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GCSE Maths for AQA

4th Edition

Foundation Scheme of Work

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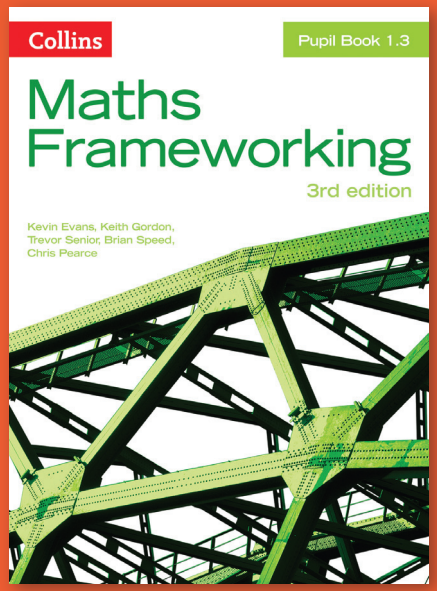

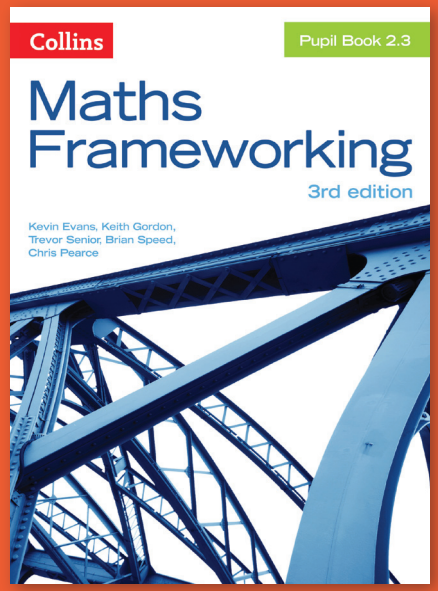

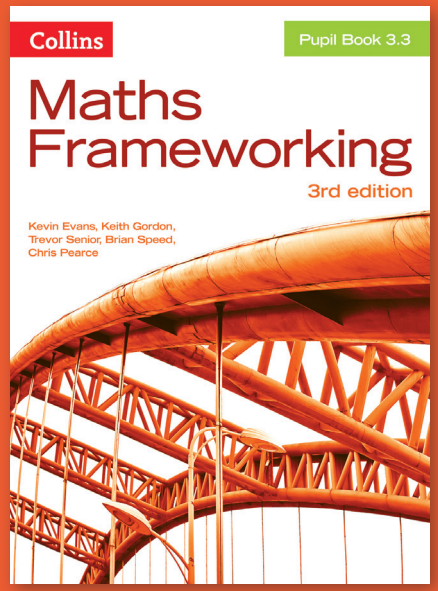

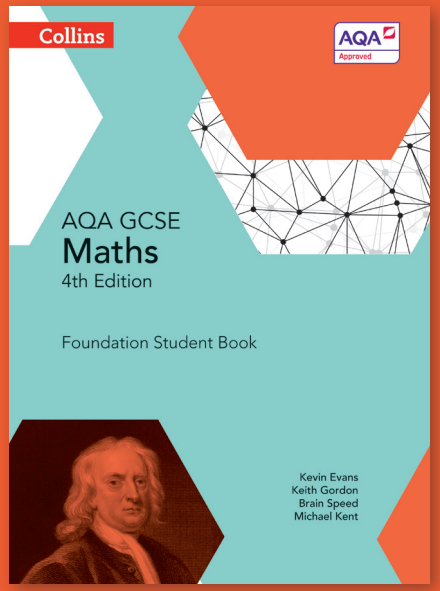

Using **Maths Frameworking 3rd edition Pupil Books 1.3, 2.3 and 3.3** and **AQA GCSE Maths 4th edition Foundation Student Book** together will give you a complete 5 year maths programme.

To download 2 and 3 year Foundation tier route maps go to collins.co.uk/GCSEMaths

AQA Foundation tier 5-year scheme of work

This 5-year Foundation Scheme of Work offers a flexible approach for Year 7 to Year 11. It is based on a minimum of seven one hour Maths lessons per fortnight (assuming a two week timetable of three lessons in one week and four in the second). This accounts for an average of 140 teaching hours per academic year, with the exception of Year 11, which has 115 due to GCSE examinations in summer (2). In addition to this, there are assessment and review sessions built in.

Core texts are Maths Frameworking (3rd edition) Pupil Books 1.1, 1.2, 2.1, 2.2, 3.1, 3.2 and AQA GCSE Maths (4th Edition) Foundation Student Book.

Mathematical reasoning, problem solving activities and applications are an integral part of each topic.

Students should progress at their own rate with book 2 not being appropriate for all.

There are opportunities for extended projects throughout, which are intended to span a sequence of lessons and give students the opportunity to use, apply and experience the mathematics they have learned in practical real-life situations or in a problem solving and reasoning context.

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
Year 7	Term 1	Week 1 – 2	7	1.1:1:Using numbers 1.2:1: Using numbers	1.1 The Calendar	• To read and use calendars
					1.2 The 12-hour and 24-hour clocks	• To read and use 12-hour and 24-hour clocks • To convert between 12-hour and 24-hour systems
					1.3 Managing money	• To work out everyday money problems
					1.1 Timetables, charts and money	• To carry out calculations from information given in tables and charts
					1.4 Positive and negative numbers	• To use a number line to order positive and negative whole numbers • To solve problems involving negative temperatures
					1.5 Adding negative numbers	• To carry out additions and subtractions involving negative numbers • To use a number line to calculate with negative numbers
					1.6 Subtracting negative numbers	• To carry out subtractions involving negative numbers

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 3 – 4	7	1.1:2: Sequences 1.2:2: Sequences	2.1 Function machines	• To use function machines to generate inputs and outputs
					2.2 Sequences and rules	• To recognise, describe and write down sequences that are based on a simple rule
					2.3 Finding terms in patterns	• To find missing terms in a sequence
					2.4 The square numbers	• To introduce the sequence of square numbers
					2.5 The triangular numbers	• To introduce the sequence of triangular numbers
					2.4 Other sequences	• To know and understand square and triangular number sequences
		Week 5 – 6	7	1.1:3: Perimeter and area 1.2:3: Perimeter, area and volume	3.1 Length and perimeter	• To measure and draw lines accurately • To work out the perimeter of a shape
					3.2 Area	• To work out the area of a shape by counting squares
					3.1 Perimeter and area	• To work out the perimeter and area of 2D shapes
					3.3 Perimeter and area of rectangles 3.2 Perimeter and area of rectangles	• To work out the perimeter of a rectangle • To work out the area of a rectangle • To use a simple formula to calculate the area and perimeter of a rectangle
					3.3 Perimeter and area of compound shapes	• To work out the perimeter and area of compound shapes
					3.4 Volume of cubes and cuboids	• To work out the volume of a cube or cuboid using a simple formula • To work out the capacity of a cube or cuboid
		Week 7	3	Extended project opportunity / revision		
		Week 7	1	Assessment		
		Week 8		Half-term Holiday		

