**LANGDON PARK SIXTH FORM**

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| **Subject: Mathematics** | **Year: Y13** | **Topic 4.3 Points of inflection** |

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| ***What and Why*** “You have already learned how to use differentiation to identify local maxima and minima on curves. But there is another kind of change in a curve which is also important - one where the nature of the curvature changes from convex to concave, or vice- versa. These are called points of inflection. They are a bit tricky but you can use calculus to identify them. They are important as they occur in many situations - for example cubics, trig functions and the Normal distribution all have points of inflection. This short but challenging unit will help you round out your understanding of the applications of calculus and will help you aim for the highest grades at A Level.” |

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| **Key terms:**Turning pointLocal minimumLocal maximumConcaveConvexCurvatureSecond derivative | **Key ideas*** Understand what is meant by a point of inflection and its relation to a change in curvature
* Understand how points of inflection are related to the second derivative
* Understand how to locate points of inflection on a wide variety of functions and curves
 | **Applications and skills:*** Be able to use the second derivative to identify points of inflection
* Be able to apply this to a wide variety of function, from polynomials to trig functions and the Normal distribution
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| **Specification point** | **Pre-reading** | **Application and Assessment (date)** | **Independent learning** | **Extension – Cultural Capital and Reading** |
| G3 | **Topics you should be confident in prior to unit:**The material you learned in the unit on Differentiation, especially on identifying local minima and maxima and the use of the first and second derivatives | * End of unit assessment, which will also include selected year 12 material
* 50% seen
* 50% unseen
* 90% pass needed or resit required.
 | Kerboodle Online LoginMy MathsExam SolutionsMaths Genie  |  **ARTICLE:** A useful article giving an overview of points of inflection[**https://nrich.maths.org/7197/solution#:~:text=The%20point%20of%20inflection%20occurs,function%20y%3Dx%5E3.**](https://nrich.maths.org/7197/solution#:~:text=The%20point%20of%20inflection%20occurs,function%20y%3Dx%5E3.)**Enrichment:?** |

**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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