



Year Group	Year 7					
Subject intent	Our curriculum will enable students to: <ul style="list-style-type: none"> - Learn within a coherent and exciting framework which does not limit students' ambitions. - Develop new skills through a variety of interesting contexts to foster enjoyment. - Develop a rich, deep and secure subject knowledge. - Understand what they are doing well and how they need to improve. - Explore the breadth and depth of the national curriculum.] - Improve their spiritual, social, moral and cultural understanding to develop confidence in their own financial and numerical understanding 					
Subject Implementation	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	<u>Year 7 Higher:</u> - Analysing and displaying data. <u>Year 7 Intermediate:</u> - Analysing and displaying data <u>Year 7 Foundation:</u> - Analysing and displaying data	<u>Year 7 Higher:</u> - Number skills. <u>Year 7 Intermediate:</u> - Number skills <u>Year 7 Foundation:</u> - Number skills	<u>Year 7 Higher:</u> - Expressions, functions and formulae <u>Year 7 Intermediate:</u> - Expressions, functions and formulae <u>Year 7 Foundation:</u> - Expressions, functions and formulae	<u>Year 7 Higher:</u> - Decimals and measures <u>Year 7 Intermediate:</u> - Decimals and measures <u>Year 7 Foundation:</u> - Decimals and measures	<u>Year 7 Higher:</u> - Fractions <u>Year 7 Intermediate:</u> - Fractions <u>Year 7 Foundation:</u> - Fractions	End of Exam preparation and consolidation tasks
Skills	- Numeracy skills (multiply/	-Numeracy skills (multiply/ divide/ add/ subtract.)	"use and interpret algebraic manipulation,	order positive and negative integers, decimals and	Compare fractions Change an improper	Revisit topics from previous learning to consolidate and /



	<p>divide/ add/ subtract.)</p> <ul style="list-style-type: none"> - Count - Draw different statistical charts. 	<p>-Rounding</p> <p>-Using a scientific calculator</p> <p>- order positive and negative integers, decimals and fractions; use the symbols =, \neq, $<$, $>$, \leq, \geq</p>	<p>including:</p> <ul style="list-style-type: none"> ● ab in place of $a \times b$ ● $3y$ in place of $y + y + y$ and $3 \times y$ ● a^2 in place of $a \times a$, a^3 in place of $a \times a \times a$, a^2b in place of $a \times a \times b$ ● a/b in place of $a \div b$ ● coefficients written as fractions rather than as decimals ● brackets" <p>"simplify and manipulate algebraic expressions (including those involving surds and algebraic fractions) by:</p> <ul style="list-style-type: none"> ● collecting like terms ● multiplying a single term over a bracket ● taking out common factors 	<p>fractions; use the symbols =, \neq, $<$, $>$, \leq, \geq</p> <p>use scale factors, scale diagrams and maps</p> <p>Using formulae to calculate the area of 2D shapes.</p> <p>Rounding</p> <p>Calculate the area and perimeter of 2d shapes using the non-calculator and calculator method .</p> <p>Multiply decimals by multiples of 10, 100 and 1000, add and subtract decimals.</p> <p>Convert between different unit of measures.</p>	<p>fraction to a mixed number.</p> <p>Simplify fractions by dividing numerator and denominator by common factors.</p> <p>Add and subtract simple fractions.</p> <p>Work with equivalent fractions and decimals.</p> <p>Convert a percentage to a fraction or decimal.</p> <p>Work with equivalent percentages, fractions and decimals.</p> <p>Use different strategies to calculate with percentages.</p>	<p>stretch students learning further.</p>
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			<ul style="list-style-type: none"> • expanding products of two or more binomials • factorising quadratic expressions of the form $x^2 + bx + c$, including the difference of two squares; factorising quadratic expressions of the form $ax^2 + bx + c$ • simplifying expressions involving sums, products and powers, including the laws of indices" 			
Subject Impact	Interpret and construct tables, charts and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data, vertical line charts for ungrouped discrete numerical data, <u>tables and line graphs for</u>	Apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative; understand and use place value (e.g.	understand and use the concepts and vocabulary of expressions, equations, formulae, identities, inequalities, terms and factors substitute numerical values into formulae and expressions,	apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative; understand and use place value (e.g. when	apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative; understand and use place value (e.g. when	Students are able to demonstrate the outcomes stated from autumn one to summer one.



