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Year 7	Term 1		Term 2		Term 3	
	HT1	HT2	HT3	HT4	HT5	HT6
Key knowledge (NC driven)	• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction • Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction • Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include	• Understand and use place value for decimals, measures and integers of any size • Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ • Work interchangeably with terminating decimals and their corresponding fractions • Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures]	• Use a calculator and other technologies to calculate results accurately and then interpret them appropriately • Generate terms of a sequence from either a term-to-term or a position-to-term rule • Recognise arithmetic sequences and find the nth term • Recognise geometric sequences and appreciate other sequences that arise • Recognise and use relationships between operations including inverse operations • Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y,	• Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative • Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals • Recognise and use relationships between operations including inverse operations • Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between	• Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% • Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 • Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar	• Appreciate the infinite nature of the sets of integers, real and rational numbers • Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale • Understand that the probabilities of all possible outcomes sum to 1 • Enumerate sets and unions/intersections of sets systematically, using tables, grids and venn diagrams • Generate theoretical sample spaces for single and combined events with equally likely,

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the concept of zero and place value ●Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts ●Read, write, and convert time between analogue and digital 12- and 24-hour clocks ●Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days ●Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit	●Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers) ●Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using	a^2 in place of a × a, a^3 in place of a × a × a, a^2b in place of a × a × b, a/b in place of a ÷ b, coefficients written as fractions rather than as decimals, brackets ●Substitute numerical values into formulae and expressions, including scientific formulae ●Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs ●Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation a<x≤b ●Simplify and manipulate algebraic expressions to maintain equivalence by:	exact representations of roots and their decimal approximations ●Use a calculator and other technologies to calculate results accurately and then interpret them appropriately ●Substitute numerical values into formulae and expressions, including scientific formulae ●Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors ●Simplify and manipulate algebraic expressions to maintain equivalence by: -Collecting like terms -Multiplying a single term over a bracket -Taking out common factors	charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data ●Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative ●Interpret fractions and percentages as operators ●Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; ose the symbols =, ≠, , ≤, ≥ ●Work interchangeably with terminating decimals and their	mutually exclusive outcomes and use these to calculate theoretical ●Draw and measure line segments and angles in geometric figures, including interpreting scale drawings ●Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric ●Use the standard conventions for labelling the sides and angles of triangle abc, and know and use the criteria for congruence of triangles ●Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids ●Construct and interpret appropriate tables, charts, and diagrams,

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fractions where the answer is a whole number ●Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths ●Compare and order fractions whose denominators are all multiples of the same number ●Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	product notation and the unique factorisation property ●Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations ●Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative ●Recognise and use relationships between operations including inverse operations	-Collecting like terms -Multiplying a single term over a bracket -Taking out common factors -Expanding products of two or more binomials ●Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) ●Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships ●Move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs]	-Expanding products of two or more binomials ●Understand and use standard mathematical formulae; rearrange formulae to change the subject ●Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% ●Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 ●Construct and interpret	corresponding fractions ●Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots ●Move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs] ●Select and use appropriate calculation strategies to solve increasingly complex problems ●Develop their mathematical knowledge, in part through solving	including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data ●Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies ●Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles ●Understand and use the relationship between parallel lines and alternate and corresponding angles ●Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons

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●Solve comparison, sum and difference problems using information presented in a line graph ●Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate ●Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed ●Recognise and show, using diagrams, families of common equivalent fractions ●Solve problems involving number	●Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders) ●Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data ●Use conventional notation for the priority of operations,	●Make and test conjectures about patterns and relationships; look for proofs or counterexamples ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics ●Begin to model situations mathematically and express the results using a range of formal mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar	appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data ●Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots ●Move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs]	problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics ●Begin to model situations mathematically and express the results using a range of formal mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems.	●Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs ●Use language and properties precisely to analyse numbers, algebraic expressions, 2-d and 3-d shapes, probability and statistics ●Begin to reason deductively in geometry, number and algebra, including using geometrical constructions ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems,

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up to three decimal places ●Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero ●Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number ●Solve problems involving multiplication and division, including scaling by simple fractions and problems involving measure ●Use all four operations to solve	including brackets, powers, roots and reciprocals ●Substitute numerical values into formulae and expressions, including scientific formulae ●Change freely between related standard units [for example time, length, area, volume/capacity, mass] ●Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots ●Select and use appropriate calculation strategies to solve	and nonroutine problems.	●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics ●Begin to model situations mathematically and express the results using a range of formal mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems.		including in financial mathematics ●Begin to model situations mathematically and express the results using a range of formal mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems.

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	problems involving measure •Identify: angles at a point and one whole turn (total 360°), angles at a point on a straight line and half a turn (total 180°), other multiples of 90° •Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons •Calculate the mean as an average •Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].	increasingly complex problems •Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems •Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics •Begin to model situations mathematically and express the results using a range of formal mathematical representations •Select appropriate concepts, methods and techniques to apply to unfamiliar			

	●Enumerate possibilities of combinations of two variables ●Find pairs of numbers that satisfy an equation with two unknowns ●Use their knowledge of the order of operations to carry out calculations involving the four operations ●Solve problems involving addition, subtraction, multiplication and division ●Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate ●Solve problems involving multiplication and division, including	and nonroutine problems.			

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	scaling by simple fractions and problems involving simple rates					
Topic	**Transition Unit – Based on KS2 NC**	**1. Place Value** **2. Types of Number** **3. Addition & Subtraction** **4. Multiplication & Division**	**5. Sequences** **6. Algebraic Notation** **7. Equality & Equivalence**	**8. Operations with Equations and Directed Number** **9. Fractions, Decimals, Percentages**	**9. Fractions, Decimals, Percentages** **10. Fractions and Percentages of Amounts** **11. Adding and Subtracting Fractions**	**12. Sets and Probability** **13. Constructing and Measuring** **14. Develop Geometric Reasoning**
Assessment	**Formal Formative Assessment** (based on KS2 NC) -Baseline Assessment in Week 1 **Formal Formative Assessment** -Exit Assessment in Week 6 **Informal Formative Assessment**	**Summative Assessment** -DC1 Assessment in Week 13 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up)	**Formal Formative Assessment** -Assessment in Week 20 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks	**Formal Formative Assessment** -Assessment in Week 25 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks	**Summative Assessment** -DC2 End of Year Assessment in Week 32 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets

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	-Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Exit Tickets	-Live marking and feedback -Homework Tasks -Exit Tickets	-Exit Tickets	-Exit Tickets	-Homework Tasks -Exit Tickets	

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Year 8	Term 1		Term 2		Term 3	
	HT1	HT2	HT3	HT4	HT5	HT6
Key knowledge (NC driven)	●Use scale factors, scale diagrams and maps ●Use ratio notation, including reduction to simplest form ●Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio ●Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction ●Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions ●Solve problems involving direct and	●Substitute numerical values into formulae and expressions, including scientific formulae ●Work with coordinates in all four quadrants ●Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane ●Interpret mathematical relationships both algebraically and graphically ●Construct and interpret appropriate tables, charts, and diagrams,	●Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y, a² in place of a × a, a³ in place of a × a × a, a²b in place of a × a × b, a/b in place of a ÷ b, coefficients written as fractions rather than as decimals, brackets ●Work interchangeably with terminating decimals and their corresponding fractions ●Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of	●Substitute numerical values into formulae and expressions, including scientific formulae ●Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors ●Simplify and manipulate algebraic expressions to maintain equivalence by: -Collecting like terms -Multiplying a single term over a bracket -Taking out common factors -Expanding products of two or more binomials ●Understand and use standard mathematical formulae; rearrange	●Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations ●Interpret and compare numbers in standard form a x 10n 1≤a<10, where n is a positive or negative integer or zero ●Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) ●Calculate and solve problems involving:	●Derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line ●Use the standard conventions for labelling the sides and angles of triangle abc, and know and use the criteria for congruence of triangles ●Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies ●Apply the properties of angles at a point, angles

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	inverse proportion, including graphical and algebraic representations ●Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals ●Use standard units of mass, length, time, money and other measures, including with decimal quantities ●Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] ●Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using	including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data ●Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs ●Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are	another, compare two quantities using percentages, and work with percentages greater than 100% ●Interpret fractions and percentages as operators ●Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative ●Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale	formulae to change the subject ●Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) ●Generate terms of a sequence from either a term-to-term or a position-to-term rule ●Recognise arithmetic sequences and find the nth term ●Recognise geometric sequences and appreciate other sequences that arise ●Identify variables and express relations between variables algebraically and graphically ●Develop their mathematical knowledge, in part through solving problems and evaluating the	perimeters of 2-d shapes (including circles), areas of circles and composite shapes ●Derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line ●Use the standard conventions for labelling the sides and angles of triangle abc, and know and use the criteria for congruence of triangles	at a point on a straight line, vertically opposite angles ●Understand and use the relationship between parallel lines and alternate and corresponding angles ●Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons ●Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers) ●Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie

