**Assessment in Maths**

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

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

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| **multiplication and division strategies**<br><br>**2.1.5 - Use the laws and conventions of arithmetic to calculate efficiently** | 2.1.2.1* Understand the mathematical structures that underpin multiplication and division of positive and negative integers<br><br>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 ÷ 0.03, etc.<br><br>2.1.2.3* Generalise and fluently use written multiplication strategies to calculate accurately with decimals<br><br>2.1.2.4 Generalise and fluently use written division strategies to calculate accurately with decimal<br><br>2.1.3.1 Understand the mathematical structures that underpin the addition and subtraction of fractions<br><br>2.1.3.2 Generalise and fluently use addition and subtraction strategies to calculate with fractions and mixed number | | |
| **Unit 4 – Expressions and Equations**<br><br>**1.4.1. - Understand and use the convention and vocabulary of algebra** | 1.4.1.1 Understand that a letter can be used to represent a generalised number<br><br>1.4.1.2 Understand that algebraic notation follows particular conventions | Y9 Spring – Expressions and formulae | A=1 b=2 etc… inverse operations |

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| **including forming and interpreting algebraic expressions and equations**<br><br>**1.4.2 - Simplify algebraic expressions by collecting like terms to maintain equivalence**<br><br>**1.4.3 - Simplify algebraic expressions by collecting like terms to maintain equivalence** | and that following these aids clear communication<br><br>1.4.1.3 Know the meaning of and identify: term, coefficient, factor, product, expression, formula and equation<br><br>1.4.1.4* Understand and recognise that a letter can be used to represent a specific unknown value or a variable<br><br>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<br><br>1.4.3.1* Understand how to use the distributive law to multiply an expression by a term such as 3(a + 4b) and 3p2 (2p + 3b)<br><br>1.4.3.2 Understand how to use the distributive law to factorise expressions | | |

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| | where there is a common factor, such as 3a + 12b and 6p3 + 9p2b<br><br>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 ± 2b) ± 4(2ab ± 6b), etc | | |
| **Unit 5 – Plotting Coordinates**<br><br>**4.2.1 - Connect coordinates, equations and graphs** | 4.2.1.1 Describe and plot coordinates, including non-integer values, in all four quadrants 4.2.1.2 Solve a range of problems involving coordinates<br><br>4.2.1.3* Know that a set of coordinates, constructed according to a mathematical rule, can be represented algebraically and graphically | Y8 Autumn – Graphical representations of linear relationships<br><br>Y9 Summer – Graphical representations | X and y wrong way |
| **Unit 6 – Perimeter and Area**<br><br>**6.2.1 - Understand the concept of perimeter and use it in a range of problem-solving situations**<br><br>**6.2.2 - Understand the concept of area and use it in a range of problem-solving situations** | 6.2.1.1 Use the properties of a range of polygons to deduce their perimeters 6.2.2.1* Derive and use the formula for the area of a trapezium<br><br>6.2.2.2 Understand that the areas of composite shapes can be found in different way | Y8 Summer –Perimeter area and volume | Area and perimeter wrong, not using all sides of compound shape |

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| **Unit 7 – Arithmetic procedures including fractions**<br><br>**1.3.1 - Work interchangeably with terminating decimals and their corresponding fractions**<br><br>**1.3.2 - Compare and order positive and negative integers, decimals and fractions**<br><br>**2.1.3 - Know, understand and use fluently a range of calculation strategies for addition and subtraction of fractions**<br><br>**2.1.4 - Know, understand and use fluently a range of calculation strategies for multiplication and division of fractions** | 1.3.1.1 Understand that 1 can be written in the form n n (where n is any integer) and vice versa<br><br>1.3.1.2 Understand that fractions of the form a b , where a > b, are greater than one and use this awareness to convert between improper fractions and mixed numbers<br><br>1.3.1.3* Understand that a fraction represents a division and that performing that division results in an equivalent decimal<br><br>1.3.1.4 Appreciate that any terminating decimal can be written as a fraction with a denominator of the form 10n (e.g. 0.56 = 56 100 , 560 1000 )<br><br>1.3.1.5* Understand the process of simplifying fractions through dividing both numerator and denominator by common factors 1<br><br>.3.1.6 Know how to convert from fractions to decimals and back again using the converter key on a calculator<br><br>1.3.1.7 Know how to enter fractions as divisions on a calculator and understand the limitations of the decimal representation that results | Y9 Summer – Standard form | Not seeing a fraction as a division<br>Using remainders<br>Dividing makes it smaller<br>Large digit negative bigger than smaller, ie –9 bigger than -1 |