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 9 – 10	7	1.1:4: Decimal numbers 1.2:4: Decimal numbers	4.1 Multiplying and dividing by 10, 100 and 1000	• To multiply and divide decimal numbers by10, 100 and 1000
					4.2 Ordering decimals	• To order decimal numbers according to size
					4.3 Estimates	• To estimate calculations in order to spot possible errors
					4.4 Adding and subtracting decimals	• To add and subtract decimal numbers
					4.5 Multiplying and dividing decimals	• To be able to multiply and divide decimal numbers by any whole number
		Week 11 – 12	7	1.1:5: Working with numbers 1.2:5: Working with numbers	5.1 Square numbers	• To recognise and use square numbers up to 225 (15^2)
					5.1 Square numbers and square roots	• To recognise and use square roots up to √225
					5.2 Rounding	• To round numbers to the nearest whole number 10, 100 or 1000
					5.3 Order of operations	• To use the conventions of BIDMAS to carry out calculations
					5.4 Long and short multiplication	• To choose a written method for multiplying two numbers together • To use written methods to carry out multiplications accurately
					5.5 Long and short division	• To choose a written method for dividing one number by another • To use written methods to carry out divisions accurately
					5.6 Calculations with measurements	• To convert between common metric units • To use measurements in calculations • To recognise and use appropriate metric units
		Week 13 - 14	7	1.1:6: Statistics 1.2:6: Statistics	6.1 Mode, median and range	• To understand the meaning of mode, median and range
					6.2 The Mean	• To understand and calculate the mean average of data
					6.2 Reading data from tables and charts	• To read data from tables and charts
					6.3 Using a tally chart	• To create and use a tally chart
					6.3 Statistical diagrams	• To be able to read and interpret different statistical diagrams
					6.4 Using data 6.4 Collecting and using data	• To understand how to use (and collect) data
					6..5 Grouped frequency	• To understand and use grouped frequency
					6.6 Data collection	• To gain a greater understanding of data collection

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 15	3	Assessment and review		
		Week 16		Christmas Holiday		
		Week 17		Christmas Holiday		
	Term 2	**Week 18 – 19**	7	1.1:7: Algebra 1.2:7: Algebra	7.1 Expressions and substitution	• To use algebra to write simple expressions • To substitute numbers into expressions to work out their value
					7.2 Simplifying expressions	• To learn the rules for simplifying expressions
					7.3 Using formulae	• To use formulae
					7.4 Writing formulae	• To write formulae
		Week 20 – 21	7	1.1:8: Fractions 1.2:8: Fractions	8.1 Equivalent fractions	• To find simple equivalent fractions • To write fractions in their simplest form
					8.2 Comparing fractions	• To compare and order two fractions
					8.3 Adding and subtracting fractions	• To add and subtract fractions with the same denominator • The add and subtract fractions with different denominators
					8.4 Mixed numbers and improper fractions	• To convert between mixed numbers and improper fractions
					8.5 Calculations with mixed numbers	• To add and subtract simple mixed numbers with the same denominator • To add and subtract simple mixed numbers with different denominators
		Week 22 – 23	6	1.1:9: Angles 1.2:9: Angles	9.1 Using the compass to give directions	• To use a compass to give directions
					9.2 Measuring angles	• To know the different types of angles • To use a protractor to measure an angle
					9.3 Drawing angles	• To use a protractor to draw an angle
					9.4 Calculating angles	• To calculate angles at a point • To calculate angles on a straight line • To calculate opposite angles
					9.3 Angles in a triangle	• To know that the sum of the angles in a triangle is 180°
					9.4 Angles in a quadrilateral	• To know that the sum of the angles in a quadrilateral is 360°
					9.5 Properties of triangles and quadrilaterals	• To understand the properties of parallel, intersecting and perpendicular lines • To understand and use the properties of a triangle • To understand and use the properties of quadrilaterals

