

Collins



GCSE Maths

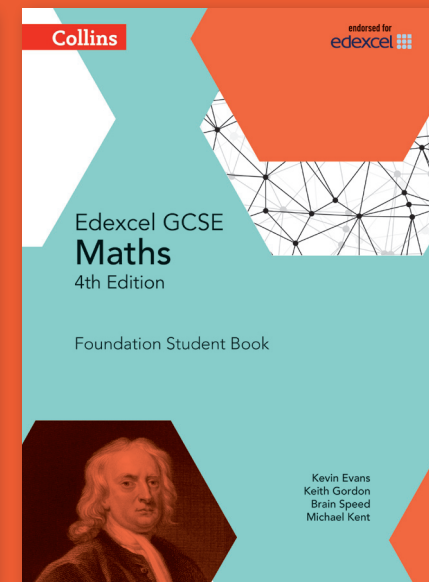
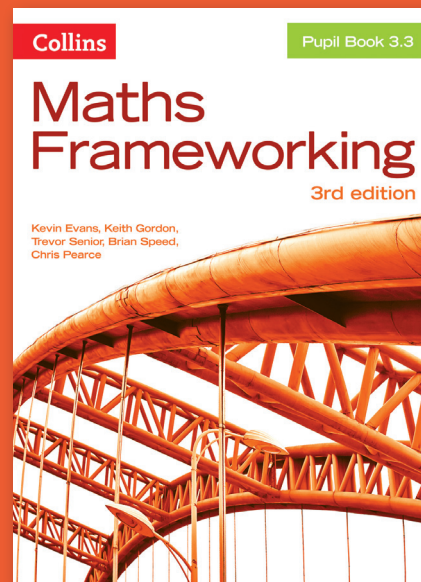
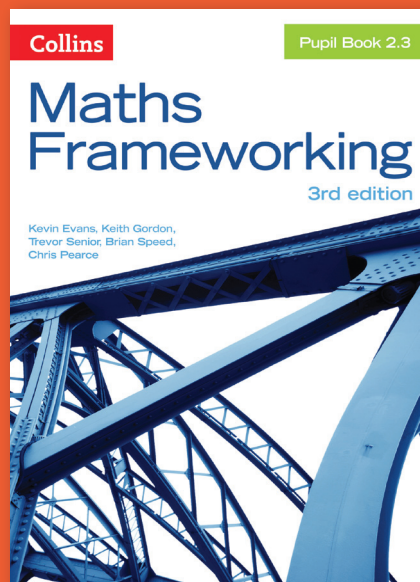
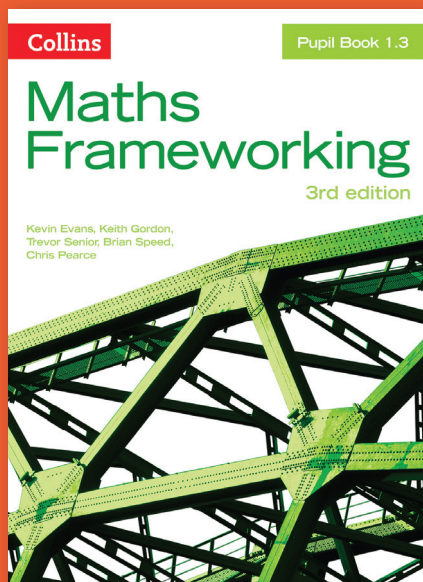
for Edexcel

4th Edition

Foundation Scheme of Work



Collins



Using **Maths Frameworking 3rd edition Pupil Books 1.3, 2.3 and 3.3** and **Edexcel 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

Edexcel 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 Edexcel 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	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		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 2.2 Sequences and rules 2.3 Finding terms in patterns 2.4 The square numbers 2.5 The triangular numbers 2.4 Other sequences	- To use function machines to generate inputs and outputs - To recognise, describe and write down sequences that are based on a simple rule - To find missing terms in a sequence - To introduce the sequence of square numbers - To introduce the sequence of triangular numbers - 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 3.2 Area 3.1 Perimeter and area 3.3 Perimeter and area of rectangles 3.2 Perimeter and area of rectangles 3.3 Perimeter and area of compound shapes 3.4 Volume of cubes and cuboids	- To measure and draw lines accurately - To work out the perimeter of a shape - To work out the area of a shape by counting squares - To work out the perimeter and area of 2D shapes - 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 - To work out the perimeter and area of compound shapes - 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		

