Year 11 Developing: Curriculum Implementation Plan

Mathematics – Year 11 Developing – Overview				
Knowledge and Skills – Students will be taught to…	Reading, Oracy, Literacy	Formative Assessment	Summative Assessment	Link to GCSE Content
Please see individual units below. Note: The overview for Year 11 is *approximate* – teachers will use the results of all forms of assessment to identify the most appropriate learning for each individual group, in order to best use the available time in Year 11 to prepare them for GCSE exams.	• Reading worded questions to understand the context and decide how to approach a problem • Paired discussion of problems • Writing responses to worded questions such as "Explain why…" • Expanding vocabulary of key mathematical terms • Giving verbal responses in class question-and-answer	• Questioning in class • Self-assessment • Peer-assessment • Starter and homework questions • Mini-tests • Show of hands and other forms of whole-class feedback • Review of student work during lessons • Mini-whiteboards	Full GCSE mock examinations in Autumn and Spring terms.	Please see individual units below.

Mathematics – Weekly Unit 11A – Algebra Revision	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• REVISE collecting like terms • REVISE using the laws of indices • REVISE solving 2-step linear equations	Simplify expressions involving sums, products and powers, including the laws of indices Simplify algebraic expressions by collecting like terms Simplify algebraic products and quotients Apply the index laws for multiplication and division to algebraic simplification, in simple cases Solve linear equations in one unknown algebraically
Mathematics – Weekly Unit 11B – Sequences Revision and nth term	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• REVISE identifying the next term of a range of sequences, explaining the reasoning, and making deductions about later terms • REVISE drawing the next pattern in a sequence and make deductions about later patterns • Use the nth term of a linear sequence to generate terms • Find the nth term of a linear sequence	Generate a sequence by spotting a pattern or using a term-to-term rule given algebraically or in words Recognise sequences of triangular and square numbers, and simple arithmetic progressions Recognise and use the sequences of triangular and square numbers, and simple arithmetic progressions Generate a sequence from a formula for the nth term Deduce expressions to calculate the nth term of linear sequences Find a position-to-term rule for simple arithmetic sequences, algebraically or in words e.g. 2n, n + 5 Find a formula for the nth term of an arithmetic sequence
Mathematics – Weekly Unit 11C – Standard Form	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• Convert between ordinary numbers and standard form • Solve problems involving the relative sizes of numbers in standard form • Calculate in standard form using a calculator	Interpret and order numbers expressed in standard form Convert numbers to and from standard form Use a calculator to perform calculations with numbers in standard form Calculate with numbers in standard form

Mathematics – Weekly Unit 11D – Linear Graphs	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• Identify vertical and horizontal lines from their equations • Plot the graph of a line, or simple quadratic function, using a table of values	Use a table of values to plot graphs of linear and quadratic functions given as y in terms of x Work with x and y coordinates in all four quadrants

Mathematics – Weekly Unit 11E – Scatter Graphs	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• Identify different types of data (quantitative, discrete, continuous, qualitative, primary, secondary) • Plot a scatter diagram and identify correlation • Identify an outlier on a scatter diagram • Make simple predictions by drawing a line of best fit	Use and interpret scatter graphs of bivariate data Recognise correlation and know that it does not indicate causation Draw estimated lines of best fit on a scatter graph and use them to make predictions Plot and interpret scatter diagrams for bivariate data; recognise correlation Identify an outlier in simple cases Interpret correlation within the context of the variables Draw a line of best fit by eye, and use it to make predictions

Mathematics – Weekly Unit 11F – Area Revision	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• REVISE finding the area of a rectangle, triangle, parallelogram or trapezium • Find the area of a compound shape made from rectangles (rectilinear) • Calculate the area of a circle or semi-circle	Know and apply the formulae A=1/2bh for the area of a triangle and A=bh for the area of a rectangle Calculate the area of a trapezium Apply area formulae in calculations involving the area of composite 2D shapes

Mathematics – Weekly Unit 11G – Ratio	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• Simplify a 2-part or 3-part ratio • Simplify a ratio where the quantities are in different units • Link ratio to fractions • Divide a quantity in a ratio	Find the ratio of quantities in the form a : b and simplify Split a quantity into two parts given the ratio of the parts Express the division of a quantity into two parts as a ratio Split a quantity into three or more parts given the ratio of the parts Identify and work with fractions in ratio problems Interpret a ratio of two parts as a fraction of a whole

Mathematics – Weekly Unit 11H – Inequalities	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• Identify an inequality from a number line, or draw a number line for an inequality • Solve a range of linear inequalities	Understand and use the symbols <, ≤, > and ≥ Solve linear inequalities in one variable, expressing solutions on a number line using the conventional notation Solve linear inequalities in one variable, representing the solution set on a number line
Mathematics – Weekly Unit 11I – Formulae and Functions	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• Substitute positive and negative values into formulae • Rearrange a simple formula to change the subject • Use a given function machine, including to solve a practical problem	Substitute positive numbers into simple formulae to find the value of the subject Substitute positive or negative numbers into more complex formulae, including powers, roots and algebraic fractions Rearrange formulae to change the subject, where the subject appears once only Interpret, where appropriate, simple expressions as functions with inputs and outputs Interpret simple expressions as functions with inputs and outputs
Mathematics – Weekly Unit 11J – Angles Revision, Polygons and Bearings	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• REVISE angles • Find the sum of the interior angles of a polygon by dividing it into triangles • Measure bearings and interpret map scales, in simple cases	Know the terms acute, obtuse, right and reflex angles Use a protractor to construct and measure angles Know and use the sum of the angles at a point is 360° Know that the sum of the angles at a point on a line is 180° Know and use vertically opposite angles are equal Derive and use the sum of the interior angles of a triangle is 180° Derive and use the sum of the exterior angles of a polygon is 360° Find the sum of the interior angles of a polygon Interpret and use bearings

Mathematics – Weekly Unit 11K – Statistics Revision and Grouped Data	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• REVISE Statistics • Identify the modal class interval for a table of grouped data • Estimate the mean for a table of grouped data, appreciating why it is an estimate	Calculate the mean, median and range for ungrouped data Identify the mode for ungrouped data Find the modal class, and calculate estimates of the range, mean and median for grouped data, and understand why they are estimates Make simple comparisons Compare data sets using 'like for like' summary values Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate measures of central tendency (including modal class) and spread (the range) Apply statistics to describe a population

Mathematics – Weekly Unit 11A – Percentage Revision and Repeated Percentage Change	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• REVISE percentages • Calculate the result of a repeated percentage change, including compound interest and simple interest	Understand percentage is 'number of parts per hundred' Calculate a percentage of a quantity Express one quantity as a percentage of another, with or without a calculator Calculate simple interest, including in financial contexts Increase or decrease a quantity by a simple percentage, including simple decimal or fractional multipliers; apply this to simple original value problems and simple interest Set up, solve and interpret the answers in growth and decay problems, including compound interest Express percentage change as a decimal or fractional multiplier; apply this to percentage change problems

Mathematics – Weekly Unit 11AM – Shape Revision and Pythagoras	
Knowledge and Skills – Students will be taught to…	Links to KS4 National Curriculum (red) & Exam board specification (blue)
• REVISE Shape • Apply Pythagoras' theorem, including to decide whether a triangle is right-angled	Recall and use Pythagoras' theorem Know, derive and apply Pythagoras' theorem to find lengths in right-angled triangles in 2D figures Apply Pythagoras' Theorem in right-angled triangles in 2D