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 23	1	Assessment		
		Week 24		Half-term Holiday		
		Week 25 – 26	7	1.1:10: Coordinates and graphs 1.2:10: Coordinates and graphs	10.1 Coordinates	• To understand and use coordinates to locate points.
					10.2 From mappings to graphs	• To work out coordinates from a rule • To draw a graph for a simple rule
					10.3 Naming graphs	• To recognise and draw line graphs of fixed values
					10.2 Graphs from relationships	• To draw a graph for a simple relationship
					10.3 Graphs for fixed values of x and y	• To recognise and draw line graphs with fixed values of x and y
					10.4 Graphs of the form $y = ax$	• To recognise and draw lines of the form $y = ax$
					10.5 Graphs of the form $x + y = a$	• To recognise and draw graphs of the form $x + y = a$
					10.4 Graphs from the real world	• To learn how graphs can be used to represent real-life situations • To draw and use real-life graphs
		Week 27 – 28	7	1.1:11: Percentages 1.2:11: Percentages	11.1 Fractions and percentages	• To understand what a percentage is • To understand the equivalence between some simple fractions and percentages
					11.2 Fractions of a quantity	• To find a fraction of a quantity
					11.3 Percentages of a quantity	• To find a percentage of a quantity
					11.4 Percentages with a calculator	• To write a percentage as a decimal • To use a calculator to find a percentage of a quantity
					11.5 Percentage increases and decreases	• To work out the result of a simple percentage change
		Week 29 – 30	5	1.1:12: Probability 1.2:12: Probability	12.1 Probability words	• To learn and use words about probability
					12.2 Probability scales	• To know and use the 0–1 probability scale • To work out probabilities based on equally likely outcomes
					12.3 Experimental probability	• To learn about and understand experimental probability • To understand the difference between theoretical and experimental probability
		Week 30	2	Assessment and review		
		Week 31		Easter Holiday		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 32		Easter Holiday		
	Term 3	**Week 33 – 34**	7	1.1:13: Symmetry 1.2:13: Symmetry	13.1 Line symmetry	• To recognise shapes that have reflective symmetry • To draw lines of symmetry on a shape
					13.2 Rotational symmetry	• To recognise shapes that have rotational symmetry • To find the order of rotational symmetry for a shape
					13.3 Reflections	• To understand how to reflect a shape • To use a coordinate grid to reflect shapes
					13.4 Tessellations	• To understand how to tessellate shapes
		Week 35 – 36	5	1.1:14: Equations 1.2:14: Equations	14.1 Finding unknown numbers	• To find missing numbers in simple calculations
					14.2 Solving equations	• To understand what an equation is • To solve equations involving one operation
					14.3 Solving more complex equations	• To solve equations involving two operations
					14.4 Setting up and solving equations	• To use algebra to set up and solve equations
		Week 36 – 37	5	1.1:15 Interpreting data 1.2:15 interpreting data	15.1 Pie charts	• To read data from pie charts, where the data is given in simple sectors • To use a scaling method to draw a pie chart
					15.2 Comparing data by median and the range	• To use the median and range to compare data • To make sensible decisions by comparing the median and range of two sets of data
					15.2 Comparing mean and range	• To use the mean and range to compare data • To make sensible decisions by comparing the mean and range of two sets of data
					15.3 Statistical surveys	• To use charts and diagrams to interpret data.
		Week 37	1	Assessment		
		Week 38		Half-term Holiday		
		Week 39 – 40	7	1.1:16 3D Shapes 1.2:16 3D Shapes	16.1 3D shapes and nets	• To know how to count the faces, edges and vertices on a 2D shape • To draw nets for 3D shapes
					16.1 Naming and drawing 3D shapes	• To be familiar with the names of 3D shapes and their properties • To use isometric paper to draw shapes made from cubes
					16.2 Using nets to construct 3D shapes	• To construct 3D shapes from nets.
					16.3 3D investigations	• To work out the rule connecting faces, edges and vertices in 3D shapes (Euler)

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 41 – 42	7	1.1:17 Ratio 1.2:17 Ratio	17.1 Introduction to ratios	• To introduce ratio notation • To use ratios to compare quantities
					17.2 Simplifying ratios	• To write a ratio as simply as possible
					17.3 Ratios and sharing	• To use ratios to find missing quantities
					17.4 Ratios and fractions	• To understand the connection between ratios and fractions
		Week 43 – 44	7	Extended project opportunity / revision		
		Week 45	4	Assessment, revision and review		
		SUMMER HOLIDAY (Y7→Y8)				
Year 8	**Term 1**	**Week 1 – 2**	7	2.1:1: Working with numbers 2.2:1: Working with numbers	1.1 Adding and subtracting with negative numbers	• To carry out additions and subtractions involving negative numbers
					1.2 Multiplying and dividing negative numbers	• To carry out multiplications and divisions involving negative numbers
					1.3 Factors and highest common factors (HCF)	• To understand and use highest common factors
					1.4 Multiples and lowest common multiple (LCM)	• To understand and use lowest common multiples
					1.5 Squares, cubes and roots	• To understand and use squares and square roots • To understand and use cubes and cube roots
					1.4 Powers and roots	• To understand and use powers and roots
					1.6 Prime factors	• To know what prime numbers are • To identify the prime factors of a number
		Week 3 – 4	7	2.1:2: Geometry 2.2:2: Geometry	2.1 Parallel and perpendicular lines	• To identify parallel lines • To identify perpendicular lines
					2.1 Angles in parallel lines	• To calculate angles in parallel lines
					2.2 Angles in triangles and quadrilaterals	• To know that the sum of the angles in a triangle is 180° • To know that the sum of the angles in a quadrilateral is 360°
					2.2 The geometric properties of quadrilaterals	• To know the geometric properties of quadrilaterals
					2.3 Translations	• To know how to translate a point or shape
					2.4 Rotations	• To know how to rotate a shape
					2.5 Constructions	• To construct the mid-point and perpendicular bisector of a line • To construct an angle bisector

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 5 – 6	7	2.1:3: Probability 2.2:3: Probability	3.1 Probability scales	• To use a probability scale to represent a chance
					3.2 Collecting data on a frequency table	• To collect data and use it to find probabilities • To decide if an event is fair or biased
					3.2 Mutually exclusive events	• To recognise mutually exclusive events
					3.3 Mixed events	• To recognise mixed events where you can distinguish different probabilities
					3.3 Using a sample space to calculate probabilities	• To use a sample space to calculate probabilities
					3.4 Experimental probability 3.5 Experimental probability	• To calculate probabilities from experiments
		7	3	Extended project opportunity / revision		
		7	1	Assessment		
		8		Half-term Holiday		
		Week 9 – 10	7	2.1:4: Percentages 2.2:4: Percentages	4.1 Calculating percentages	• To write one percentage as a percentage of another
					4.2 Calculating the result of a percentage change 4.2 Calculating percentage increases and decreases	• To calculate the result of a percentage increase or decrease • To use a multiplier to calculate a percentage change
					4.3 Calculating a percentage change	• To work out a change in value as a percentage increase or decrease.
		Week 11 – 12	7	2.1:5: Sequences 2.2:5: Sequences	5.1 The Fibonacci sequence 5.4 The Fibonacci sequence	• To know and understand the Fibonacci sequence
					5.2 Algebra and function machines	• To use algebra with function machines
					5.3 The *n*th term of a sequence	• To use the *n*th term of a sequence
					5.3 Working out the *n*th term of a sequence	• To work out the *n*th term of a sequence
		Week 13 – 14	7	2.1:6: Area 2.2:6: Area of 2D and 3D shapes	6.1 Area of a rectangle	• To use a formula to work out the area of a rectangle
					6.2 Areas of compound shapes	• To work out the area of a compound shape
					6.3 Area of a triangle	• To use a formula to work out the area of a triangle
					6.4 Area of a parallelogram	• To work out the area of a parallelogram
					6.3 Area of a trapezium	• To work out the area of a trapezium
					6.4 Surface areas of cubes and cuboids	• To find the surface areas of cubes and cuboids
		Week 15	3	Assessment and review		
		Week 16		Christmas Holiday		

