

Assessment in Maths

Assessment (Written)	Essential Component of Understanding/Application	Why is this essential?	Misconceptions Often Addressed
<p>Unit 1 – Place Value</p> <p>1.1.1 - Understand the values of digits in decimals, measures and integers</p>	<p>1.1.1.1 Understand place value in integers</p> <p>1.1.1.2* Understand place value in decimals, including recognising exponent and fractional representations of the column headings</p> <p>1.1.1.3 Understand place value in the context of measure</p> <p>1.1.1.4 Order and compare numbers and measures using $<$, $>$, $=$</p>	<p>Y8 – Estimation and rounding</p>	<p>More decimal places, bigger number.</p> <p>Different representations of place value, ie fractions</p>
<p>Unit 2 – Properties of number: factors, multiples, squares and cubes</p> <p>1.2.1 - Understand multiples</p> <p>1.2.2 - Understand integer exponents</p> <p>1.2.3 - Understand and use the unique prime factorisation of a number</p>	<p>1.2.1.1 Understand what a multiple is and be able to list multiples of n</p> <p>1.2.1.2* Identify and explain whether a number is or is not a multiple of a given integer</p> <p>1.2.2.1 Understand the concept of square and cube</p> <p>1.2.2.2 Understand the concept of square root and cube root</p> <p>1.2.2.3 Understand and use correct notation for positive integer exponents</p>		<p>Factors and multiples wrong way round</p> <p>Exponent of 2 means times by 2</p> <p>1 is prime</p>

	<p>1.2.2.4 Understand how to use the keys for squares and other powers and square root on a calculator</p> <p>1.2.3.1 Understand what a factor is and be able to identify factors of positive integers</p> <p>1.2.3.2 Understand what a prime number is and be able to identify prime numbers</p> <p>1.2.3.3 Understand that a positive integer can be written uniquely as a product of its prime factors</p> <p>1.2.3.4* Use the prime factorisation of two or more positive integers to efficiently identify the highest common factor</p> <p>1.2.3.5 Use the prime factorisation of two or more positive integers to efficiently find their lowest common multiple</p>		
<p>Unit 3 – Arithmetic procedures with integers and decimals</p> <p>2.1.1 - Understand and use the structures that underpin addition and subtraction</p> <p>2.1.2 - understand and use the structures that underpin</p>	<p>2.1.1.1* Understand the mathematical structures that underpin addition and subtraction of positive and negative integers</p> <p>2.1.1.2* Generalise and fluently use written addition and subtraction strategies, including columnar formats, with decimals</p>	<p>Y7 Spring – arithmetic procedures including fractions</p>	<p>Wrongly lined up, not using number sense and only using written method.</p> <p>Ron order</p> <p>Only bidmas when brackets seen</p>

<p>multiplication and division strategies</p> <p>2.1.5 - Use the laws and conventions of arithmetic to calculate efficiently</p>	<p>2.1.2.1* Understand the mathematical structures that underpin multiplication and division of positive and negative integers</p> <p>2.1.2.2 Factorise multiples of $10n$ in order to simplify multiplication and division of both integers and decimals, e.g. 300×7000, 0.3×0.007, $0.9 \div 0.03$, etc.</p> <p>2.1.2.3* Generalise and fluently use written multiplication strategies to calculate accurately with decimals</p> <p>2.1.2.4 Generalise and fluently use written division strategies to calculate accurately with decimal</p> <p>2.1.3.1 Understand the mathematical structures that underpin the addition and subtraction of fractions</p> <p>2.1.3.2 Generalise and fluently use addition and subtraction strategies to calculate with fractions and mixed number</p>		
<p>Unit 4 – Expressions and Equations</p> <p>1.4.1. - Understand and use the convention and vocabulary of algebra</p>	<p>1.4.1.1 Understand that a letter can be used to represent a generalised number</p> <p>1.4.1.2 Understand that algebraic notation follows particular conventions</p>	<p>Y9 Spring – Expressions and formulae</p>	<p>A=1 b=2 etc... inverse operations</p>

