

Curriculum Statement of Intent:

To ensure every pupil has the skills, understanding and knowledge to be able to think systematically and logically, solve problems and cope with any numerical challenges they may face in everyday life.

- *Provide a broad and balanced education for all pupils in the subjects of Mathematics*
- *Enable pupils to develop knowledge, understand concepts and acquire skills, and be able to choose and apply these in relevant situations in the real world such as solving numerical problems*
- *Support pupils' spiritual, moral, social and cultural development by taking any opportunities to start class discussions*
- *Promote a positive attitude towards learning through setting high standards and modelling the attitude we want pupils to aspire to.*
- *Ensure equal access to learning in Mathematics, with high expectations for every pupil and appropriate levels of challenge and support to enable pupils to reach their full potential.*
- *Develop pupils' independent learning skills and resilience, to equip them for further/higher education and employment by providing an environment where pupils are encouraged to ask questions and making mistakes is part of a positive learning journey.*

Curriculum Statement of Implementation:

- *The maths curriculum is based around 5 key strands. These are: Number, Algebra, Shape and Measure (Geometry), Handling Data (Probability and Statistics) and Ratio and Proportion. By the end of year 8 all these strands will have been taught a minimum of twice. When students enter year 9 (the start of KS4) the strands remain the same but the content and the skills are developed further. By the end of year 10 the full GCSE content will have been delivered to all students.*
- *The maths curriculum is organised to support, stretch and challenge all pupils, regardless of their ability. Traditional methods of teaching are used to build on the foundations already attained from KS2, with an emphasis on retention and inter leaving topics. All teachers are encouraged to teach to the top of every class, ensuring scaffolding and modelling is well placed to allow all students to succeed.*
- *Maths is predominantly skills based; it relies on a strong foundation of the basic skills and builds upon those as the course progresses. All maths lessons are based around the DEC ten principles with a strong emphasis on modelling and guided practice.*
- *How your curriculum covers the following, making reference to separate school policies on these where relevant:*
 - *Sex and relationship education (if applicable) N/A*
 - *Spiritual, moral, social and cultural development – see end of this document*
 - *British values - The mathematics curriculum promotes the British values of tolerance and resilience on a daily basis through problem solving and understanding of complex concepts, encouraging students to persevere and try different methods to arrive at a correct solution. Students are encouraged to build on and learn from their mistakes in maths lessons. Teamwork through peer assessment and group work underpins the schemes of learning in the maths faculty. Students work together in all areas of the maths curriculum to support each other and build mutual respect for one another. Students are allowed to make mistakes and learn from them in all maths lessons. This fosters confidence and builds self-esteem, it encourages students to take risks and become lifelong learners whilst using their mathematical skills in*

all aspects of life. Within Maths lessons we promote the DEC values of respect, believe, aspire and commit.

- *Careers guidance – within the mathematics curriculum we link to potential careers and how maths can support certain professions, e.g. the maths which would relate to becoming an engineer/chemists/surveyor etc. (whenever possible the more obscure professions will be linked, to get pupils seeing maths from a different angle than the conventional angle of maths only help accountants etc.)*

With regards to planning in Maths:

- *Short term planning is completed by the individual class teacher based on medium and long term plan provided faculty leader.*
- *Medium term planning is in the form of Schemes of Work (years 7 – 10). Each Scheme of Work includes all assessments and shared resources between staff, to encourage sharing good resources. Within each Scheme of Work there are planned weeks of intervention to allow teachers to address any areas of concern throughout a term (if not addressed earlier). Year 7 and 8 have a week within the Scheme of Work where the classroom teachers choosing the topics taught/retaught based on their assessments of the class. Year 9 & 10 have an intervention week after an MAO to enable the classroom teacher to address any whole class weaknesses. Medium term planning for year 11 is expected from all year 11 staff. These Schemes of Work are written based on RAG analysis from formal assessments for each class. These Schemes of Work are QA'ed by the faculty leader and all staff are provided with a Scheme of Work with regards to exam practice for all year 11 teachers to follow.*
- *Long term planning is in the form of overviews/Programme of Study for year 7 – 10. These ensure that all the content is completed in the allocated learning time.*
- *Within maths, time is allocated for collaborative planning and the j drive is organised to ensure all faculty members share resources, to support each other's planning. All assessments are standardised and provided by the faculty leader. The faculty has a comment format for lesson resources which ensures pupils have a consistent experience across any maths classes. We have a subscription to mathswatch – to support pupil's independent learning (homework/revision), justmaths - to support pupils independent learning (revision) also is an excellent resource bank for staff. Recently subscribed to mymaths to support A-Level learners.*

