| Term | Week | Focus | Summary | Learning Outcomes | Learning skills |
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|  | 1 | Algebraic Methods | Working with algebra and proof | To explore algebraic division, factor and remainder theorem, mathematical proof and methods of proof. | - Automaticity <br> - Meta-cognition <br> - Resilience |
|  | 2 | Measures of Spread | Calculating measures of spread in data | To explore types of data, central tendency and measures of spread. | - Critical and logical thinking <br> - Precision <br> - Intellectual playfulness |
|  | 3 | Differentiation | Applications of differentiation | To explore applications of differentiation including stationary points, increasing and decreasing functions and modelling with differentiation. | - Speed and accuracy <br> - Automaticity <br> - Flexible thinking |
|  | 4 | Discrete Random Variables | Applications of discrete random variables | To explore discrete random variables, finding expected and variance and solving problems. | - Originality <br> - Fluent thinking <br> - Generalisation |
|  | 5 | Integration | Applications of integration | To explore areas under curves and calculating the trapezium rule. | - Strategy planning <br> - Connection finding <br> - Self regulation |
|  | 6 | Circle Geometry | Co-ordinate geometry in circles | To explore midpoints, bisectors, equations of circles, intersections of circles and lines, tangent and chord properties. | - Critical and logical thinking <br> - Precision <br> - Intellectual playfulness |

Subject: Mathematics

| N <br> E <br> E | 1 | Sequence and Series | Arithmetic and Geometric sequences | To explore arithmetic and geometric series, the sum of series, sigma notation, recurring relations and modelling with series. | - Problem solving <br> - Fluent thinking <br> - Generalisation |
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|  | 2 | Correlation and Regression | Correlation and regression of lines | To explore linear regression, calculating the least squares and the product moment correlation coefficient. | - Strategy planning <br> - Connection finding <br> - Self regulation |
|  | 3 | Binomial Expansion | Using binomial expansion | To explore factorial notation, Pascal's triangle, the binomial exapnsion and approximating using binomial expansion. | - Big picture thinking <br> - Hard working <br> - Self regulation |
|  | 4 | Exponentials and Logarithms | Exponential and logarithmic functions | To explore exponents and logarithms, laws of logarithms, solving equations with logarithms, changing the base of a logarithm. | - Problem solving <br> - Strategy planning <br> - Meta-cognition |
|  | 5 | Trigonometry | Trigonometric Identities and equations | To explore exact values of trigonometric ratios, trigonometric identities, solving trigonometric equations. | - Abstraction <br> - Problem solving <br> - Generalisation |