<p>including forming and interpreting algebraic expressions and equations</p> <p>1.4.2 - Simplify algebraic expressions by collecting like terms to maintain equivalence</p> <p>1.4.3 - Simplify algebraic expressions by collecting like terms to maintain equivalence</p>	<p>and that following these aids clear communication</p> <p>1.4.1.3 Know the meaning of and identify: term, coefficient, factor, product, expression, formula and equation</p> <p>1.4.1.4* Understand and recognise that a letter can be used to represent a specific unknown value or a variable</p> <p>1.4.1.5* Understand that relationships can be generalised using algebraic statements 1.4.1.6 Understand that substituting particular values into a generalised algebraic statement gives a sense of how the value of the expression changes 1.4.2.1 Identify like terms in an expression, generalising an understanding of unitising 1.4.2.2 Simplify expressions by collecting like terms</p> <p>1.4.3.1* Understand how to use the distributive law to multiply an expression by a term such as $3(a + 4b)$ and $3p^2(2p + 3b)$</p> <p>1.4.3.2 Understand how to use the distributive law to factorise expressions</p>		
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	<p>where there is a common factor, such as $3a + 12b$ and $6p^3 + 9p^2b$</p> <p>1.4.3.3 Apply understanding of the distributive law to a range of problem-solving situations and contexts (including collecting like terms, multiplying an expression by a single term and factorising), e.g. $10 - 2(3a + 5)$, $3(a \pm 2b) \pm 4(2ab \pm 6b)$, etc</p>		
<p>Unit 5 – Plotting Coordinates</p> <p>4.2.1 - Connect coordinates, equations and graphs</p>	<p>4.2.1.1 Describe and plot coordinates, including non-integer values, in all four quadrants</p> <p>4.2.1.2 Solve a range of problems involving coordinates</p> <p>4.2.1.3* Know that a set of coordinates, constructed according to a mathematical rule, can be represented algebraically and graphically</p>	<p>Y8 Autumn – Graphical representations of linear relationships</p> <p>Y9 Summer – Graphical representations</p>	<p>X and y wrong way</p>
<p>Unit 6 – Perimeter and Area</p> <p>6.2.1 - Understand the concept of perimeter and use it in a range of problem-solving situations</p> <p>6.2.2 - Understand the concept of area and use it in a range of problem-solving situations</p>	<p>6.2.1.1 Use the properties of a range of polygons to deduce their perimeters</p> <p>6.2.2.1* Derive and use the formula for the area of a trapezium</p> <p>6.2.2.2 Understand that the areas of composite shapes can be found in different way</p>	<p>Y8 Summer –Perimeter area and volume</p>	<p>Area and perimeter wrong, not using all sides of compound shape</p>