Curriculum Coverage

	Year 7	Year 8
Half Term 1	Number 1 includes: Use all four operations Use positive and negative integers with all four operations Understand and apply the use of BIDMAS in calculations Recognise and state factors, multiples and primes Evaluate indices Understand place value Find a percentage of an amount	Algebra 2 includes: Plot coordinates in all four quadrants Plot straight line graphs Understand and interpret the equation $y = mx + c$ Find the gradient and intercept of a straight line Find and use term to term rules of sequences Recall and recognise triangular and square numbers Recognise Fibonacci's sequence Find and use the nth term of a linear sequence Find and use the nth term of quadratic sequences
Half Term 2	Algebra 1 includes: Perform Substitution into formula Simplify expressions using all 4 operations Expand brackets Factorise into brackets Solve linear equations Form algebraic expressions	Geometry 2 includes: Perform all transformations Construct shapes accurately using compasses Perform all recognised constructions Solve problems using Loci You can solve problems using Pythagoras You can solve problems using Trigonometry
Half Term 3	Geometry 1 includes: Understand properties of shapes and correct notation Understand, explain and reason with basic angle rules Find the area of simple and compound shapes Find the perimeter of simple and compound shapes Find the volume of prisms Find the surface area of prisms	Number 3 includes: Change fractions from mixed number to improper fractions Change fractions to decimals to percentages Find fractions of an amount Calculate with fractions using all four operations including mixed numbers Effectively use a calculator Round values to decimal places and significant figures Estimate solutions to calculations Understand bounds and how they affect calculations
Half Term 4	Probability and Statistics 1 includes: Understand the different types of data Represent data in diagrams Interpret and compare data from diagrams Find all averages from a data set Find basic probabilities using decimal and fractions	Ratio and proportion 2 includes: Use ratio to solve problems Use proportion to solve problems with money Plot real life graphs of conversion Perform conversions with currencies and all required units, such as time, length and mass. Calculate with compound measures such as speed, distance time and mass, density and volume. Form equations showing direct and indirect proportion
Half Term 5	Number 2 includes: Find equivalence in fractions Change fractions from mixed number to improper fractions Change fractions to decimals to percentages Find fractions of an amount Calculate with fractions using all four operations Effectively use a calculator Round values to decimal places and significant figures	Algebra 3 includes: Perform Substitution into formula Simplify expressions using all 4 operations Expand brackets Factorise into brackets Solve linear equations Form algebraic expressions Rearrange and manipulate linear and quadratic formula

	Estimate solutions to calculations	
Half Term 6	Ratio and Proportion 1 includes: Use ratio to solve problems Use proportion to solve problems with money Plot real life graphs of conversion Perform conversions with currencies and all required units, such as time, length and mass.	Number 4 includes: Evaluate indices Find a percentage of an amount Find fractions of an amount Write numbers in standard form Convert numbers to and from standard form Use surds in calculations, this should include simplifying, cancelling and expanding.

SMSC/BV

Number 1

Worded questions must be developed using practical examples of our national infrastructure such as trains and buses.

Worded questions must be developed to link to national issues around election totals.

Worded questions must develop an understanding of temperature differences in the UK and how this influences trade and production.

Geometry 1

Shapes can be used to identify properties of the British flag.

Probability and statistics 1

Data should incorporate national statistics, this must have a direct link to elections at both national and regional level. This can then prompt discussion around the fairness of the voting system.

Averages must look at British values around population increases of groups, NHS waiting times; this could also feature national institutions.

Worded questions must be used to consider the diversity of the population in the UK, the demographics of voting per party.

Number 2

Spending in sectors on NHS and Education could also be considered. Interest can also be linked to talking to students about budgeting and looking at spending patterns. Get students thinking about bank accounts and ISA's as a way of saving for the future.

Fractions could link to the cultural and religious make of the UK.

Ratio and Proportion 1

Problems can be used in the context of the UK voting system and democracy. In addition we could consider religions and cultures in the UK.

Students should focus on difference and diversity and celebrating this fact.

Geometry 2

Students can identify symmetry and rotational symmetry in the flags of the UK. Origins of flags can be discussed.

Students can investigate the heights of national landmarks and monuments.

Number 3

Fractions could link to the cultural and religious make of the UK.

Problems can be used in the context of the UK voting system and democracy. In addition we could consider religions and cultures in the UK.

Ratio and proportion 2

Worded questions must be developed to link to national issues around election totals.

Problems with speed, distance and time can consider laws of the UK and the implications of breaking the law. **Number 4**

Worded questions must be developed using practical examples of our national infrastructure such as trains and busses.

Worded questions must be used to consider the diversity of the population in the UK, the demographics of voting per party.

Spending in sectors on NHS and Education could also be considered. Interest can also be linked to talking to students about budgeting and looking at spending patterns. Get students thinking about bank accounts and ISA's as a way of saving for the future.

Worded questions must be used to consider population worldwide and how these populations are very different to that of the UK.

Worded questions must be used to consider the diversity of the population in the UK, the demographics of voting per party.