	<p><u>time series data</u> and know their appropriate use.</p> <p>interpret, analyse and compare the distributions of data sets from univariate empirical distributions through:</p> <ul style="list-style-type: none"> • appropriate graphical representation involving discrete, continuous and grouped data, including box plots • appropriate measures of central tendency (median, mean, mode and modal class) and spread (range, including consideration of outliers, quartiles and interquartile range) 	<p>when working with very large or very small numbers, and when calculating with decimals)</p> <p>recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions); use conventional notation for priority of operations, including brackets, powers, roots and reciprocals</p> <p>use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique</p>	<p>including scientific formulae</p>	<p>working with very large or very small numbers, and when calculating with decimals)</p> <p>use standard units of mass, length, time, money and other measures (including standard compound measures) using decimal quantities where appropriate</p> <p>round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures); use inequality notation to specify simple error intervals due to truncation or rounding</p> <p>change freely between related standard units (e.g. time, length, area, volume/capacity, mass) and compound</p>	<p>working with very large or very small numbers, and when calculating with decimals)</p> <p>calculate exactly with fractions, surds and multiples of π; simplify surd expressions involving squares (e.g. $\sqrt{12} = \sqrt{4 \times 3} = \sqrt{4} \times \sqrt{3} = 2\sqrt{3}$) and rationalise denominators</p> <p>work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $\frac{7}{2}$ or 0.375 or $\frac{3}{8}$); change recurring decimals into their corresponding fractions and vice versa</p> <p>interpret fractions and percentages as operators</p> <p>express one quantity as a fraction of</p>	
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	<p>factorisation theorem</p> <p>use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5; estimate powers and roots of any given positive number</p> <p>use standard units of mass, length, time, money and other measures (including standard compound measures) using decimal quantities where appropriate</p> <p>estimate answers; check calculations using approximation and estimation, including answers obtained using technology</p> <p>round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of</p>	<p>units (e.g. speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts</p> <p>use standard units of measure and related concepts (length, area, volume/capacity, mass, time, money, etc.)</p> <p>measure line segments and angles in geometric figures, including interpreting maps and scale drawings and use of bearings</p> <p>know and apply formulae to calculate: area of triangles, parallelograms, trapezia; volume of cuboids and other right prisms (including cylinders)</p>	<p>another, where the fraction is less than 1 or greater than 1</p> <p>define percentage as 'number of parts per hundred'; interpret percentages and percentage changes as a fraction or a decimal, and interpret these multiplicatively; express one quantity as a percentage of another; compare two quantities using percentages; work with percentages greater than 100%; solve problems involving percentage change, including percentage increase/decrease and original value problems, and simple interest including in financial mathematics</p>	
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		decimal places or significant figures); use inequality notation to specify simple error intervals due to truncation or rounding				
Assessment	Summative and formative	Summative and formative	Summative and formative	Summative and formative	Summative and formative	Summative and formative



Year Group	Year 8					
Subject intent	Our curriculum will enable students to: <ul style="list-style-type: none"> - Learn within a coherent and exciting framework which does not limit students' ambitions. - Develop new skills through a variety of interesting contexts to foster enjoyment. - Develop a rich, deep and secure subject knowledge. - Understand what they are doing well and how they need to improve. - Explore the breadth and depth of the national curriculum. - Improve their spiritual, social, moral and cultural understanding to develop confidence in their own financial and numerical understanding 					
Subject Implementation	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	<u>Year 8 Higher:</u> - Area and volume <u>Year 8 Intermediate:</u> - Area and volume <u>Year 8 Foundation:</u> - Area and volume	<u>Year 8 Higher:</u> - Real-life graphs <u>Year 8 Intermediate:</u> - Real-life graphs <u>Year 8 Foundation:</u> - Real-life graphs	<u>Year 8 Higher:</u> - Decimals and ratio <u>Year 8 Intermediate:</u> - Decimals and ratio <u>Year 8 Foundation:</u> - Decimals and ratio	<u>Year 8 Higher:</u> - Lines and angles <u>Year 8 Intermediate:</u> - Lines and angles <u>Year 8 Foundation:</u> - Lines and angles	<u>Year 8 Higher:</u> - Straight-line graphs <u>Year 8 Intermediate:</u> - Straight-line graphs <u>Year 8 Foundation:</u> - Straight-line graphs	End of Exam preparation and consolidation tasks
Skills	Derive and use the formula for the area of a triangle, parallelogram and trapezium.	Use and interpret conversion graphs. Interpret distance-time	Round decimals to an appropriate degree of accuracy and to a given number of significant figures.	Classify quadrilaterals by their geometric properties. Solve geometric problems using side	Recognise when values are in direct proportion with or without a graph. Plot graphs and	Revisit topics from previous learning to consolidate and / stretch students learning further.



