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| **Bridgewater High Key Stage 3 Curriculum Map** |
| Subject – Year 7 |



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| **Intent:6 key principles** | **Implementation** | | **Autumn Term 1** | **Autumn Term 2** | **Spring Term 1** | **Spring Term 2** | **Summer Term 1** | **Summer Term 2** |
| **Clarity around knowledge** | **Theme/Topic** | | **Algebraic thinking** | **Place value & proportion** | **Applications of number** | **Directed number & fractional thinking** | **Lines and angles** | **Reasoning with number** |
| **Key Knowledge & Concepts** | | **Sequences**  Describe sequences  Compare numerical and graphical forms  Use function machines with bar  models  **Understand and use algebraic notation**  Use algebraic notation  Understand inverse operations  Substitution and generating sequences  Represent sequences graphically  **Equality and equivalence**  Understand equality  Use fact families  Form/solve 1-step equations  Equivalence of algebraic expressions  Collect like terms | **Place value and ordering**  Integer place value  Decimal place value  Intervals and number lines  Compare and order numbers  Range and median from a list  Rounding to powers of 10  Rounding to 1 significant figure  **Fraction, decimal and percentage equivalence**  Represent tenths and hundredths on number lines  Convert between fractions, decimals and percentages  Equivalent fractions  Interpret pie charts  Index form  Fractions above 1 | **Addition & subtraction**  Mental methods  Formal written methods  Solve problems in Context of perimeter, money, frequency trees, tables, bar charts, line charts  **Multiplication & division**  Multiply by 10, 100, 1000, 0.1, 0.01  Convert metric units  HCF & LCM  Area of shapes  Finding the mean  Order of operations  **Fractions and percentages of amounts**  Simple fractions and % of amounts | **Directed Number**  Order directed numbers  4 operations with directed number  Using a calculator  Solving 2-step equations  Order of operations  **Add & subtract fractions**  Tenths & hundredths on a number line  Convert mixed numbers & improper fractions  Add & subtract fractions  Add and subtract fractions & decimals | **Construction and measuring**  Line and angle notation  Draw and measure lines and angles  Classify angles  Parallel and perpendicular lines  Types of triangles, quadrilaterals and other polygons  Construct triangles given SSS,SAS,ASA  Draw and interpret pie charts  **Geometric reasoning**  Calculate and use angles at a point, angles on a straight line and vertically opposite angles  Calculate missing angles in triangles and quadrilaterals | **Developing number sense**  Mental arithmetic  Use known facts to derive other facts  Evaluate expressions  Use estimation  **Sets and probability**  Set notation  Venn Diagrams and complement of a set  Language probability  Probability of a single event and sum of probabilities of an event.  **Prime numbers and proof**  Prime, square and triangle numbers  Powers and roots  Conjectures and counter examples  Prime factors with HCF and LCM |
| **Clarity around Sequencing** | **Main links across the curriculum** | | Material in this unit is revisited in forthcoming units  Efficient use of calculators and informal estimation | Solve equations with fractions  Sequences with fractions  Pie charts, median, range | Perimeter: equations & simplifying  Tables: distance charts & timetables  Revisit rounding  Order of operations: negatives | Inequalities: number lines  Revisit sequences  equations & substitution | Simplifying expressions, perimeter, equations Pie charts, mental methods for add and subtract | Fractions, decimals, %  Factors and multiples |
| **Cross – curricular / Authentic Links** | | Geog compass  Tech units  Science graphs | Geog data  Science energy | Science formulae and equations  Tech nets and area |  | PE units of measurement | Science standard form and data |
| **Vocabulary / Literacy** | **Literacy** | **Reading** |  |  |  |  |  |  |
| **Ext. Writing** |  |  |  |  |  |  |
| **Key**  **Vocabulary** | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser |
| **Memory & Cognition** | **Retrieval Practice: Focus a*nd Activity*** | **Start** | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity |
| **On going** | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 |
| **End** | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle |
| **Assessment** | **Summative**  **Assessment** | | Topic test | Topic test | Topic test | Topic test | Topic test | Topic test |