YR 9 Curriculum Overview

Term	9AS (HIGHER)	9PIR (FOUNDATION)
HT 1	<p><u>Unit 1 Number:</u></p> <p>Work out the total number of ways of performing a series of tasks</p> <p>Estimation</p> <p>Write as a product of its prime factors</p> <p>Find the HCF and LCM of up to 3 numbers</p> <p>Use all the laws of indices</p> <p>Use negative & fractional powers</p> <p>Convert to and from standard form</p> <p>Perform calculations on numbers in standard form</p> <p>Simplify surds</p> <p>Add, subtract, multiply and divide surds</p> <p>Rationalise the denominator</p> <p><u>Unit 2 Algebra:</u></p> <p>Use the rules of indices to simplify algebraic expressions</p> <p>Expand and simplify brackets</p> <p>Factorise expressions</p> <p>Solve equations (up to unknowns on both sides)</p> <p>Form and solve equations</p> <p>Substitute numbers into formulae</p> <p>Change the subject of the formulae</p> <p>Find the nth term and use the nth term of linear sequences</p> <p>Find the nth term and use the nth term of quadratic sequences</p>	<p><u>Unit 1 Number:</u></p> <p>Calculations (including negative numbers)</p> <p>Rounding to nearest 10, 100 and 1000</p> <p>Rounding decimals/four operations with decimals</p> <p>Factors and Multiples</p> <p>HCF and LCM from lists</p> <p>Squares, cubes and roots</p> <p>Index notation</p> <p>Product of prime factors</p> <p>HCF and LCM (Venn diagrams)</p> <p>HCF and LCM (real life context)</p> <p><u>Unit 2 Algebra:</u></p> <p>Simplify expressions (add and subtract)</p> <p>Simplify expressions (multiply and divide)</p> <p>Substitution into expressions</p> <p>Substitution into formulae</p> <p>Expand single brackets</p> <p>Expand and simplify double brackets</p> <p>Factorise simple expressions</p> <p>Form expressions</p> <p>Use formulae</p>
HT 2	<p><u>Unit 3 Interpreting and representing data:</u></p> <p>Construct and use back-to-back stem and leaf diagrams</p> <p>Construct and use frequency polygons and pie charts</p> <p>Plot and interpret time series graphs</p> <p>Plot and interpret scatter graphs</p> <p>Estimate averages from grouped data</p> <p>Construct and use two-way tables</p> <p><u>Unit 4 Fractions, ratio and proportion:</u></p> <p>Add, Subtract, multiply and divide fractions and mixed numbers</p> <p>Find the reciprocal of an integer, decimal or fraction</p> <p>Write ratios in the form 1:n or n:1</p> <p>Share ratios</p> <p>Solve problems involving ratio</p> <p>Convert between currencies and measures</p> <p>Work out percentage increase and decrease</p> <p>Calculate simple and compound interest</p> <p>Calculate using fractions, decimals and percentages</p> <p>Convert a recurring decimal to a fraction</p>	<p><u>Unit 3 Graphs, tables and charts:</u></p> <p>Design tables and data collection sheets/Read data from tables</p> <p>Complete and construct two way tables</p> <p>Draw and interpret comparative and composite bar charts</p> <p>Plot and interpret time series graphs</p> <p>Construct & interpret stem&leaf & back-to-back stem&leaf diagrams</p> <p>Draw and interpret pie charts</p> <p>Plot and interpret scatter graphs</p> <p><u>Unit 4 Fractions and percentages:</u></p> <p>Simple fractions/Find equivalent fractions</p> <p>Add, subtract, multiply and divide fractions (with mixed numbers)</p> <p>Find fractions of amounts</p> <p>Convert between fractions and decimals (and vice versa)</p> <p>Write one number as a fraction of another</p> <p>Convert between fractions and percentages (and vice versa)</p> <p>Write one number as a percentage of another</p> <p>Convert between percentages and decimals (and vice versa)</p> <p>Find a percentage of a quantity</p> <p>Calculate percentage increase and decrease</p> <p>Calculate simple interest</p>
HT 3	<p><u>Unit 5 Angles and trigonometry:</u></p> <p>Find missing angles in triangles, quadrilaterals and parallel lines</p> <p>Find exterior and interior angles of polygons & solve problems</p> <p>Use Pythagoras' Theorem to find missing sides of RA triangles</p> <p>Solve problems using Pythagoras' Theorem</p> <p>Recall the exact values of trigonometry</p> <p>Use trigonometry to find missing sides and angles of RA triangles</p> <p><u>Unit 6 Graphs:</u></p> <p>Find the gradient and intercept from a linear equation</p> <p>Rearrange an equation into the form $y = mx + c$</p> <p>Plot graphs with equations $ax + by = c$</p> <p>Find the equation of a line, given its gradient and one point on the line</p> <p>Find the gradient of a line through two points</p> <p>Find the coordinates of the midpoint of a line segment</p> <p>Find the gradient and length of a line segment</p> <p>Find the equations of lines parallel or perpendicular to a given line</p> <p>Draw quadratic graphs</p> <p>Solve quadratic equations graphically</p> <p>Draw graphs of cubic and reciprocal functions</p> <p>Draw and interpret distance-time graphs</p> <p>Draw and interpret real-life linear graphs</p> <p>Recognise and use graphs of proportion</p> <p>Draw and interpret real-life non- linear graphs</p> <p>Draw the graph of a circle</p>	<p><u>Unit 5 Equations, inequalities and sequences:</u></p> <p>Solve simple linear equations</p> <p>Rearrange simple linear equations</p> <p>Solve equations with unknowns on both side</p> <p>Understand inequality notation</p> <p>Write down whole numbers which satisfy an inequality</p> <p>Represent inequalities on number lines</p> <p>Solve simple linear inequalities</p> <p>Recognise and extend sequences</p> <p>Find the nth term</p> <p>Use the nth term</p> <p><u>Unit 6 Angles:</u></p> <p>Solve problems using side and angle properties of quadrilaterals</p> <p>Solve angle problems in triangles</p> <p>Find missing angles in parallel lines (alternate/corresponding angles)</p> <p>Calculate interior and exterior angles in polygons</p> <p>Solve problems involving interior and exterior angles in polygons</p> <p>Solve problems using equations</p>

