

Chapter	Time	Topic Break-Down	Learning Objectives (Students will be able to)
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10: Linear graphs	10	10.1	Drawing linear graphs from points	Draw linear graphs by finding points
		10.2	Gradient of a line	Find the gradient of a straight line Draw a line with a certain gradient
		10.3	Drawing graphs by gradient-intercept and cover-up methods	Draw graphs using the gradient-intercept method Draw graphs using the cover-up method
		10.4	Finding the equation of a line from its graph	Find the equation of a line, using its gradient and intercept Find the equation of a line given two points on the line
		10.5	Real-life uses of graphs	Convert from one unit to another unit by using a conversion graph Use straight-line graphs to find formulae
		10.6	Solving simultaneous equations using graphs	Solve simultaneous linear equations using graphs
		10.7	Parallel and perpendicular lines	Draw linear graphs parallel or perpendicular to other lines and passing through a specific point

11: Right-angled triangles	14	11.1	Pythagoras' theorem	Calculate the length of the hypotenuse in a right-angled triangle
		11.2	Find the length of a shorter side	Calculate the length of a shorter side in a right-angled triangle
		11.3	Applying Pythagoras' theorem in real-life situations	Solve practical problems involving Pythagoras' theorem
		11.4	Pythagoras' theorem and isosceles triangles	Use Pythagoras' theorem and isosceles triangles
		11.5	Pythagoras' theorem in three dimensions	Use Pythagoras' theorem to solve problems involving three dimensions
		11.6	Trigonometric ratios	Use the three trigonometric ratios
		11.7	Calculating angles	Use the trigonometric ratios to calculate an angle
		11.8	Using the sine and cosine functions	Find lengths of sides and angles in right-angled triangles using the sine and cosine functions
		11.9	Using the tangent function	Find lengths of sides and angles in right-angled triangles using the tangent functions
		11.10	Which ratio to use	Decide which trigonometric ratio to use in a right-angled triangle
		11.11	Solving problems using trigonometry	Solve practical problems using trigonometry Solve problems using an angle of elevation or an angle of depression
		11.12	Trigonometry and bearings	Solve bearing problems using trigonometry
		11.13	Trigonometry and isosceles triangles	Find a missing length in an isosceles triangle Calculate the area of the triangle

Week Commencing 17th October 2022 - Revision & Assessment

Half Term

26: Proof - Booklet	6	26.1	Introduction to proof	Understand that proof is about logic, deciding whether statements are true/false
		26.2	Equations and Identities	Know the difference between equations and identities, prove simple identities
		26.3	Starting to generalise	Show something is true using specific cases, introducing algebra as an approach
		26.4	Multiple proofs	Show that expressions are a multiple of a given number using factorisation
		26.5	Types of number	Expressing different types of number as algebraic expressions (even, odd, consecutive e
		26.6	More complex proofs	Converting worded statements to algebra and proving them always true
		26.7	Consecutive number proofs (Extension only)	Complete generic proofs involving consecutive number tricks
		26.8	Geometric proofs (Extension only)	Challenging proofs involving geometric representations instead of algebra

12: Similarity	10	12.1	Similar triangles	Show two triangles are similar
				Work out the scale factor between similar triangles
		12.2	Areas and volumes of similar shapes	Solve problems involving the area and volume of similar shapes

13: Exploring and applying probability	8	13.1	Experimental probability	Calculate experimental probabilities and relative frequencies
				Estimate probabilities from experiments
				Use different methods to estimate probabilities
		13.2	Mutually exclusive and exhaustive outcomes	Recognise mutually exclusive, complementary and exhaustive events
		13.3	Expectation	Predict the likely number of successful events, given the number of trials and the probability of any one solution
		13.4	Probability and two-way tables	Predict the likely number of successful events, given the number of trials and the probability of any one outcome
13.5	Probability and Venn diagrams	Use Venn diagrams to solve probability questions		

Week Commencing 12th December 2022 - Revision & Assessment

End of Autumn Term

14: Powers and standard form	8	14.1	Powers (indices)	Use powers
				Multiply and divide by powers of 10
		14.2	Rules for multiplying and dividing powers	Use rules for multiplying and dividing powers
		14.3	Standard form	Change a number to, and from, Standard form Calculate numbers using Standard form