| **Possible misconceptions** | | Sequences: thinking the 10th term is double the 5th term  Algebra: thinking 2 more than x is 2x  Equations: solving x/4=8 to get x=2 | Place value: thinking that 5.203 is bigger than 5.23  FDP: thinking that 1/3 = 0.3 or 25% = 1/25 | Subtraction: doing 1-8 and getting 7  Multiply: 0.32x10 = 0.320  Using slant height for area of a triangle | Thinking -8 is greater than -2  Adding Fractions: 1/7 + 3/7 = 4/14 | Using the wrong side of the protractor  Using rule for angles on a straight line for non-adjacent angles | Calculating when asked to estimate  Writing probability as a ratio |
| **Aspiring, inspiring and Real** | **Links to real world (Inc. SMSC / PD curricula)** | | **Problem solving** | **Problem solving** | **Problem solving**  Financial maths | **Problem solving** | **Problem solving** | **Problem solving**  **Probability** |

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| **Bridgewater High Key Stage 3 Curriculum Map** |
| Subject – Year 8 |



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| **Intent:6 key principles** | **Implementation** | | **Autumn Term 1** | **Autumn Term 2** | **Spring Term 1** | **Spring Term 2** | **Summer Term 1** | **Summer Term 2** |
| **Clarity around knowledge** | **Theme/Topic** | | **Proportional reasoning** | **Representations** | **Algebraic techniques** | **Developing number** | **Developing geometry** | **Reasoning with data** |
| **Key Knowledge & Concepts** | | **Ratio and scale**  Understanding ratio and its link to multiplication.  Use Ratio notation.  Reduce ratios to simplest form.  Solve ratio problems.  Calculate the circumference of a circle.  **Multiplicative change**  Use scale factors, linking to ratio, to solve simple direct proportion problems.  Convert between currencies, including using graphs.  Draw and interpret scale diagrams and maps.  **Multiplying and dividing fractions**  Multiply and divide a fraction by an integer  Multiply and divide a fraction by a fraction  Understand and use reciprocal | **Working in the Cartesian plane**  Plot and interpret straight line graphs.  Understand and use the equations of a straight line, including lines parallel to the axes.  Make links between direct proportion and straight lines of the form y=kx.  Model situations by translating them into expressions, formulae and graphs.  **Representing data**  Draw and interpret scatter graphs.  Understand correlation. Draw and use line of fit. Understand grouped, discrete and continuous data. Design and use one and two way tables  **Probability**  List outcomes using sample space diagrams for one and two events  Find probabilities using tables and Venn diagrams | **Brackets, equations and inequalities**  Expand and factorise into single brackets  Form and use expressions, formulae and identities  Form and solve equations and inequalities with and without brackets  Distinguish between equations, expressions, formulae and identities  **Sequences**  Generate sequences using more complex rules e.g. with brackets and squared terms, both in words and algebraically  **Indices**  Form expressions using indices  Understand and use the addition and subtraction rules | **Fractions and percentages**  Develop understanding of fractions, decimals and percentages  Evaluate percentage increases and decreases  Use multiplers to solve percentage problems  Express one number as a percentage of another  **Standard index form**  Convert between numbers in ordinary and standard form  Compare numbers given in standard form  Calculate with numbers in standard form, with and without a calculator  **Number sense**  Develop mental strategies  Convert between metric measures and units  Estimation, including rounding to a given number of decimal places  Use the order of operations | **Angles in parallel lines and polygons**  Review Y7 angles rules  Understand and use parallel lines and angles  Revisit geometric notation  Work out angles in special quadrilaterals  Find and use the sum of interior and exterior angles of a polygon  Prove simple geometric facts  **Area of trapezia and circles**  Review area of shapes covered in Y7  Calculate the area of a trapezium  Calculate the area of a circle and parts of a circle  Use significant figures  Calculate the area of compound shapes  **Line symmetry and reflection**  Recognise line symmetry in polygons and other shapes  Reflect shapes in horizontal, vertical and diagonal lines | **The data handling cycle**  Understand and use primary and secondary sources of data  Collect data including using questionnaires  Interpret and construct statistical diagrams including multiple bar charts  Construct and interpret pie charts  Compare distributions using charts  Identify misleading graphs  **Measures of location and dispersion**  Revisit the median and mean including finding the total given the mean  Find the mean of grouped data  Work out the mode and modal class  Choosing the appropriate average  Comparing distributions using measures |