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 by 10, 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 $\sqrt{225}$
					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 our 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 - To 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
		Week 23	1	Assessment		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 24		Half-term Holiday		
		Week 25 – 26	7	1.1:10: Coordinates and graphs 1.2:10: Coordinates and graphs	10.1 Coordinates 10.2 From mappings to graphs 10.3 Naming graphs 10.2 Graphs from relationships 10.3 Graphs for fixed values of x and y 10.4 Graphs of the form $y = ax$ 10.5 Graphs of the form $x + y = a$ 10.4 Graphs from the real world	- To understand and use coordinates to locate points - To work out coordinates from a rule - To draw a graph for a simple rule - To recognise and draw line graphs of fixed values - To draw a graph for a simple relationship - To recognise and draw line graphs with fixed values of x and y - To recognise and draw lines of the form $y = ax$ - To recognise and draw graphs of the form $x + y = a$ - 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 11.2 Fractions of a quantity 11.3 Percentages of a quantity 11.4 Percentages with a calculator 11.5 Percentage increases and decreases	- To understand what a percentage is - To understand the equivalence between some simple fractions and percentages - To find a fraction of a quantity - To find a percentage of a quantity - To write a percentage as a decimal - To use a calculator to find a percentage of a quantity - 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 12.2 Probability scales 12.3 Experimental probability	- To learn and use words about probability - To know and use the 0–1 probability scale - To work out probabilities based in equally likely outcomes - 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		
		Week 32		Easter Holiday		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
	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)

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 17.2 Simplifying ratios 17.3 Ratios and sharing 17.4 Ratios and fractions	- To introduce ratio notation - To use ratios to compare quantities - To write a ratio as simply as possible - To use ratios to find missing quantities - 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 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 2.1 Angles in parallel lines 2.2 Angles in triangles and quadrilaterals 2.2 The geometric properties of quadrilaterals 2.3 Translations 2.4 Rotations 2.5 Constructions	- To identify parallel lines - To identify perpendicular lines - To calculate angles in parallel lines - 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° - To know the geometric properties of quadrilaterals - To know how to translate a point or shape - To know how to rotate a shape - 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 3.2 Collecting data on a frequency table 3.2 Mutually exclusive events 3.3 Mixed events 3.3 Using a sample space to calculate probabilities 3.4 Experimental probability 3.4 Experimental probability	- To use a probability scale to represent a chance - To collect data and use it to find probabilities - To decide if an event is fair or biased - To recognise mutually exclusive events - To recognise mixed events where you can distinguish different probabilities - To use a sample space to calculate probabilities - To calculate probabilities from experiments
		Week 7	3	Extended project opportunity / revision		
		Week 7	1	Assessment		
		Week 8		Half-term Holiday		
		Week 9 – 10	7	2.1:4: Percentages 2.2:4: Percentages	4.1 Calculating percentages 4.2 Calculating the result of a percentage change 4.2 Calculating percentage increases and decreases 4.3 Calculating a change as a percentage	- To write one percentage as a percentage of a another - To calculate the result of a percentage increase or decrease - To use a multiplier to calculate 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 5.2 Algebra and function machines 5.3 The n th term of a sequence 5.3 Working out the n th term of a sequence	- To know and understand the Fibonacci sequence - To use algebra with function machines - To use the nth term of a sequence - To work out the nth 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 6.2 Areas of compound shapes 6.3 Area of a triangle 6.4 Area of a parallelogram 6.3 Area of a trapezium 6.4 Surface area of cubes and cuboids	- To use a formula to work out the area of a rectangle - To work out the area of a compound shape - To use a formula to work out the area of a triangle - To work out the area of a parallelogram - To work out the area of a trapezium - To find the surface areas of cubes and cuboids
		Week 15	3	Assessment and review		
		Week 16		Christmas Holiday		
		Week 17		Christmas Holiday		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
	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 fractions
					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

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 35 – 26	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 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		
		Week 45	4	Assessment, revision and review		
		SUMMER HOLIDAY (Y8→Y9)				

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
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		

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
					7.4 Dividing fractions 7.4 Dividing fractions and mixed numbers	• To divide one fraction or mixed number by another
		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

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 22 – 23	6	3.1:9: Decimal numbers 3.2:9: Decimal numbers	9.1 Multiplication of decimals 9.2 Powers of ten 9.2 Standard form 9.3 Rounding suitably 9.3 Rounding appropriately 9.4 Dividing decimals 9.4 Mental calculations 9.5 Solving problems	- To multiply decimal numbers - To understand and work with both positive and negative powers of ten - To understand and work with standard form, using both positive and negative powers of ten - To round numbers to a suitable or appropriate degree of accuracy - To divide with decimals - To learn and understand some routines that can be used when calculating mentally - 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 10.2 Volume formulae for cubes and cuboids 10.3 Volumes of triangular prisms	- To work out the surface areas of cubes or cuboids - To use a simple formula to work out the volume of a cube or cuboid - 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 10.2 Volume of a prism 10.3 Surface area of a prism 10.4 Volume of a cylinder 10.5 Surface area of a cylinder	- To convert from one metric unit to another - To calculate the volume of a prism - To calculate the surface area of a prism - To calculate the volume of a cylinder - To calculate the curved surface area of a cylinder - To calculate the total surface area of a cylinder