<p>Unit 7 – Arithmetic procedures including fractions</p> <p>1.3.1 - Work interchangeably with terminating decimals and their corresponding fractions</p> <p>1.3.2 - Compare and order positive and negative integers, decimals and fractions</p> <p>2.1.3 - Know, understand and use fluently a range of calculation strategies for addition and subtraction of fractions</p> <p>2.1.4 - Know, understand and use fluently a range of calculation strategies for multiplication and division of fractions</p>	<p>1.3.1.1 Understand that 1 can be written in the form $\frac{n}{n}$ (where n is any integer) and vice versa</p> <p>1.3.1.2 Understand that fractions of the form $\frac{a}{b}$, where $a > b$, are greater than one and use this awareness to convert between improper fractions and mixed numbers</p> <p>1.3.1.3* Understand that a fraction represents a division and that performing that division results in an equivalent decimal</p> <p>1.3.1.4 Appreciate that any terminating decimal can be written as a fraction with a denominator of the form 10^n (e.g. $0.56 = \frac{56}{100}$, $\frac{560}{1000}$)</p> <p>1.3.1.5* Understand the process of simplifying fractions through dividing both numerator and denominator by common factors</p> <p>1.3.1.6 Know how to convert from fractions to decimals and back again using the converter key on a calculator</p> <p>1.3.1.7 Know how to enter fractions as divisions on a calculator and understand the limitations of the decimal representation that results</p>	<p>Y9 Summer – Standard form</p>	<p>Not seeing a fraction as a division</p> <p>Using remainders</p> <p>Dividing makes it smaller</p> <p>Large digit negative bigger than smaller, ie -9 bigger than -1</p>
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	<p>1.3.2.1 Compare negative integers using < and ></p> <p>1.3.2.2 Compare decimals using < and ></p> <p>1.3.2.3 Compare and order fractions by converting to decimals</p> <p>1.3.2.4 Compare and order fractions by converting to fractions with a common denominator</p> <p>1.3.2.5 Order a variety of positive and negative fractions and decimals using appropriate methods of conversion and recognising when conversion to a common format is not required</p> <p>1.3.2.6 Appreciate that, for any two numbers there is always another number in between them</p> <p>2.1.3.1 Understand the mathematical structures that underpin the addition and subtraction of fractions</p> <p>2.1.3.2 Generalise and fluently use addition and subtraction strategies to calculate with fractions and mixed numbers</p> <p>2.1.4.1* Understand the mathematical structures that underpin the multiplication of fractions</p>		
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	<p>2.1.4.2* Understand how to multiply unit, non-unit and improper fractions</p> <p>2.1.4.3 Generalise and fluently use strategies to multiply with mixed numbers (e.g. $3\frac{2}{4} \times 2\frac{1}{2}$)</p> <p>2.1.4.4 Understand the mathematical structures that underpin the division of fractions</p> <p>2.1.4.5 Divide a fraction by a whole number</p> <p>2.1.4.6 Divide a whole number by a fraction</p> <p>2.1.4.7 Divide a fraction by a fraction</p>		
<p>Unit 8 – Understanding multiplicative relationships: fractions and ratios</p> <p>3.1.1 - Understand the concept of multiplicative relationships</p> <p>3.1.2 - Understand the concept of multiplicative relationships</p> <p>3.1.3 - Understand that multiplicative relationships can be represented in a number of ways and connect</p>	<p>3.1.1.1* Appreciate that any two numbers can be connected via a multiplicative relationship</p> <p>3.1.1.2 Understand that a multiplicative relationship can be expressed as a ratio and as a fraction</p> <p>3.1.1.3 Be able to calculate the multiplier for any given two numbers</p> <p>3.1.1.4 Appreciate that there are an infinite number of pairs of numbers for any given multiplicative relationship (equivalence)</p> <p>3.1.2.1* Use a double number line to represent a multiplicative relationship</p>	<p>Y8 Spring - Understanding multiplicative relationships: percentages and proportionality</p>	<p>Only seeing additive relationship</p> <p>Multiplying always makes it bigger</p> <p>Not sharing in equal parts</p>

<p>and move between those different representations</p> <p>3.1.4 - Understand that ratios are an example of a multiplicative relationship and apply this understanding to a range of contexts</p>	<p>and connect to other known representations</p> <p>3.1.2.2* Understand the language and notation of ratio and use a ratio table to represent a multiplicative relationship and connect to other known representation</p> <p>3.1.3.1 Find a fraction of a given amount</p> <p>3.1.3.2 Given a fraction and the result, find the original amount</p> <p>3.1.3.3 Express one number as a fraction of another</p> <p>3.1.4.1 Be able to divide a quantity into a given ratio</p> <p>3.1.4.2 Be able to determine the whole, given one part and the ratio</p> <p>3.1.4.3* Be able to determine one part, given the other part and the ratio</p> <p>3.1.4.4 Use ratio to describe rates (e.g. exchange rates, conversions, cogs, etc.)</p>		
<p>Unit 9 – Transformations</p> <p>6.3.1 - Understand and use translations</p> <p>6.3.2 - Understand and use rotations</p>	<p>6.3.1.1 Understand the nature of a translation and appreciate what changes and what is invariant</p> <p>6.3.1.2 Understand the minimum information required to describe a</p>		<p>Shapes changing size Reflection lines incorrect Vectors used incorrectly, y first. Enlargement always makes it bigger Rotating around a point not on the shape</p>

<p>6.3.3 - Understand and use reflections</p> <p>6.3.4 - Understand and use enlargements</p>	<p>translation (vertical and horizontal displacement)</p> <p>6.3.1.3 Translate objects from information given in a variety of forms</p> <p>6.3.2.1 Understand the nature of rotations and appreciate what changes and what is invariant</p> <p>6.3.2.2* Understand the minimum information required to describe a rotation (centre of rotation, size and direction of rotation)</p> <p>6.3.2.3 Rotate objects using information about centre, size and direction of rotation</p> <p>6.3.3.1 Understand the nature of reflections and appreciate what changes and what is invariant</p> <p>6.3.3.2* Understand the minimum information required to describe a reflection (line of reflection)</p> <p>6.3.3.3 Reflect objects using a range of lines of reflection (including non-vertical and non-horizontal)</p> <p>6.3.4.1 Understand the nature of enlargements and appreciate what changes and what is invariant</p>		
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	<p>6.3.4.2 Understand the minimum information required to describe an enlargement (centre of enlargement and scale factor)</p> <p>6.3.4.3 Enlarge objects using information about the centre of enlargement and scale factor</p>		
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Year 7

What happens following an assessment to address pupil misconceptions and reteaching of essential knowledge?