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inequality notation a<x≤b ●Move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs] ●Extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations ●Extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional	reflectively and rotationally symmetric ●Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures ●Move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs] ●Develop algebraic and graphical fluency, including understanding linear and simple quadratic functions ●Use language and properties precisely to analyse numbers,	●Understand that the probabilities of all possible outcomes sum to 1 ●Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams ●Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical ●Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots ●Select and use appropriate calculation strategies	outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics ●Begin to model situations mathematically and express the results using a range of formal mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems	●Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies ●Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles ●Understand and use the relationship between parallel lines and alternate and corresponding angles ●Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons ●Develop their mathematical	charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data ●Explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics ●Begin to model situations mathematically and express the results using a range of formal mathematical representations

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	relations algebraically ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics ●Begin to model situations mathematically and express the results using a range of formal	algebraic expressions, 2-d and 3-d shapes, probability and statistics ●Extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in	to solve increasingly complex problems ●Substitute values in expressions, rearrange and simplify expressions, and solve equations ●Use language and properties precisely to analyse numbers, algebraic expressions, 2-d and 3-d shapes, probability and statistics ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics ●Begin to model situations mathematically and		knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics ●Begin to model situations mathematically and express the results using a range of formal mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems	●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems

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	mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems	financial mathematics ●Begin to model situations mathematically and express the results using a range of formal mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems	express the results using a range of formal mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems			
Topic	**1. Ratio & Scale** **2. Multiplicative Change** **3. Number Sense**	**4. Working in the Cartesian Plane** **5. Representing Data** **6. Line Symmetry & Reflection**	**7. Indices** **8. Fractions & Percentages** **9.Multiplying & Dividing Fractions** **10. Tables & Probability**	**11. Brackets, Equations & Inequalities** **12. Sequences**	**13. Standard Index Form** **14. Area of Trapezia & Circles** **15. Angles in Parallel Lines & Polygons**	**15. Angles in Parallel Lines & Polygons** **16. Measures of Location** **17. The Data Handling Cycle**
Assessment	**Formal Formative Assessment** -Assessment in Week 6	**Summative Assessment** -DC1 Assessment in Week 13	**Formal Formative Assessment** -Assessment in Week 20	**Formal Formative Assessment** -Assessment in Week 25	**Summative Assessment**	**Informal Formative Assessment** -Use of whiteboards during lessons

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Informal Formative Assessment -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	-DC2 End of Year Assessment in Week 34 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	-Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets

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Year 9	Term 1		Term 2		Term 3	
	HT1	HT2	HT3	HT4	HT5	HT6
Key knowledge (NC driven)	●Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property ●Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative ●Interpret and compare numbers in standard form a	●Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane ●Interpret mathematical relationships both algebraically and graphically ●Reduce a given linear equation in two variables to the standard form y = mx + c; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically	●Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs ●Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles ●Interpret mathematical relationships both algebraically and geometrically ●Use scale factors, scale diagrams and maps ●Understand that a multiplicative	●Draw and measure line segments and angles in geometric figures, including interpreting scale drawings ●Derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line ●Use the standard conventions for labelling the sides and angles of triangle abc, and	●Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs ●Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles ●Interpret mathematical relationships both algebraically and geometrically ●Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles,	●Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric ●Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles ●Understand and use the relationship between parallel lines and alternate and corresponding angles ●Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors ●Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling,

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	x 10n 1≤a<10, where n is a positive or negative integer or zero ●Appreciate the infinite nature of the sets of integers, real and rational numbers ●Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% ●Interpret fractions and percentages as operators	●Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations ●Use ratio notation, including reduction to simplest form ●Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio ●Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction ●Solve problems involving direct and inverse proportion,	relationship between two quantities can be expressed as a ratio or a fraction ●Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids ●Use standard units of mass, length, time, money and other measures, including with decimal quantities ●Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] ●Use a calculator and other technologies to calculate results accurately and then interpret them appropriately	know and use the criteria for congruence of triangles ●Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale ●Understand that the probabilities of all possible outcomes sum to 1 ●Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams ●Generate theoretical sample spaces for single and combined events with equally likely, mutually	parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders) ●Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3D ●Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric ●Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures	using equations in x and y and the Cartesian plane ●Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations ●Find approximate solutions to contextual problems from given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs ●Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property

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●Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics ●Understand and use standard mathematical formulae; rearrange formulae to change the subject ●Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs ●Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement)	including graphical and algebraic representations ●Use compound units such as speed, unit pricing and density to solve problems ●Change freely between related standard units [for example time, length, area, volume/capacity, mass] ●Develop algebraic and graphical fluency, including understanding linear and simple quadratic functions ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems	●Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics ●Select and use appropriate calculation strategies to solve increasingly complex problems ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve	exclusive outcomes and use these to calculate theoretical probabilities ●Use language and properties precisely to analyse numbers, algebraic expressions, 2-d and 3-d shapes, probability and statistics ●Explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including	●Use language and properties precisely to analyse numbers, algebraic expressions, 2-d and 3-d shapes, probability and statistics ●Extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics	●Simplify and manipulate algebraic expressions to maintain equivalence by: -Collecting like terms -Multiplying a single term over a bracket -Taking out common factors -Expanding products of two or more binomials ●Make and test conjectures about patterns and relationships; look for proofs or counterexamples ●Begin to reason deductively in geometry, number and algebra, including using geometrical constructions ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems,

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	• Move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs] • Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems • Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics • Begin to model situations mathematically and	• Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics • Begin to model situations mathematically and express the results using a range of formal mathematical representations • Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems	problems, including in financial mathematics • Begin to model situations mathematically and express the results using a range of formal mathematical representations • Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems	in financial mathematics • Begin to model situations mathematically and express the results using a range of formal mathematical representations • Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems	• Begin to model situations mathematically and express the results using a range of formal mathematical representations • Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems	including in financial mathematics • Begin to model situations mathematically and express the results using a range of formal mathematical representations • Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems

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	express the results using a range of formal mathematical representations ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems					
Topic	**1. Number** **2. Using Percentages** **3. Form & Solve Equations**	**4. Straight Line Graphs** **5. Ratio & Proportion** **6. Rates**	**7. Pythagoras** **8. Enlargement & Similarity** **9. Maths & Money**	**10. Constructions & Congruency** **11. Probability**	**12. Trigonometry** **13. 3D Shapes** **14. Rotation & Translation**	**15. Deduction** **16. Algebraic Representation** **17. Testing Conjecture**
Assessment	**Formal Formative Assessment** -Assessment in Week 6 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback	**Summative Assessment** -DC1 Assessment in Week 13 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up)	**Formal Formative Assessment** -Assessment in Week 20 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks	**Formal Formative Assessment** -Assessment in Week 25 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks	**Summative Assessment** -DC2 End of Year Assessment in Week 34 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets

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	-Homework Tasks -Exit Tickets	-Live marking and feedback -Homework Tasks -Exit Tickets	-Exit Tickets	-Exit Tickets	-Homework Tasks -Exit Tickets	

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Year 10 Foundation	Term 1		Term 2		Term 3	
	HT1	HT2	HT3	HT4	HT5	HT6
Key knowledge (NC driven)	• Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations • Interpret and compare numbers in standard form a x 10n 1≤a<10, where n is a positive or negative integer or zero • Calculate with roots, and with integer {and fractional} indices • Calculate with numbers in standard for A x	• Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative • Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare	• Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y, a2 in place of a × a, a3 in place of a × a × a, a2 b in place of a × a × b, a/b in place of a ÷ b, coefficients written as fractions rather than as decimals, brackets • Substitute numerical values into formulae and expressions, including scientific formulae • Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors	• Draw and measure line segments and angles in geometric figures, including interpreting scale drawings • Use the standard conventions for labelling the sides and angles of triangle abc, and know and use the criteria for congruence of triangles • Interpret mathematical relationships both algebraically and geometrically • Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for	• Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders) • Calculate and solve problems involving: perimeters of 2-d shapes (including circles), areas of circles and composite shapes • Apply systematic listing strategies • Record, describe and analyse the frequency of outcomes of simple probability experiments	• Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data • Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs • Use and interpret scatter graphs of bivariate data; recognise correlation and know that it does not indicate causation; draw estimated lines of best fit; make

