## Maths Department: Curriculum Overview 2023-24

## Curriculum Intent:

In Maths, IT \& Computing, our aims are for all students;

- To have a passion for and resilience towards Maths, IT and Computing
- To develop strong problem solving, digital literacy and numeracy skills
- To be able to communicate their learning in Maths, IT and Computing effectively
- To be aware of E-Safety and how to report concerns and keep themselves safe \& healthy online
- To gain qualifications to best prepare students for life after Fullbrook
- Mastery Scheme of work in Year 7 \& 8 to create a greater depth of understanding. SoW was developed and agreed collaboratively, based on staff feedback
- Year 9 will see harder topics from Y7-8 stretched further, to prepare for the CGSE course
- GCSE course starts one full cycle at the beginning of YIO, finishing at Christmas of YII, to leave plenty of time for revision
- Teachers to work collaboratively on designing thought-provoking and meaningful 100 -minute lesson plans that follow the learning cycle
- Key Stage 3 assessments to be re-designed to reflect new SoW, but also new assessment format, with 20 marks multiple choice at the start
- Year 9 Low attainers entered into the Edexcel Entry Awards to provide opportunities to experience success
- Yellow Feedback Sheets, highlighted so students can clearly see what they are doing well on and what they need to work on. Students respond to this (by completing INT Questions)
- Focus on Problem Solving within lessons
- T\&L Maths meetings to discuss pedagogy with a focus on Problem Solving and mathematical communication
- UKMT Maths Challenges
- OCR Additional Maths offered in Year IO \& II
- Numeracy Challenge in tutor time every cycle
- Primary School Team Maths Challenge
- Marking Policy is only to mark formative and summative assessment points, but not mark books, to reduce workload and be more beneficial to the students.
- Open Book Tests to encourage the students to make more accurate and detailed notes
- Use Profiles for Success to help support disadvantaged students
- Key Stage Leaders attend Maths Hubs courses for latest pedagogy
- Interleaving - will regularly take place in the form of starters in lessons and through Open books tests, Assessments, End of Year Tests and Mocks
- Reading \& Vocabulary - Tier 3 Vocabulary taught and recorded in students' books using purple D.V.I. sheets
- Keywords for each topic on SoW and learning logs (which are put in the students' books)
- Discuss the importance of vocab in Maths Teaching \& Learning meetings

| Year 7 | Term 1 |  |  |  | Term 2 |  |  |  | Term 3 |  |  | End Points |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Half Term 1 <br> [12 lessons] |  | Half Term 2 <br> [12 lessons] |  | Half Term 3 [10 lessons] |  | Half Term 4 [11 lessons] |  | Half Term 5 <br> [10 lessons] |  | Half Term 6 [10 lessons] |  |
| Topic | Factors, Multiples, Primes | Negative Numbers | Algebraic Expressions | Measuring Space | Calculations | Rounding and Estimating | Representing Data | Averages | Fractions | Perimeter, Area, Volume | Constructions |  |
| Skill | Number | Number | Algebra | Geometry | Number | Number | Statistics | Statistics | Number | Geometry | Geometry |  |