| **Clarity around Sequencing** | **Main links across the curriculum** | | Revisit area  Revisit equations  Revisit converting improper fractions and mixed numbers  Links to fractions of an amount | Revisit calculation with directed number  Link to solving one and two step linear equations  Revisiting venn diagrams and set notation | Revisit use of directed number  Solve equations in context of other maths topics | Revisit FDP equivalence  Revisit formal methods of calculation for integers and fractions  Compare and use ratios in context of FDP | Revisit forming and solving equations  Revisit properties of shapes  Revisit equations of straight lines | Revisit finding the range  Use algebraic substitution to form lists for averages and the range |
| **Cross – curricular / Authentic Links** | | Tech isometric drawing, scale and measurement | Science pressure  PE fitness testing | Science units e.g. speed of sound |  | PE measures (javelin) | Science difference in temperatures |
| **Vocabulary / Literacy** | **Literacy** | **Reading** |  |  |  |  |  |  |
| **Ext. Writing** |  |  |  |  |  |  |
| **Key**  **Vocabulary** | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser |
| **Memory & Cognition** | **Retrieval Practice: Focus a*nd Activity*** | **Start** | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity |
| **On going** | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 |
| **End** | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle |
| **Assessment** | **Summative**  **Assessment** | | Topic test | Topic test | Topic test | Topic test | Topic test | Topic test |
| **Possible misconceptions** | | 6 x 1/7 = 6/42 | Plotting coordinates the wrong way round  Drawing an axis with unequal scales | Only multiplying the first term when expanding a bracket | Multiplying by 0.2 to work out 2% | Reflecting in a diagonal line as if it was a vertical line | Not dividing by the total frequency (mean of grouped data) |
| **Aspiring, inspiring and Real** | **Links to real world (Inc. SMSC / PD curricula)** | | **Problem solving**  Financial maths | **Problem solving**  Probability | **Problem solving** | **Problem solving** | **Problem solving** | **Problem solving**  Data handling |

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| **Bridgewater High Key Stage 3 Curriculum Map** |
| Subject – Year 9 |



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| **Intent:6 key principles** | **Implementation** | | **Autumn Term 1** | **Autumn Term 2** | **Spring Term 1** | **Spring Term 2** | **Summer Term 1** | **Summer Term 2** |
| **Clarity around knowledge** | **Theme/Topic** | | **Reasoning with algebra** | **Constructing in 2 and 3 dimensions** | **Reasoning with number** | **Reasoning with geometry** | **Reasoning with proportion** | **Representations** |
| **Key Knowledge & Concepts** | | **Straight line graphs**  Interpret straight line graphs  Find and use the equation of a straight line  Reduce equations to the form y=mx+c  Compare to linear sequences and finding the rule for the nth term  **Forming and solving equations and inequalities**  Revisit and extend to equations and inequalities with unknown on both sides using all previous contexts: angles, probability, area etc.  Change the subject of a formula  **Testing conjectures**  Test conjectures in a wide range of contexts | **Three dimensional shapes**  Understand the language of faces, edges and vertices  Know the names of common prisms and non-prisms  Identify 2D shapes within 3D shapes  Work out the volume and surface area of cuboids and cylinders  Work out the volume of any prism  Work out missing lengths given area/volume  **Constructions and congruency**  Construct 3D shapes from nets and construct nets of 3D shapes  Construct and use scale drawings  Construct perpendiculars and bisectors  Understand congruency  Exploring congruency via construction | **Numbers**  Revisit types of number – extend to include rational and real numbers  Revisit fraction arithmetic  Extend knowledge of HCF and LCM  Revisit standard form  **Using percentages**  Revisit percentage increase and decrease  Use percentages over 100%  Find percentage changes  Use multipliers in a variety of contexts  Solve reverse percentage problems  **Maths and money**  Explore financial maths including bills and bank statements, interest, unit pricing (best buys) | **Deduction**  Revisit angles rules including within special quadrilaterals. Find angles using algebraic methods  Use chains of reasoning to evaluate angles  **Rotation and translation**  Identify the order of rotational symmetry of a shape. Find the result of rotating a shape. Translate points and shapes given by a vector  Understand variance and invariance in the context of transformations  **Pythagoras’ Theorem**  Identify the