HT 4	<p><u>Unit 7 Area and volume:</u></p> <p>Find the area and perimeter of compound shapes Recall and use the formula for area of a trapezium Convert between metric units of area Calculate bounds of measurements Calculate volumes of prisms Calculate the surface area of prisms Calculate the area and circumference of a circle (exact and in terms of π) Calculate the area and perimeter of sectors (exact and in terms of π) Calculate the volume and surface area of spheres Calculate the volume and surface area of pyramids and cones</p>	<p><u>Unit 7 Averages and range:*</u></p> <p>Calculate averages from lists of data Find averages from stem and leaf diagrams Compare sets of data using all the mean and range Calculate the mean and mode from frequency tables Estimate the mean from grouped data Understand the need for sampling Understand how to avoid bias Design questionnaires</p>
HT 5	<p><u>Unit 8 Transformation and constructions:</u></p> <p>Draw plans and elevations Perform and describe translations Perform and describe reflections Perform and describe rotations Perform and describe positive enlargements Perform and describe negative enlargements Combine transformations Use scales on maps and solve problems involving bearings Accurately construct triangles Construct perpendicular bisector of a line Bisect an angle using a ruler and compass Construct shapes made from triangles using a ruler and compass Draw a locus Use loci to solve problems</p> <p><u>Unit 9 Equations and inequalities:</u></p> <p>Find the roots of quadratic functions Rearrange and solve simple quadratic equations Solve more complex quadratic equations Use the quadratic formula to solve a quadratic equation Complete the square for a quadratic expression Solve quadratic equations by completing the square Solve linear simultaneous equations, algebraically Solve linear simultaneous equations, graphically Solve quadratic simultaneous equations Solve inequalities and show the solution on a number line and using set notation</p>	<p><u>Unit 8 Perimeter, area and volume 1:</u></p> <p>Calculate the area and perimeter by counting squares Calculate the area and perimeter of rectangles and squares using the formula Calculate the area and perimeter of triangles and parallelograms using the formula Calculate the area and perimeter trapeziums using the formula Can work backwards from the area to find missing sides of shapes Calculate the area of compound shapes Can convert between units e.g. mm^2 to cm^2 Can find the volume of prisms Can find the surface area of prisms</p> <p><u>Unit 9 Graphs:</u></p> <p>Find the midpoint of a line segment Recognise, name and plot straight lines parallel to the axes Plot straight line graphs – using tables of values and using the intercept and gradient Find the equation of straight lines Understand that parallel lines have the same gradient Real life graphs/Conversion graphs Distance-time graphs</p>
HT 6	<p><u>Unit 10 Probability:*</u></p> <p>Understand probability of event NOT happening/ Use sample space to work out probabilities Find probabilities based on experimental data/ Make predictions based on experimental data Use frequency trees to work out the probability of events Use tree diagrams to work out probabilities on events (independent and conditional) Use Venn diagrams to work out probabilities on events Understand Venn diagram notation</p>	<p><u>Unit 10 Transformations:</u></p> <p>Perform and describe translations Perform and describe reflections Perform and describe rotations Perform and describe positive enlargements Combine transformations</p> <p><u>Unit 11 Ratio and proportion:</u></p> <p>Use ratio notation Write a ratio in its simplest form Write ratios in the form 1:n Link ratio to converting units Sharing ratio into given amounts Using a ratio to work out totals Simple proportion Best value Conversion graphs</p>

SMSC: Willingness to participate in, and respond to mathematical opportunities. Use of social skills in different contexts, including working and socialising with pupils from different religious, ethnic and socio-economic backgrounds. Data should incorporate national statistics, this must have a direct link to elections at both national and regional level. This can then prompt discussion around the fairness of the voting system. Averages must look at British values around population increases of groups, NHS waiting times; this could also feature national institutions. Worded questions must be used to consider the diversity of the population in the UK, the demographics of voting per party. Spending in sectors on NHS and Education could also be considered. Interest can also be linked to talking to students about budgeting and looking at spending patterns. Get students thinking about bank accounts and ISA's as a way of saving for the future. Fractions could link to the cultural and religious make of the UK. Problems can be used in the context of the UK voting system and democracy. In addition we could consider religions and cultures in the UK. Students should focus on difference and diversity and celebrating this fact.