| Content | Finding Factors <br> Finding Multiples <br> Identifying <br> primes, squares <br> and cubes <br> Product of Prime <br> Factors <br> HCF <br> LCM | Ordering negatives, Addition, Subtraction, Multiplication, Division with negatives Worded examples | Collecting like term <br> Substitution, multiplying expressions, expanding brackets, factorising | Measuring lines, measuring angles, reading scales, telling the time, calculations with time, converting units of measure | Place Value <br> Column addition <br> Column <br> subtraction <br> Multiplication <br> Division <br> Calculations with <br> decimals <br> BIDMAS | Rounding to decimals places <br> Rounding to significant figures Estimating calculations Upper and Lower Bounds | Types of data <br> Bar Charts <br> Dual Bar Charts <br> Pie Charts <br> Frequency Tables <br> Line Graphs <br> Scatter Graphs | Mean, median, mode, range Averages from a frequency table Comparing two sets of data | Simplify Fractions <br> Multiply and divide fractions <br> Add and subtract fractions Order Fractions Mixed Numbers | Perimeter and <br> Area of rectangle, triangle, parallelogram, trapezium Volume of prisms Area an circumference of circle <br> Surface Area of cuboid | Construct ASA, SAS, SSS triangles Construct equilateral triangles, perpendicular bisectors and angle bisectors Basic loci |  |
| Prior <br> Knowledge <br> Required | Times Tables, basic arithmetic | Number Line | Basic arithmetic, negatives |  | Basic arithmetic | Place Value | Reading a scale | Basic arithmetic, BIDMAS | Shade a fraction on a picture | Area by counting squares | Measuring angles |  |
| Feedback Points |  | Skills Check | ASSESSMENT POINT 1 | Skills Check |  | Skills Check |  | Skills Check |  | ASSESSMENT POINT 2 |  |  |
| Key Questions | Convince me that 109 is <br> a prime number <br> Is 2468 a square <br> number? How do you know? <br> Is 1 a prime number? Why? <br> Why are they called square numbers and cube numbers? Why don't we find the HCM and LCF? | Convince me that -15 <br> <-3 <br> The coldest day was - <br> $7^{\circ} \mathrm{C}$. The temperature rose by 2 degrees overnight. What was the temperature the next day? <br> Simon had $£ 450$ in his bank account. He spent $£ 500$. What is his balance? | Kenny thinks that ' $b$ '' <br> is the same as ' $2 b$ ' <br> because when $b=2$, <br> $b^{2}=4$ and $2 b=4$. Do <br> you agree with <br> Kenny? <br> Explain your answer. <br> Jenny thinks that $7+$ <br> $2 a=9 a$. Do you agree <br> with Jenny? Explain <br> your answer. | Show me a metric unit of measure. <br> Why is it not correct to add $3 \mathrm{~kg}+50 \mathrm{~g}$ and make 53? <br> What is a sensible unit of measurement to measure $\qquad$ ? | Find missing digits in this multiplication calculation Convince me that 2472 $\times 12=29664$ Why have you chosen to add (subtract, multiply)? Show me a calculation that is connected to $147 \times 26=3822$. | Could this calculation be correct? <br> How do we know? The crowd was given as 32000. Could the actual crowd be 31782? What more information do you need? | Show me a pie Chart representing the following information: Blue (25\%), Red over 50\%), Yellow (the rest) If two pie charts have the same sized section, does each section represent the same amount of data? Show me a scatter graph with positive/negative correlation | Always / Sometimes / Never: <br> The mean is a whole number. <br> Joe is working out the mean of $2,3,4$ and 5 . He calculates $2+3+4+$ $5 \div 4=10.25$. <br> Do you agree with Joe? Explain. | Show me an improper fraction. Show me a mixed number. How many wholes are there in $7 / 7$ ? 21/7? Jim eats $2 / 4$ of a Pizza, Jo eats $1 / 2$. Who has eaten more? Kenny thinks $1 / 2+1 / 2=$ 2/4. Do you agree? Sam thinks you can only multiply fractions if they have the same denominator. Do you agree? Explain. | If rectangle A has a bigger perimeter than rectangle B does rectangle A have a bigger area? Prove your answer <br> Can you find a rectangle with a perimeter of 22 cm and an area of $28 \mathrm{~cm}^{2}$ ? <br> What is the biggest field you can enclose with 100 m of fencing? Can you find a 3D shape with the same surface area and volume? | Given SSS, how many different triangles can be constructed? Why? Repeat for ASA, SAS, SSA, AAS, AAA. Always / Sometimes / Never: to draw a triangle you need to know the size of three angles; to draw a triangle you need to know the size of three sides. |  |