hypotenuse of a right-angled triangle  Determine whether a triangle is right-angled. Calculate missing sides in right-angled triangles | **Enlargement and similarity**  Enlarge shapes by a positive scale factor including from a given point  Calculate the lengths of missing sides in similar shapes  **Solving ratio and proportion problems**  Direct proportion problems and graphs  Conversion graphs  Solve ratio problems given the whole or a part  Simple inverse proportion  Unit pricing problems (best buy)  **Rates**  Work with speed, distance time  Solve problems involving density  Work with compound units | **Probability**  Relative frequency  Expected number of outcomes  Independent events  **Algebraic representations**  Drawing and reading from quadratics  Interpreting other graphs e.g. reciprocal  Representing inequalities |
| **Clarity around Sequencing** | **Main links across the curriculum** | | Link equations of graphs to solving equations  Revisit key topics through equations  Review use of brackets  Review geometric properties and rules | Revisit estimation,  Revisit rounding to the nearest integer, decimal places and significant figures  Revisit unit conversions including area and volume units | Add and subtract fractions  Working out fractions of amounts  FDP equivalence  Ratio | Revisit fractions and directed numbers in the context of rotation. Compare and contrast rotational symmetry with line symmetry  Identify 2D and 3D shapes. Link constructions and geometric reasoning |  |  |
| **Cross – curricular / Authentic Links** | | Art geometric shape  Geog % change, maps scale  Tech measurement | Art scale drawing  Geog graphs and statisics  Tech enlargement, congruence | ICT sequences  Science density | History statistics  Science SDT and SDT graphs | ICT finance  Food ratio, time | ICT finance  Food pie charts |
| **Vocabulary / Literacy** | **Literacy** | **Reading** |  |  |  |  |  |  |
| **Ext. Writing** |  |  |  |  |  |  |
| **Key**  **Vocabulary** | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser |
| **Memory & Cognition** | **Retrieval Practice: Focus a*nd Activity*** | **Start** | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity |
| **On going** | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 |
| **End** | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle |
| **Assessment** | **Summative**  **Assessment** | | Topic test | Topic test | Topic test | Topic test | Topic test | Topic test |
| **Possible misconceptions** | | Getting inequality signs the wrong way round | Thinking that volume is multiply all the numbers together | Not recognising reverse % questions | Always adding for Pythagoras’ Theorem | Not enlarging all sides on a shape | Thinking relative frequency is the same as frequency |
| **Aspiring, inspiring and Real** | **Links to real world (Inc. SMSC / PD curricula)** | | **Problem solving** | **Problem solving** | **Problem solving**  Financial maths | **Problem solving** | **Problem solving** | **Problem solving**  Probability |

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| **Bridgewater High Key Stage 3 Curriculum Map** |
| Subject – Year 10 |



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| **Intent:6 key principles** | **Implementation** | | **Autumn Term 1** | **Autumn Term 2** | **Spring Term 1** | **Spring Term 2** | **Summer Term 1** | **Summer Term 2** |
| **Clarity around knowledge** | **Theme/Topic** | | **Similarity** | **Developing Algebra** | **Geometry** | **Proportions and proportional change** | **Delving into data** | **Using Number** |
| **Key Knowledge & Concepts** | | **Congruence, similarity and enlargement**  Understand the difference between congruence and similarity.  Enlarge a shape about a point.  Understand and use similarity  Find sides in similar shapes including pairs of similar triangles  Understand and use the conditions for a pair of congruent triangles.  *Higher content:*  *Area and volume of similar shapes*  *Formal proof for congruency*  *Enlarge a shape by a negative scale factor*  **Trigonometry**  Understand trigonometric ratios  Work out missing sides and angles in right-angled triangles  Know and use exact trigonometric values.  *Higher content:*  *Use trigonometry in 3D shapes*  *Sine and cosine rules. Area of a triangle using 1/2absinC* | **Representing solutions of equations and inequalities**  Form and solve equations and inequalities in a variety of contexts including unknown on both sides  Represent solutions to inequalities on a number line.  Represent equations graphically**.**  *Higher content:*  *Use set notation for solutions*  *Solve inequalities in 2 variables, identifying regions*  *Solve quadratic equations and inequalities (by factorisation only)*  **Simultaneous equations** Understand that some equations have multiple solutions.  