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10n, where 1≤A<10 and n is an integer ●Understand and use place value for decimals, measures and integers of any size ●Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ ●Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative ●Use a calculator and other technologies to calculate results accurately and then	two quantities using percentages, and work with percentages greater than 100% ●Interpret fractions and percentages as operators ●Understand and use place value for decimals, measures and integers of any size ●Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ ●Work interchangeably with terminating decimals and their corresponding fractions ●Identify and work with fractions in ratio problems	●Simplify and manipulate algebraic expressions to maintain equivalence by: -Collecting like terms -Multiplying a single term over a bracket -Taking out common factors -Expanding products of two or more binomials ●Simplify and manipulate algebraic expressions (including those involving surds {and algebraic fractions}) by: - factorising quadratic expressions of the form x2 + bx + c, including the difference of two squares; {factorising quadratic expressions of the form ax2 + bx + c} - simplifying expressions involving sums, products and	example, equal lengths and angles] using appropriate language and technologies ●Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3D ●Use scale factors, scale diagrams and maps ●Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids ●Interpret and use fractional {and negative} scale factors for enlargement ●Apply the concepts of congruence and similarity, including the relationships	involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale ●Understand that the probabilities of all possible outcomes sum to 1 ●Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams ●Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities ●Apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one	predictions; interpolate and extrapolate apparent trends whilst knowing the dangers of doing so ●Assess the validity of an argument and the accuracy of a given way of presenting information ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical

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interpret them appropriately ●Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property ●Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals ●Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures]	●Use ratio notation, including reduction to simplest form ●Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio ●Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction ●Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions ●Solve problems involving direct and inverse proportion, including graphical and algebraic representations	powers, including the laws of indices ●Recognise and use relationships between operations including inverse operations ●Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) ●Where appropriate, interpret simple expressions as functions with inputs and outputs ●Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ ●Appreciate the infinite nature of the sets of integers, real and rational numbers	between lengths, {areas and volumes} in similar figures ●Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles ●Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons ●Use mathematical language and properties precisely ●Reason deductively in geometry, number and algebra, including using geometrical constructions ●Develop their mathematical knowledge, in part through solving problems and evaluating the	●Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions ●Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers) ●Interpret, analyse and compare the distributions of data sets from univariate empirical	representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem

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	●Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation a<x≤b ●Apply and interpret limits of accuracy when rounding or truncating, {including upper and lower bounds} ●Interpret fractions and percentages as operators ●Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 ●Consolidate their numerical and mathematical capability from key stage 3 and extend their understanding of the number system and place value to include	●Use a calculator and other technologies to calculate results accurately and then interpret them appropriately ●Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes,	●Apply and interpret limits of accuracy when rounding or truncating ●Solve linear inequalities in one {or two} variable{s}, {and quadratic inequalities in one variable}; represent the solution on a number line, {using set notation and on a graph} ●Generate terms of a sequence from either a term-to-term or a position-to-term rule ●Recognise arithmetic sequences and find the nth term ●Recognise geometric sequences and appreciate other sequences that arise ●Recognise and use sequences of triangular, square and cube numbers, simple arithmetic progressions, Fibonacci type	outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the	distributions through: -appropriate graphical representation involving discrete, continuous and grouped data {including box plots} -appropiate measures of central tendency (including modal class) and spread {including quartiles and inter-quartile range} ●Apply statistics to describe a population ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts	

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	powers and roots (and fractional indices) ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical	including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar	sequences, quadratic sequences, and simple geometric progressions ●Deduce expressions to calculate the nth term of linear {and quadratic} sequences ●Work with coordinates in all four quadrants ●Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane ●Interpret mathematical relationships both algebraically and graphically ●Reduce a given linear equation in two variables to the standard form y = mx + c; calculate and interpret gradients and intercepts of	context of the given problem	●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem	

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	representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem	and nonroutine problems; interpret their solution in the context of the given problem	graphs of such linear equations ●Use the form y=mx+c to identify parallel {and perpendicular} lines; find the equation of the line through two given points, or through one point with a given gradient ●Use standard units of mass, length, time, money and other measures, including with decimal quantities ●Draw and measure line segments and angles in geometric figures, including interpreting scale drawings ●Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively			

			and rotationally symmetric ●Change freely between related standard units [for example time, length, area, volume/capacity, mass] ●Extend their ability to identify variables and express relations between variables algebraically and graphically ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of			

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			mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem			
Topic	1. Place Value and Powers 2. Negative Numbers 3. Multiples, Factors & Primes	7. Calculating with Fractions 8. Percentages 9. FDP 10. Ratio & Proportion	12. Simplifying & Substitution 13. Solving Equations 14. Inequalities 15. Sequences	18. Angles 1 19. Properties of Shape 20. Similar & Congruent Shapes 21. Angles 2	22. Area & Perimeter 23. Volume 24. Probability 25. Averages	26. Representing Data

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	4. Order of Operations **5. Rounding & Use of a Calculator** **6. Fractions**	**11. Percentage Change**	**16. Coordinates & Graphs** **17. Measuring & Converting Units**			
Assessment	**Formal Formative Assessment** (based on KS2 NC) -Assessment in Week 6 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Exit Tickets	**Summative Assessment** -DC1 Assessment in Week 13 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Formal Formative Assessment** -Assessment in Week 20 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Formal Formative Assessment** -Assessment in Week 25 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Summative Assessment** -DC2 End of Year Assessment in Weeks 35 & 36 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets

Year 10	**Term 1**		**Term 2**		**Term 3**	
Crossover	**HT1**	**HT2**	**HT3**	**HT4**	**HT5**	**HT6**

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Key knowledge (NC driven)						
	• Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations • Interpret and compare numbers in standard form a x 10n 1≤a<10, where n is a positive or negative integer or zero • Use a calculator and other technologies to calculate results accurately and then interpret them appropriately • {Estimate powers and roots of any given positive number} • Calculate with roots, and with integer indices	• Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% • Interpret fractions and percentages as operators • Understand and use place value for decimals, measures and integers of any size • Order positive and negative integers, decimals and fractions; use the number line as a	• Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y, a2 in place of a × a, a3 in place of a × a × a, a2 b in place of a × a × b, a/b in place of a ÷ b, coefficients written as fractions rather than as decimals, brackets • Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors • Simplify and manipulate algebraic expressions to maintain equivalence by: -Collecting like terms -Multiplying a single term over a bracket -Taking out common factors -Expanding products of two or more binomials	• Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) • Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3D • Calculate surface areas and volumes of spheres, pyramids, cones and composite solids • Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively	• Use scale factors, scale diagrams and maps • Compare lengths, areas and volumes using ratio notation and/or scale factors; make links to similarity • Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids • Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs • Interpret and use fractional scale factors for enlargement	• Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data • Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs • Use and interpret scatter graphs of bivariate data; recognise correlation and know that it does not indicate causation; draw estimated lines of best fit; make predictions; interpolate and extrapolate apparent trends whilst knowing the dangers of doing so • Assess the validity of an argument and the

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• Calculate with numbers in standard for A x 10^n, where $1 \leq A < 10$ and n is an integer • Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property • Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative	model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ • Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative • Work interchangeably with terminating decimals and their corresponding fractions • Identify and work with fractions in ratio problems • Use scale factors, scale diagrams and maps • Use ratio notation, including reduction to simplest form • Divide a given quantity into two parts in a given	• Simplify and manipulate algebraic expressions (including those involving surds {and algebraic fractions}) by: - factorising quadratic expressions of the form x2 + bx + c, including the difference of two squares; {factorising quadratic expressions of the form ax2 + bx + c} - simplifying expressions involving sums, products and powers, including the laws of indices • Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) • Where appropriate, interpret simple expressions as	and rotationally symmetric • Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles • Understand and use the relationship between parallel lines and alternate and corresponding angles • Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons • Interpret mathematical relationships both algebraically and geometrically • Use mathematical language and properties precisely • Reason deductively in geometry, number and algebra,	• Apply the concepts of congruence and similarity, including the relationships between lengths, in similar figures • Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles • Interpret mathematical relationships both algebraically and geometrically • Apply Pythagoras' Theorem and trigonometric ratios to find angles and lengths in right-angled triangles in two dimensional figures • Apply systematic listing strategies • Record, describe and analyse the frequency of outcomes of simple	accuracy of a given way of presenting information • Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems • Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts • Make and use connections between different parts of mathematics to solve problems • Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions • Select appropriate concepts, methods and