| Direct Vocab Instruction | (Common) multiple (Common) factor Divisible <br> Prime number <br> Square number Cube number Product of Prime Factors | Negative Number <br> Positive Number <br> Integer <br> Zero <br> Ascending <br> Descending <br> Increase <br> Decrease <br> The equals sign (and <br> not equals) <br> The inequality symbols | Algebra, algebraic, <br> algebraically <br> Symbol <br> Expression <br> Variable <br> Substitute | Length, distance <br> Mass, weight <br> Volume <br> Capacity <br> Metre, centimetre, <br> millimetre <br> Tonne, kilogram, gram, milligram <br> Litre, millilitre <br> Hour, minute, second <br> Inch, foot, yard <br> Pound, ounce <br> Pint, gallon | Addition <br> Subtraction <br> Sum, Total <br> Difference, Minus, Less <br> Operation <br> Multiply, Multiplication, <br> Times, Product <br> Commutative <br> Factor <br> Estimate <br> Divide, Division, Divisible | Round <br> Approximate <br> Estimate <br> Decimal place <br> Significant figure <br> Lower bound <br> Upper bound | Data <br> Categorical, Discrete, <br> Continuous <br> Grouped data <br> Frequency table <br> Tally <br> Bar Chart <br> Line Graph <br> Graph, Scale, Axis <br> Line Graph <br> Scatter Graph <br> Correlation <br> Pie Chart | Average Mean Median Mode, Modal, Bimodal Measure Data Statistic | Fraction <br> Proper / Improper <br> Top Heavy <br> Simplify, cancel, lowest terms <br> Mixed Numbers <br> Equivalent <br> Numerator <br> Denominator | Area <br> Perimeter <br> Surface area <br> Volume <br> Triangle, quadrilateral, <br> pentagon, hexagon, <br> octagon <br> Square, rectangle, <br> parallelogram, <br> trapezium, rhombus, <br> kite <br> Diameter <br> Radius <br> Circumference | Plane <br> Parallel <br> Perpendicular <br> Equilateral <br> Sketch <br> Construct <br> Bisect <br> Side, Angle <br> Scale <br> Bearing |  |
| Standardised Homework | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch |  |


| Year 8 | Term 1 |  |  |  | Term 2 |  |  |  | Term 3 |  |  | End <br> Points |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Half Term 1 [12 lessons] |  | Half Term 2 <br> [12 lessons] |  | Half Term 3 <br> [10 lessons] | Half Term 4 [11 lessons] |  | Half Term 5 [10 lessons] |  | Half Term 6 [10 lessons] |  |  |
| Topic | FDP | Percentages | Equations | Angles | Ratio | Compound Measures | Probability | Sequences | Algebraic Graphs | Right Angled Triangles | Transformations |  |
| Skill | Number | Number | Algebra | Geometry | Proportion | Proportion | Statistics | Algebra | Algebra | Geometry | Geometry |  |
| Content | Convert between equivalent <br> Fractions, <br> Decimals and <br> Percentages <br> Change a fraction into a recurring <br> decimal <br> Change a recurring decimal into a fraction | Find \% of an amount Increase of decrease by a \% Express as a \% Use decimal multipliers Solve finance problems with interest | Solve linear equations (one step, two step, x on both sides) Substitute numbers into formulae Change subject of formulae | Apply basic angle facts, around a point, straight line, in a triangle Angles in parallel lines Angles in polygons | Write as a ratio <br> Simplify a ratio <br> Divide amount into a ratio <br> Ratio given one <br> part, Ratio given <br> the difference <br> Best Buys <br> Currency <br> Conversions <br> Direct proportion | Speed Density | Probability scale <br> Equally likely <br> outcomes <br> Probabilities add <br> up to 1 <br> Sample Space <br> Diagrams <br> Relative <br> Frequency <br> Tree Diagrams | Missing term <br> Term to term rules <br> Nth term (linear) <br> Generating <br> sequences <br> Using nth term | Plot coordinates <br> Plot a straight <br> line from a table <br> of values <br> Find gradient $Y=m x+c$ | Identify <br> Hypotenuse <br> Pythagoras to find hypotenuse Pythagoras to find shorter side Label a triangle SOH CAH TOA to find a missing length | Lines of symmetry <br> Reflection <br> Rotation <br> Translation <br> Enlargement |  |
| Prior <br> Knowledge <br> Required | Fractions | FDP | Collecting like terms, expand bracket | Measuring an angle | Basic arithmetic and fractions | Basic arithmetic, Measuring time | Fractions | Substitution | Substitution | Substitution, squaring | Coordinates |  |
| Feedback Points |  | ASSESSMENT POINT 1 |  | Skills Check |  | Skills Check |  | Skills Check | ASSESSMENT POINT 2 |  | Skills Check |  |
| Key Questions | How do you convert between FDP? Can all fractions be converted into a decimal? <br> What is an irrational number? <br> What is a fraction? What is a decimal? Is $33.3 \%$ the same as 33.33\%? | How can I find $10 \%$ of any number? How does this help me to find 5\%, 20\%, 35\% etc How do you find the multiplier when doing a percentage increase? Is this the same for doing a percentage decrease? Is decreasing 80 by $20 \%$ the same as finding $80 \%$ of 80 ? Why? | Does the equation still balance? <br> If I do this to one side what must I do to the other side? <br> How can we check our answer is correct? What is the inverse of ........? <br> What is currently the subject of the formulae | Without using a protractor, can you estimate the size of this angle and state the type of angle? <br> How would you instruct a year 5 student on using a protractor? After finding missing angles, can you give a reason for each answer? What is the difference between congruent and similar shapes? | If you double the total amount of money what will happen to Ben's share? <br> Is the question telling us how much money there is in total, or how much 1 person has? How many multiples of the recipe do we need? Will halving the recipe help? <br> Are the units the same? | Why is the graph horizontal? (on d/t and $\mathrm{v} / \mathrm{t}$ ) <br> When is it travelling fastest? How do you know? <br> Does it matter what units I use for speed? Who is travelling quickest? <br> Give me an example of a high density material | If an event is certain then what is its probability? Come up with examples of mutually exclusive events How many cards are in a deck? <br> How do you find relative frequency? The probability of a team winning is 0.6 Ben thinks the probability of them winning twice is $0.6+0.6=1.2$. Why is Ben wrong? | Kenny thinks that 2, 4, 8, <br> $16, \ldots$ is a linear <br> example. Do you agree? <br> Explain your answer. <br> Create a linear sequence <br> with 3 rd term of ' 8 '. <br> Show me a linear <br> sequence where the rule to get from one term to the next is 'add $3^{\prime}$. <br> Always/ Sometimes <br> /Never: The $10^{\text {th }}$ term of is double the $5^{\text {th }}$ term of the (linear) sequence | Jack describes this point as $(-3,4)$. Jill describes the point as $(4,-3)$. Who do you agree with? Why? <br> Two vertices of a rectangle are ( $-1,2$ ) and ( $4,-2$ ). What could the other two vertices be? Show me a point on this line (e.g. $y=2 x+1$ ) Tell me a line parallel to $y=4 x+5$ Show me lines with the same " $m$ ", show me lines with the same " $c$ " | Can you identify the sides of the triangle regardless of the orientation Can you explain what SOH CAH TOA stands for and how to use it Can you think of a reallife situation that you can use Pythagoras theorem for | Always / Sometimes / Never: The centre of rotation is in the centre of the object Convince me that $\mathrm{y}=0$ is the $x$-axis Always / Sometimes / Never: The line $x=a$ is parallel to the $x$-axis What rotation, translation, reflection, or enlargement could I exactly back on itself? |  |