YR 10 Curriculum Overview

Term	10AS Higher	10PIR Foundation
HT1	<u>Unit 11 Multiplicative reasoning:</u> Find an amount after repeated percentage changes Solve growth and decay problems Calculate rates (suvat) Solve complex problems involving compound measures (DMV, FPA) Use direct and inverse proportion	<u>Unit 12 Right-angled triangles:</u> Use Pythagoras' Theorem to find missing sides of RA triangles Use Pythagoras' Theorem to solve geometry problems Recall the exact values of trigonometry Use trigonometry to find missing length in RA triangles Use trigonometry to find missing angles in RA triangles Solve problems with Pythagoras and trigonometry
	<u>Unit 12 Similarity and congruence:</u> Show that two triangles are congruent Know the conditions of congruency Prove shapes are congruent Solve problems involving congruency Find missing lengths on similar shapes Use similar triangles to work out lengths in real life Use links between linear scale factor and area scale factor to solve problems Use links between linear scale factor & volume scale factor to solve problems	
	<u>Unit 13 More trigonometry:</u> Understand & use upper & lower bounds in calculations involving trig Understand how to find the sine of any angle Know the graph of the sine function and use it to solve equations Understand how to find the cosine of any angle Know the graph of the cosine function and use it to solve equations Understand how to find the tangent of any angle Know the graph of the tangent function and use it to solve equations Find the area of a triangle and a segment of a circle Use the sine and cosine rule to solve 2D problems Solve bearings problems using trigonometry Use Pythagoras' theorem & trigonometry in 3D Recognise how changes in a function affect trigonometric graphs	<u>Unit 13 Probability:</u> Calculate probability of simple events Understand probability of event NOT happening Use sample space to work out probabilities Find probabilities based on experimental data Make predictions based on experimental data Use Venn diagrams to work out probabilities on events Understand Venn diagram notation Use frequency trees to work out the probability of events Use tree diagrams to work out the probability of events
HT2	<u>Unit 14 Further statistics:</u> Understand how to take a simple random sample/stratified sample Draw and interpret cumulative frequency tables and diagrams Work out the median, quartiles and IQR from CF Draw and interpret boxplots Work out the median, quartiles and IQR from box plots Compare data Draw histograms Interpret histograms	<u>Unit 14 Multiplicative reasoning:</u> Calculate percentage increase and decrease Express a given number as a percentage of another number in more complex situations Reverse percentages Compound interest Depreciation Solve problems involving compound units (e.g. density) Calculate speed, distance or time Direct proportion Inverse proportion
	<u>Unit 15 Equations and graphs:</u> Solve simultaneous equations graphically Represent inequalities on graphs Interpret graphs of inequalities Recognise and draw quadratic functions Find approximate solutions to quadratic equations graphically Recognise and draw cubic functions Find approximate solutions to cubic equations graphically Use iteration process to find estimations	<u>Unit 15 Constructions, loci and bearings:</u> Recognise and name 3D shapes and their properties Draw accurate plans and elevations Accurately construct triangles Accurately construct triangles Use scales on maps to work out lengths and distances Accurately construct bisectors Loci Find and use three-figure bearings Use angles in parallel lines to work out bearings
HT3	<u>Unit 16 Circle theorems:</u> Solve problems involving angles, triangles and circles Understand & use facts about chords & their distance from the centre of circle Solve problems involving chords and radii Understand and use facts about tangents at a point and from a point Give reasons for angle and length calculations involving tangents Understand, prove and use facts about angles subtended at the centre and the circumference of circles Understand, prove & use facts about the angle in a semicircle is a right angle Find missing angles using these theorems and give reasons for answers Understand, prove and use facts about angles subtended at the circumference of a circle Understand, prove and use facts about cyclic quadrilaterals. Prove the alternate segment theorem Solve angle problems using theorems	<u>Unit 16 Quadratic equations and graphs:</u> Expand and simplify double brackets (including squaring a single bracket) Recognise a quadratic expression/equation Plot quadratic graphs Solve equations using a quadratic graph Factorise a quadratic expression Solve a quadratic equation by factorising
		<u>Unit 17 Perimeter, area and volume 2:</u> Calculate the circumference of a circle Calculate the area of a circle Calculate the area and perimeter of semi circles and quarter circles Calculate the area of compound shapes with circles Calculate the volume of cylinders Calculate the surface area of a cylinder Calculate the volume of a pyramid and cone Calculate the surface area of a pyramid and cone Calculate the volume of a sphere Calculate the surface area of a sphere
HT4	<u>Unit 17 More algebra:</u> Change the subject of a formula where the subject appears twice Simplify algebraic fractions Add and subtract algebraic fractions Multiply and divide algebraic fractions	<u>Unit 18 Fractions, indices and standard form:</u> Multiple and divide mixed numbers Know and use the laws of indices Convert large numbers to and from standard form Convert small numbers to and from standard form