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●Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals ●Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] ●Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation a<x≤b ●Apply and interpret limits of accuracy when rounding or truncating ●Interpret fractions and percentages as operators ●Express one quantity as a	part:part or part:whole ratio; express the division of a quantity into two parts as a ratio ●Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction ●Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions ●Solve problems involving direct and inverse proportion, including graphical and algebraic representations ●Understand that X is inversely proportional to X is equivalent to X is proportional to 1/Y; interpret	functions with inputs and outputs ●Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ ●Appreciate the infinite nature of the sets of integers, real and rational numbers ●Apply and interpret limits of accuracy when rounding or truncating ●Solve linear inequalities in one variable, represent the solution on a number line, {using set notation} ●Generate terms of a sequence from either a term-to-term or a position-to-term rule	including using geometrical constructions ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected	probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale ●Understand that the probabilities of all possible outcomes sum to 1 ●Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams ●Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities ●Apply the property that the probabilities of an exhaustive set	techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem

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fraction of another, where the fraction is less than 1 and greater than 1 ●Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative ●Consolidate their numerical and mathematical capability from key stage 3 and extend their understanding of the number system and place value to include powers and roots ●Select and use appropriate calculation strategies to solve increasingly complex problems, including exact calculations	equations that describe direct and inverse proportion ●Use a calculator and other technologies to calculate results accurately and then interpret them appropriately ●Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics ●Set up, solve and interpret the answers in growth and decay problems, including compound interest ●Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of a × b, 3y in	●Recognise arithmetic sequences and find the nth term ●Recognise geometric sequences and appreciate other sequences that arise ●Recognise and use sequences of triangular, square and cube numbers, simple arithmetic progressions, Fibonacci type sequences, quadratic sequences, and simple geometric progressions ●Deduce expressions to calculate the nth term of linear sequences ●Substitute numerical values into formulae and expressions, including scientific formulae ●Model situations or procedures by translating them into algebraic expressions or	by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem	of mutually exclusive events sum to one ●Use a probability model to predict the outcomes of future experiments; understand that empirical unbiased samples tend towards theoretical probability distributions, with increasing sample size ●Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions ●{Calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams and Venn diagrams}

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	involving multiples of π (and surds), use of standard form and application and interpretation of limits of accuracy ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and	place of y + y + y and 3 × y, a2 in place of a × a, a3 in place of a × a × a, a2 b in place of a × a × b, a/b in place of a ÷ b, coefficients written as fractions rather than as decimals, brackets ●Substitute numerical values into formulae and expressions, including scientific formulae ●Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors ●Simplify and manipulate algebraic expressions to maintain equivalence by: -Collecting like terms	formulae and by using graphs ●Work with coordinates in all four quadrants ●Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane ●Interpret mathematical relationships both algebraically and graphically ●Reduce a given linear equation in two variables to the standard form y = mx + c; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically ●Use the form y=mx+c to identify		●Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers) ●Infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling ●Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through:	

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| | express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions
●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem | -Multiplying a single term over a bracket
-Taking out common factors
-Expanding products of two or more binomials
●Understand and use standard mathematical formulae; rearrange formulae to change the subject
●Simplify and manipulate algebraic expressions (including those involving surds {and algebraic fractions}) by:
- factorising quadratic expressions of the form x2 + bx + c, including the difference of two squares; {factorising quadratic | parallel {and perpendicular} lines; find the equation of the line through two given points, or through one point with a given gradient
●Calculate and solve problems involving: perimeters of 2-d shapes (including circles), areas of circles and composite shapes
●Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies
●Identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference, | | -appropriate graphical representation involving discrete, continuous and grouped data
-appropiate measures of central tendency (including modal class) and spread {including quartiles and inter-quartile range}
●Apply statistics to describe a population
●Extend and formalise their knowledge of ratio and proportion, including trigonometric ratios, in working with measures and geometry, and in working with proportional relations algebraically and graphically
●Make and test conjectures about the generalisations that underlie | |

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		expressions of the form ax2 + bx + c} - simplifying expressions involving sums, products and powers, including the laws of indices ●Know the difference between an equation and an identity; argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ●Develop their mathematical knowledge, in part through solving problems and	tangent, arc, sector and segment ●Calculate arc lengths, angles and areas of sectors of circles ●Extend their ability to identify variables and express relations between variables algebraically and graphically ●Select and use appropriate calculation strategies to solve increasingly complex problems, including exact calculations involving multiples of π ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve		patterns and relationships; look for proofs or counter-examples; begin to use algebra to support and construct arguments (and proofs) ●Reason deductively in geometry, number and algebra, including using geometrical constructions ●Explore what can and cannot be inferred in statistical and probabilistic settings, and express their arguments formally ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve	

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		evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods	problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem		problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem	

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		and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem				
Topic	1. Indices & Standard Form 2. Product of Prime Factors, HCF & LCM 3. Order of Operations 4. Rounding & Use of a Calculator 5. Fractions 6. Calculating with Fractions	7. Percentages 8. FDP 9. Ratio 10. Proportion 11. Percentage Change 12. Simplifying & Substitution	13. Expanding & Factorising 14. Solving Equations 15. Inequalities 16. Sequences 17. Equation of a Straight Line 18. Area & Circles	19. Surface Area 20. Volume 21. Angles 1 22. Angles 2	23. Similar & Congruent Shapes 24. Pythagoras 25. Trigonometry 26. Probability 27. Averages	28. Representing Data
Assessment	**Formal Formative Assessment** (based on KS2 NC) -Assessment in Week 6	**Summative Assessment** -DC1 Assessment in Week 13	**Formal Formative Assessment** -Assessment in Week 20	**Formal Formative Assessment** -Assessment in Week 25	**Summative Assessment** -DC2 End of Year Assessment in Weeks 35 & 36	**Informal Formative Assessment** -Use of whiteboards during lessons

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Informal Formative Assessment -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Exit Tickets	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	-Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets

Year 10	Term 1		Term 2		Term 3	
Higher	HT1	HT2	HT3	HT4	HT5	HT6

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Key knowledge (NC driven)						
	•Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property •Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative •Define percentage as 'number of parts per hundred', interpret percentages and percentage	•Use scale factors, scale diagrams and maps •Use ratio notation, including reduction to simplest form •Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio •Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction •Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions •Solve problems involving direct and inverse proportion,	•Substitute numerical values into formulae and expressions, including scientific formulae •Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs •Work with coordinates in all four quadrants •Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane •Interpret mathematical relationships both algebraically and graphically •Reduce a given linear equation in two variables to the standard form y =	•Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs •Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles •Interpret mathematical relationships both algebraically and geometrically •Apply Pythagoras' Theorem and trigonometric ratios to find angles and lengths in right-angled triangles {and where possible, general	•Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons •Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids •Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs •Interpret and use fractional {and negative} scale factors for enlargement	•{Construct and interpret diagrams for grouped discrete data and continuous data ie histograms with equal and unequal class intervals and cumulative frequency graphs, and know their appropriate use} •Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through: -appropriate graphical representation involving discrete, continuous and grouped data {including box plots} -appropiate measures of central tendency (including modal class) and spread {including quartiles and inter-quartile range} •Apply statistics to describe a population •Develop their mathematical knowledge, in part through solving problems and evaluating

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changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% ●Interpret fractions and percentages as operators ●Use a calculator and other technologies to calculate results accurately and then interpret them appropriately ●Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in	including graphical and algebraic representations ●Understand that X is inversely proportional to X is equivalent to X is proportional to 1/Y; {construct and} interpret equations that describe direct and inverse proportion ●Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100%	mx + c; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically ●Use the form y=mx+c to identify parallel {and perpendicular} lines; find the equation of the line through two given points, or through one point with a given gradient ●Solve linear inequalities in one {or two} variable{s}, {and quadratic inequalities in one variable}; represent the solution on a number line, {using set notation and on a graph} ●Find approximate solutions to contextual problems from given graphs of a variety of functions, including	triangles} in two {and three} dimensional figures ●Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders) ●Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3D ●Calculate surface areas and volumes of spheres, pyramids, cones and composite solids ●Calculate surface areas and volumes of spheres, pyramids, cones and composite solids	●Apply the concepts of congruence and similarity, including the relationships between lengths, {areas and volumes} in similar figures ●Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles ●Apply Pythagoras' Theorem and trigonometric ratios to find angles and lengths in right-angled triangles {and where possible, general triangles} in two {and three} dimensional figures ●Know the exact values of sinθ and cosθ for θ = 0o, 30o, 45o, 60o and 90o; know the exact value for tanθ for θ = 0o, 30o, 45o and 60o	the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem

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financial mathematics ● Set up, solve and interpret the answers in growth and decay problems, including compound interest {and work with general iterative processes} ● Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations ● Interpret and compare numbers in standard form a x 10n 1≤a<10, where n is a positive or negative integer or zero ● {Estimate powers and roots of any	● Interpret fractions and percentages as operators ● Identify and work with fractions in ratio problems ● Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 ● Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics ● Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y, a2 in place of a × a, a3 in place of a × a × a, a2 b in place of a × a × b, a/b in place	piece-wise linear, exponential and reciprocal graphs ● Identify and interpret roots, intercepts and turning points of quadratic functions graphically; deduce roots algebraically ● Recognise, sketch and produce graphs of linear and quadratic functions, simple cubic functions, the reciprocal function y=1/x with x≠0 ● Simplify and manipulate algebraic expressions (including those involving surds {and algebraic fractions}) by: - factorising quadratic expressions of the form x2 + bx + c, including the difference of two squares; {factorising quadratic	● Understand and use the relationship between parallel lines and alternate and corresponding angles ● Use mathematical language and properties precisely ● Make and test conjectures about the generalisations that underlie patterns and relationships; look for proofs or counter-examples; begin to use algebra to support and construct arguments (and proofs) ● Reason deductively in geometry, number and algebra, including using geometrical constructions ● Develop their mathematical knowledge, in part through solving problems and evaluating the	● Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale ● Understand that the probabilities of all possible outcomes sum to 1 ● Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams ● Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities	

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given positive number} ●Calculate with roots, and with integer {and fractional} indices ●Calculate with numbers in standard for A x 10n, where 1≤A<10 and n is an integer ●Calculate exactly with fractions {surds} and multiples of π; {simplify surd expressions involving squares [for example √12 = √(4 x 3) = √4 x √3 = 2√3] and rationalise denominators} ●{change recurring decimals into their corresponding fractions and vice versa} ●Consolidate their numerical and mathematical capability from key stage 3 and extend	of a ÷ b, coefficients written as fractions rather than as decimals, brackets ●Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors ●Understand and use standard mathematical formulae; rearrange formulae to change the subject ●Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) ●Where appropriate, interpret simple expressions as functions with inputs and outputs	expressions of the form ax2 + bx + c} - simplifying expressions involving sums, products and powers, including the laws of indices ●Solve quadratic equations {including those that require rearrangement} algebraically by factorising, {by completing the square and by using the quadratic formula}; find approximate solutions using a graph ●Generate terms of a sequence from either a term-to-term or a position-to-term rule ●Recognise arithmetic sequences and find the nth term ●Recognise geometric sequences and appreciate other sequences that arise	outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the	●Apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one ●Use a probability model to predict the outcomes of future experiments; understand that empirical unbiased samples tend towards theoretical probability distributions, with increasing sample size ●Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions ●{Calculate and interpret conditional probabilities through representation using expected frequencies with	

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their understanding of the number system and place value to include powers and roots (and fractional indices) ●Select and use appropriate calculation strategies to solve increasingly complex problems, including exact calculations involving multiples of π (and surds), use of standard form and application and interpretation of limits of accuracy ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ●Develop their mathematical knowledge, in part through solving	●Translate simple situations or procedures into algebraic expressions or formulae; derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution ●Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations ●Solve two simultaneous eqations in two variables (linear/linear {or linear/quadratic}) algebraically; find approximate solutions using a graph	●Recognise and use sequences of triangular, square and cube numbers, simple arithmetic progressions, Fibonacci type sequences, quadratic sequences, and simple geometric progressions (rn where n is an integer, and r is a positive rational number {or a surd}) {and other sequences} ●Deduce expressions to calculate the nth term of linear {and quadratic} sequences ●Calculate and solve problems involving: perimeters of 2-d shapes (including circles), areas of circles and composite shapes ●Identify and apply circle definitions and properties, including: centre,	context of the given problem	two-way tables, tree diagrams and Venn diagrams} ●Use mathematical language and properties precisely ●Extend and formalise their knowledge of ratio and proportion, including trigonometric ratios, in working with measures and geometry, and in working with proportional relations algebraically and graphically ●Reason deductively in geometry, number and algebra, including using geometrical constructions ●Explore what can and cannot be inferred in statistical and probabilistic settings, and express their arguments formally	

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problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions	●Simplify and manipulate algebraic expressions to maintain equivalence by: -Collecting like terms -Multiplying a single term over a bracket -Taking out common factors -Expanding products of two or more binomials ●Simplify and manipulate algebraic expressions (including those involving surds {and algebraic fractions}) by: -factorising quadratic expressions of the form x2 + bx + c, including the difference of two squares; {factorising quadratic	radius, chord, diameter, circumference, tangent, arc, sector and segment ●Calculate arc lengths, angles and areas of sectors of circles ●Move freely between different numerical, algebraic, graphical and diagrammatic representations, including of linear, quadratic, reciprocal, (exponential and trigonometric) functions ●Consolidate their algebraic capability from key stage 3, to include quadratic equations, simultaneous equations and inequalities ●Develop their mathematical knowledge, in part through solving problems and		●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods	

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	●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem	expressions of the form ax2 + bx + c} - simplifying expressions involving sums, products and powers, including the laws of indices ●Extend their ability to identify variables and express relations between variables algebraically and graphically ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems	evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the		and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem	

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		• Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts • Make and use connections between different parts of mathematics to solve problems • Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions • Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their	context of the given problem			

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		solution in the context of the given problem				
Topic	1. Product of Prime Factors, HCF & LCM 2. Calculating with Fractions 3. Percentage Change 4. Indices & Standard Form 5. Surds 6. Recurring Decimals	7. Ratio 8. Proportion 9. Fractions, Percentages & Ratio 10. Solving Equations & Rearranging 11. Simultaneous Equations 12. Expanding & Factorising	13. Equation of a Straight Line 14. Inequalities & Regions 15. Non-Linear Graphs 16. Solving Quadratic Equations 17. Linear & Quadratic Sequences 18. Circles & Sectors	19. Pythagoras 20. Surface Area & Volume 21. Angles 1	22. Angles 2 23. Similar & Congruent Shapes 24. Exact Trig Values & Trigonometry 25. Probability	26. Box Plots & Cumulative Frequency 27. Histograms
Assessment	**Formal Formative Assessment** (based on KS2 NC) -Assessment in Week 6 **Informal Formative Assessment**	**Summative Assessment** -DC1 Assessment in Week 13 **Informal Formative Assessment**	**Formal Formative Assessment** -Assessment in Week 20 **Informal Formative Assessment**	**Formal Formative Assessment** -Assessment in Week 25 **Informal Formative Assessment**	**Summative Assessment** -DC2 End of Year Assessment in Weeks 35 & 36 **Informal Formative Assessment**	**Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up)

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-Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Exit Tickets	-Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	-Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	-Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	-Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	-Live marking and feedback -Homework Tasks -Exit Tickets

Year 11	Term 1		Term 2		Term 3	
Foundation	HT1	HT2	HT3	HT4	HT5	HT6

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| Key knowledge (NC driven) | • Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property
• Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations
• Calculate with roots, and with integer {and fractional} indices | • Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y, a2 in place of a × a, a3 in place of a × a × a, a2 b in place of a × a × b, a/b in place of a ÷ b, coefficients written as fractions rather than as decimals, brackets
• Substitute numerical values into formulae and expressions, including scientific formulae
• Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors
• Simplify and manipulate algebraic expressions to | • Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative
• Use standard units of mass, length, time, money and other measures, including with decimal quantities
• Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures]
• Use a calculator and other technologies to calculate results accurately and then interpret them appropriately
• Model situations or procedures by translating them into | • Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale
• Understand that the probabilities of all possible outcomes sum to 1
• Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams
• Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities | | |

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	●Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 ●Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative ●Interpret fractions and percentages as operators ●Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express	maintain equivalence by: -Collecting like terms -Multiplying a single term over a bracket -Taking out common factors -Expanding products of two or more binomials ●Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs ●Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) ●Work with coordinates in all four quadrants ●Recognise, sketch and produce graphs of linear and quadratic	algebraic expressions or formulae and by using graphs ●Interpret mathematical relationships both algebraically and graphically ●Plot and interpret graphs (including reciprocal graphs {and exponential graphs}) and graphs of non-standard functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration ●Translate simple situations or procedures into algebraic expressions or formulae; derive an equation (or two simultaneous equations), solve the	●Apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one ●Use a probability model to predict the outcomes of future experiments; understand that empirical unbiased samples tend towards theoretical probability distributions, with increasing sample size ●Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions ●Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar		

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	•Use a calculator and other technologies to calculate results accurately and then interpret them appropriately •Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics •Understand and use place value for decimals, measures and integers of any size •Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥	functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane •Interpret mathematical relationships both algebraically and graphically •Reduce a given linear equation in two variables to the standard form y = mx + c; calculate and interpret gradients and intercepts of graphs of such linear equations •Simplify and manipulate algebraic expressions by: - simplifying expressions involving sums, products and powers, including the laws of indices	equation(s) and interpret the solution •Draw and measure line segments and angles in geometric figures, including interpreting scale drawings •Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures •Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles •Understand and use the relationship between parallel lines and alternate and corresponding angles •Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon,	charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data •Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs •Interpret and construct tables and line graphs for time series data •Infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling •Use and interpret scatter graphs of bivariate data; recognise correlation		

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	●Work interchangeably with terminating decimals and their corresponding fractions ●Identify and work with fractions in ratio problems ●Use ratio notation, including reduction to simplest form ●Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio ●Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction ●Relate the language of ratios and the associated calculations to the arithmetic of	●Where appropriate, interpret simple expressions as functions with inputs and outputs ●Use the form y=mx+c to identify parallel {and perpendicular} lines; find the equation of the line through two given points, or through one point with a given gradient ●Extend their ability to identify variables and express relations between variables algebraically and graphically ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including	and to derive properties of regular polygons ●Construct and interpret plans and elevations of 3D shapes ●Move freely between different numerical, algebraic, graphical and diagrammatic representations, including of linear, quadratic, reciprocal, (exponential and trigonometric) functions ●Use mathematical language and properties precisely ●Reason deductively in geometry, number and algebra, including using geometrical constructions ●Develop their mathematical knowledge, in part through solving problems and evaluating the	and know that it does not indicate causation; draw estimated lines of best fit; make predictions; interpolate and extrapolate apparent trends whilst knowing the dangers of doing so ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and		

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	fractions and to linear functions ●Solve problems involving direct and inverse proportion, including graphical and algebraic representations ●Consolidate their numerical and mathematical capability from key stage 3 and extend their understanding of the number system and place value to include powers and roots (and fractional indices) ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ●Develop their mathematical knowledge, in part through solving problems and evaluating the	multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine	outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the	express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem		

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	outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to	problems; interpret their solution in the context of the given problem	context of the given problem			

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	apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem					
Topic	1. Types of Number 2. Fractions 3. Calculating with Fractions 4. Percentages 5. FDP 6. Ratio & Proportion	7. Simplifying & Substitution 8. Expanding & Factorising 9. Solving Equations 10. Linear Graphs	11. Money & Time 12. Angles 13. Plans & Elevations 14. Symmetry 15. Transformations 16. Real Life Graphs	17. Probability 18. Representing Data		
Assessment	**Summative Assessment** -Mock Exams in Weeks 10 & 11 **Informal Formative Assessment** -Use of whiteboards during lessons	**Summative Assessment** -Mock Exams in Weeks 10 & 11 **Informal Formative Assessment** -Use of whiteboards during lessons	**Summative Assessment** -Mock Exams in Weeks 22 & 23 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up)	**Summative Assessment** -Mock Exams in Weeks 22 & 23 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up)		

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	-Targeted questioning (no hands up) -Live marking and feedback -Exit Tickets	-Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	-Live marking and feedback -Homework Tasks -Exit Tickets	-Live marking and feedback -Homework Tasks -Exit Tickets		

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Year 11	Term 1		Term 2		Term 3	
Crossover	**HT1**	**HT2**	**HT3**	**HT4**	**HT5**	**HT6**
Key knowledge (NC driven)	●Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ ●Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative ●Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their	●Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y, a2 in place of a × a, a3 in place of a × a × a, a2 b in place of a × a × b, a/b in place of a ÷ b, coefficients written as fractions rather than as decimals, brackets ●Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors ●Understand and use standard mathematical formulae; rearrange formulae to change the subject	●Change freely between related standard units [for example time, length, area, volume/capacity, mass] ●Use compound units such as speed, unit pricing and density to solve problems ●Convert between related compound units (speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts ●Draw and measure line segments and angles in geometric figures, including interpreting scale drawings ●Derive and use the standard ruler and compass constructions (perpendicular bisector of a line	●Understand that the probabilities of all possible outcomes sum to 1 ●Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams ●Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities ●Apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one ●Use a probability model to predict the outcomes of future experiments; understand that empirical unbiased		

decimal approximations ●Interpret and compare numbers in standard form a x 10n 1≤a<10, where n is a positive or negative integer or zero ●Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% ●Interpret fractions and percentages as operators	●Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs ●Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) ●Interpret mathematical relationships both algebraically and graphically ●Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations ●Find approximate solutions to contextual problems from	segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line ●Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures ●Understand and use the relationship between parallel lines and alternate and corresponding angles ●Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving	samples tend towards theoretical probability distributions, with increasing sample size ●Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions ●{Calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams and Venn diagrams} ●Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for		

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	●Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] ●Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation a<x≤b ●Use a calculator and other technologies to calculate results accurately and then interpret them appropriately ●Calculate with roots, and with integer {and fractional} indices ●Calculate with numbers in standard for A x 10n, where 1≤A<10 and n is an integer	given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs ●Simplify and manipulate algebraic expressions (including those involving surds {and algebraic fractions}) by: - factorising quadratic expressions of the form x2 + bx + c, including the difference of two squares; {factorising quadratic expressions of the form ax2 + bx + c} - simplifying expressions involving sums, products and powers, including the laws of indices rearrangement)	right-angled triangles ●Interpret and use fractional {and negative} scale factors for enlargement ●{Describe the changes and invariance achieved by combinations of rotations, reflections and translations} ●Construct and interpret plans and elevations of 3D shapes ●Interpret and use bearings ●Apply Pythagoras' Theorem and trigonometric ratios to find angles and lengths in right-angled triangles {and where possible, general triangles} in two {and three} dimensional figures ●Know the exact values of sinθ and cosθ for θ = 0o, 30o,	categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data ●Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs ●Infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling ●Use and interpret scatter graphs of bivariate data; recognise correlation and know that it does not indicate causation; draw estimated lines of best fit; make predictions;		

	• Identify and work with fractions in ratio problems • Apply and interpret limits of accuracy when rounding or truncating, {including upper and lower bounds} • Use scale factors, scale diagrams and maps • Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1 • Use ratio notation, including reduction to simplest form • Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio • Understand that a multiplicative relationship between two	• Where appropriate, interpret simple expressions as functions with inputs and outputs • Identify and interpret roots, intercepts and turning points of quadratic functions graphically; deduce roots algebraically {and turning points by completing the square} • Recognise, sketch and produce graphs of linear and quadratic functions, simple cubic functions, the reciprocal function y=1/x with x≠0 • Plot and interpret graphs (including reciprocal graphs {and exponential graphs}) and graphs of	45o, 60o and 90o; know the exact value for tanθ for θ = 0o, 30o, 45o and 60o • Describe translations as 2D vectors • Apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors; {use vectors to construct geometric arguments and proofs} • Extend and formalise their knowledge of ratio and proportion, including trigonometric ratios, in working with measures and geometry, and in working with proportional relations algebraically and graphically	interpolate and extrapolate apparent trends whilst knowing the dangers of doing so • Explore what can and cannot be inferred in statistical and probabilistic settings, and express their arguments formally • Assess the validity of an argument and the accuracy of a given way of presenting information • Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems • Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts • Make and use connections		

| quantities can be expressed as a ratio or a fraction
• Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions
• Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics
• Solve problems involving direct and inverse proportion, including graphical and algebraic representations
• Understand that X is inversely proportional to X is equivalent to X is proportional to 1/Y; {construct and} | non-standard functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration
• Solve quadratic equations {including those that require rearrangement} algebraically by factorising, {by completing the square and by using the quadratic formula}; find approximate solutions using a graph
• Solve two simultaneous eqations in two variables (linear/linear {or linear/quadratic}) algebraically; find approximate | • Make and test conjectures about the generalisations that underlie patterns and relationships; look for proofs or counter-examples; begin to use algebra to support and construct arguments (and proofs)
• Reason deductively in geometry, number and algebra, including using geometrical constructions
• Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems
• Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts | between different parts of mathematics to solve problems
• Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions
• Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem | | |

