

Curriculum Implementation Mapping – Skills and Knowledge

Subject: Maths

Year group: 11 Higher

Topic	Term 1	Term 2	Term 3
Knowledge	<p>Formulae</p> <ul style="list-style-type: none"> - rearranging to change the subject <p>Quadratics</p> <ul style="list-style-type: none"> - review and extension of quadratics from year 10 <p>Simultaneous equations</p> <ul style="list-style-type: none"> - review and extension from year 10 <p>Triangles</p> <ul style="list-style-type: none"> - 2D and 3D problems - Trigonometric ratios of angles between 0° and 360° - Sine rule and Cosine rule - Using sine to find the area of any triangle <p>Statistical diagrams review</p> <ul style="list-style-type: none"> - Frequency polygons - Cumulative frequency graphs - Box plots - Histograms 	<p>Probability: Combined events</p> <p>Addition rules for outcomes of events</p> <p>Combined events</p> <p>Tree diagrams</p> <p>Independent events</p> <p>Conditional probability</p> <p>Functions</p> <ul style="list-style-type: none"> - Review from year 10 <p>Algebraic Fractions</p> <ul style="list-style-type: none"> - Simplifying - Multiplying and dividing - Adding and subtracting - Solving Equations 	<p>Graphs</p> <ul style="list-style-type: none"> - Review of real life graphs - Velocity–time graphs - Estimating the area under a curve - Rates of change - Equation of a circle - Other graphs - Transformations of graphs <p>Proof</p> <ul style="list-style-type: none"> - Congruency review - Algebraic proof - Recurring decimals <p>Review of Approximation, Proportion, Surds and Accuracy</p> <ul style="list-style-type: none"> - Approximation: Review of iteration from year 10
Skills	<p>Formulae - rearrange a simple formula and a formula that requires factorisation to change the subject</p> <p>Quadratics - solve a quadratic equation, identify the significant points of a quadratic function graphically; identify the roots of a quadratic function by solving; identify the turning point by using symmetry or completing the square; solve a quadratic inequality.</p> <p>Simultaneous equations - Solve simultaneous linear equations using elimination; Solve simultaneous linear equations using substitution; Solve one quadratic and one linear equation simultaneously using a graph; Solve one quadratic and one linear equation simultaneously using substitution</p> <p>Triangles</p> <p>Use trigonometric ratios and Pythagoras' theorem to solve more complex two-dimensional problems and three-dimensional problems. Find the sine, cosine and tangent of any angle from 0° to 360°. Use the sine rule and cosine rule to find sides and angles in any triangle. Work out area of a triangle from two sides and the included angle.</p> <p>Draw and interpret frequency polygons, cumulative frequency graphs and box plots</p>	<p>Probability: Combined events</p> <ul style="list-style-type: none"> - Work out the probability of different outcomes of combined events - Work out the probability of two outcomes or events occurring at the same time - Use probability and frequency tree diagrams to work out the probability of combined events - Use the connectors 'and' and 'or' to work out the probabilities for combined events - Work out the probability of combined events when the probabilities change after each event <p>Functions</p> <ul style="list-style-type: none"> - Use functions (and function notation) to calculate an output or input - Determine a function from a mapping. - Find and use an inverse function - Find and use a composite function. <p>Algebraic Fractions</p> <ul style="list-style-type: none"> - Simplify an algebraic fraction by cancelling out common factors - multiply and divide algebraic fractions including simplifying by cancelling common factors. - Add and subtract algebraic fractions and fully simplify - Solve equations containing algebraic fractions. 	<p>Graphs</p> <ul style="list-style-type: none"> - Draw a graph of the depth of liquid as a container is filled. - Read information from a velocity–time graph. - Work out the distance travelled from a velocity–time graph. - Work out the acceleration from a velocity–time graph. - Use areas of rectangles, triangles and trapeziums to estimate the area under a curve. - Interpret the meaning of the area under a curve. - Draw a tangent at a point on a curve and use it to work out the gradient at a point on a curve. Interpret the gradient at a point on a curve - Know the equation of a circle centred at the origin - Find the equation of a tangent to a circle. - Recognise and plot cubic, exponential and reciprocal graphs. <p>Proof</p> <ul style="list-style-type: none"> - Construct an accurate proof for congruent triangles - Construct an accurate algebraic proof - Prove a recurring decimal converts into its corresponding form <p>Approximation Review</p> <ul style="list-style-type: none"> - Find approximate solutions to equations numerically using iteration <p>Proportion review</p> <ul style="list-style-type: none"> - Solve problems where two variables have a direct or inverse proportional relationship, including finding the constant of proportionality <p>Surds review</p> <ul style="list-style-type: none"> - Find and use the relationship between negative powers and roots.

	<p>Draw and interpret histograms where the bars are of equal and unequal width</p> <p>Calculate the median, quartiles and interquartile range from a histogram</p> <p>Use long division confidently, and prepare for polynomial division at A level</p> <p>Understand sampling and collect unbiased reliable data for a sample</p> <p>- Revise and practice all circle theorems</p>		<p>- Calculate, simplify and manipulate surds, including rationalising a denominator.</p> <p>Accuracy review</p> <p>- Find the error interval or limits of accuracy of numbers that have been rounded to different degrees of accuracy.</p> <p>- Combine limits of two or more variables together to solve problems</p>
Assessment Pattern	Non-Calculator GCSE Exam (Higher level Edexcel) to be sat in class over two lessons	Mock Exams in Sports Hall - Full set of Edexcel Higher GCSE papers	Calculator GCSE Exam (Higher level Edexcel) to be sat in class over two lessons

Topic	Term 4	Term 5	Term 6
Knowledge	Recap and exam practice: Teachers should utilise exam analysis (using PinPoint learning and marking assessments) to inform their planning and which topics to focus on for their classes.		
Skills	Solid understanding of all topics. Metacognition skills significantly improved through exam practice and direction from teachers.		
Assessment Pattern	March Mocks. Full set of Edexcel Higher GCSE papers in the hall.	EXAM MATHS GCSE PAPER 1	EXAM MATHS GCSE PAPERS 2 & 3