Form and solve simultaneous equations algebraically and graphically  *Higher content:*  *Solve simultaneous equations with one linear and one quadratic* | **Angles and bearings**  Review KS3 angles rules  Understand and use bearings  **Working with circles**  Review area and circumference  Name parts of a circle and perform related calculations  Find areas and volumes related to circles e.g. cylinder, cone, sphere etc  *Higher content:*  *Derive, use and prove the first 4 circle theorems*  *Equation of a circle.*  **Vectors**  Vector notation  Vector arithmetic – addition, subtraction and multiplication by a scalar  Vectors and translations  *Higher content:*  *Geometric proofs with vectors* | **Ratios and fractions**  Use ratios, including with mixed units  Fractions in ratios  Fractions from ratios. Combining ratios. Best buys  Currency convert  *Higher content:*  *Revise area and volume ratios*  **Percentages and interest**  Convert FDP  Find % / % change  Find one number as a % of another  Simple and compound interest  Exponential change e.g. depreciation  Find original values  *Higher content:*  *Use iterative methods*  **Probability**  Review of single event probability  Mutually exclusive and independent events  Tree diagrams  Find probabilities from frequency trees, tables and venn diagrams  *Higher content:*  *Conditional probability* | **Collecting, representing and interpreting data –** Understand sampling.  Construct and interpret tables and line graphs for time series data.  Understand and represent grouped data.  Understand and identify correlation.  Use a line of best fit and understand extrapolation.  Construct/interpret frequency polygons.  Evaluate measures of location and dispersion.  Use statistical diagrams and measures to compare distributions  *Higher content:*  *Construct and interpret cumulative frequency diagrams, box plots and histograms*  *Understand quartiles*  *Use and interpret the inter-quartile range* | **Non-calculator methods**  Four operations with integers (positive and negative), fractions and decimals with and without context  Work with exact answers e.g. area and volume.  Evaluate calculations involving percentages.  Upper and lower bounds  *Higher content:*  *Calculations involving upper and lower bounds*.  **Types of number and sequences**  Use factors, multiples, primes and prime factorisation.  Recognise arithmetic and geometric sequences.  Recognise and use other sequences.  *Higher content:*  *Nth term of a quadratic sequence.*  *Work with rational, irrational numbers including recurring decimals.*  **Indices and roots**  Work out powers and roots.  Use rules of indices.  Calculate with numbers in standard form.  *Higher content:*  *Calculate with surds.*  *Use fractional indices.* |
| **Clarity around Sequencing** | **Main links across the curriculum** | | Angle rules including angles in parallel lines  Equations  Pythagoras theorem | Context for equations to include probability, area, angles, ratio problems. | Revisit Trigonometry  Revisit areas and volumes or other and compound shapes  Estimation, Rounding, Significant Figures | Revisit formal methods of calculation  Revisit fraction arithmetic | Using equations e.g.solving problems about the mean.  Non-calculator methods. | **Fractions, decimals, %**  **Factors and multiples** |
| **Cross – curricular / Authentic Links** | |  | Geog data handling  Chemistry % yield  Graphics nets |  |  | Geog data handling  PE collecting data | Physics vectors, graphs, acceleration |
| **Vocabulary / Literacy** | **Literacy** | **Reading** |  |  |  |  |  |  |
| **Ext. Writing** |  |  |  |  |  |  |
| **Key**  **Vocabulary** | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser |
| **Memory & Cognition** | **Retrieval Practice: Focus a*nd Activity*** | **Start** | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity |
| **On going** | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 |
| **End** | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle |
| **Assessment** | **Summative**  **Assessment** | | Topic test | Topic test | Topic test | Topic test | Topic test | Topic test |
| **Possible misconceptions** | | Similarity – adding instead of multiplying | Negative numbers errors on sim eq | Not using North line for bearings | Understanding the difference between simple/compound | Interpret scatter without line of best fit | Incorrect use of index laws |
| **Aspiring, inspiring and Real** | **Links to real world (Inc. SMSC / PD curricula)** | | **Problem solving**  Trigonometry | **Problem solving** | **Problem solving**  Area and volume  Bearings | **Problem solving**  **Probability**  **Financial maths** | **Problem solving**  Financial maths | **Problem solving** |

