

| Mathemat | | Curriculum Checkpoints: What do students know and what can they do? | | | | MW Clips | Further guidance |
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| Year 11 | | Developing | Securing | Mastering | Excelling | | |
| AF1 | Percentages and interest | Learn how to convert between fractions, decimals, and percentages and understand how to compare their values. | Develop the ability to increase or decrease values by a given percentage, understanding how to apply this in real-life situations. | Explore the concepts of simple and compound interest, understanding how interest rates and compounding affect the growth of investments or debts. | Learn to reverse percentage changes and find the original value given the final value and the percentage change. | 88 89 110 111 | Percentage and interest |
| | | Practice calculating percentages of given amounts using mental methods and calculators. | Learn how to express one number as a percentage of another, finding percentages in different contexts | Solve problems that involve multiple percentage changes, such as finding the overall change after a series of increases or decreases. | Apply mathematical concepts of growth and decay to solve real-world problems, such as population growth or radioactive decay. | | |
| AF2 | Gradients, graphs and lines | Find the equation of a straight line from a graph, understanding the relationship between the graph and the equation. | Solve linear simultaneous equations graphically, using graphical methods to find the intersection points of two lines and determine their solutions. | Find the equations of perpendicular lines, developing an understanding of the relationship between slopes of perpendicular lines and applying it to determine the equations of perpendicular lines. | Find and use the equation of a circle with center at the origin, demonstrating advanced skills in working with circle equations and understanding the properties of circles. | 96 99 100 116 121 140 157 194 | Straight line graphs Quadratic graphs |
| | | Plot and read from quadratic, cubic, and reciprocal graphs, developing skills in recognizing graph shapes and interpreting their characteristics. | Identify and interpret roots and intercepts of quadratics, understanding the significance of the x-intercepts (roots) and y-intercepts in quadratic graphs. | Understand and use exponential graphs, interpreting the characteristics of exponential functions and their graphical representations. | Find the equation of the tangent to any curve, mastering the concept of tangents and their equations, and applying it to various types of curves. | | |
| AF3 | Handling | Understand populations, samples, and different types of data, including categorical and numerical data, and their relevance in statistical analysis. | Construct and interpret two-way tables, understanding how to organize and analyze data across two different variables. | Construct and interpret histograms, applying advanced techniques to create and analyze distributions of numerical data. | Construct and interpret box plots, demonstrating advanced skills in summarizing and comparing data distributions using graphical representations. | 58 59 60 61 | Histograms, Cumulative |

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| AF3 | Data handling | Construct and interpret frequency tables and frequency polygons, developing skills in organising and representing data in a meaningful way. | Construct and interpret line and bar charts, including composite bar charts, enhancing skills in visually representing and comparing data sets. | Construct and interpret cumulative frequency diagrams, developing an understanding of how to represent and interpret cumulative frequencies for different data | Compare distributions using charts and statistical measures, analysing and comparing data sets effectively using both graphical and numerical methods. | 61 64 65 65 | frequency and box plots |
| AF4 | Vectors | Understand and use vector notation, becoming familiar with the symbols and conventions used to represent vectors in mathematics. | Explore vector journeys in shapes, understanding how vectors can describe and analyse transformations and movements in geometric figures. | Explore co-linear points using vectors, utilising vector methods to determine if points lie on the same line and applying vector concepts to establish collinearity. | Apply advanced vector techniques to solve geometric problems and explore geometric transformations, constructing complex arguments and proofs using vectors. | 72 76 85 90 97 | Vectors |
| | | Draw and comprehend addition and subtraction of vectors, learning how to perform vector operations and interpret their geometric meaning. | Understand parallel vectors, recognising the concept of vectors that have the same or opposite direction and developing skills in identifying parallel vectors. | Use vectors to construct geometric arguments and proofs, employing vector techniques to formulate and support geometric arguments and proofs. | Apply vector methods to analyse and solve advanced geometric problems, demonstrating a deep understanding of vector geometry and its applications. | 102 117 118 | |
| AF5 | Expanding and factorising | Expand and factorise expressions with a single bracket, learning how to simplify expressions by expanding them and reverse the process by factorising them. | Factorise quadratic expressions, developing the ability to factorise quadratic expressions into binomial factors. | Factorise complex quadratic expressions, understanding and applying advanced factoring techniques to factorise quadratic expressions with complex coefficients. | Complete the square, mastering the technique of completing the square to solve quadratic equations and transform quadratic expressions into perfect square trinomials. | 94 157 192 209b | Expanding and factorising |
| | | Expand binomials, mastering the technique of multiplying two binomial expressions together and simplifying the result. | Solve equations equal to 0, applying factoring techniques to solve equations by setting them equal to zero and finding the solutions. | Solve quadratic equations by factorisation, using factoring methods to solve quadratic equations and determine their solutions. | quadratic formula, demonstrating a deep understanding of the quadratic formula and its application to find solutions for quadratic equations with real or complex roots. | 210a 214a 214b 215 | |

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| AF6 | Changing the subject | Solve linear equations, developing skills in finding solutions for equations that involve linear expressions. | Form and solve equations and inequalities in the context of shape, applying algebraic techniques to solve geometric problems involving equations and inequalities. | Change the subject when the subject appears more than once, demonstrating advanced skills in rearranging formulas with multiple occurrences of the subject to solve for the desired variable. | Solve equations by iteration, employing iterative methods to solve equations that require an iterative process to converge to a solution. | 35 136 190 180 139 191 156 213 | Changing the subject |
| | | Solve inequalities, understanding how to find solution sets for inequalities and represent them on a number line. | Change the subject of a simple or complex formula, developing the ability to rearrange formulas and solve for different variables. | Apply mathematical reasoning to solve challenging problems involving equations and inequalities. | Apply advanced algebraic techniques to solve complex equations and inequalities in various contexts | | |
| AF7 | Functions | Understand and use function machines, recognising how inputs are transformed into outputs using a given function. | Use function notation, becoming familiar with the notation $f(x)$ to represent a function and understand its meaning. | Explore and analyse inverse functions, understanding the concept of inverse functions and how they undo the operations of a given function. | Solve quadratic inequalities, applying advanced algebraic and graphical techniques to solve inequalities involving quadratic functions and determine the solution sets. | 36 98 101 134b 194 212 214b 215 | Functions |
| | | Substitute values into expressions and formulae, understanding how to replace variables with specific values and evaluate the resulting expressions. | Work with composite functions, learning how to combine multiple functions to form a composite function and evaluate its outputs. | Graph quadratic functions, mastering the skills to plot and interpret the graphs of quadratic functions. | Investigate and analyse higher-level concepts related to functions, such as transformation of functions or exponential functions. | | |
| AF8 | Resequencing of the curriculum following | Your maths teacher will resequence the curriculum based of gaps in knowledge following the mock examinations. | | | | | |