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 17		Christmas Holiday		
	Term 2	**Week 18 – 19**	7	2.1:7: Graphs 2.2:7: Graphs	7.1 Rules from coordinates	• To recognise patterns with coordinates
					7.2 Graphs from rules	• To draw graphs of linear rules
					7.1 Graphs from linear equations	• To recognise and draw the graph of a linear equations
					7.2 Gradient (steepness) of a straight line	• To work out the gradient in a graph from a linear equation • To work out an equation of the form $y = mx + c$ from the graph
					7.3 Graphs from simple quadratic equations 7.3 Graphs from simple quadratic equations	• To recognise and draw the graph from a simple quadratic equation
					7.4 Distance-time graphs	• To read and draw distance-time graphs
					7.4 Real-life graphs	• To draw graphs from real-life situations to illustrate the relationship between two variables
		Week 20 – 21	7	2.1:8: Simplifying numbers 2.2:8: Simplifying numbers	8.1 Powers of 10	• To multiply and divide by 100 and 1000
					8.2 Large numbers and rounding	• To round large numbers
					8.3 Significant figures	• To round to one significant figure
					8.4 Estimating answers	• To use rounding to estimate rough answers to calculations
					8.5 Problem solving with decimals	• To solve problems involving decimals
					8.4 Standard form with large numbers	• To write a large number in standard form
					8.5 Multiplying with numbers in standard form	• To multiply with numbers in standard form
		Week 22 – 23	6	2.1:9: Interpreting data 2.2:9: Interpreting data	9.1 Information from charts	• To revise reading from charts and tables
					9.2 Reading pie charts	• To interpret a pie chart
					9.3 Creating pie charts	• To use a scaling method to draw pie charts
					9.3 Scatter graphs and correlation	• To read scatter graphs • To understand correlations
					9.4 Creating scatter graphs	• To create scatter graphs
		Week 23	1	Assessment		
		Week 24		Half-term Holiday		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 25 – 27	10	2.1:10: Algebra 2.2:10: Algebra	10.1 Algebraic notation	• To simplify algebraic expressions involving the four basic operations
					10.2 Like terms	• To simplify algebraic expression by combining like terms
					10.3 Expanding brackets	• To remove brackets from an expression
					10.4 Using algebra 10.4 Using algebraic expressions	• To use algebraic expressions in different contexts • To manipulate algebraic expressions • To identify equivalent expressions
					10.5 Using powers 10.5 Using index notation	• To write algebraic expressions involving powers
		Week 28 – 29	7	2.1:11: Congruence and scaling 2.2:11: Congruence and scaling	11.1 Congruent shapes	• To recognise congruent shapes
					11.2 Shape and ratio	• To use ratio to compare lengths and areas of 2D shapes
					11.2 Enlargements	• To enlarge a 2D shape by a scale factor
					11.3 Scale diagrams 11.4 Scales	• To understand and use scale diagrams • To know how to use map ratios
		Week 30	3	Revision		
		Week 30	1	Assessment and review		
		Week 31		Easter Holiday		
		Week 32		Easter Holiday		
	Term 3	**Week 33 – 35**	9	2.1:12: Fractions and decimals 2.2:12: Fractions and decimals	12.1 Adding and subtracting fractions	• To add and subtract fractions and mixed numbers
					12.2 Multiplying fractions and integers	• To multiply by a fraction or a mixed number by an integer
					12.3 Dividing with integers and fractions	• To divide a unit fraction by an integer • To divide an integer by a unit fraction
					12.4 Multiplication with powers of ten 12.4 Multiplication with large and small numbers	• To multiply by a power of ten • To multiply with combinations of large and small numbers mentally
					12.5 Division with powers of ten 12.5 Division with large and small numbers	• To mentally divide by a power of ten • To divide combinations of large and small numbers mentally

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 35 – 36	4	2.1:13: Proportion 2.2:13: Proportion	13.1 Direct proportion	• To understand the meaning of direct proportion • To find missing values in problems involving proportion
					13.2 Graphs and direct proportion	• To represent direct proportion graphically and algebraically
					13.3 Inverse proportion	• To understand what is meant by inverse proportion • To solve problems using inverse proportion
					13.4 Comparing direct proportion and inverse proportion	• To recognise direct and inverse proportion and work out missing values
		Week 37	4	2.1:14: Circles 2.2:14: Circles	14.1 The circle and its parts	• To know the definition of a circle and the names of its parts
					14.2 Circumference of a circle	• To work out the relationship between the circumference and the diameter of a circle
					14.3 A formula to work out the approximate circumference of a circle 14.3 Formula for the circumference of a circle	• To use a formula to calculate the circumference of a circle
					14.4 Formula for the area of a circle	• To use a formula to calculate the area of a circle
		Week 37	1	Assessment		
		Week 38		Half-term Holiday		
		Week 39 – 40	7	2.1:15: Equations and formulae 2.2:15: Equations and formulae	15.1 Equations	• To solve simple equations
					15.2 Equations with brackets	• To solve equations that include brackets
					15.2 Equations with the variable on both sides	• To solve equations with the variable on both sides
					15.3 More complex equations	• To solve equations involving two operations
					15.4 Substituting into formulae	• To substitute values into a variety of formulae
					15.4 Rearranging formulae	• To change the subject of a formula
		Week 41 – 42	7	2.1: 16: Comparing data 2.2:16: Comparing data	16.1 Frequency tables	• To create a frequency table from raw data
					16.2 The mean	• To understand and use the mean average of data
					16.1 Grouped frequency tables	• To create a grouped frequency table from raw data
					16.3 Drawing frequency diagrams	• To be able to draw a diagram from a frequency table
					16.4 Comparing data	• To use the mean and range to compare data from two sources
					16.5 Which average to use?	• To understand when each different type of average is most useful
		Week 43 – 44	7	Extended project opportunity / revision		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 45	4	Assessment, revision and review		
		SUMMER HOLIDAY (Y8→Y9)				
Year 9	**Term 1**	**Week 1 – 2**	7	3.1:1: Percentages 3.2:1: Percentages	1.1 Simple interest	• To understand what simple interest is • To solve problems involving simple interest
					1.2 Percentage increases and decreases	• To calculate the result of a percentage increase or decrease • To choose the most appropriate method to calculate percentage change
					1.3 Calculating the original value	• Given the result of a percentage change, to calculate the original value
					1.4 Using percentages	• To make links between fractions, decimals and percentages • To choose the correct calculation to work out a percentage
		Week 3 – 4	7	3.1:2: Equations and formulae 3.2:2: Equations and formulae	2.1 Multiplying out brackets	• To multiply out brackets
					2.2 Factorising algebraic expressions	• To factorise expressions
					2.3 Equations with brackets	• To solve equations with one or more sets of brackets
					2.4 Equations with fractions	• To solve equations with fractions
					2.5 Rearranging formulae	• To change the subject of a formula
		Week 5 – 6	5	3.1:3: Polygons 3.2:3: Polygons	3.1 Polygons	• To know the names of polygons • To know the difference between an irregular and a regular polygon
					3.2 Angles in polygons	• To work out the sizes of the interior angles of regular polygons
					3.2 Constructions	• To make accurate geometric constructions
					3.3 Angles in regular polygons	• To work out the exterior and interior angles of a regular polygon
					3.4 Regular polygons and tessellations	• To work out which regular polygons tessellate
		Week 6 – 7	5	3.1:4: Using data 3.2:4: Using data	4.1 Scatter graphs and correlation	• To infer a correlation from two related scatter graphs
					4.2 Interpreting graphs and diagrams	• To use and interpret a variety of graphs and diagrams
					4.2 Time-series graphs	• To use and interpret a variety of time-series graphs
					4.3 Two-way tables	• To interpret a variety of two-way tables
					4.4 Comparing two or more sets of data	• To compare two sets of data from statistical diagrams
					4.5 Statistical investigations	• To plan a statistical investigation
		Week 7	1	Assessment		
		Week 8		Half-term Holiday		