	Solving algebraic fractions Simplify surds&expand expressions involving surds Rationalise the denominator Use function notation Find composite functions Algebraic proof	Multiply and divide numbers in standard form Add and subtract numbers in standard form Use a calculator for calculations in standard form
HT 5	<u>Unit 18 Vectors and geometric proof:</u> Understand and use vector notation Work out the magnitude of a vector Calculate the resultant of two vectors Solve problems with vectors Proof with vectors	<u>Unit 19 Congruence, similarity and vectors:</u> Understand similarity Use similarity to solve angle problems Find the scale factor of an enlargement Use similarity to solve problems (similar triangles) Recognise congruent shapes Use congruence to work out unknown angles Use congruence to work out unknown sides Add and subtract vectors Find the resultant of two vectors Find multiples of vectors
HT 6	<u>Unit 19 Proportion and graphs:</u> Direct proportion Inverse proportion Recognise graphs of exponential functions Sketch graphs of exponential functions Calculate the gradient of a tangent at a point Estimate the area under a non-linear graph Understand graph transformations	<u>Unit 20 More algebra:</u> Draw and interpret graphs of cubic functions Draw and interpret a graph of $y=1/x$ Draw and interpret non-linear graphs to solve problems Solve simultaneous equations by drawing a graph Write and solve simultaneous equations Solve simultaneous equations algebraically Change the subject of the formula

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	Year 12	Year 13
Half Term 1	Pure unit 1 – Algebra and Functions Algebraic expressions Quadratic functions Equations Inequalities Graphs Transformations	Pure units 4 & 5 Binomial Expansion Radians Trigonometric Equations Mechanics units 4-8 Moments Forces at any angle Applications of kinematics Applications of forces Further kinematics
Half Term 2	Pure unit 2-4 Coordinate geometry Further Algebra Vectors (2D)	Statistics units 1, 2 & 3 Regression and correlation Probability The normal distribution Pure Units 6 & 7 Trigonometric Functions Trigonometry and modelling.
Half Term 3	Pure unit 5/Statistics 5 Trigonometry Statistics units 1-5 Statistical sampling Data presentation and interpretation Probability Statistical distributions Statistical hypothesis testing	Teacher 1: Pure unit 9 Differentiation Rates of change KAO – Pure unit test 9 Teacher 2: Pure unit 8 Parametric equations
Half Term 4	Mechanics unit 6-9 Quantities and units in mechanics Kinematics Forces & Newton's Law Kinematics 2 Pure unit 6 Differentiation	Teacher 1: Pure unit 10-11 Integration Numerical methods
Half Term 5	Pure unit 7 - 8 Integration Exponentials and logarithms	Pure unit 12 Vectors
Half Term 6	Start A2 course Pure units 1 – 3 Algebraic methods Functions and graphs Sequences and series	Course complete

Curriculum – Assessment (Measuring Impact)

Data Drop Points

The following statements outline the contributing assessment information sources which, aggregated, provide 'Working At Grade' entries for each child throughout the year.

Year 7

Data Drop point 1:

In the autumn term there are three assessments which are considered to form a pupil's WAG. Two of these are based on units that pupils have studied throughout that term (KAO 1 – Number 1, KAO 2 – Algebra, see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey (which includes KS1 and 2). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 7]

Data Drop point 2:

In the spring term there are three assessments which are considered to form a pupil's WAG. Two of these are based on units that pupils have studied throughout that term (KAO 3 – Geometry 1, KAO 4 – Probability and Statistics 1, see curriculum overview for more details on what skills these include). The final assessment (MAO 2) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey (which includes KS1 and 2). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 7]

Data Drop point 3:

In the summer term there are three assessments which are considered to form a pupil's WAG. Two of these are based on units that pupils have studied throughout that term (KAO 5 – Number 2, KAO 6 – Ratio and Proportion 1, see curriculum overview for more details on what skills these include). The final assessment (MAO 3) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey (which includes KS1 and 2). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 7]

Moderation processes: Marking moderation occurs after every MAO assessment. Sample of 5 pupils from every class moderated and discussed within department. When a teacher is less than 75% accurate, papers are remarked by the team and CPD will be provided for those staff members.

Year 8

Data Drop point 1:

In the autumn term there are three assessments which are considered to form a pupil's WAG. Two of these are based on units that pupils have studied throughout that term (KAO 1 – Algebra 2, KAO 2 – Geometry 2, see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey (which includes KS1 and 2). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 8]

Data Drop point 2:

In the spring term there are three assessments which are considered to form a pupil's WAG. Two of these are based on units that pupils have studied throughout that term (KAO 3 – Number 3, KAO 4 – Probability and Statistics 2, see curriculum overview for more details on what skills these include). The final assessment (MAO 2) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey (which includes KS1 and 2). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 8]

Data Drop point 3:

In the summer term there are three assessments which are considered to form a pupil's WAG. Two of these are based on units that pupils have studied throughout that term (KAO 5 – Algebra 3, KAO 6 – Number 4, see curriculum overview for more details on what skills these include). The final assessment (MAO 3) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey (which includes KS1 and 2). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 8]

Moderation processes: Marking moderation occurs after every MAO assessment. Sample of 5 pupils from every class moderated and discussed within department. When a teacher is less than 75% accurate, papers are remarked by the team and CPD will be provided for those staff members.