	<p>Calculate the area of compound shapes made from rectangles and triangles.</p> <p>Calculate the volume of cubes and cuboids.</p> <p>Sketch nets of 3D solids.</p> <p>Draw 3D solids on isometric paper.</p> <p>Calculate the surface area of cubes and cuboids.</p> <p>Solve problems in everyday contexts involving measures.</p>	<p>graphs.</p> <p>Plot distance-time graphs from descriptive text.</p> <p>Plot line graphs from tables of data.</p> <p>Draw and interpret line graphs and identify trends, non-linear graphs from a range of sources, graphs from a range of sources.</p>	<p>Order decimals of any size, including positive and negative decimals.</p> <p>Multiply larger numbers.</p> <p>Multiply and divide by decimals.</p> <p>Divide a quantity into three or more parts in a given ratio.</p> <p>Use ratios involving decimals.</p> <p>Solve ratio and proportion problems involving decimals.</p> <p>Use unit ratios.</p>	<p>and angle properties of special quadrilaterals.</p> <p>Identify corresponding angles and alternate angles on a diagram</p> <p>Understand proofs of angle facts.</p> <p>Solve problems using properties of angles in parallel and intersecting lines.</p> <p>Calculate the sum of the interior and exterior angles of a polygon.</p> <p>Work out the sizes of interior and exterior angles of a polygon</p>	<p>reading values to solve problems.</p> <p>Plot a straight-line graph and work out its gradient.</p> <p>Plot the graphs of linear functions.</p> <p>Write the equations of straight line graphs in the form $y = mx + c$.</p>	
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Subject Impact						
	<p>identify properties of the faces, surfaces, edges and vertices of: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres</p> <p>construct and interpret plans and elevations of 3D shapes</p> <p>use standard units of measure and related concepts (length, area, volume/capacity, mass, time, money, etc.)</p> <p>know and apply formulae to calculate: area of triangles, parallelograms, trapezia; volume of cuboids and other right prisms (including cylinders)</p>	<p>identify and interpret gradients and intercepts of linear functions graphically and algebraically</p> <p>plot and interpret graphs (including reciprocal graphs and exponential graphs) and graphs of non-standard functions in real contexts to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration</p>	<p>Order positive and negative integers, decimals and fractions; use the symbols =, ≠, <, >, ≤, ≥</p> <p>Apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative; understand and use place value (e.g. when working with very large or very small numbers, and when calculating with decimals)</p> <p>Round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures); use inequality notation to specify simple error intervals</p>	<p>Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles; understand and use alternate and corresponding angles on parallel lines; derive and use the sum of angles in a triangle (e.g. to deduce and use the angle sum in any polygon, and to derive properties of regular polygons)</p> <p>Derive and apply the properties and definitions of special types of quadrilaterals, including square, rectangle, parallelogram, trapezium, kite and rhombus; and triangles and other plane figures using appropriate language</p>	<p>Plot graphs of equations that correspond to straight-line graphs in the coordinate plane; use the form $y = mx + c$ to identify parallel and perpendicular lines; find the equation of the line through two given points or through one point with a given gradient.</p> <p>Identify and interpret gradients and intercepts of linear functions graphically and algebraically</p> <p>Solve problems involving direct and inverse proportion, including graphical and algebraic representations.</p> <p>Use compound units such as speed, rates of pay, unit pricing, density and pressure.</p> <p>Interpret the gradient</p>	<p>Students are able to demonstrate the outcomes stated from autumn one to summer one.</p>



			<p>due to truncation or rounding</p> <p>Divide a given quantity into two parts in a given part: part or part: whole ratio; express the division of a quantity into two parts as a ratio; apply ratio to real contexts and problems (such as those involving conversion, comparison, scaling, mixing, concentrations)</p>		<p>of a straight line graph as a rate of change; recognise and interpret graphs that illustrate direct and inverse proportion.</p>	
Assessment	Summative and formative	Summative and formative	Summative and formative	Summative and formative	Summative and formative	Summative and formative