interpret equations that describe direct and inverse proportion ●Set up, solve and interpret the answers in growth and decay problems, including compound interest {and work with general iterative processes} ●Consolidate their numerical and mathematical capability from key stage 3 and extend their understanding of the number system and place value to include powers and roots (and fractional indices) ●Select and use appropriate calculation strategies to solve increasingly complex problems, including exact calculations	solutions using a graph ●Translate simple situations or procedures into algebraic expressions or formulae; derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution ●Consolidate their algebraic capability from key stage 3, to include quadratic equations, simultaneous equations and inequalities ●Move freely between different numerical, algebraic, graphical and diagrammatic representations, including of linear, quadratic, reciprocal, (exponential and	●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem

	involving multiples of π (and surds), use of standard form and application and interpretation of limits of accuracy ●Extend their ability to identify variables and express relations between variables algebraically and graphically ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ● ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems	trigonometric) functions ●Extend their ability to identify variables and express relations between variables algebraically and graphically ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems				

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	●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the	●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem			

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	context of the given problem					
Topic	**1. Bounds & Error Intervals** **2. Calculating with Standard Form** **3. Calculating with Fractions** **4. Percentages** **5. Ratio** **6. Proportion** **7. Percentages, Fractions & Ratio**	**8. Solving Equations & Rearranging** **9. Simultaneous Equations** **10. Non-Linear Graphs** **11. Solving Quadratic Equations**	**12. Compound Measures** **13. Constructions & Loci** **14. Bearings** **15. Plans & Elevations** **16. Transformations** **17. Vectors** **18. Exact Trig Values & Trigonometry**	**19. Probability** **20. Representing Data**		
Assessment	**Summative Assessment** -Mock Exams in Weeks 10 & 11 **Informal Formative Assessment** -Use of whiteboards during lessons	**Summative Assessment** -Mock Exams in Weeks 10 & 11 **Informal Formative Assessment** -Use of whiteboards during lessons	**Summative Assessment** -Mock Exams in Weeks 22 & 23 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up)	**Summative Assessment** -Mock Exams in Weeks 22 & 23 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up)		

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	-Targeted questioning (no hands up) -Live marking and feedback -Exit Tickets	-Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	-Live marking and feedback -Homework Tasks -Exit Tickets	-Live marking and feedback -Homework Tasks -Exit Tickets		

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Year 11 Higher B	Term 1		Term 2		Term 3	
	HT1	**HT2**	**HT3**	**HT4**	**HT5**	**HT6**
Key knowledge (NC driven)	•Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ •Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative •Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] •Use approximation through rounding	•Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations •Simplify and manipulate algebraic expressions (including those involving surds {and algebraic fractions}) by: - factorising quadratic expressions of the form x2 + bx + c, including the difference of two squares; {factorising quadratic expressions of the form ax2 + bx + c}	•Change freely between related standard units [for example time, length, area, volume/capacity, mass] •Use compound units such as speed, unit pricing and density to solve problems •Convert between related compound units (speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts •Draw and measure line segments and angles in geometric figures, including interpreting scale drawings •Derive and use the standard ruler and compass constructions (perpendicular bisector of a line	•Understand that the probabilities of all possible outcomes sum to 1 •Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams •Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities •Apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one •Use a probability model to predict the outcomes of future experiments; understand that empirical unbiased		

	to estimate answers and calculate possible resulting errors expressed using inequality notation a<x≤b ●Apply systematic listing strategies {including use of the product rule for counting} ●Apply and interpret limits of accuracy when rounding or truncating, {including upper and lower bounds} ●Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y, a2 in place of a × a, a3 in place of a × a × a, a2 b in place of a × a × b, a/b in place of a ÷ b, coefficients written as fractions rather than as decimals, brackets	- simplifying expressions involving sums, products and powers, including the laws of indices ●Identify and interpret roots, intercepts and turning points of quadratic functions graphically; deduce roots algebraically {and turning points by completing the square} ●Solve quadratic equations {including those that require rearrangement} algebraically by factorising, {by completing the square and by using the quadratic formula}; find approximate solutions using a graph	segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line ●Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures ●Understand and use the relationship between parallel lines and alternate and corresponding angles ●Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides,	samples tend towards theoretical probability distributions, with increasing sample size ●Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions ●{Calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams and Venn diagrams} ●Explore what can and cannot be inferred in statistical and probabilistic settings, and express their arguments formally		

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•Simplify and manipulate algebraic expressions to maintain equivalence by: -Collecting like terms -Multiplying a single term over a bracket -Taking out common factors -Expanding products of two or more binomials •Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) •Simplify and manipulate algebraic expressions (including those involving surds {and algebraic fractions}) by: - factorising quadratic	•Solve two simultaneous eqations in two variables (linear/linear {or linear/quadratic}) algebraically; find approximate solutions using a graph •Translate simple situations or procedures into algebraic expressions or formulae; derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution •Identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference, tangent, arc, sector and segment •{Apply and prove standard circle	including Pythagoras' Theorem, and use known results to obtain simple proofs •Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles •Interpret mathematical relationships both algebraically and geometrically •Interpret and use fractional {and negative} scale factors for enlargement •{Describe the changes and invariance achieved by combinations of rotations, reflections and translations} •Interpret and use bearings •Apply Pythagoras' Theorem and	•Assess the validity of an argument and the accuracy of a given way of presenting information •Infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling •{Construct and interpret diagrams for grouped discrete data and continuous data ie histograms with equal and unequal class intervals and cumulative frequency graphs, and know their appropriate use} •Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through: •-appropriate graphical		

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	expressions of the form x2 + bx + c, including the difference of two squares; {factorising quadratic expressions of the form ax2 + bx + c} - simplifying expressions involving sums, products and powers, including the laws of indices ●Know the difference between an equation and an identity; argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments {and proofs} ●Where appropriate, interpret simple expressions as functions with inputs and outputs; {interpret the	theorems concerning angles, radii, tangents and chords, and use them to prove related results} ●Consolidate their algebraic capability from key stage 3, to include quadratic equations, simultaneous equations and inequalities ●Move freely between different numerical, algebraic, graphical and diagrammatic representations, including of linear, quadratic, reciprocal, (exponential and trigonometric) functions ●Extend their ability to identify variables and express relations between variables	trigonometric ratios to find angles and lengths in right-angled triangles {and where possible, general triangles} in two {and three} dimensional figures ●{Know and apply the sine rule, a/sinA = b/sinB = c/sinC and cosine rule, a2 = b2 + c2 - 2bc cosA, to find unknown lengths and angles} ●{Know and apply Area = 1/2ab sinC to calculate the area, sides or angles of any triangle} ●Describe translations as 2D vectors ●Apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors; {use vectors to construct	representation involving discrete, continuous and grouped data {including box plots} ●-appropiate measures of central tendency (including modal class) and spread {including quartiles and inter-quartile range} ●Apply statistics to describe a population ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of		

	reverse process as the 'inverse function'; interpret the succession of two functions as a 'composite function'} ●{Find approximate solutions to equations numerically using iteration} ●Solve problems involving direct and inverse proportion, including graphical and algebraic representations ●Understand that X is inversely proportional to X is equivalent to X is proportional to 1/Y; {construct and} interpret equations that describe direct and inverse proportion ●Move freely between different numerical, algebraic, graphical and diagrammatic	algebraically and graphically ●Make and test conjectures about the generalisations that underlie patterns and relationships; look for proofs or counter-examples; begin to use algebra to support and construct arguments (and proofs) ●Reason deductively in geometry, number and algebra, including using geometrical constructions ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems	geometric arguments and proofs} ●Extend and formalise their knowledge of ratio and proportion, including trigonometric ratios, in working with measures and geometry, and in working with proportional ●Make and test conjectures about the generalisations that underlie patterns and relationships; look for proofs or counter-examples; begin to use algebra to support and construct arguments (and proofs) ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems	mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem		