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 9 – 10	6	3.1:5: Circles	5.1 The formula for the circumference of a circle	• To calculate the circumference of a circle
					5.2 The formula for the area of a circle	• To calculate the area of a circle
					5.3 Mixed problems	• To solve problems involving the circumference and area of a circle
		Week 10 – 11	5	3.2:5: Applications of graphs	5.1 Step graphs	• To interpret step graphs
					5.2 Time graphs	• To interpret and draw time graphs
					5.3 Exponential growth graphs	• To interpret and draw exponential growth graphs
		Week 12 – 13	7	3.2:6: Pythagoras' theorem	6.1 Introducing Pythagoras' theorem	• To understand Pythagoras' theorem
					6.2 Calculating the length of the hypotenuse	• To calculate the length of the hypotenuse in a right-angled triangle
					6.3 Calculating the length of a shorter side	• To calculate the length of a shorter side in a right-angled triangle • To show that a triangle is right-angled
					6.4 Using Pythagoras' theorem to solve problems	• To use Pythagoras' theorem to solve problems
		Week 14	3	3.1: 6: Enlargements	6.1 Scale factors and enlargements	• To use a scale factor to show an enlargement
					6.2 The centre of enlargement	• To enlarge a shape around a centre of enlargement
					6.3 Enlargements on grids	• To enlarge a shape on a coordinate grid
		Week 15	3	Assessment and review		
		Week 16		Christmas Holiday		
		Week 17		Christmas Holiday		
	Term 2	**Week 18 – 19**	7	3.1:7 Fractions 3.2:7 Fractions	7.1 Adding and subtracting fractions	• To add or subtract any two fractions
					7.2 Multiplying fractions	• To multiply two fractions
					7.3 Multiplying mixed numbers	• To multiply one mixed number by another
					7.3 Dividing fractions 7.4 Dividing fractions and mixed numbers	• To divide one fraction or mixed number by another

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 20 – 21	7	3.1:8: Algebra 3.2:8: Algebra	8.1 Expanding brackets 8.1 More about brackets	• To multiply out brackets with a variable or constant outside them
					8.2 Factorising algebraic expressions 8.2 Factorising expressions containing powers	• To factorise expressions • To take out a variable as a factor
					8.3 Expand and simplify 8.3 Expanding the product of two brackets	• To expand expressions with two brackets and simplify them
		Week 22 – 23	6	3.1:9: Decimal numbers 3.2:9: Decimal numbers	9.1 Multiplication of decimals	• To multiply decimal numbers
					9.2 Powers of ten	• To understand and work with both positive and negative powers of ten
					9.2 Standard form	• To understand and work with standard form, using both positive and negative powers of ten
					9.3 Rounding suitably 9.3 Rounding appropriately	• To round numbers to a suitable or appropriate degree of accuracy
					9.4 Dividing decimals	• To divide with decimals
					9.4 Mental calculations	• To learn and understand some routines that can be used when calculating mentally
					9.5 Solving problems	• To solve real-life problems involving multiplication or division
		Week 23	1	Assessment		
		Week 24		Half-term Holiday		
		Week 25 – 26	7	3.1:10: Surface area and volume of 3D shapes	10.1 Surface areas of cubes and cuboids	• To work out the surface areas of cubes or cuboids
					10.2 Volume formulae for cubes and cuboids	• To use a simple formula to work out the volume of a cube or cuboid
					10.3 Volumes of triangular prisms	• To work out the volume of a triangular prism
		Week 27 – 28	6	3.2:10: Prisms and cylinders	10.1 Metric units for area and volume	• To convert from one metric unit to another
					10.2 Volume of a prism	• To calculate the volume of a prism
					10.3 Surface area of a prism	• To calculate the surface area of a prism
					10.4 Volume of a cylinder	• To calculate the volume of a cylinder
					10.5 Surface area of a cylinder	• To calculate the curved surface area of a cylinder • To calculate the total surface area of a cylinder

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 28 – 30	6	3.1:11: Solving equations graphically 3.2:11: Solving equations graphically	11.1 Graphs from equations in the form $y = mx + c$	• To draw a linear graph from any linear equation • To solve a linear equation from a graph
					11.2 Problems involving straight-line graphs	• To draw graphs to solve some problems
					11.1 Graphs from equations in the form $ay \pm bx = c$	• To draw any linear graph from any linear equation • To solve a linear equation from a graph
					11.2 Graphs from quadratic equations	• To draw graphs from quadratic equations
					11.3 Solving simple quadratic equations by drawing graphs 11.3 Solving quadratic equations by drawing graphs	• To solve a quadratic equation by drawing a graph
					11.4 Problems involving quadratic graphs	• To solve problems that use quadratic graphs
					11.4 Solving simultaneous equations by graphs	• To solve a pair of simultaneous equations graphically
		Week 30	2	Assessment and review		
		Week 31		Easter Holiday		
		Week 32		Easter Holiday		
	Term 3	**Week 33 – 34**	7	3.1:12 Distance, speed and time	12.1 Distance	• To work out the distance travelled in a certain time at a given speed • To use and interpret distance-time graphs
					12.2 Speed	• To work out the speed of an object, given the distance travelled and the time taken
					12.3 Time	• To work out the time an object will take on its journey, given its speed and the distance travelled
		Week 35 – 36	5	3.2:12: Compound units	12.1 Speed	• To understand and use measures of speed
					12.2 More about proportion	• To understand and use density and other compound measures
					12.3 Unit costs	• To understand and use unit pricing
		Week 36 – 37	5	3.1:13: Similar triangles	13.1 Similar triangles	• To understand what similar triangles are
					13.2 A summary of similar triangles	• To use and recall facts about similar triangles
					13.3 Using triangles to solve problems	• To know that triangles can be used to solve some real-life problems