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| | 1.3.2.1 Compare negative integers using < and ><br><br>1.3.2.2 Compare decimals using < and ><br><br>1.3.2.3 Compare and order fractions by converting to decimals<br><br>1.3.2.4 Compare and order fractions by converting to fractions with a common denominator<br><br>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<br><br>1.3.2.6 Appreciate that, for any two numbers there is always another number in between them<br><br>2.1.3.1 Understand the mathematical structures that underpin the addition and subtraction of fractions<br><br>2.1.3.2 Generalise and fluently use addition and subtraction strategies to calculate with fractions and mixed numbers<br><br>2.1.4.1* Understand the mathematical structures that underpin the multiplication of fractions | | |

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| | 2.1.4.2* Understand how to multiply unit, non-unit and improper fractions<br><br>2.1.4.3 Generalise and fluently use strategies to multiply with mixed numbers (e.g. 3 2 4 3 2 1× )<br><br>2.1.4.4 Understand the mathematical structures that underpin the division of fractions 2.1.4.5 Divide a fraction by a whole number<br><br>2.1.4.6 Divide a whole number by a fraction 2.1.4.7 Divide a fraction by a fraction | | |
| **Unit 8 – Understanding multiplicative relationships: fractions and ratios**<br><br>**3.1.1 - Understand the concept of multiplicative relationships**<br><br>**3.1.2 - Understand the concept of multiplicative relationships**<br><br>**3.1.3 - Understand that multiplicative relationships can be represented in a number of ways and connect** | 3.1.1.1* Appreciate that any two numbers can be connected via a multiplicative relationship<br><br>3.1.1.2 Understand that a multiplicative relationship can be expressed as a ratio and as a fraction<br><br>3.1.1.3 Be able to calculate the multiplier for any given two numbers<br><br>3.1.1.4 Appreciate that there are an infinite number of pairs of numbers for any given multiplicative relationship (equivalence)<br><br>3.1.2.1* Use a double number line to represent a multiplicative relationship | Y8 Spring - Understanding multiplicative relationships: percentages and proportionality | Only seeing additive relationship<br>Multiplying always makes it bigger<br>Not sharing in equal parts |

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

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

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| | 6.3.4.2 Understand the minimum information required to describe an enlargement (centre of enlargement and scale factor)<br><br>6.3.4.3 Enlarge objects using information about the centre of enlargement and scale factor | | |

**Year 7**

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

- All assessments are covered and green penned 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 |
|---|---|---|---|
| **Unit 1 – Estimating and rounding**<br><br>**1.1.2 Round numbers to a required number of decimal places**<br><br>**1.1.3 Round numbers to a required number of significant figures**<br><br>**1.1.4 Estimate calculations by rounding** | 1.1.2.1 Round numbers to three decimal places<br><br>1.1.2.2 Round numbers to any number of decimal places<br><br>1.1.3.1 Understand the concept of significant figures<br><br>1.1.3.2* Round integers to a required number of significant figures<br><br>1.1.3.3 Round decimals to a required number of significant figures<br><br>1.1.4.1 Understand what is meant by a sensible degree of accuracy<br><br>1.1.4.2* Estimate numerical calculations<br><br>1.1.4.3 Estimate and check if solutions to problems are of the correct magnitude<br><br>1.1.4.4 Determine whether calculations using rounding will give an underestimate or overestimate 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<br><br>1.1.4.6 Calculate possible errors expressed using inequality notation $a < x \leq b$ | | Not rounding to nearest sig fig<br>Rounding decimals incorrectly<br>Loosing decimal point<br>First zero significant |
| **Unit 2 – Sequences**<br><br>**4.1.1 Understand the features of a sequence** | 4.1.1.1* Appreciate that a sequence is a succession of terms formed according to a rule | Y9 Spring – Non linear relations | |