| Direct Vocab Instruction | Convert <br> Equivalent <br> Recurring <br> Reciprocal <br> Irrational number | Multiplier <br> Simple Interest <br> Compound interest Profit <br> Depreciation <br> Increase <br> Decrease | Equation <br> Formulae <br> Substitute <br> Variable <br> Re-arrange <br> Subject <br> Linear <br> Quadratic | Opposite, alternate, corresponding, interior, exterior, Polygon Congruent Supplementary, complementary Acute, obtuse, reflex Parallel, perpendicular Equilateral, isosceles, right-angle | Proportion <br> Ratio <br> Scale <br> Simplify <br> Currency <br> Exchange Rate Direct Proportion Inverse Proportion | Gradient Speed Velocity Kilometres, Metres, Miles Conversion Acceleration Mass Dessity Volume Pressure | Bias <br> Mutually exclusive Relative Frequency Independent and dependent events Sample Tree diagram Outcome | Pattern <br> Sequence <br> Linear <br> Term <br> Ascending <br> Descending <br> Term-to-term rule <br> Position-to-term rule <br> $\mathrm{n}^{\text {th }}$ term | Plot <br> Equation (of a graph) <br> Function <br> Formula <br> Linear <br> Coordinate plane <br> Gradient <br> y-intercept <br> Substitute <br> Quadratic | Angle Hypotenuse <br> Adjacent <br> Opposite <br> Sine (sin) <br> Cosine (cos) <br> Tangent (tan) <br> Right angle <br> Pythagoras <br> Trigonometry | (Cartesian) coordinates <br> Axis, axes, $x$-axis, $y$-axis <br> Origin <br> Quadrant <br> Translation, Reflection, <br> Rotation <br> Enlargement <br> Transformation <br> Object, Image <br> Congruent <br> Mirror line <br> Vector <br> Centre of rotation |  |
| Standardised Homework | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch |  |


| Year 9 | Term 1 |  |  |  | Term 2 |  |  |  | Term 3 |  |  | End <br> Points |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Half Term 1 [12 lessons] |  | Half Term 2 <br> [12 lessons] |  | Half Term 3 <br> [10 lessons] | Half Term 4 <br> [11 lessons] |  | Half Term 5 [10 lessons] |  | Half Term 6 [10 lessons] |  |  |
| Topic | Number, Powers, Error | Algebra | Equations | Angles | Direct and Inverse Proportion | Data and Probability | Fractions | Sequences and Algebraic Graphs | Pythagoras, Trig, Vectors | Perimeter, Area, Volume | Similar Shapes |  |
| Skill | Number | Algebra | Algebra | Geometry | Proportion | Statistics | Number | Algebra | Geometry | Geometry | Geometry |  |
| Content | Multiplying \& Dividing Decimals Indices Laws Standard Form Negative and Fractional Indices Surds Upper and Lower Bounds | Expanding <br> Brackets <br> Collecting Like <br> Terms <br> Simplifying with <br> Indices <br> Factorising <br> Completing the <br> Square | Solving linear equations Solving <br> Quadratics by <br> Factorising <br> Quadratic <br> Formula <br> Changing the <br> subject <br> Inequalities | Angles in parallel lines <br> Angles in polygons Circle Theorems Bearings | Solve direct and inverse proportion with a constant of proportionality Recognise graphs | Sampling <br> Freq. Polygon <br> Pie Chart Scatter Graph Cumulative Freq. Two Way Tables Venn Diagrams Tree Diagrams | Consolidate all fraction skills from Year 7 <br> Convert recurring decimal to fraction Work with algebraic fractions | Linear sequences Geometric sequences Quadratic sequences Recognise and plot graphs Find gradient $Y=m x+c$ | Pythagoras, 3D <br> SOH CAH TOA 3D <br> Sine Rule and Cosine Rule (acc only) <br> Adding column vectors <br> Drawing vector diagrams | Consolidate perimeter and area <br> Arcs and Sectors Volume of prisms, cylinders, cones, pyramids Surface area of a cylinder | Finding a scale factor Identifying congruent and similar shapes Find a missing length on a similar shape Areas and volumes |  |