Year Group	Year 9					
Subject intent	<p>Our curriculum will enable students to:</p> <ul style="list-style-type: none"> - Learn within a coherent and exciting framework which does not limit students' ambitions. - Develop new skills through a variety of interesting contexts to foster enjoyment. - Develop a rich, deep and secure subject knowledge. - Understand what they are doing well and how they need to improve. - Explore the breadth and depth of the national curriculum. - Improve their spiritual, social, moral and cultural understanding to develop confidence in their own financial and numerical understanding 					
Subject Implementation	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	<p><u>Year 9 Higher:</u> - Indices and standard form</p> <p><u>Year 9 Intermediate:</u> - Indices and standard form</p> <p><u>Year 9 Foundation:</u> - Indices and standard form</p>	<p><u>Year 9 Higher:</u> - Multiplicative reasoning</p> <p><u>Year 9 Intermediate:</u> - Multiplicative reasoning</p> <p><u>Year 9 Foundation:</u> - Multiplicative reasoning</p>	<p><u>Year 9 Higher:</u> - Construction</p> <p><u>Year 9 Intermediate:</u> - Construction</p> <p><u>Year 9 Foundation:</u> - Construction</p>	<p><u>Year 9 Higher:</u> - Sequences, inequalities, equations and proportion</p> <p><u>Year 9 Intermediate:</u> - Sequences, inequalities, equations and proportion</p> <p><u>Year 9 Foundation:</u> - Sequences, inequalities, equations and proportion</p>	<p><u>Year 9 Higher:</u> - Circles, Pythagoras and prisms</p> <p><u>Year 9 Intermediate:</u> - Circles, Pythagoras and prisms</p> <p><u>Year 9 Foundation:</u> - Circles, Pythagoras and prisms</p>	End of Exam preparation and consolidation tasks
Skills	Use index laws to	Enlarge 2D shapes using a positive whole	Use scales on maps	Use the nth term to generate an	Calculate the circumference of a	



	<p>simplify expressions.</p> <p>Calculate combinations of powers, roots, fractions and brackets.</p> <p>Estimate answers to calculations.</p> <p>Use powers of 10 and their prefixes.</p> <p>Write large and small numbers using standard form.</p> <p>Enter and read standard form numbers on a calculator.</p> <p>Order numbers written in standard form.</p>	<p>number scale factors and centre of enlargement.</p> <p>Enlarge 2D shapes using a negative whole number scale factors and fractional scale factor.</p> <p>Find an original value using inverse operations.</p> <p>Calculate percentage change.</p> <p>Solve problems using compound measures.</p> <p>Solve problems using constant rates and related formulae.</p> <p>Solve best-buy problems.</p> <p>Solve problems involving inverse proportion.</p>	<p>and diagrams.</p> <p>Draw diagrams to scale.</p> <p>Make accurate constructions using drawing equipment.</p> <p>Construct accurate triangles.</p> <p>Construct accurate nets of solids involving triangles.</p> <p>Construct and draw accurate scale diagrams.</p>	<p>arithmetic sequence.</p> <p>Recognise and continue geometric sequences.</p> <p>Recognise and continue quadratic sequences.</p> <p>Represent inequalities on a number line.</p> <p>Find integer values that satisfy an inequality.</p> <p>Construct and solve equations including fractions or powers.</p> <p>Use algebra to solve problems involving direct or inverse proportion.</p>	<p>circle.</p> <p>Calculate the area of a circle.</p> <p>Find the length of an unknown side of a right-angled triangle.</p> <p>Calculate the volume and surface area of a prism.</p> <p>Calculate the volume and surface area of a cylinder.</p> <p>Convert between m^3, cm^3 and mm^3.</p> <p>Find the lower and upper bounds for a measurement.</p> <p>Calculate percentage error intervals.</p>	
Subject Impact	Recognise and use relationships between operations, including	Round numbers and measures to an appropriate degree of	Use scale factors, scale diagrams and	Solve linear equations in one unknown algebraically	Apply and interpret limits of accuracy, including upper and	



inverse operations (e.g. cancellation to simplify calculations and expressions); use conventional notation for priority of operations, including brackets, powers, roots and reciprocals. Use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5; estimate powers and roots of any given positive number. Calculate with roots, and with integer and fractional indices. Calculate with and interpret standard form $A \times 10^n$, where $1 \leq A < 10$ and n is an integer.

accuracy (e.g. to a specified number of decimal places or significant figures); use inequality notation to specify simple error intervals due to truncation or rounding. Define percentage as 'number of parts per hundred; interpret percentages and percentage changes as a fraction or a decimal, and interpret these multiplicatively; express one quantity as a percentage of another; compare two quantities using percentages; work with percentages greater than 100%; solve problems involving percentage change, including percentage increase/decrease and original value problems, and simple interest including in financial

maps.