15. Equations and Inequalities	12	15.1	Linear equations	Solve equations in the which the variable appears as part of the numerator of a fraction Solve equations where you have to expand brackets first Solve equations where the variable appears on both sides of the equals sign Set up equations from given information and then solve them
		15.2	Elimination method for simultaneous equations	Solve simultaneous linear equations in two variables using the elimination method
		15.3	Substitution method for simultaneous equations	Solve simultaneous linear equations in two variables using the substitution method
		15.4	Balancing coefficients to solve simultaneous equations	Solve simultaneous linear equations by balancing coefficients
		15.5	Using simultaneous equations to solve problems	Solve problems using simultaneous equations
		15.6	Linear inequalities	Solve a simple linear inequality and represent it on a number line
		15.7	Graphical inequalities	Show a graphical inequality Find regions that satisfy more than one graphical inequality
		15.8	Trial and Improvement	Estimate the answer to an equation that does not have an exact solution using trial and improvement

Week Commencing 6th February - Revision & Assessment

Half Term

16: Counting, accuracy, powers and surds	11	16.1	Rational numbers, reciprocals, terminating and recurring decimals	Recognise rational numbers, reciprocals, terminating decimals and recurring decimals
				Convert terminal decimals to fractions
				Convert fractions to recurring decimals
				Find reciprocals to numbers of fractions
		16.2	Estimating powers and roots	How to estimate powers and roots of any given positive number
		16.3	Negative and fractional powers	Apply the rules of powers to negative and fractional powers
				Find and use the relationship between negative powers and roots
		16.4	Surds	Simplify surds
				Calculate and manipulate surds, including rationalising a denominator
		16.5	Limits of accuracy	Find the error interval or limits of accuracy of numbers that have been rounded to different degrees of accuracy
16.6	Problems involving limits of accuracy	Combine limits of two or more variables together to solve problems		
16.7	Choices and outcomes	Work out the number of choices, arrangements or outcomes when choosing from lists or sets		

17: Quadratic equations	9	17.1	Plotting quadratic graphs	Draw and read values from quadratic graphs
		17.2	Solving quadratic equations by factorisation	Solve a quadratic equation by factorisation
				Rearrange a quadratic equation so that it can be factorised
		17.3	Solving a quadratic equation by using the quadratic formula	Solve a quadratic equation by using the quadratic formula
				Recognise why some quadratic equations cannot be solved
		17.4	Solving quadratic equations by completing the square	Solve a quadratic equations by completing the square
		17.5	The significant points of a quadratic curve	Identify the significant points of a quadratic function graphically
				Identify the roots of a quadratic function by solving a quadratic equation
				Identify the turning point of a quadratic function by using symmetry or completing the square
17.6	Solve one linear and one non-linear equation using graphs	Solve a pair of simultaneous equations where one is linear and one is non-linear, using graphs		

Week Commencing 27th March - Revision & Assessment

End of Spring Term

17: Quadratic equations	5	17.7	Solving quadratic equations by the method of intersection	Solving equations by the method of intersecting graphs
		17.8	Solving linear and non-linear simultaneous equations algebraically	Solve simultaneous equations where one equation is linear and the other is non-linear
		17.9	Quadratic inequalities	Solve quadratic inequalities

18: Sampling and more complex diagrams	8	18.1	Collecting data	Understanding sampling Collect unbiased reliable data for a sample
		18.2	Frequency polygons	Draw and interpret frequency polygons
		18.3	Cumulative frequency graphs	Draw and interpret cumulative frequency graphs
		18.4	Box plots	Draw and interpret box plots
		18.5	Histograms	Draw and interpret histograms where the bars are of equal width Draw and interpret histograms where the bars are of unequal width Calculate the median, quartiles and interquartile range from a histogram

19: Combined events	10	19.1	Addition rules for outcomes of events	Work out the probability of different outcomes of combined events
		19.2	Combined events	Work out the probability of two outcomes or events occurring at the same time
		19.3	Tree diagrams	Use tree diagrams to work out the probability of combined events
		19.4	Independent events	Use the connectors 'and' and 'or' to work out the probabilities for combined events
		19.5	Conditional probability	Work out the probability of combined events when the probabilities change after each event

Week Commencing 22nd May 2022 - Revision & Assessment

Half Term

20: Circle Theorems	10	20.1	Circle theorems	Work out the size of angles in circles
		20.2	Cyclic quadrilaterals	Find the size of angles in cyclic quadrilaterals
		20.3	Tangents and Chords	Use tangents and chords to find the size of angles in circles
		20.4	Alternate segment theorem	Use the alternate segment theorem to find the size of angles in circles
		20.5	Proof of the circle theorems	
		20.6	Exam Question Practice	

Week Commencing 12th June 2023 - Revision

Week Commencing 19th June 2023 - End of Year Exams

Week Commencing 26th June 2023 - End of Year Exams