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

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| | 4.2.2.4 Solve a range of problems involving graphical and algebraic aspects of linear relationships | | |
| **Unit 4 – Solving Linear Equations**<br><br>**2.2.1 Understand what is meant by finding a solution to a linear equation with one unknown**<br><br>**2.2.2 Solve a linear equation with a single unknown on one side where obtaining the solution requires one step**<br><br>**2.2.3 Solve a linear equation with a single unknown where obtaining the solution requires two or more steps (no brackets)**<br><br>**2.2.4 Solve efficiently a linear equation with a single unknown involving brackets** | 2.2.1.1 Recognise that there are many different types of equations of which linear is one type<br><br>2.2.1.2 Understand that in an equation the two sides of the 'equals' sign balance<br><br>2.2.1.3* Understand that a solution is a value that makes the two sides of an equation balance<br><br>2.2.1.4 Understand that a family of linear equations can all have the same solution<br><br>2.2.2.1 Solve a linear equation requiring a single additive step<br><br>2.2.2.2 Solve a linear equation requiring a single multiplicative step<br><br>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<br><br>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<br><br>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<br><br>2.2.3.4 Solve complex linear equations, including those involving reciprocals | | |

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

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| | compound measures 3.1.6.3 Recognise and use inverse proportionality in a range of contexts | | |
| **Unit 6 - Statistical representations, measures and analysis**<br><br>**5.1.1 Understand and calculate accurately measures of central tendency and spread**<br><br>**5.1.2 Construct accurately statistical representations**<br><br>**5.2.1 Interpret reasonably statistical measures and representations**<br><br>**5.2.2 Choose appropriately statistical measures and representations** | 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<br><br>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<br><br>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<br><br>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<br><br>5.1.2.1 Construct bar charts from data presented in a number of different ways<br><br>5.1.2.2* Construct pie charts from data presented in a number of different ways<br><br>5.1.2.3 Construct pictograms from data presented in a number of different ways<br><br>5.1.2.4 Construct scatter graphs from data presented in a number of different ways<br><br>5.2.1.1 Understand that the different measures of central tendency offer a summary of a set of data | | |

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| | 5.2.1.2 Understand how certain statistical measures may change as a result of changes in data<br><br>5.2.1.3 Understand range as a measure of spread, including a consideration of outliers<br><br>5.2.1.4 Understand that the different statistical representations offer different insights into a set of data<br><br>5.2.1.5* Use the different measures of central tendency and spread to compare two sets of data<br><br>5.2.1.6 Use the different statistical representations to compare two sets of data<br><br>5.2.1.7 Recognise relationships between bivariate data represented on a scatter graph<br><br>5.2.2.1 Given a statistical problem, choose what data needs to be analysed to explore that problem<br><br>5.2.2.2* Given a statistical problem, choose appropriate statistical measures to explore that problem<br><br>5.2.2.3 Given a statistical problem, choose appropriate representations to explore that problem<br><br>5.2.2.4 Given a statistical problem, choose appropriate measures and representations to effectively summarise and communicate conclusions | | |

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| **Unit 7 - Perimeter, area and volume**<br><br>**6.2.1 Understand the concept of perimeter and use it in a range of problem-solving situations**<br><br>**6.2.2 Understand the concept of area and use it in a range of problem-solving situations**<br><br>**6.2.3 Understand the concept of volume and use it in a range of problem-solving situations** | 6.2.1.2 Recognise that there is a constant multiplicative relationship ( π) between the diameter and circumference of a circle<br><br>6.2.1.3 Use the relationship C = πd to calculate unknown lengths in contexts involving the circumference of circle<br><br>6.2.2.3* Understand the derivation of, and use the formula for, the area of a circle<br><br>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<br><br>6.2.2.5* Understand the concept of surface area and find the surface area of 3D shapes in an efficient way<br><br>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<br><br>6.2.3.2 Use the constant cross-sectional area property of prisms and cylinders to determine their volume | | |
| **Unit 8 - Geometrical properties: polygons**<br><br>**6.1.1 Understand and use angle properties** | 6.1.1.1* Understand that a pair of parallel lines traversed by a straight line produces sets of equal and supplementary angles<br><br>6.1.1.2* Know and understand proofs that in a triangle, the sum of interior angles is 180 degrees<br><br>6.1.1.3 Know and understand proofs for finding the interior and exterior angle of any regular polygon | Y9 Autumn - Geometrical properties: similarity and Pythagoras' theorem | |

