Curriculum Map: MATHEMATICS

Nothing Short of Remarkable
We are Ambitious ▪ We are Committed ▪ We are Proud

	Year 7	Year 8	Year 9	Year 10	Year 11
Term 1	*TOPIC/KNOWLEDGE* **Number Theory – The Four Operations:** **Addition, Subtraction, Multiplication and Division** Students will consolidate key skills and knowledge in number theory and methods of addition, subtraction, multiplication and division. New concepts involving estimation, accuracy and algebra will be introduced alongside common applications of the skills acquired. New concepts in geometry involving finding the areas of complex shapes such as trapezia and volume of prisms will also be introduced. *SKILLS* Addition, subtraction, multiplication and division of integers, decimals and negative numbers. Rounding to a specified degree of accuracy including use of significant figures applied to estimation. Introduction to algebra including new vocabulary, simplifying and substitution into expressions.	*TOPIC/KNOWLEDGE* **Shaping Up** Students will have the opportunity to review and extend their knowledge on a broad range of geometrical topics enabling them to solve increasingly challenging angle problems, construct accurate diagrams using mathematical equipment, enhance their ability to work with map scales and develop their spatial reasoning. *SKILLS* **Spatial Reasoning** Construct nets of 3D shapes. Draw plans and elevations of 2D shapes. Classify properties for 2D and 3D shapes including circles. **Area/Perimeter** • Calculate the perimeter and area of circles and composite shapes involving circles. **Angles** • Draw and measure angles of any size and apply angle facts to solve problems. • Find the sum of angles in any given polygon. • Work with interior and exterior angles and angles in parallel lines. • Draw and interpret bearings to solve bearing problems involving parallel lines.	*TOPIC/KNOWLEDGE* Students in Year 9 will study a range of topics from each of the core Mathematical strands: Number, Algebra, Geometry, Ratio and Proportion and Statistics. To navigate the transition from Key Stage 3 to GCSE Mathematics, students will begin to gain familiarity with GCSE style exam questions and develop both their problem-solving skills and understanding of real-life Maths. In Term 1 we provide students with the opportunity to revisit and master topics from Year 7 and 8 Number and Geometry before developing skills in applying their knowledge to problems in context and solving problems within mathematical and real-life contexts. *SKILLS* **Higher Tier** • Recap of number theory including the four operations with fractions, decimals and negative numbers with an emphasis on problem solving. • Factors and Multiples including prime factor decomposition and systematic listing strategies.	*TOPIC/KNOWLEDGE* Students in year 10 continue to study a range of topics from each of the core Mathematical strands at GCSE: Number, Algebra, Geometry, Ratio and Proportion and Statistics. To develop confidence with the wide breadth of topics within GCSE Mathematics, students will experience a more dedicated focus on assessment and GCSE exam questions both formally and within their lessons. In Term 1 we provide students with the opportunity to revisit and master topics and advance their understanding of key concepts introduced at KS3 in Number and Geometry. Students will then begin to develop understanding of the key links between different areas of Mathematics through the interleaving topics from the GCSE curriculum in order to improve their learning whilst supporting the retrieval of key concepts already met through their KS3 education. *SKILLS*	*TOPIC/KNOWLEDGE* Students in year 11 continue to study a range of topics from each of the core Mathematical strands at GCSE: Number, Algebra, Geometry, Ratio and Proportion and Statistics. Students will be presented with a full suite of GCSE assessment materials to develop confidence with the wide breadth of topics within GCSE Mathematics. Teachers will equip students with a variety of techniques to develop their approach to answering increasingly complex mathematical problems using the skills and knowledge developed in previous years of study at the school. In Term 1 we provide students with the opportunity to revisit and master topics and advance their understanding of key concepts introduced in previous years in Algebra and Geometry.