| Prior Knowledge Required | Squaring and Cubing | Simplifying expressions | Inverse operations, factorising | Basic angle facts | Substitution | Plotting coordinates, probability scale | Fraction skills from Y7 | Nth term from Y 8 | Pythagoras SOH CAH TOA | Perimeter and area of rectilinear shapes and circles | Proportion |  |
| Feedback Points |  |  | Open Book Test 1 |  | ASSESSMENT 1 |  | Open Book Test 2 |  | ASSESSMENT 2 |  | Open Book Test 3 |  |
| Key Questions |  |  |  |  |  |  |  |  |  |  |  |  |
| Direct Vocab Instruction | Inequality <br> Root <br> Powers, Indices <br> BIDMAS <br> Reciprocal <br> Estimate <br> Significant figures <br> Rounding <br> Product <br> Prime <br> HCF, LCM <br> Standard form <br> Bound <br> Error interval | Expression <br> Coefficient <br> Formula <br> Inequality <br> Term <br> Identity <br> Simplify <br> Expand <br> Factorise <br> Substitute <br> Rearrange <br> Subject <br> Function <br> Input, Output | Solve <br> Equation <br> Unknown <br> Expand <br> Inequality <br> Factorise <br> Quadratic <br> Linear <br> Simultaneous <br> Solution | Opposite <br> Alternate <br> Corresponding <br> Interior <br> Exterior <br> Polygon <br> Congruent <br> Similar <br> Bearing <br> Proof <br> Radius <br> Tangent <br> Chord <br> Diameter | Directly Proportional Inversely Proportional <br> Exchange rate <br> Currency <br> Distance <br> Speed <br> Time <br> Density <br> Pressure <br> Capacity <br> Compound units | Discrete <br> Continuous <br> Grouped data <br> Population <br> Sample <br> Bias <br> Frequency <br> Correlation <br> Outlier <br> Line of best fit <br> Interpolate <br> Extrapolate <br> Cumulative <br> Frequency density | Fraction Numerator Denominator Reciprocal Ascending Descending Mixed number Improper Recurring | Sequenc <br> Term <br> Consecutive <br> Fibonacci-type <br> Linear <br> Geometric <br> Common ratio <br> Quadratic <br> Common difference <br> Gradient <br> Intercept <br> Root <br> Turning point/Vertex <br> Solution <br> Quadratic <br> Cubic <br> Reciprocal | Hypotenuse <br> Adjacent <br> Opposite <br> Vector <br> Scalar <br> Parallel | Area <br> Perimeter <br> Volume <br> Compound shape <br> Surface area <br> Arc <br> Sector <br> Radius <br> Diameter <br> Circumference <br> Sphere <br> Prism <br> Pyramid <br> Cone | Congruent <br> Similar <br> Scale Factor <br> Length <br> Area <br> Volume |  |
| Standardised Homework | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch | MathsWatch |  |


| Year 10 | Term 1 |  |  |  | Term 2 |  |  |  | Term 3 |  |  | End Points |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Half Term } 1 \\ & \text { [12 lessons] } \end{aligned}$ |  | $\begin{aligned} & \text { Half Term } 2 \\ & \text { [12 lessons] } \end{aligned}$ |  | Half Term 3 [10 lessons] | Half Term 4 [11 lessons] |  | $\begin{aligned} & \text { Half Term } 5 \\ & \text { [10 lessons] } \end{aligned}$ |  | $\begin{aligned} & \text { Half Term } 6 \\ & \text { [10 lessons] } \end{aligned}$ |  |  |
| Topic | Number, Powers, Error | Algebra | Representing Data | Averages | Transformations \& Constructions | Ratio | Percentages | Fractions | Sequences | Proportion \& Compound Measures | Solving Equations |  |