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| **Bridgewater High Key Stage 3 Curriculum Map** |
| Subject – Year 11 |



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| **Intent:6 key principles** | **Implementation** | | **Autumn Term 1** | **Autumn Term 2** | **Spring Term 1** | **Spring Term 2** | **Summer Term 1** | **Summer Term 2** |
| **Clarity around knowledge** | **Theme/Topic** | | **Graphs** | **Algebra** | **Reasoning** | **Revision and Communication** | **Revision** |  |
| **Key Knowledge & Concepts** | | **Gradients & lines**  Equations of straight lines  **Non-linear graphs**  Quadratic curves  Roots  Cubic & reciprocal graphs  *Higher content:*  *Exponential graphs*  **Using graphs**  Reflect shapes in a line  Speed, distance, time graphs  Real life graphs  *Higher content:*  *Equations of perpendicular lines*  *Equation of a tangent to a curve*  *Estimate the area under a curve* | **Expanding & factorising**  Single brackets  Binomials – expand only  Quadratics – factorise  Quadratic equations  Simplify algebraic expressions including algebraic fractions  *Higher content:*  *Solve quadratic equations by completing the square and using the quadratic formula*  **Changing the subject**  Solve linear equations  Change subject of a formula  Volume of a pyramid  *Higher content:*  *Changing the subject of a formula where the subject occurs more than once*  **Functions**  Finding inputs & outputs  Equivalent algebraic expressions  Use of kinematics formulae  *Higher content:*  *Solve equations by iteration*  *Work with composite and inverse functions* | **Multiplicative Reasoning:**  Review scale and enlargement  Direct and inverse proportion  Pressure and Density  Additive and multiplicative reasoning  **Geometric Reasoning:**  Angle facts, language of reasoning and chains of reasoning  Pythagoras’ theorem and trigonometric ratios  *Higher content:*  *Construct formal geometric proofs including the remaining circle theorems*  **Algebraic Reasoning:**  Working with complex indices  Simplification of complex expressions and finding the nth term rule  Justify whether a number is / is not in a sequence  *Higher content:*  *Construct formal algebraic proofs* | **Transforming and constructing:**  Transformation of shapes and symmetry  Constructions  Loci  *Higher content:*  *Trig graphs*  *Translations and reflections of graphs*  **Listing and describing:**  Systematic listing  Sample spaces and probability  Venn diagrams  Plans and Elevations  Comparing distributions  *Higher content:*  *Product rule for counting*  **Show that ...**  Illustrate equivalence, numerically and algebraically  Justify answers  Use angle rules  Use the conditions for congruent triangles *Higher content:*  *Formal proof with congruent triangles* | **-Number work inc multi-step problem solving**  **-Forming & solving equations & inequalities**  **-Working with formulae**  **-Probability** |  |
| **Clarity around Sequencing** | **Main links across the curriculum** | | **Solving equations**  **Proportional reasoning** | **Negative numbers**  **Graphs** | **Revise non-calculator methods. Revisit other topics** | **Interleaves with all topics.** |  |  |
| **Cross – curricular / Authentic Links** | | **Art shape / ratio**  **Science stats and equations**  **DT data**  **History data trends** | **Science equations, formulae, rates of change, graphs**  **DT plan / elevation, nets** | **DT % profir/loss, ratio and scale**  **PE finance**  **Biology probability** | **CS flowcharts and iteration**  **PE data ratio and stats** |  |  |
| **Vocabulary / Literacy** | **Literacy** | **Reading** |  |  |  |  |  |  |
| **Ext. Writing** |  |  |  |  |  |  |
| **Key**  **Vocabulary** | See knowledge organiser | See knowledge organiser | See knowledge organiser | See knowledge organiser |  |  |
| **Memory & Cognition** | **Retrieval Practice: Focus a*nd Activity*** | **Start** | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity | Making links  Road map activity |  |  |
| **On going** | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 | Multi-topic focus  Flashback 4 |  |  |
| **End** | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle | Revision of topic  Mathswatchvle |  |  |
| **Assessment** | **Summative**  **Assessment** | | Topic test | Topic test | Topic test | Topic test |  |  |
| **Possible misconceptions** | | Coordinates for negative x values | Incorrect order for changing the subject | Knowing when to use Pythag / trig | Drawing the wrong construction (loci) |  |  |
| **Aspiring, inspiring and Real** | **Links to real world (Inc. SMSC / PD curricula)** | | **Problem solving**  **Real life graphs** | **Problem solving** | **Problem solving**  **Scale** | **Problem solving**  **Probability**  **Plans/elevation** | **Problem solving** | **Problem solving** |