Use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); use these to construct given figures and solve loci problems; know that the perpendicular distance from a point to a line is the shortest distance to the line.

Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles; understand and use alternate and corresponding angles on parallel lines; derive and use the sum of angles in a triangle (e.g. to

(including those with the unknown on both sides of the equation); find approximate solutions using a graph. Translate simple situations or procedures into algebraic expressions or formulae; derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution. Solve linear inequalities in one or two variable(s), and quadratic inequalities in one variable; represent the solution set on a number line, using set notation and on a graph. Generate terms of a sequence from either a term-to-term or a position-to-term rule. Recognise and use sequences of triangular, square and cube numbers, simple arithmetic

lower bounds. Change freely between related standard units (e.g. time, length, area, volume/capacity, mass) and compound units (e.g. speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts. Identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference, tangent, arc, sector and segment. Know and apply formulae to calculate: area of triangles, parallelograms, trapezia; volume of cuboids and other right prisms (including cylinders). Know the formulae: circumference of a circle = $2\pi r = \pi d$, area of a circle = πr^2 ; calculate: perimeters of 2D shapes,



		<p>mathematics. Solve problems involving direct and inverse proportion, including graphical and algebraic representations. Use compound units such as speed, rates of pay, unit pricing, density and pressure. Compare lengths, areas and volumes using ratio notation; make links to similarity (including trigonometric ratios) and scale factors. Identify, describe and construct congruent and similar shapes, including on coordinate axes, by considering rotation, reflection, translation and enlargement (including fractional and negative scale factors).</p>	<p>deduce and use the angle sum in any polygon, and to derive properties of regular polygons).</p> <p>Measure line segments and angles in geometric figures, including interpreting maps and scale drawings and use of bearings.</p>	<p>progressions, Fibonacci type sequences, quadratic sequences, and simple geometric progressions (rn where n is an integer, and r is a rational number > 0 or a surd) and other sequences. Solve problems involving direct and inverse proportion, including graphical and algebraic representations. Construct and interpret equations that describe direct and inverse proportion.</p>	<p>including circles; areas of circles and composite shapes; surface area and volume of spheres, pyramids, cones and composite solids. Calculate arc lengths, angles and areas of sectors of circles. Know the formulae for: Pythagoras' theorem $a^2 + b^2 = c^2$, and the trigonometric ratios, $\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$, $\cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$ and $\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$ apply them to find angles and lengths in right-angled triangles and, where possible, general triangles in two and three dimensional figures.</p>	
Assessment	Summative and formative	Summative and formative	Summative and formative	Summative and formative	Summative and formative	Summative and formative



Year Group	Year 10					
Subject intent	<p>Our curriculum will enable students to:</p> <ul style="list-style-type: none"> - Learn within a coherent and exciting framework which does not limit students' ambitions. - Develop new skills through a variety of interesting contexts to foster enjoyment. - Develop a rich, deep and secure subject knowledge. - Understand what they are doing well and how they need to improve. - Explore the breadth and depth of the national curriculum. - Improve their spiritual, social, moral and cultural understanding to develop confidence in their own financial and numerical understanding 					
Subject Implementation	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	<p><u>Year 10 Higher:</u> - Expressions and formulae</p> <p><u>Year 10 Foundation:</u> - Expressions and formulae - GCSE exam practice</p>	<p><u>Year 10 Higher:</u> - Graphs</p> <p><u>Year 10 Foundation:</u> - Graphs - GCSE exam practice</p>	<p><u>Year 10 Higher:</u> - Probability</p> <p><u>Year 10 Foundation:</u> - Probability - GCSE exam practice</p>	<p><u>Year 10 Higher:</u> - Comparing shapes</p> <p><u>Year 10 Foundation:</u> - Comparing shapes - GCSE exam practice</p>	<p><u>Year 10 Higher:</u> - Transformations.</p> <p><u>Year 10 Foundation:</u> - Transformations. - GCSE exam practice</p>	End of Exam preparation and consolidation tasks
Skills	Write and solve equations with fractions, unknown on both sides. Substitute values into expressions involving powers and roots.	Draw a graph from its equation, without working out points. Write the equation of a line parallel to	Identify and work out the probabilities of mutually exclusive outcomes and events. Calculate estimates of probability from	Use congruent shapes to solve problems about triangles and other polygons. Work out whether shapes are similar,	Recognise and carry out reflections in a mirror line. Reflect a shape on a coordinate grid. Describe a reflection on a coordinate grid.	