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	representations, including of linear, quadratic, reciprocal, (exponential and trigonometric) functions ● Extend and formalise their knowledge of ratio and proportion, including trigonometric ratios, in working with measures and geometry, and in working with proportional relations algebraically and graphically ● Make and test conjectures about the generalisations that underlie patterns and relationships; look for proofs or counter-examples; begin to use algebra to support and construct	● Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ● Make and use connections between different parts of mathematics to solve problems ● Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ● Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their	● Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ● Make and use connections between different parts of mathematics to solve problems ● Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ● Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem			

	arguments (and proofs) ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems	solution in the context of the given problem			

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	• Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions • Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem					
Topic	**1. Bounds & Error Intervals** **2. Iteration** **3. Algebraic Fractions** **4. Proof**	**8. Simultaneous Equations** **9. Solving Quadratic Equations** **10. Circles Theorems**	**11. Compound Measures** **12. Constructions & Loci** **13. Bearings** **14. Transformations** **15. Vectors**	**18. Probability** **19. Representing Data**		

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	5. Product Rule for Counting **6. Direct/Inverse Proportion** **7. Functions**		**16. Sine/Cosine Rule** **17. 3D Pythagoras & Trigonometry**			
Assessment	**Summative Assessment** -Mock Exams in Weeks 10 & 11 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Exit Tickets	**Summative Assessment** -Mock Exams in Weeks 10 & 11 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Summative Assessment** -Mock Exams in Weeks 22 & 23 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Summative Assessment** -Mock Exams in Weeks 22 & 23 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets		

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Year 11 Higher A	Term 1		Term 2		Term 3	
	HT1	HT2	HT3	HT4	HT5	HT6
Key knowledge (NC driven)	●Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ ●Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative ●Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] ●Use approximation through rounding	●Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations ●Identify and interpret roots, intercepts and turning points of quadratic functions graphically; deduce roots algebraically {and turning points by completing the square} ●{Recognise and use the equation of a circle with centre at the origin; find the equation of a tangent to a circle at a given point}	●Change freely between related standard units [for example time, length, area, volume/capacity, mass] ●Use compound units such as speed, unit pricing and density to solve problems ●Convert between related compound units (speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts ●Draw and measure line segments and angles in geometric figures, including interpreting scale drawings ●Derive and use the standard ruler and compass constructions (perpendicular bisector of a line	●Recognise, sketch and produce graphs of linear and quadratic functions, simple cubic functions, the reciprocal function y=1/x with x≠0, {the exponential function y=kx for positive values of k, and the trigonometric functions (with arguments in degrees) y=sinx, y=cosx and y=tanx for angles of any size) ●{Sketch translations and reflections of the graph of a given function} ●{Calculate or estimate gradients of graphs and areas under graphs (including quadratic and other non-linear graphs), and interpret results in		

	to estimate answers and calculate possible resulting errors expressed using inequality notation a<x≤b ● Apply systematic listing strategies {including use of the product rule for counting} ● Apply and interpret limits of accuracy when rounding or truncating, {including upper and lower bounds} ● Use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y, a2 in place of a × a, a3 in place of a × a × a, a2 b in place of a × a × b, a/b in place of a ÷ b, coefficients written as fractions rather than as decimals, brackets	● Solve quadratic equations {including those that require rearrangement} algebraically by factorising, {by completing the square and by using the quadratic formula}; find approximate solutions using a graph ● Solve two simultaneous eqations in two variables (linear/linear {or linear/quadratic}) algebraically; find approximate solutions using a graph ● Translate simple situations or procedures into algebraic expressions or formulae; derive an equation (or two simultaneous equations), solve	segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line ● Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures ● Understand and use the relationship between parallel lines and alternate and corresponding angles ● Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides,	cases such as distance-time graphs, velocity-time graphs and graphs in financial contexts} ● Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ● Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ● Make and use connections between different parts of mathematics to solve problems ● Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may		

	• Simplify and manipulate algebraic expressions to maintain equivalence by: -Collecting like terms -Multiplying a single term over a bracket -Taking out common factors -Expanding products of two or more binomials • Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement) • Simplify and manipulate algebraic expressions (including those involving surds {and algebraic fractions}) by: - factorising quadratic	the equation(s) and interpret the solution • Identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference, tangent, arc, sector and segment • {Apply and prove standard circle theorems concerning angles, radii, tangents and chords, and use them to prove related results} • Consolidate their algebraic capability from key stage 3, to include quadratic equations, simultaneous equations and inequalities • Move freely between different numerical, algebraic, graphical	including Pythagoras' Theorem, and use known results to obtain simple proofs • Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles • Interpret mathematical relationships both algebraically and geometrically • Interpret and use fractional {and negative} scale factors for enlargement • {Describe the changes and invariance achieved by combinations of rotations, reflections and translations} • Interpret and use bearings • Apply Pythagoras' Theorem and	have been affected by any modelling assumptions • Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem		

	expressions of the form x2 + bx + c, including the difference of two squares; {factorising quadratic expressions of the form ax2 + bx + c} - simplifying expressions involving sums, products and powers, including the laws of indices ●Know the difference between an equation and an identity; argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments {and proofs} ●Where appropriate, interpret simple expressions as functions with inputs and outputs; {interpret the	and diagrammatic representations, including of linear, quadratic, reciprocal, (exponential and trigonometric) functions ●Make and test conjectures about the generalisations that underlie patterns and relationships; look for proofs or counter-examples; begin to use algebra to support and construct arguments (and proofs) ●Reason deductively in geometry, number and algebra, including using geometrical constructions ●Develop their mathematical knowledge, in part through solving problems and	trigonometric ratios to find angles and lengths in right-angled triangles {and where possible, general triangles} in two {and three} dimensional figures ●{Know and apply the sine rule, a/sinA = b/sinB = c/sinC and cosine rule, a2 = b2 + c2 - 2bc cosA, to find unknown lengths and angles} ●{Know and apply Area = 1/2ab sinC to calculate the area, sides or angles of any triangle} ●Describe translations as 2D vectors ●Apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors; {use vectors to construct			

	reverse process as the 'inverse function'; interpret the succession of two functions as a 'composite function'} ●{Find approximate solutions to equations numerically using iteration} ●Solve problems involving direct and inverse proportion, including graphical and algebraic representations ●Understand that X is inversely proportional to X is equivalent to X is proportional to 1/Y; {construct and} interpret equations that describe direct and inverse proportion ●Move freely between different numerical, algebraic, graphical and diagrammatic	evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods	geometric arguments and proofs} ●Extend and formalise their knowledge of ratio and proportion, including trigonometric ratios, in working with measures and geometry, and in working with proportional ●Make and test conjectures about the generalisations that underlie patterns and relationships; look for proofs or counter-examples; begin to use algebra to support and construct arguments (and proofs) ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems			

	representations, including of linear, quadratic, reciprocal, (exponential and trigonometric) functions ●Extend and formalise their knowledge of ratio and proportion, including trigonometric ratios, in working with measures and geometry, and in working with proportional relations algebraically and graphically ●Make and test conjectures about the generalisations that underlie patterns and relationships; look for proofs or counter-examples; begin to use algebra to support and construct	and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem	●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems ●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem			

	arguments (and proofs) ●Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning ●Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems ●Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts ●Make and use connections between different parts of mathematics to solve problems				

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	●Model situations mathematically and express the results using a range of formal mathematical representations, reflecting on how their solutions may have been affected by any modelling assumptions ●Select appropriate concepts, methods and techniques to apply to unfamiliar and nonroutine problems; interpret their solution in the context of the given problem					
Topic	**1. Bounds & Error Intervals** **2. Iteration** **3. Algebraic Fractions** **4. Proof**	**8. Completing the Square & the Quadratic Formula** **9. Quadratic Simultaneous Equations**	**12. Compound Measures** **13. Constructions & Loci** **14. Bearings** **15. Transformations** **16. Vectors**	**19. Graph Transformations** **20. Gradient & Area Under a Curve**		

	5. Product Rule for Counting 6. Direct/Inverse Proportion 7. Functions	10. Equation of a Circle 11. Circle Theorems	17. Sine/Cosine Rule 18. 3D Pythagoras & Trigonometry			
Assessment	**Summative Assessment** -Mock Exams in Weeks 10 & 11 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Exit Tickets	**Summative Assessment** -Mock Exams in Weeks 10 & 11 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Summative Assessment** -Mock Exams in Weeks 22 & 23 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets	**Summative Assessment** -Mock Exams in Weeks 22 & 23 **Informal Formative Assessment** -Use of whiteboards during lessons -Targeted questioning (no hands up) -Live marking and feedback -Homework Tasks -Exit Tickets		