- All assessments are covered and green panned in class,
- The pupils complete evaluation sheets working out EBI, WWW and MRI. This then highlights their individual strengths and weaknesses within the topic
- Within the following topic there are starters covering the previous topic so retrieval practice is key

Formative Assessment in Maths

- Questioning
- White boards
- Exit tickets

Feedback and Acting on Feedback (should be on the most valuable thing)

- Every assessment has feedback that the pupil acts upon

Year 8

Assessment (Written)	Essential Component of Understanding/Application	Why is this essential?	Misconceptions Often Addressed
<p>Unit 1 – Estimating and rounding</p> <p>1.1.2 Round numbers to a required number of decimal places</p> <p>1.1.3 Round numbers to a required number of significant figures</p> <p>1.1.4 Estimate calculations by rounding</p>	<p>1.1.2.1 Round numbers to three decimal places</p> <p>1.1.2.2 Round numbers to any number of decimal places</p> <p>1.1.3.1 Understand the concept of significant figures</p> <p>1.1.3.2* Round integers to a required number of significant figures</p> <p>1.1.3.3 Round decimals to a required number of significant figures</p> <p>1.1.4.1 Understand what is meant by a sensible degree of accuracy</p> <p>1.1.4.2* Estimate numerical calculations</p> <p>1.1.4.3 Estimate and check if solutions to problems are of the correct magnitude</p> <p>1.1.4.4 Determine whether calculations using rounding will give an underestimate or overestimate</p> <p>1.1.4.5 Understand the impact of rounding errors when using a calculator, and the way that these can be compounded to result in large inaccuracies</p> <p>1.1.4.6 Calculate possible errors expressed using inequality notation $a < x \leq b$</p>		<p>Not rounding to nearest sig fig</p> <p>Rounding decimals incorrectly</p> <p>Loosing decimal point</p> <p>First zero significant</p>
<p>Unit 2 – Sequences</p> <p>4.1.1 Understand the features of a sequence</p>	<p>4.1.1.1* Appreciate that a sequence is a succession of terms formed according to a rule</p>	<p>Y9 Spring – Non linear relations</p>	

<p>4.1.2 Recognise and describe arithmetic sequences</p>	<p>4.1.1.2 Understand that a sequence can be generated and described using term-to-term approaches</p> <p>4.1.1.3 Understand that a sequence can be generated and described by a position-to-term rule</p> <p>4.1.2.1 Understand the features of an arithmetic sequence and be able to recognise one</p> <p>4.1.2.2* Understand that any term in an arithmetic sequence can be expressed in terms of its position in the sequence (nth term)</p> <p>4.1.2.3 Understand that the nth term allows for the calculation of any term</p> <p>4.1.2.4 Determine whether a number is a term of a given arithmetic sequence</p>		
<p>Unit 3 - Graphical representations of linear relationships</p> <p>4.2.1 Connect coordinates, equations and graphs</p> <p>4.2.2 Explore linear relationships</p>	<p>4.2.1.3* Know that a set of coordinates, constructed according to a mathematical rule, can be represented algebraically and graphically</p> <p>4.2.1.4 Understand that a graphical representation shows all of the points (within a range) that satisfy a relationship</p> <p>4.2.2.1 Recognise that linear relationships have particular algebraic and graphical features as a result of the constant rate of change</p> <p>4.2.2.2 Understand that there are two key elements to any linear relationship: rate of change and intercept point</p> <p>4.2.2.3* That writing linear equations in the form $y = mx + c$ helps to reveal the structure</p>	<p>Y9 Summer – Graphical representations</p>	