N.B: Due to the high demands of the new specification papers for maths GCSE, as a department we believe it is in the pupils best interest that they are exposed to exam papers at the earliest possible opportunity. With this in mind all students in year 8 and sit real GCSE old specification papers as their MAOs, to prepare them for the new specification in KS4. With this in mind, pupil's grades may be lower than expected but they may still be making the expected levels of progress.

Year 9

Data Drop point 1:

FOUNDATION

In the autumn term there are five assessments which are considered to form a pupil's WAG. Four of these are based on units that pupils have studied throughout that term (KAO 1 – Number 1 (unit 1), KAO 2 – Algebra 1 (unit 2), KAO 3 – Graphs, tables and charts (unit 3), KAO 4 – Fractions and percentages (unit 4), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

HIGHER

In the autumn term there are five assessments which are considered to form a pupil's WAG. Four of these are based on units that pupils have studied throughout that term (KAO 1 – Number 1 (unit 1), KAO 2 - Algebra 1 (unit 2), KAO 3 – Interpreting and representing data (unit 3), KAO 4 – Fractions, ratio and proportion (unit 4), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 9]

Data Drop point 2:

FOUNDATION

In the spring term there are four assessments which are considered to form a pupil's WAG. Three of these are based on units that pupils have studied throughout that term (KAO 5 – Equations, inequalities and sequences (unit 5), KAO 6 – Angles (unit 6), KAO 7 – Averages and range (unit 7), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

HIGHER

In the spring term there are four assessments which are considered to form a pupil's WAG. Three of these are based on units that pupils have studied throughout that term (KAO 5 – Angles and trigonometry (unit 5), KAO 6 – Graphs (unit 6), KAO 7 – Area and volume (unit 7), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 9]

Data Drop point 3:

FOUNDATION

In the summer term there are five assessments which are considered to form a pupil's WAG. Four of these are based on units that pupils have studied throughout that term (KAO 8 – Perimeter, area and volume 1 (unit 8), KAO 9 – Graphs (unit 9), KAO 10 – Transformations (unit 10), KAO 11 – Ratio and proportion (unit 11), see curriculum overview for more

details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

HIGHER

In the summer term there are four assessments which are considered to form a pupil's WAG. Three of these are based on units that pupils have studied throughout that term (KAO 8 – Transformations and constructions (unit 8), KAO 9 – Equations and inequalities (unit 9), KAO 10 – Probability (unit 10), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 9]

Moderation processes: Marking moderation occurs after every MAO assessment. Sample of 5 pupils from every class moderated and discussed within department. When a teacher is less than 75% accurate, papers are remarked by the team and CPD will be provided for those staff members.

N.B: Due to the high demands of the new specification papers for maths GCSE, as a department we believe it is in the pupils best interest that they are exposed to these papers at the earliest possible opportunity. With this in mind all students in year 9 and above sit real GCSE new specification papers as their MAOs. With this in mind, pupil's grades may be lower than expected but they may still be making the expected levels of progress.

Year 10

Data Drop point 1:

FOUNDATION

In the autumn term there are five assessments which are considered to form a pupil's WAG. Four of these are based on units that pupils have studied throughout that term (KAO 1 – Right-angled triangles (unit 12), KAO 2 – Probability (unit 13), KAO 3 – Multiplicative reasoning (unit 14), KAO 4 – Constructions, loci and bearings (unit 15), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

HIGHER

In the autumn term there are six assessments which are considered to form a pupil's WAG. Five of these are based on units that pupils have studied throughout that term (KAO 1 – Multiplicative reasoning (unit 11), KAO 2 – Similarity and congruency (unit 12), KAO 3 – More trigonometry (unit 13), KAO 4 – Further statistics (unit 14), KAO 5 – Equations and graphs (unit 15), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 10]

Data Drop point 2:

FOUNDATION

In the spring term there are four assessments which are considered to form a pupil's WAG. Three of these are based on units that pupils have studied throughout that term (KAO 5 – Quadratic equations and graphs (unit 16), KAO 6 – Perimeter, area and volume 2 (unit 17), KAO 7 – Fractions, indices and standard form (unit 18), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

HIGHER

In the spring term there are three assessments which are considered to form a pupil's WAG. Two of these are based on units that pupils have studied throughout that term (KAO 5 – Circle theorems (unit 16), KAO 6 – More algebra (unit 17), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 10]

Data Drop point 3:

FOUNDATION

In the summer term there are three assessments which are considered to form a pupil's WAG. Two of these are based on units that pupils have studied throughout that term (KAO 8 – Congruence, similarity and vectors (unit 19), KAO 9 –

More algebra (unit 20), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

HIGHER

In the summer term there are three assessments which are considered to form a pupil's WAG. Two of these are based on units that pupils have studied throughout that term (KAO 7 – Vectors and geometric proof (unit 18), KAO 8 – Proportion and graphs (unit 19), see curriculum overview for more details on what skills these include). The final assessment (MAO 1) assesses all mathematical skills that will have been taught to pupils throughout their entire school journey and future topics (which include KS1, KS2, KS3 and upcoming topics on KS4). KAO scores account for 20% of a pupils WAG and 80% is assigned to the MAO.