	<p>Write and use formulae.</p> <p>Substitute into formulae and then solve equations to find unknown values.</p> <p>Change the subject of a formula.</p> <p>Use the rules for indices for multiplying and dividing.</p> <p>Factorise an expression by taking out an algebraic common factor.</p> <p>Multiply out double brackets and collect like terms.</p>	<p>another line.</p> <p>Compare graph lines using their equations.</p> <p>Draw graphs with equations like $ax + by = c$.</p> <p>Rearrange equations of graphs into $y = mx + c$.</p> <p>Solve problems using simultaneous equations.</p> <p>Draw graphs with quadratic equations in the form $y = x^2$.</p> <p>Interpret graphs of quadratic functions.</p> <p>Draw and interpret graphs showing inverse proportion.</p> <p>Draw and interpret non-linear graphs.</p>	<p>experiments.</p> <p>Decide whether a dice or spinner is unbiased.</p> <p>List all the possible outcomes of one or two events in a sample space diagram.</p> <p>Decide if a game is fair</p> <p>Show all the possible outcomes of two events in a two-way table.</p> <p>Calculate probabilities from two-way tables.</p> <p>Draw Venn diagrams.</p> <p>Calculate probabilities from Venn diagrams.</p>	<p>congruent or neither.</p> <p>Solve problems involving similar triangles.</p> <p>Use conventions for naming the sides of a right-angled triangle.</p> <p>Use the trigonometric ratios to work out an unknown angle in a right-angled triangle.</p>	<p>Describe and carry out rotations on a coordinate grid.</p> <p>Translate 2D shapes.</p> <p>Transform 2D shapes by combinations of rotations, reflections and translations.</p> <p>Identify congruent shapes.</p> <p>Enlarge shapes using given scale factors.</p> <p>Work out the scale factor given an object and its image.</p>	
Subject Impact	Substitute numerical values into formulae	Understand and use the concepts and	Record, describe and analyse the frequency	Use the basic congruence criteria	Use the basic congruence criteria	



and expressions, including scientific formulae. Understand and use the concepts and vocabulary of expressions, equations, formulae, identities, inequalities, terms and factors.

"Simplify and manipulate algebraic expressions (including those involving surds and algebraic fractions) by:

- collecting like terms
- multiplying a single term over a bracket
- taking out common factors
- Expanding products of two or more binomials
- factorising quadratic expressions of the form $x^2 + bx + c$, including the difference of two squares; factorising quadratic expressions of the form $ax^2 + bx + c$
- simplifying

vocabulary of expressions, equations, formulae, identities, inequalities, terms and factors. Plot graphs of equations that correspond to straight-line graphs in the coordinate plane; use the form $y = mx + c$ to identify parallel and perpendicular lines; find the equation of the line through two given points or through one point with a given gradient. Recognise, sketch and interpret graphs of linear functions, quadratic functions, simple cubic functions, the reciprocal function $y = 1/x$ with $x \neq 0$, exponential functions $y = kx$ for positive values of k , and the trigonometric functions (with arguments in

of outcomes of probability experiments using tables and frequency trees.

Apply ideas of randomness, fairness and equally likely events to calculate expected outcomes of multiple future experiments.

Relate relative expected frequencies to theoretical probability, using appropriate language and the 0-1 probability scale.

Enumerate sets and combinations of sets systematically, using tables, grids, Venn diagrams and tree diagrams.

Construct theoretical possibility spaces for single and combined experiments with equally likely

for triangles (SSS, SAS, ASA, RHS).

Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to conjecture and derive results about angles and sides, including Pythagoras' theorem and the fact that the base angles of an isosceles triangle are equal, and use known results to obtain simple proofs. Apply the concepts of congruence and similarity, including the relationships between lengths, areas and volumes in similar figures. Know the formulae for: Pythagoras' theorem $a^2 + b^2 = c^2$, and the trigonometric ratios, $\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$, $\cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$ and $\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$

for triangles (SSS, SAS, ASA, RHS).