	4.2.2.4 Solve a range of problems involving graphical and algebraic aspects of linear relationships		
<p>Unit 4 – Solving Linear Equations</p> <p>2.2.1 Understand what is meant by finding a solution to a linear equation with one unknown</p> <p>2.2.2 Solve a linear equation with a single unknown on one side where obtaining the solution requires one step</p> <p>2.2.3 Solve a linear equation with a single unknown where obtaining the solution requires two or more steps (no brackets)</p> <p>2.2.4 Solve efficiently a linear equation with a single unknown involving brackets</p>	<p>2.2.1.1 Recognise that there are many different types of equations of which linear is one type</p> <p>2.2.1.2 Understand that in an equation the two sides of the ‘equals’ sign balance</p> <p>2.2.1.3* Understand that a solution is a value that makes the two sides of an equation balance</p> <p>2.2.1.4 Understand that a family of linear equations can all have the same solution</p> <p>2.2.2.1 Solve a linear equation requiring a single additive step</p> <p>2.2.2.2 Solve a linear equation requiring a single multiplicative step</p> <p>2.2.3.1 Understand that an equation needs to be in a format to be ‘ready’ to be solved, through collecting like terms on each side of the equation</p> <p>2.2.3.2 Know that when an additive step and a multiplicative step are required, the order of operations will not affect the solution</p> <p>2.2.3.3* Recognise that equations with unknowns on both sides of the equation can be manipulated so that the unknowns are on one side</p> <p>2.2.3.4 Solve complex linear equations, including those involving reciprocals</p>		

	<p>2.2.4.1 Appreciate the significance of the bracket in an equation</p> <p>2.2.4.2 Recognise that there is more than one way to remove a bracket when solving an equation</p> <p>2.2.4.3 Solve equations involving brackets where simplification is necessary first</p>		
<p>Unit 5 – Understand Multiplicative relationships percentages and proportionality</p> <p>3.1.2 Understand that multiplicative relationships can be represented in a number of ways and connect and move between those different representations.</p> <p>3.1.5 Understand that percentages are an example of a multiplicative relationship and apply this understanding to a range of contexts</p> <p>3.1.6 Understand proportionality</p>	<p>3.1.2.3 Use a graph to represent a multiplicative relationship and connect to other known representations</p> <p>3.1.2.4 Use a scaling diagram to represent a multiplicative relationship and connect to other known representations</p> <p>3.1.5.1 Describe one number as a percentage of another</p> <p>3.1.5.2 Find a percentage of a quantity using a multiplier</p> <p>3.1.5.3* Calculate percentage changes (increases and decreases)</p> <p>3.1.5.4 Calculate the original value, given the final value after a stated percentage increase or decrease</p> <p>3.1.5.5 Find the percentage increase or decrease, given start and finish quantities</p> <p>3.1.6.1 Understand the connection between multiplicative relationships and direct proportion 3.1.6.2 Recognise direct proportion and use in a range of contexts, including</p>		

	compound measures 3.1.6.3 Recognise and use inverse proportionality in a range of contexts		
<p>Unit 6 - Statistical representations, measures and analysis</p> <p>5.1.1 Understand and calculate accurately measures of central tendency and spread</p> <p>5.1.2 Construct accurately statistical representations</p> <p>5.2.1 Interpret reasonably statistical measures and representations</p> <p>5.2.2 Choose appropriately statistical measures and representations</p>	<p>5.1.1.1* Understand what the mean is measuring, how it is measuring it and calculate the mean from data presented in a range of different ways</p> <p>5.1.1.2 Understand what the median is measuring, how it is measuring it and find the median from data presented in a range of different ways</p> <p>5.1.1.3* Understand what the mode is measuring, how it is measuring it and identify the mode from data presented in a range of different ways</p> <p>5.1.1.4 Understand what the range is measuring, how it is measuring it and calculate the range from data presented in a range of different ways</p> <p>5.1.2.1 Construct bar charts from data presented in a number of different ways</p> <p>5.1.2.2* Construct pie charts from data presented in a number of different ways</p> <p>5.1.2.3 Construct pictograms from data presented in a number of different ways</p> <p>5.1.2.4 Construct scatter graphs from data presented in a number of different ways</p> <p>5.2.1.1 Understand that the different measures of central tendency offer a summary of a set of data</p>		