| Skill | Number | Algebra | Statistics | Statistics | Geometry | Proportion | Number | Number | Algebra | Proportion | Algebra |  |
| Content | Multiplying \& Dividing Decimals Indices Laws Standard Form Negative and Fractional Indices Surds Upper and Lower Bounds | Expanding <br> Factorising <br> Indices <br> Completing the <br> Square <br> Inverse <br> Functions <br> Composite <br> Functions | Freq Polygon <br> Pie Chart <br> Cumulative <br> Frequency <br> Box Plot <br> Histogram <br> Scatter Graph | Averages from Freq tables Averages from box plots, cumulative freq graphs and box plots Comparing data | Reflection <br> Rotation <br> Translation <br> Enlargement <br> Invariant Points <br> Combinations <br> Constructions Loci | Sharing quantities in a ratio Combining ratios Scaling ratios and solving problems Link ratios and equations | \% Change <br> Reverse <br> Percentages <br> Profit and loss <br> Compound <br> Interest <br> Successive \% <br> Change | Find reciprocal <br> Manipulate <br> Fractions <br> Recurring <br> decimals to <br> fractions <br> Add, multiply, <br> simplify algebraic <br> fractions | Linear sequences Geometric sequences Quadratic sequences | Direct/inverse proportion Recognise graphs Best Buys Currency Conv. Speed, Density, Pressure Area under curve Instant. Rate of change | Linear equations <br> Quadratic <br> equations <br> (factorise, <br> formula, <br> complete square) <br> Iteration <br> Linear <br> Inequalities <br> Quadratic <br> Inequalities |  |
| Prior Knowledge Required | Decimals Squaring, cubing, powers | Simplifying algebra | Bar Charts | Averages from raw data | Transformations from Y8 | Simplify Ratio | \% of amounts Multipliers | Fractions arithmetic | Nth term linear | Gradient | Inverse <br> Operations <br> Factorising |  |
| Feedback Points |  | ASSESSMENT 1 |  | Open Book Test $1$ |  | Open Book Test 2 |  | Open Book Test 3 |  | ASSESSMENT 2 |  |  |
| Key Questions |  |  |  |  |  |  |  |  |  |  |  |  |
| Direct Vocab Instruction | Inequality <br> Root <br> Powers, Indices <br> BIDMAS <br> Reciprocal <br> Estimate <br> Significant figures <br> Rounding <br> Product <br> Prime <br> HCF, LCM <br> Standard form <br> Bound <br> Error interval | Expression Coefficient <br> Formula <br> Inequality <br> Term <br> Identity <br> Simplify <br> Expand <br> Factorise <br> Substitute <br> Rearrange <br> Subject <br> Function <br> Input, Output | Discrete Continuous Grouped data Population Sample Bias <br> Frequency Correlation Outlier Line of best fit Interpolate Extrapolate Cumulative Frequency density | Grouped Data Mean <br> Median <br> Mode <br> Range <br> Interquartile Range Outlier Class <br> intervalFrequency | Rotate <br> Translate <br> Enlarge <br> Reflect <br> Scale Factor <br> Object <br> Image <br> Construct <br> Congruent <br> Similar <br> Perpendicular <br> Bisect <br> Locus <br> Invariant | $\begin{aligned} & \hline \text { Ratio } \\ & \text { Multiple } \\ & \text { LCM } \end{aligned}$ Scale | Fraction <br> Percentage <br> Increase <br> Decrease <br> Profit <br> Simple interest <br> Compound interest | Fraction Numerator Denominator Reciprocal Ascending Descending Mixed number Improper Recurring | Sequence <br> Term <br> Consecutive <br> "Fibonacci-type <br> sequence" <br> Linear <br> Geometric <br> Common ratio <br> Quadratic <br> Common difference | Directly Proportional Inversely Proportional Exchange rate Currency Speed Density <br> Pressure Capacity Compound units Velocity Acceleration Tangent Instantaneous rate of change Average rate of change | Solve <br> Equation <br> Unknown <br> Expand <br> Inequality <br> Factorise <br> Quadratic <br> Linear <br> Simultaneous <br> Solution |  |