Identify, describe and construct congruent and similar shapes, including on coordinate axes, by considering rotation, reflection, translation and enlargement (including fractional and negative scale factors). Describe the changes and invariance achieved by combinations of rotations, reflections and translations.



	<p>expressions involving sums, products and powers, including the "laws of indices"</p> <p>Understand and use standard mathematical formulae; rearrange formulae to change the subject.</p> <p>Solve linear equations in one unknown algebraically (including those with the unknown on both sides of the equation); find approximate solutions using a graph.</p>	<p>degrees) $y = \sin x$, $y = \cos x$ and $y = \tan x$ for angles of any size.</p> <p>Plot and interpret graphs (including reciprocal graphs and exponential graphs) and graphs of non-standard functions in real contexts to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration.</p> <p>Solve two simultaneous equations in two variables (linear/linear or linear/quadratic) algebraically; find approximate solutions using a graph.</p>	<p>outcomes and use these to calculate theoretical probabilities.</p> <p>Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions.</p> <p>Calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams and Venn diagrams.</p>	<p>apply them to find angles and lengths in right-angled triangles and, where possible, general triangles in two and three dimensional figures.</p> <p>know the exact values of $\sin \theta$ and $\cos \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ$ and 90°; know the exact value of $\tan \theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ$ and 60°.</p>		
Assessment	Summative and formative	Summative and formative	Summative and formative	Summative and formative	Summative and formative	Summative and formative



Year Group	Year 11					
Subject intent	Our curriculum will enable students to: <ul style="list-style-type: none"> - Learn within a coherent and exciting framework which does not limit students' ambitions. - Develop new skills through a variety of interesting contexts to foster enjoyment. - Develop a rich, deep and secure subject knowledge. - Understand what they are doing well and how they need to improve. - Explore the breadth and depth of the national curriculum. - Improve their spiritual, social, moral and cultural understanding to develop confidence in their own financial and numerical understanding 					
Subject Implementation	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	<u>Year 11 Higher:</u> - Vectors and geometric proof <u>Year 11 Foundation:</u> - Vectors and geometric proof - GCSE exam practice	<u>Year 11 Higher:</u> - Proportion and graphs <u>Year 11 Foundation:</u> - Proportion and graphs - GCSE exam practice	<u>Year 11 Higher:</u> - Circle theorems <u>Year 11 Foundation:</u> - Circle theorems - GCSE exam practice	<u>Year 11 :</u> - GCSE exam practice	<u>Year 11 r:</u> - GCSE exam practice	
Skills	Addition, subtraction of vectors. Represent a vector as a column vector. Use vectors in simple and complex	Sketch translations and reflections of a given function. Sketch and interpret graphs of linear,	Understand and use the terms sector and segment. Understand and apply	Build exam skills and review previously taught content in exam style.	Build exam skills and review previously taught content in exam style.	



	geometric arguments and proofs.	quadratic and non-linear functions. Solve problems involving direct and inverse proportion, including graphical and algebraic representations.	circle theorems Prove the theorem that two angles in the same segment are equal. Solve a problem using circle theorems.			
Subject Impact	apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors; use vectors to construct geometric arguments and proofs	Calculate or estimate gradients of graphs and areas under graphs (including quadratic and other non-linear graphs), and interpret results in cases such as distance-time graphs, velocity-time graphs and graphs in financial contexts (this does not include calculus). Understand and use proportion as equality of ratios. Understand that X is inversely proportional to Y is equivalent to X is proportional to $1/Y$; construct and interpret equations	Recognise and use the equation of a circle with centre at the origin; find the equation of a tangent to a circle at a given point. Identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference, tangent, arc, sector and segment. Apply and prove the standard circle theorems concerning angles, radii, tangents and chords, and use them to prove related			



		<p>that describe direct and inverse proportion.</p> <p>Interpret the gradient of a straight line graph as a rate of change; recognise and interpret graphs that illustrate direct and inverse proportion.</p> <p>Interpret the gradient at a point on a curve as the instantaneous rate of change; apply the concepts of average and instantaneous rate of change (gradients of chords and tangents) in numerical, algebraic and graphical contexts (this does not include calculus).</p>	results.			
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