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 37	1	Assessment		
		Week 38		Half-term Holiday		
		Week 39 – 40	7	3.2:13 Right-angled triangles	13.1 Introducing trigonometric ratios	• To understand what trigonometric ratios are
					13.2 How to find trigonometric ratios of angles	• To understand what the trigonometric ratios sine, cosine and tangent are
					13.3 Using trigonometric ratios to find angles	• To find the angle identified from a trigonometric ratio
					13.4 Using trigonometric ratios to find lengths	• To find an unknown length of a right-angled triangle, give one side and another angle
		Week 41 – 42	7	3.1:14: Revision and GCSE preparation 3.2:14: Revision and GCSE preparation	Practice	• To practise topics covered in this course
					Revision	• To revise topics covered in this course
					GCSE-type questions	• To be introduced to the GCSE course
		Week 43 – 44	7	Extended project		
		Week 45	4	Assessment, revision and review		
		SUMMER HOLIDAY (Y9→Y10)				
Year 10	**Term 1**	**Week 1 – 3**	10	F:1: Number: Basic Number	1.1 Place value and ordering numbers	• To use a number line to represent negative numbers • To use inequalities with negative numbers • To compare and order positive and negative numbers
					1.2 Order of operations and BIDMAS	• To work out the answers to problems with more than one mathematical operation
					1.3 The four rules	• To use the four rules of arithmetic with integers and decimals

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 4 – 6	10	F:2: Geometry and measures: Measures and scale drawings	2.1 Systems of measurement	• To convert from one metric unit to another • To convert from one imperial unit to another
					2.2 Conversion factors	• To use approximate conversion factors to change between imperial units and metric units
					2.3 Scale drawings	• To read and draw scale drawings • To use a scale drawing to make estimates
					2.4 Nets	• To draw nets of some 3D shapes • To identify a 3D shape from its net
					2.5 Using an isometric grid	• To read from and draw on isometric grids • To interpret diagrams to draw plans and elevations
		Week 7	3	F:3: Statistics: Charts, tables and averages	3.1 Frequency tables	• To use tally charts and frequency tables to collect and represent data • To use grouped frequency tables to collect and represent data
					3.2 Statistical diagrams	• To draw pictograms to represent statistical data • To draw bar charts and vertical line charts to represent statistical data
		Week 8		Half-term Holiday		
		Week 9	4	F:3: Statistics: Charts, tables and averages	3.3 Line graphs	• To draw a line graph to show trends in data
					3.4 Statistical averages	• To work out the mode, median, mean and range of small sets of data • To decide which is the best average to use to represent a data set

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 10 – 12	10	F:4:Geometry and measures: Angles	4.1 Angles facts	• To calculate angles on a straight line • To calculate angles around a point • To use vertically opposite angles
					4.2 Triangles	• To recognise and calculate the angles in different sorts of triangle
					4.3 Angles in a polygon	• To calculate the sum of the interior angles in a polygon
					4.4 Regular polygons	• To calculate the exterior angles and the interior angles of a regular polygon
					4.5 Angles in parallel lines	• To calculate angles in parallel lines
					4.6 Special quadrilaterals	• To use angle properties in quadrilaterals
					4.7 Bearings	• To use a bearing to specify a direction
		Week 13 – 15	10	F:5: Number: Number properties	5.1 Multiples of whole numbers	• To find multiples of whole numbers • To recognise multiples of numbers
					5.2 Factors of whole numbers	• To identify the factors of a number
					5.3 Prime numbers	• To identify prime numbers
					5.4 Prime factors, LCM and HCF	• To identify prime factors • To identify the lowest common multiple (LCM) of two numbers • To identify the highest common factor (HCF) of two numbers
					5.5 Square numbers	• To identify square numbers • To use a calculator to find the square of a number
					5.6 Square roots	• To recognise the square roots of square numbers up to 225 • To use a calculator to find the square roots of any number
					5.7 Basic calculations on a calculator	• To use some of the important keys when working on a calculator
		Week 16		Christmas Holiday		
		Week 17		Christmas Holiday		
	Term 2	**Week 18 – 19**	7	F:6: Number: Approximations	6.1 Rounding whole numbers	• To round a whole number
					6.2 Rounding decimals	• To round decimal numbers to a given accuracy
					6.3 Approximating calculations	• To identify significant figures • To round numbers to a given number of significant figures • To use approximation to estimate answers and check calculations • To round a calculation at the end of a problem, to give what is considered to be a sensible answer

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 20 – 21	7	F:7: Number: Decimals and fractions	7.1 Calculating with decimals	• To multiply and divide with decimals
					7.2 Fractions and reciprocals	• To recognise different types of fraction, reciprocal, terminating decimal and recurring decimal • To convert terminating decimals to fractions • To convert fractions to decimals • To find reciprocals of numbers or fractions
					7.3 Writing one quantity as a fraction of another	• To work out a fraction of a quantity • To find one quantity as a fraction of another
					7.4 Adding and subtracting fractions	• To add and subtract fractions with different denominators
					7.5 Multiplying and dividing fractions	• To multiply proper fractions • To multiply mixed numbers • To divide by fractions
					7.6 Fractions on a calculator	• To use a calculator to add and subtract fractions • To use a calculator to multiply and divide fractions
		Week 22 – 23	7	F:8: Algebra: Linear graphs	8.1 Graphs and equations	• To use flow diagrams to draw graphs • To work out the equations of horizontal and vertical lines
					8.2 Drawing linear graphs by finding points	• To draw linear graphs without using flow diagrams
					8.3 Gradient of a line	• To work out the gradient of a straight line • To draw a line with a certain gradient
					8.4 $y = mx + c$	• To draw graphs using the gradient-intercept method • To draw graphs using the cover-up method
					8.5 Finding the equation of a line from its graph	• To work out the equation of a line, using its gradient and y-intercept • To work out the equation of a line given two points on the line
					8.6 The equation of a parallel line	• To work out the equation of a linear graph that is parallel to another line and passes through a specific point
		Week 24		Half-term Holiday		
		Week 25	4	F:8: Algebra: Linear graphs	8.7 Real-life uses of graphs	• To convert from one unit to another unit by using a conversion graph • To use straight-line graphs to work out formulae
					8.8 Solving simultaneous equations using graphs	• To solve simultaneous linear equations using graphs