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Moderation processes: Marking moderation occurs after every MAO assessment. Sample of 5 pupils from every class moderated and discussed within department. When a teacher is less than 75% accurate, papers are remarked by the team and CPD will be provided for those staff members.

Year 11

Data Drop point 1:

A pupil's WAG is based wholly on a full series of 3 mock exam papers that will take place in December 2018, under full exam conditions. The grade boundaries for these papers are based on past grade boundaries plus 5 marks (as grade boundaries do fluctuate every year). Mitigation based on prior results will take place if a student is absent or unexpectedly underperforms.

[J:\Curriculum areas\Maths\5. 2018-2019\2. Assessments\Year 11]

Data Drop point 2:

A pupil's WAG is based wholly on a full series of 3 mock exam papers that will take place in February/March 2018, under full exam conditions. The grade boundaries for these papers are based on past grade boundaries plus 5 marks (as grade boundaries do fluctuate every year). Mitigation based on prior results will take place if a student is absent or unexpectedly underperforms.

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Predictions:

Predictions will be entered after the Easter holidays for all year 11 pupils. These will be based on the mock window 2 results along with papers that students complete within class and homework.

Moderation processes: Year 11 papers are externally marked by a qualified examination marker who also provides the department with marking of GCSE papers CPD.

Year 12

Data Drop point 1:

In the autumn term there are four assessments which are considered to form a pupil's WAG. All of these are based on units that pupils have studied throughout that term (Pure unit test 1 – Algebraic expressions/quadratic functions/equations/inequalities/graphs/transformations, Pure unit test 2 – Coordinate geometry, Pure unit test 3 – Further algebra, Pure unit test 4 – Vectors (2D), Pure MAO 1 – all previous topics combined, see curriculum overview for more details on what skills these include).

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Data Drop point 2:

In the spring term there are twelve assessments which are considered to form a pupil's WAG. All of these are based on units that pupils have studied throughout that term (Pure unit test 5 – Trigonometry, Pure unit test 6 – Differentiation, Statistics unit test 1 – Statistical sampling, Statistics unit test 2 – Data presentation and interpretation, Statistics unit test 3 – Probability, Statistics unit test 4 – Statistical distributions, Statistics unit test 5 – Statistical hypothesis testing, Mechanics unit test 6 – Quantities and units in mechanics, Mechanics unit test 7 – Kinematics, Mechanics unit test 8 – Forces and Newton's Law, Mechanics unit test 9 – Kinematics 2, MAO 2 – all previous topics combined (including autumn term topics), see curriculum overview for more details on what skills these include).

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Data Drop point 3:

In the summer term a pupil's WAG is based wholly on a full series of 2 mock exam papers that will take place in May/June, under full exam conditions. The grade boundaries for these papers are based on past grade boundaries plus 5 marks (as grade boundaries do fluctuate every year).

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Moderation processes: Marking moderation occurs after every MAO assessment. Every paper is marked by one of the two classroom teacher, this is then moderated by the other teacher, checking the marking is accurate. When a teacher is less than 75% accurate, papers are remarked team and CPD will be provided for the staff member.

Year 13

Data Drop point 1:

In the autumn term there are eleven assessments which are considered to form a pupil's WAG. All of these are based on units that pupils have studied throughout that term (Pure unit test 4 – Binomial expansion, Pure unit test 5 – Radians, Pure unit test 6 – Trigonometric functions, Pure unit test 7 – Trigonometry and modelling, Mechanics unit test 4– Moments, Mechanics unit test 5 – Forces at any angle, Mechanics unit test 6 – Application of kinematics, Mechanics unit test 7 –Application of forces, Mechanics unit test 8 – Further kinematics, Statistics unit test 1 – Regression and correlation, Statistics unit test 2 – Probability, Statistics unit test 3 – The normal distribution, see curriculum overview for more details on what skills these include).

Data Drop point 2:

In the spring term a pupil's WAG is based on four pure assessments (Pure unit test 8 – Parametric equations, Pure unit test 9 – Differentiation and rates of change, Pure unit test 10 – Numerical methods, Pure unit test 11 – Integration, see curriculum overview for more details on what skills these include) and a full past exam paper on the statistics and mechanics unit of the course which will take place in March, under full exam conditions. The grade boundaries for this paper are based on past grade boundaries plus 5 marks (as grade boundaries do fluctuate every year).

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Predictions:

Predictions will be entered after the Easter holidays for all year 13 pupils. These will be based on the mock window 2 results along with papers that students complete within class and homework.

Moderation processes: Marking moderation occurs after every MAO assessment. Every paper is marked by one of the two classroom teacher, this is then moderated by the other teacher, checking the marking is accurate. When a teacher is less than 75% accurate, papers are remarked team and CPD will be provided for the staff member.