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| | 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 | | |
| **Unit 9 – Constructions**<br><br>**6.4.1 Use the properties of a circle in constructions**<br><br>**6.4.2 Use the properties of a rhombus in construction** | .4.1.1 Understand a circle as the locus of a point equidistant from a fixed point<br><br>6.4.1.2 Use intersecting circles to construct triangles and rhombuses from given lengths<br>6.4.2.1 Be aware that the diagonals of a rhombus bisect one another at right angles<br><br>6.4.2.2 Be aware that the diagonals of a rhombus bisect the angles<br><br>6.4.2.3* Use the properties of a rhombus to construct a perpendicular bisector of a line segment<br><br>6.4.2.4 Use the properties of a rhombus to construct a perpendicular to a given line through a given point<br><br>6.4.2.5 Use the properties of a rhombus to construct an angle bisector | | |

**Year 8**

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- Within the following topic there are starters covering the previous topic so retrieval practice is key

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- Questioning
- White boards
- Exit tickets

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

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**Year 9**

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

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

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| | 1.4.5.1* Understand that an additive relationship between variables can be written in a number of different ways<br><br>1.4.5.2 Understand that a multiplicative relationship between variables can be written in a number of different ways<br><br>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) | | |
| **Unit 5 – Trigonometry**<br><br>**3.2.1 - Understand the trigonometric functions**<br><br>**3.2.2 – Use trigonometry to solve problems in a range of contexts** | 3.2.1.1* Understand that the trigonometric functions are derived from measurements within a unit circle<br><br>3.2.1.2 Recognise the right-angled triangle within a unit circle and use proportion to scale to similar triangles<br><br>3.2.1.3* Know how the sine, cosine and tangent ratios are derived from the sides of a right-angled triangle<br><br>3.2.2.1 Choose appropriate trigonometric relationships to use to solve problems in right-angled triangles<br><br>3.2.2.2 Use trigonometric ratios to find a missing side in a right-angled triangle<br><br>3.2.2.3 Use trigonometric ratios to find a missing angle in a right-angled triangle | Y11 U39F &U38H - Trigonomentry | |
| **Unit 6 – Standard Form** | 1.3.3.1* Be able to write any integer in a range of forms, e.g. 53 = 5.3 × 10, 530 × 1 10, 5300 × 0.01, etc. | Y10 U20F & U19H Standard Form | |

| | | | |
|---|---|---|---|
| **1.3.3 – Interpret and compare numbers in standard form A × 10n, 1 ≤ A < 10** | 1.3.3.2 Understand that very large numbers can be written in the form a × 10n, (where 1 < a ≤ 10) and appreciate the real-life contexts where this format is usefully used<br><br>1.3.3.3 Understand that very small numbers can be written in the form a × 10−n, (where 1 < a ≤ 10) and appreciate the real-life contexts where this format is usefully used | | |
| **Unit 7 - Graphical representations**<br><br>**4.2.3 – Model and interpret a range of situations** | 4.2.3.1 Understand that different types of equation give rise to different graph shapes, identifying quadratics in particular<br><br>4.2.3.2 Read and interpret points from a graph to solve problems<br><br>4.2.3.3* Model real-life situations graphically<br><br>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 | Y10 U7F & U5H – Coordinates and linear graphs<br>Y10 U15F &U12H Real life graphs | |
| **End of year**<br>**Mock Exams P2** | • GCSE calculator topics at Foundation level | For GCSE<br>To progress to A-level studies in Mathematics as good basics for Advanced topics | |

**Year 9**

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

- All assessments are covered and green penned 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<br>To progress to A-level studies in Mathematics as good basics for Advanced topics | Not understanding the difference between similar and congruent<br>Enlargement can also make shapes smaller<br>Negative scale factors<br>Inequality signs<br>Inequalities on graphs<br>Inverse operations<br>Solving for 2 unknowns at the same time<br>Solving a linear and quadratic at the same time. |
| Calculator topics tested | | For GCSE<br>To progress to A-level studies in Mathematics as good basics for Advanced topics | |
| Mock Exams (All 3 Papers) | • All GCSE topics will be covered over the 3 papers at Foundation or Higher Level | For GCSE<br>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 penned 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 | • All GCSE topics will be covered over the 3 papers at Foundation or Higher Level | For GCSE<br>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 penned 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