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 26 – 28	10	F:9: Algebra: Expressions and formulae	9.1 Basic algebra	• To write an algebraic expression • To recognise expressions, equations, formulae and identities
					9.2 Substitution	• To substitute into, simplify and use algebraic expressions
					9.3 Expanding brackets	• To expand brackets such as $2(x - 3)$ • To expand and simplify brackets
					9.4 Factorisation	• To factorise an algebraic expression
					9.5 Quadratic expansion	• To expand two linear brackets to obtain a quadratic expression
					9.6 Quadratic factorisation	• To factorise a quadratic expression of the form $x^2 + ax + b$ into two linear brackets
					9.7 Changing the subject of a formula	• To change the subject of a formula
		Week 29 – 30	7	F:10: Ratio and proportion and rates of change: Ratio, speed and proportion	10.1 Ratio	• To simplify a ratio • To express a ratio as a fraction • To divide amounts into given ratios • To complete calculations from a given ratio and partial information
					10.2 Speed, distance and time	• To recognise the relationship between speed, distance and time • To calculate average speed from distance and time • To calculate distance travelled from the speed and the time taken • To calculate the time taken on a journey from the speed and the distance
					10.3 Direct proportion problems	• To recognise and solve problems that involve direct proportion
					10.4 Best buys	• To find the cost per unit mass • To find the mass per unit cost • To use the above to find which product is better value.
		Week 31		Easter Holiday		
		Week 32		Easter Holiday		

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
	Term 2	**Week 33 – 34**	7	F:11: Geometry and measures: Perimeter and area	11.1 Rectangles	• To calculate the perimeter and area of a rectangle
					11.2 Compound shapes	• To calculate the perimeter and area of a compound shape made from rectangles
					11.3 Area of a triangle	• To calculate the area of a triangle • To use the formula for the area of a triangle
					11.4 Area of a parallelogram	• To calculate the area of a parallelogram • To use the formula for the area of a parallelogram
					11.5 Area of a trapezium	• To calculate the area of a trapezium • To use the formula for the area of a trapezium
					11.6 Circles	• To recognise terms used for circle work • To calculate the circumference of a circle
					11.7 The area of a circle	• To calculate the area of a circle
					11.8 Answers in terms of ϖ	• To give answers for circle calculations in terms of π
		Week 35 – 36	7	F:12:Geometry and measures: Transformations	12.1 Rotational symmetry	• To work out the order of rotational symmetry for a 2D shape • To recognise shapes with rotational symmetry
					12.2 Translation	• To translate a 2D shape
					12.3 Reflections	• To reflect a 2D shape in a mirror line
					12.4 Rotations	• To rotate a 2D shape about a point
					12.5 Enlargements	• To enlarge a 2D shape by a scale factor
					12.6 Using more than one transformation	• To use more than one transformation
					12.7 Vectors	• To represent vectors • To add and subtract vectors
		Week 37	3	F:13: Probability: Probability and events	13.1 Calculating probabilities	• To use the probability scale and the language of probability • To calculate the probability of an outcome of an event
					13.2 Probability that an outcome will not happen	• To calculate the probability of an outcome not happening when you know the probability of that outcome happening
					13.3 Mutually exclusive and exhaustive outcomes	• To recognise mutually exclusive and exhaustive outcomes
		Week 38		Half-term Holiday		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 39	4	F:13: Probability: Probability and events	13.4 Experimental probability	• To calculate experimental probabilities and relative frequencies from experiments • To recognise different methods for estimating probabilities
					13.5 Expectation	• To predict the likely number of successful outcomes, given the number of trials and the probability of any one outcome
					13.6 Choices and outcomes	• To apply systematic listing and counting strategies to identify all outcomes for a variety of problems
		Week 40	3	F:14:Geometry and measures: Volumes and surface areas of prisms	14.1 3D shapes	• To use the correct terms when working with 3D shapes
					14.2 Volume and surface area of a cuboid	• To calculate the surface area and volume of a cuboid
		Week 41 – 42	7	Summer examinations and revision		
		Week 43	4	F:14:Geometry and measures: Volumes and surface areas of prisms	14.3 Volume and surface area of a prism	• To calculate the volume and surface area of a prism
					14.4 Volume and surface area of cylinders	• To calculate the volume and surface area of a cylinder
		Week 44 – 45	7	F:15: Algebra: Linear equations	15.1 Solving linear equations	• To solve linear equations such as $3x - 1 = 11$ where the variable only appears on one side • To use inverse operations and inverse flow diagrams • To solve equations by balancing • To solve equations in which the variable (the letter) appears in the numerator of a fraction
					15.2 Solving equations with brackets	• To solve equations where you have to first expand brackets
					15.3 Solving equations with the variable on both sides	• To solve equations where the variable appears on both sides of the equals sign.
SUMMER HOLIDAY (Y10→Y11)						

