDON PARK SIXTH FORM**

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| **Subject: Mathematics** | **Year: Y13** | **Topic 2.4 Trigonometry** |

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| ***What and Why*** “Trigonometry is much more important to higher level mathematics than was probably apparent at GCSE level. You have already built your knowledge of trigonometry in units in year 12, looking at trigonometric identities and extending your knowledge of trigonometric functions. In this unit you will deepen your understanding and skill in using trigonometric functions. This will include understanding the small angle approximations for key trigonometric functions; understanding and applying the periodicity of all trigonometric functions, including inverse and reciprocal; learning how to use addition and harmonic formula for the combination of trigonometric functions and solving trigonometric equations.” |

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| **Key terms:**  Period  Symmetry  Transformation  Inverse functions  Reciprocal functions  Harmonic  Range | **Key ideas**   * Understanding the small angle formulae for trig functions and their use in modelling and in proof of derivatives for trig functions * Understanding the symmetries and periodicities of the graphs of trig functions * Understanding the definitions and characteristics of inverse and reciprocal trig functions * Knowing the different formulae for combing trig functions (addition, double and half angle, harmonic) * Understanding trig equations and their multiple solutions in a given domain * Extending understanding of identities and proof to more complex cases * Developing an understanding of using trig functions to model real life situations | **Applications and skills:**   * Calculate small angle approximations and use them to solve problems * Use small angle approximations to prove from first principles the derivatives of basic trig functions * Sketch graphs, with correct symmetries, periods, ranges, of all drug functions including inverse and reciprocal * Efficiently use and apply to problems the addition, double and half angle and harmonic formulas for combinations of trig functions * Solve trig equations, including finding all solutions in a given angle range * Be able to prove trig identities involving all trig functions * Construct and interpret mathematical models using trig functions |

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| **Specification point** | **Pre-reading** | **Application and Assessment (date)** | **Independent learning** | **Extension – Cultural Capital and Reading** |
| H5 H6 | **Topics you should be confident in prior to unit:**  all the trigonometry you learned at GCSE and in year 12 | * End of unit assessment, which will also include selected year 12 material * 50% seen * 50% unseen * 90% pass needed or resit required. | Kerboodle Online Login  My Maths  Exam Solutions  Maths Genie | **VIDEOS:** Useful overview of the history of trigonometry and its applications  [**https://www.youtube.com/watch?v=77XAdyWz5SM**](https://www.youtube.com/watch?v=77XAdyWz5SM)  **Enrichment: V**ery useful collections of problems that will depend your understanding [**https://undergroundmathematics.org/trigonometry-compound-angles**](https://undergroundmathematics.org/trigonometry-compound-angles)  [**https://nrich.maths.org/11514**](https://nrich.maths.org/11514) |

**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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