	<p>5.2.1.2 Understand how certain statistical measures may change as a result of changes in data</p> <p>5.2.1.3 Understand range as a measure of spread, including a consideration of outliers</p> <p>5.2.1.4 Understand that the different statistical representations offer different insights into a set of data</p> <p>5.2.1.5* Use the different measures of central tendency and spread to compare two sets of data</p> <p>5.2.1.6 Use the different statistical representations to compare two sets of data</p> <p>5.2.1.7 Recognise relationships between bivariate data represented on a scatter graph</p> <p>5.2.2.1 Given a statistical problem, choose what data needs to be analysed to explore that problem</p> <p>5.2.2.2* Given a statistical problem, choose appropriate statistical measures to explore that problem</p> <p>5.2.2.3 Given a statistical problem, choose appropriate representations to explore that problem</p> <p>5.2.2.4 Given a statistical problem, choose appropriate measures and representations to effectively summarise and communicate conclusions</p>		
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<p>Unit 7 - Perimeter, area and volume</p> <p>6.2.1 Understand the concept of perimeter and use it in a range of problem-solving situations</p> <p>6.2.2 Understand the concept of area and use it in a range of problem-solving situations</p> <p>6.2.3 Understand the concept of volume and use it in a range of problem-solving situations</p>	<p>6.2.1.2 Recognise that there is a constant multiplicative relationship (π) between the diameter and circumference of a circle</p> <p>6.2.1.3 Use the relationship $C = \pi d$ to calculate unknown lengths in contexts involving the circumference of circle</p> <p>6.2.2.3* Understand the derivation of, and use the formula for, the area of a circle</p> <p>6.2.2.4 Solve area problems of composite shapes involving whole and/or part circles, including finding the radius or diameter given the area</p> <p>6.2.2.5* Understand the concept of surface area and find the surface area of 3D shapes in an efficient way</p> <p>6.2.3.1 Be aware that all prisms have two congruent polygonal parallel faces (bases) with parallelogram faces joining the corresponding vertices of the bases</p> <p>6.2.3.2 Use the constant cross-sectional area property of prisms and cylinders to determine their volume</p>		
<p>Unit 8 - Geometrical properties: polygons</p> <p>6.1.1 Understand and use angle properties</p>	<p>6.1.1.1* Understand that a pair of parallel lines traversed by a straight line produces sets of equal and supplementary angles</p> <p>6.1.1.2* Know and understand proofs that in a triangle, the sum of interior angles is 180 degrees</p> <p>6.1.1.3 Know and understand proofs for finding the interior and exterior angle of any regular polygon</p>	<p>Y9 Autumn - Geometrical properties: similarity and Pythagoras' theorem</p>	

	6.1.1.4 Solve problems that require use of a combination of angle facts to identify values of missing angles, providing explanations of reasoning and logic used		
<p>Unit 9 – Constructions</p> <p>6.4.1 Use the properties of a circle in constructions</p> <p>6.4.2 Use the properties of a rhombus in construction</p>	<p>.4.1.1 Understand a circle as the locus of a point equidistant from a fixed point</p> <p>6.4.1.2 Use intersecting circles to construct triangles and rhombuses from given lengths</p> <p>6.4.2.1 Be aware that the diagonals of a rhombus bisect one another at right angles</p> <p>6.4.2.2 Be aware that the diagonals of a rhombus bisect the angles</p> <p>6.4.2.3* Use the properties of a rhombus to construct a perpendicular bisector of a line segment</p> <p>6.4.2.4 Use the properties of a rhombus to construct a perpendicular to a given line through a given point</p> <p>6.4.2.5 Use the properties of a rhombus to construct an angle bisector</p>		