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
Year 11	Term 1	**Week 1 – 2**	7	F:16: Ratio and proportion and rates of change: Percentages and compound measures	16.1 Equivalent percentages, fractions and decimals	• To convert percentages to fractions and decimals and vice versa
					16.2 Calculating a percentage of a quantity	• To calculate a percentage of a quantity
					16.3 Increasing and decreasing quantities by a percentage	• To increase and decrease quantities by a percentage
					16.4 Expressing one quantity as a percentage of another	• To express one quantity as a percentage of another • To work out percentage change
					16.5 Compound measures	• To recognise and solve problems involving the compound measures of rates of pay, density and pressure
		Week 3 – 4	7	F:17: Ratio and proportion and rates of change: Percentages and variation	17.1 Compound interest and repeated percentage change	• To calculate simple interest • To calculate compound interest • To solve problems involving repeated percentage change
					17.2 Reverse percentage (working out the original value)	• To calculate the original amount, given the final amount, after a known percentage increase or decrease
					17.3 Direct proportion	• To solve problems in which two variables have a directly proportional relationship (direct variation) • To work out the constant of proportionality • To recognise graphs that show direct variation
					17.4 Inverse proportion	• To solve problems in which two variables have an inversely proportional relationship (inverse variation) • To work out the constant of proportionality
		Week 5 – 7	10	F:18: Statistics: Representation and interpretation	18.1 Sampling	• To obtain a random sample from a population • To collect unbiased and reliable data for a sample
					18.2 Pie charts	• To draw and interpret pie charts.
					18.3 Scatter diagrams	• To draw, interpret and use scatter diagrams • To draw and use a line of best fit
					18.4 grouped data and averages	• To identify the modal group • To calculate an estimate of the mean from a grouped table
		Week 8		Half-term Holiday		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 9 – 10	7	F:19: Geometry and measures : Constructions and loci	19.1 Constructing triangles	• To construct accurate drawings of triangles, using a pair of compasses, a protractor and a straight edge
					19.2 Bisectors	• To construct the bisectors of lines and angles • To construct angles of 60° and 90°
					19.3 Defining a locus	• To draw a locus for a given rule
					19.4 Loci problems	• To solve practical problems using loci
		Week 11 – 12	7	F:20: Geometry and measures: Curved shapes and pyramids	20.1 Sectors	• To calculate the length of an arc • To calculate the area and angle of a sector
					20.2 Pyramids	• To calculate the volume and surface area of a pyramid
					20.3 Cones	• To calculate the volume and surface area of a cone
					20.4 Spheres	• To calculate the volume and surface area of a sphere
		Week 13	3	Revision and review		
		Week 14 – 15	7	Mock Exams and Revision		
		Week 16		Christmas Holiday		
		Week 17		Christmas Holiday		
	Term 2	**Week 18 – 19**	7	F:21: Algebra: Number and Sequences	21.1 Patterns in number	• To recognise patterns in number sequences
					21.2 Number sequences	• To recognise how number sequences are built up • To generate sequences, given the nth term
					21.3 Finding the *n*th term of a linear sequence	• To find the nth term of a linear sequence
					21.4 Special sequences	• To recognise and continue some special number sequences • To understand how prime, odd and even numbers interact in addition, subtraction and multiplication problems
					2.5 General rules from given patterns	• To find the nth term from practical problems involving sequences.

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 20 – 22	10	F:22: Geometry and measures: Right-angled triangles	22.1 Pythagoras' theorem	• To know what Pythagoras' theorem is • To calculate the length of the hypotenuse in a right-angled triangle
					22.2 Calculating the length of the shorter side	• To calculate the length of a shorter side in a right-angled triangle
					22.3 Applying Pythagoras' theorem in real-life situations	• To solve problems using Pythagoras' theorem
					22.4 Pythagoras' theorem and isosceles triangles	• To use Pythagoras' theorem in isosceles triangles
					22.5 Trigonometric ratios	• To define, understand and use the three trigonometric ratios
					22.6 Calculating lengths using trigonometry	• To use trigonometric ratios to calculate a length in a right-angled triangle
					22.7 Calculating angles using trigonometry	• To use the trigonometric ratios to calculate an angle
					22.8 Trigonometry without a calculator	• To work out and remember trigonometric values for angles of 30°, 45°, 60° and 90°
					22.9 Solving problems using trigonometry	• To solve practical problems using trigonometry • To solve problems using an angle of elevation or an angle of depression
					22.10 Trigonometry and bearings	• To solve bearing problems using trigonometry
					22.11 Trigonometry and isosceles triangles	• To use trigonometry to solve problems involving isosceles triangles
		Week 23		Half-term Holiday		
		Week 24 – 25	7	F:23: Geometry and measures: Congruency and similarity	23.1 Congruent triangles	• To demonstrate that two triangles are congruent
					23.2 Similarity	• To recognise similarity in any two shapes • To show that two shapes are similar • To work out the scale factor between similar shapes

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 26 – 27	7	F:24: Probability: Combined events	24.1 Combined events	• To work out the probabilities when two or more events occur at the same time
					24.2 Two-way tables	• To read two-way tables and use them to work out probabilities
					24.3 Probability and Venn diagrams	• To use Venn diagrams to solve probability questions
					24.2 Tree diagrams	• To understand frequency tree diagrams and probability tree diagrams • To use probability tree diagrams to work out the probabilities involved in combined events
		Week 28 – 29	7	F:25: Number: Powers and standard form	25.1 Powers (indices)	• To write a number as a power of another number • To use powers (also known as indices) • To multiply and divide by powers of 10.
					25.2 Rules for multiplying and dividing powers	• To use rules for multiplying and dividing powers • To multiply and divide numbers by powers of 10.
		Week 30		Easter Holiday		
		Week 31		Easter Holiday		
	Term 3	**Week 32**	4	F:25: Number: Powers and standard form	25.3 Standard form	• To write a number in standard form • To calculate with numbers in standard form
		Week 33 – 35	11	F:26: Algebra: Simultaneous equations and linear inequalities	26.1 Elimination method for simultaneous equations	• To solve simultaneous linear equations in two variables using the elimination method
					26.2 Substitution method for simultaneous equations	• To solve simultaneous linear equations in two variables using the substitution method
					26.3 Balancing coefficients to solve simultaneous equations	• To solve simultaneous linear equations by balancing coefficients
					26.4 Using simultaneous equations to solve problems	• To solve problems using simultaneous linear equations
					26.5 Linear inequalities	• To solve a simple linear inequality and represent it on a number line

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Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 36 – 37	7	F:27: Algebra: Non-linear graphs	27.1 Distance-time graphs	• To interpret distance–time graphs • To draw a graph of the depth of liquid as a container is filled
					27.2 Plotting quadratic graphs	• To draw and read values from quadratic graphs
					27.3 Solving quadratic equations by factorisation	• To solve a quadratic equation by factorisation
					27.4 The significant points of a quadratic curve	• To identify the significant points of a quadratic function graphically • To identify the roots of a quadratic function by solving a quadratic equation • To identify the turning point of a quadratic function
					27.5 Cubic and reciprocal graphs	• To recognise and plot cubic and reciprocal graphs
		Week 38		Half-term Holiday		
		Week 39 – 40		Revision		
		Week 41 – 42		June Examinations		

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