| Standardised Homework | MathsWatch/ Exam Questions | MathsWatch/ Exam Questns | MathsWatch/ Exam Questns | MathsWatch/ Exam Questns | MathsWatch/ Exam Questions | MathsWatch/ Exam Questions | MathsWatch/ Exam Questions | MathsWatch/ Exam Questions | MathsWatch/ Exam Questions | MathsWatch/ Exam Questions | MathsWatch/ Exam Questions |  |


| Year 11 | Term 1 |  |  |  | Term 2 |  |  | Term 3 |  |  | End Points |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Half Term } 1 \\ & \text { [12 lessons] } \end{aligned}$ |  | Half Term 2 <br> [12 lessons] |  | Half Term 3 <br> [10 lessons] | Half Term 4 [11 lessons] |  | Half Term 5 [10 lessons] |  | Half Term 6 <br> [10 lessons] |  |
| Topic | Pythagoras, Trigonometry, Vectors | Probability | Algebraic Graphs | MOCKS | Angles | Perimeter, Area, Volume | Similar Shapes | REVISION | REVISION |  |  |
| Skill | Geometry | Statistics | Algebra |  | Geometry | Geometry | Proportion |  |  |  |  |
| Content | Pythagoras in different contexts SOH CAH TOA <br> Exact Trig Values Sine and Cosine Rules <br> $1 / 2 a b \operatorname{SinC}$ <br> 3d Pythagoras and Trigonometry Trig Graphs Column Vectors Vector problems, including proving lines are parallel, points are colinear | Frequency Trees <br> Two way tables <br> Venn Diagrams <br> Set notation <br> Relative <br> Frequency <br> Tree Diagrams <br> Dependent <br> events <br> Conditional <br> Probability | $Y=m x+c$ <br> Plot non-linear graphs Identify roots, intercepts and turning points Graph Transformations |  | Angles in parallel lines <br> Angles in polygons <br> Circle Theorems <br> Bearings <br> Congruent shapes <br> Proof of congruency | Arcs and Sectors <br> Volume of prisms, cylinders, cones, pyramids Surface area of a cylinder Surface Area of a cone <br> Volume of a frustum | Find missing lengths <br> Show shapes are similar <br> Convert between measures of area and volume Understand lengths, areas, volumes in 2D and 3D similar shapes Find missing surface areas and volumes of similar shapes |  |  |  |  |
| Prior Knowledge Required | Pythagoras, SOH CAH TOA | Tree Diagrams, Venn Diagrams |  |  | Angles in Parallel Lines, Angles in polygons | Area and Volume of shapes | Similar and congruent definitions |  |  |  |  |
| Feedback Points |  | Open Book Test |  | MOCKS |  | MOCKS |  |  |  |  |  |
| Key Questions |  |  |  |  |  |  |  |  |  |  |  |
| Direct Vocab Instruction | Hypotenuse Adjacent Opposite Sine Cosine Tangent Vector Scalar Parallel | Experimenta <br> Theoretical <br> Mutually exclusive <br> Mutually exhaustive <br> Trial <br> Sample space <br> Outcome <br> Venn diagram <br> Independent <br> Dependent <br> Union <br> Intersect <br> Complement | Midpoint <br> Gradient <br> Intercept <br> Function <br> Root <br> Turning point/Vertex <br> Solution <br> Quadratic <br> Cubic <br> Reciprocal |  | Opposite <br> Alternate <br> Corresponding Interior <br> Exterior <br> Polygon <br> Congruent <br> Similar <br> Bearing <br> Proof <br> Radius <br> Tangent <br> Chord <br> Diameter | Area <br> Perimeter <br> Volume <br> Compound shape <br> Surface area <br> Arc <br> Sector <br> Radius <br> Diameter <br> Circumference <br> Sphere <br> Prism <br> Pyramid <br> Cone | Congruent <br> Similar <br> Scale Factor <br> Length <br> Area <br> Volume |  |  |  |  |
| Standardised Homework | Exam Questions, GCSE Papers | Exam Questions, GCSE Papers | Exam Questions, GCSE Papers | Exam Questions, GCSE Papers | Exam Questions, GCSE Papers | Exam Questions, GCSE Papers | Exam Questions, GCSE Papers |  |  |  |  |