Year 8

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Year 9

Assessment (Written)	Essential Component of Understanding/Application	Why is this essential?	Misconceptions Often Addressed
<p>Unit 1 – Geometric Properties</p> <p>6.1.2 – Understand and use similarity and congruence</p> <p>6.1.3 – Understand and use Pythagoras’ theorem</p>	<p>6.1.2.1* Recognise that similar shapes have sides in proportion to each other but angle sizes are preserved</p> <p>6.1.2.2 Recognise that for congruent shapes both side lengths and angle sizes are preserved</p> <p>6.1.2.3 Understand and use the criteria by which triangles are congruent</p> <p>6.1.2.4 Recognise rotational symmetry in shapes</p> <p>6.1.3.1 Be aware that there is a relationship between the lengths of the sides of a right-angled triangle</p> <p>6.1.3.2* Use and apply Pythagoras' theorem to solve problems in a range of contexts</p>	<p>Y10 U1 & 2F – Angles, scale diagrams and bearings</p> <p>Y10 U13F & U10H – Perimeter and area</p> <p>Y10 U17F & U14H Properties of polygons</p>	
<p>Unit 2 – Probability</p> <p>5.3.1 – Explore, describe and analyse the frequency of outcomes in a range of situations</p> <p>5.3.2 – Systematically record outcomes to find theoretical probabilities</p> <p>5.3.3 – Calculate and use probabilities of single and combined events</p>	<p>5.3.1.1 Understand that some outcomes are equally likely, and some are not</p> <p>5.3.1.2 Understand that the likelihood of events happening can be ordered on a scale from impossible to</p> <p>5.3.1.3* Understand that the likelihood of outcomes can be determined by designing and carrying out a probability experiment</p> <p>5.3.2.1 Systematically find all the possible outcomes for two events using a range of appropriate diagrams</p>	<p>Y10 U21F & U18H Probability</p>	

	<p>5.3.2.2 Systematically identify all possible outcomes for more than two events using appropriate diagrams, e.g. lists</p> <p>5.3.2.3 Find theoretical probabilities from sets of outcomes organised in a systematic way from a range of appropriate representations</p> <p>5.3.3.1* Understand that probability is a measure of the likelihood of an event happening and that it can be assigned a numerical value</p> <p>5.3.3.2 Calculate and use theoretical probabilities for single events</p> <p>5.3.3.3 Understand that the probabilities of all possible outcomes sum to one</p> <p>5.3.3.4 Calculate and use theoretical probabilities for combined events using a variety of appropriate representations, including Venn diagrams</p>		
<p>Unit 3 – Non-linear relationships</p> <p>4.1.3 - Recognise and describe other types of sequences</p>	<p>4.1.3.1 Understand the features of a geometric sequence and be able to recognise one</p> <p>4.1.3.2 Understand the features of special number sequences, such as square, triangle and cube, and be able to recognise one</p> <p>4.1.3.3 Appreciate that there are other number sequences</p>	Y10 U11F & U8H Sequences	
<p>Unit 4 – Expressions and formulae</p> <p>1.4.4 - Find the products of binomials</p> <p>1.4.5 – Rearrange formulae to change the subject</p>	<p>1.4.4.1* Use the distributive law to find the product of two binomials</p> <p>1.4.4.2 Understand and use the special case when the product of two binomials is the difference of two squares</p> <p>1.4.4.3 Find more complex binomial products</p>	Y10 U5F & U3H – Algebra Y10 U18F & U15H - Equations	

	<p>1.4.5.1* Understand that an additive relationship between variables can be written in a number of different ways</p> <p>1.4.5.2 Understand that a multiplicative relationship between variables can be written in a number of different ways</p> <p>1.4.5.3 Apply an understanding of inverse operations to a formula in order to make a specific variable the subject (in a wide variety of increasingly complex mix of operations)</p>		
<p>Unit 5 – Trigonometry</p> <p>3.2.1 - Understand the trigonometric functions</p> <p>3.2.2 – Use trigonometry to solve problems in a range of contexts</p>	<p>3.2.1.1* Understand that the trigonometric functions are derived from measurements within a unit circle</p> <p>3.2.1.2 Recognise the right-angled triangle within a unit circle and use proportion to scale to similar triangles</p> <p>3.2.1.3* Know how the sine, cosine and tangent ratios are derived from the sides of a right-angled triangle</p> <p>3.2.2.1 Choose appropriate trigonometric relationships to use to solve problems in right-angled triangles</p> <p>3.2.2.2 Use trigonometric ratios to find a missing side in a right-angled triangle</p> <p>3.2.2.3 Use trigonometric ratios to find a missing angle in a right-angled triangle</p>	Y11 U39F & U38H - Trigonometry	
<p>Unit 6 – Standard Form</p>	<p>1.3.3.1* Be able to write any integer in a range of forms, e.g. $53 = 5.3 \times 10$, 530×10, 5300×0.01, etc.</p>	Y10 U20F & U19H Standard Form	

