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| **What will we be learning?****Algebra:** Introduction to quadratics & rearranging formulae, Linear & quadratic equations & their graphs | **Why this? Why now?** Students simplify and manipulate algebraic expressions by expanding or factorising linear expressions and quadratic expressions of the form x² + bx + c, including the difference of two squares.Students should recognise, sketch and interpret graphs of linear functions, quadratic functions, simple cubic functions, the reciprocal function y = 1/x with x ≠ 0, {the exponential function y = k to the x power for positive values of k,Students can use the form y = mx + c to identify parallel {and perpendicular} lines; find the equation of the line through two given points, or through one point with a given gradient. | **Key Words:**Binomials, BracketsExpandFactoriseSimplifySumProductFormulaeLinearQuadraticReciprocalExponential EquationApproximateInterpretSketchGradientParallelPerpendicularDistanceSpeedAcceleration |
| **What will we learn?**• Simplify and manipulate algebraic expressions by:o expanding products of two binomialso factorising quadratic expressions of the form x2 +bx+c including the difference of two squareso simplifying expressions involving sums, products and powers, including the laws of indices • Understand and use standard mathematical formulae• Rearrange formulae to change the subject• Solve linear equations in one unknown algebraically including those with the unknown on both sides of the equation • Find approximate solutions using a graph• Solve quadratic equations algebraically by factorising• Find approximate solutions using a graph• Translate simple situations or procedures into algebraic expressions or formulae; derive an equation and the solve the equation and interpret the solution• Use the form y=mx+c to identify parallel lines and perpendicular lines• Find the equation of the line through two given points, or through one point with a given gradient• Identify and interpret gradients and intercepts of linear functions graphically and algebraically• Recognise, sketch and interpret graphs of linear functions, quadratic functions, simple cubic functions and the reciprocal function • Plot and interpret graphs (including reciprocal graphs and exponential graphs) and graphs of non-standard functions in real contexts, to find approximate solutions to problems such as simple kinematics problems involving distance, speed and acceleration |
| **What opportunities are there for wider study?****Dr Frost Maths** is the primary resource that we use for homestudies and it has lots of useful revision tools. Alongside this, you can search for a specific topic and you can either practise some questions online, or watch a video. Under the resources section, there is also a “Full Coverage” document for some topics that have a huge bank of exam questions on the topic in question. <https://www.drfrostmaths.com/course.php?sid=-10>**Corbett Maths** - video links, practice questions and textbook exercises with answers available. <https://corbettmaths.com/contents/> **MathsGenie** - videos and exam questions along with worked solutions. <https://www.mathsgenie.co.uk/advance-information.html>**Careers:** Engineering, Physicist  |
| **How will I be assessed?** Half Term AssessmentHomestudy tasksQuality of classwork |