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 $y = mx + c$ 11.2 Problems involving straight-line graphs 11.1 Graphs from equations in the form $ay \pm bx = c$ 11.2 Graphs from quadratic equations 11.3 Solving simple quadratic equations by drawing graphs 11.3 Solving quadratic equations by drawing graphs 11.4 Problems involving quadratic graphs 11.4 Solving simultaneous equations by graphs	- To draw a linear graph from any linear equation - To solve a linear equation from a graph - To draw graphs to solve some problems - To draw any linear graph from any linear equation - To solve a linear equation from a graph - To draw graphs from quadratic equations - To solve a quadratic equation by drawing a graph - To solve problems that use quadratic 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 12.2 Speed 12.3 Time	- To work out the distance travelled in a certain time at a given speed - To use and interpret distance-time graphs - To work out the speed of an object, given the distance travelled and the time taken - 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 measures	12.1 Speed 12.2 More about proportion 12.3 Unit costs	- To understand and use measures of speed - To understand and use density and other compound measures - To understand and use unit pricing
		Week 36 – 37	5	3.1:13: Similar triangles	13.1 Similar triangles 13.2 A summary of similar triangles 13.3 Using triangles to solve problems	- To understand what similar triangles are - To use and recall facts about similar triangles - To know that triangles can be used to solve some real-life problems
		Week 37	1	Assessment		
		Week 38		Half-term Holiday		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		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.

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 Angle 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		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
	Term 2	Week 18 – 19	7	F:6: Number: Approximations	6.1 Rounding whole numbers	round a whole number.
					6.2 Rounding decimals	round decimal numbers to a given accuracy.
					6.3 Approximating calculations	- identify significant figures - round numbers to a given number of significant figures - use approximation to estimate answers and check calculations - round a calculation at the end of a problem, to give what is considered to be a sensible answer.
		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.

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		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
		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

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		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		
	Term 3	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

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		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		
		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 42 – 42	7	Summer examinations and revision		
		Week 43	4	F:14:Geometry: 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

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		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)						
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, decimals and fractions	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

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		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		
		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		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
	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
					21.5 General rules from given patterns	To find the nth term from practical problems involving sequences
		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
		Week 23		Half-term Holiday		

Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 24 – 25	7	F:23: Geometry and measures: Congruency and similarity	23.1 Congruent triangles 23.2 Similarity	- To demonstrate that two triangles are congruent - To recognise similarity in any two shapes - To show that two shapes are similar - To work out the scale factor between similar shapes
		Week 26 – 27	7	F:24: Probability: Combined events	24.1 Combined events 24.2 Two-way tables 24.3 Probability and Venn diagrams 24.2 Tree diagrams	- To work out the probabilities when two or more events occur at the same time - To read two-way tables and use them to work out probabilities - To use Venn diagrams to solve probability questions - 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) 25.2 Rules for multiplying and dividing powers	- 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 - 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 26.2 Substitution method for simultaneous equations 26.3 Balancing coefficients to solve simultaneous equations 26.4 Using simultaneous equations to solve problems 26.5 Linear inequalities	- To solve simultaneous linear equations in two variables using the elimination method - To solve simultaneous linear equations in two variables using the substitution method - To solve simultaneous linear equations by balancing coefficients - To solve problems using simultaneous linear equations - To solve a simple linear inequality and represent it on a number line

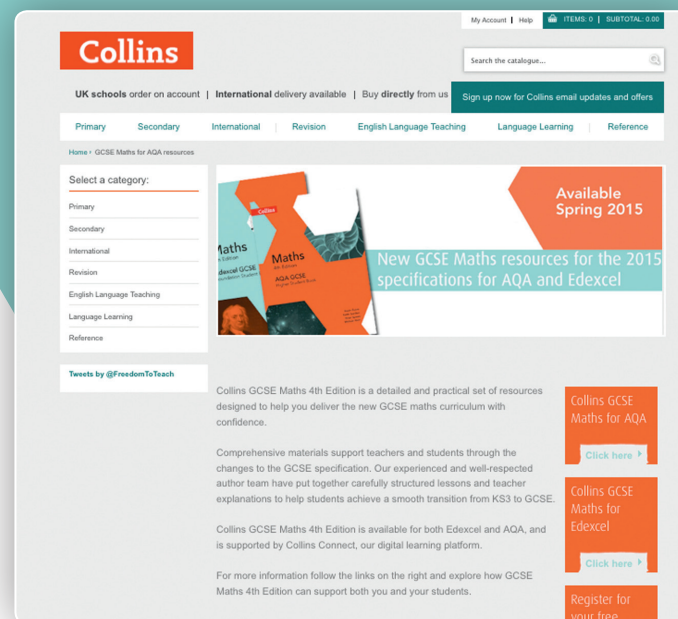
Year	Term	Week	Hours	Book: Chapter: Topic	Topic break-down (sub-topics)	Learning Objectives:
		Week 36 – 37	7	F:27: Algebra: Non-linear graphs	27.1 Distance-time graphs	- To interpret distance–time graphs - To draw a graph of the depth of liquid as a container is filled.
					27.2 Velocity-time graphs	- To read information from a velocity-time graph - work out the acceleration from a velocity-time graph
					27.3 Plotting quadratic graphs	To draw and read values from quadratic graphs
					27.4 Solving quadratic equations by factorisation	To solve a quadratic equation by factorisation
					27.5 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
					27.6 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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