<p>1.3.3 – Interpret and compare numbers in standard form $A \times 10^n$, $1 \leq A < 10$</p>	<p>1.3.3.2 Understand that very large numbers can be written in the form $a \times 10^n$, (where $1 < a \leq 10$) and appreciate the real-life contexts where this format is usefully used</p> <p>1.3.3.3 Understand that very small numbers can be written in the form $a \times 10^{-n}$, (where $1 < a \leq 10$) and appreciate the real-life contexts where this format is usefully used</p>		
<p>Unit 7 - Graphical representations</p> <p>4.2.3 – Model and interpret a range of situations</p>	<p>4.2.3.1 Understand that different types of equation give rise to different graph shapes, identifying quadratics in particular</p> <p>4.2.3.2 Read and interpret points from a graph to solve problems</p> <p>4.2.3.3* Model real-life situations graphically</p> <p>4.2.3.4* Recognise that the point of intersection of two linear graphs satisfies both relationships and hence represents the solution to both those equations</p>	<p>Y10 U7F & U5H – Coordinates and linear graphs</p> <p>Y10 U15F & U12H Real life graphs</p>	
<p>End of year Mock Exams P2</p>	<ul style="list-style-type: none"> GCSE calculator topics at Foundation level 	<p>For GCSE</p> <p>To progress to A-level studies in Mathematics as good basics for Advanced topics</p>	

Year 9

What happens following an assessment to address pupil misconceptions and reteaching of essential knowledge?

- All assessments are covered and green panned in class,
- The pupils complete evaluation sheets working out EBI, WWW and MRI. This then highlights their individual strengths and weaknesses within the topic
- Within the following topic there are starters covering the previous topic, so retrieval practice is key

Formative Assessment in Maths

- Questioning
- White boards
- Exit tickets

Feedback and Acting on Feedback (should be on the most valuable thing)

- Every assessment has feedback that the pupil acts upon

Year 10

Assessment (Written)	Essential Component of Understanding/Application	Why is this essential?	Misconceptions Often Addressed
Non Calculator topics tested		For GCSE To progress to A-level studies in Mathematics as good basics for Advanced topics	Not understanding the difference between similar and congruent Enlargement can also make shapes smaller Negative scale factors Inequality signs Inequalities on graphs Inverse operations Solving for 2 unknowns at the same time Solving a linear and quadratic at the same time.
Calculator topics tested		For GCSE To progress to A-level studies in Mathematics as good basics for Advanced topics	
Mock Exams (All 3 Papers)	<ul style="list-style-type: none"> All GCSE topics will be covered over the 3 papers at Foundation or Higher Level 	For GCSE To progress to A-level studies in Mathematics as good basics for Advanced topics	

Year 10

What happens following an assessment to address pupil misconceptions and reteaching of essential knowledge?

- Evaluation Sheets are completed and QLA completed to highlight key areas for teaching and learning
- All assessments are corrected and green panned in class,
- The pupils complete evaluation sheets working out EBI, WWW and MRI. This then highlights their individual strengths and weaknesses within the topic
- GCSE practice questions will be used as starters in the following terms to address weaker areas

Formative Assessment in Maths

- Questioning
- White boards

Feedback and Acting on Feedback (should be on the most valuable thing)

- Every assessment has feedback that the pupil acts upon

Year 11

Assessment (Written)	Essential Component of Understanding/Application	Why is this essential?	Misconceptions Often Addressed
Paper 1 Non Calculator	<ul style="list-style-type: none">All GCSE topics will be covered over the 3 papers at Foundation or Higher Level	For GCSE To progress to A-level studies in Mathematics as good basics for Advanced topics	
Mock Exams (All 3 Papers)			
Paper 2 Calculator			
Paper 3 Calculator			
All 3 GCSE Papers over 6 weeks			

Year 11

What happens following an assessment to address pupil misconceptions and reteaching of essential knowledge?

- Evaluation Sheets are completed and QLA completed to highlight key areas for teaching and learning
- All assessments are corrected and green panned in class,
- The pupils complete evaluation sheets working out EBI, WWW and MRI. This then highlights their individual strengths and weaknesses within the topic
- GCSE practice questions will be used as starters in the following terms to address weaker areas

Formative Assessment in Maths

- Questioning
- White boards

Feedback and Acting on Feedback (should be on the most valuable thing)

- Every assessment has feedback that the pupil acts upon