Applications of these skills in relation to perimeters of compound shapes and angles in polygons. Understand the metric system and being able to convert between different metric units of length, mass and capacity. To be able to find the area of a range of shapes including rectangles, triangles, circles and trapezia.	**Map Scales** • Interpret Map Scales given as ratios • Calculate real life distances and distances on a map. **Construction** • Construct the four types of triangles using Mathematical equipment. • Construct perpendicular bisectors of a line segment and angle bisectors for any given angle.	• Working with angles, including the use of algebra to solve complex problems. • Review of Key Stage 3 algebra including using conventional notation and vocabulary, expanding brackets, factorisation of expressions and solving equations. **Foundation Tier** • Recap of basic number theory including the four operations with negative numbers. • Factors and Multiples including prime factor decomposition and systematic listing strategies. • Angle facts including working with angles in parallel lines. • Working with scale and bearings.	**Higher Tier** • Solve problems involving percentage change including increase and decrease, original value problems and compound interest in financial mathematics. • Apply and interpret limits of accuracy including upper and lower bounds in calculation. • Use standard units of measure, including compound measures and change freely between them. • Calculate exactly with Surds including simplifying expressions involving surds and rationalising the denominator. **Foundation Tier** • Understand and use place value including in the context of standard form to calculate with very large or small numbers. • Solve problems involving percentage change including increase and decrease, original value problems and compound interest in financial mathematics. • Use standard units of measure, including compound measures and change freely between them.	A baseline assessment will collate and highlight areas of strength whilst suggesting and directing students to topics they need to develop through independent study. Students should aim to develop complete familiarity and confidence with GCSE questions, with a heavy focus on multi-step problem-solving elements of the course in order to fully prepare for their mock examination in the second half term. Both Tiers of entry will begin revision programmes to be conducted fortnightly once the initial baseline assessment has been conducted using AQA assessment materials. *SKILLS* **Higher Tier** • Construct and interpret equations that describe direct and indirect proportion. • Functions: Work with functions and understand associated notation. Construct and work with inverse functions. Apply relevant notation and work with composite functions. • Trigonometry and Pythagoras: Recap Pythagoras and Basic Trigonometry Ratios. Apply Pythagoras and Trigonometry in 3D figures.

				• Learn the exact values of certain trigonometric ratios. • Advance Trigonometry: Apply the SINE rule and COSINE rule when finding missing angles or missing lengths in non-right-angled triangles. • Know and apply the formula to find the area of a triangle using trigonometry. **Foundation Tier** • Volume: Use scale factors, apply formulae to calculate the volume and surface area of prisms, spheres and pyramids. • Algebraic manipulation: Simplify and manipulate algebraic expressions by expanding double brackets, factorising quadratic expressions and simplifying expressions involving sums, products and powers including indices. • Rearrange formulae to change the subject.
Term 2	*TOPIC/KNOWLEDGE* **Discovering Algebra and Bits and Pieces** Students will begin a deep dive into the world of algebra. Students will learn new skills in manipulating algebraic expressions through collecting terms, working with brackets, factorising and using substitution in formulae. They will then use these skills to develop an understanding of balancing to	*TOPIC/KNOWLEDGE* **Half Term 3: Developing Algebra** Students will revisit and extend upon their algebraic journey during this half term. They will review the basics of constructing and manipulating expressions and solving equations through balancing. Many students will learn how to solve equations involving fractions and apply these skills to construct and solve inequalities. Students will also learn to work with and calculate	*TOPIC/KNOWLEDGE* Students in Year 9 will study a range of topics from each of the core Mathematical strands: Number, Algebra, Geometry, Ratio and Proportion and Statistics. To navigate the transition from Key Stage 3 to GCSE Mathematics, students will begin to gain familiarity with GCSE style exam questions and develop both	*TOPIC/KNOWLEDGE* Students in year 10 continue to study a range of topics from each of the core Mathematical strands at GCSE: Number, Algebra, Geometry, Ratio and Proportion and Statistics. To develop confidence with the wide breadth of topics within GCSE Mathematics, students will experience a more dedicated focus on assessment and GCSE exam questions both	*TOPIC/KNOWLEDGE* Students in year 11 continue to study a range of topics from each of the core Mathematical strands at GCSE: Number, Algebra, Geometry, Ratio and Proportion and Statistics. Students will be presented with a full suite of GCSE assessment materials to develop confidence with the

solve equations and construct their own equations to solve real life problems.

Students will also build upon their knowledge of all things fractional. They will revisit and consolidate the skills required to work with fractions, decimals and percentages. They will then begin to apply these skills to enable them to perform calculations using standard methods. Students will apply these skills to answer questions in real life settings using these skills.

SKILLS
Algebra:
• construct expressions, expand brackets, factorisation and substitution
• solve one and two step equations. Construct equations and solve harder multi step equations, including where the unknown appears on both sides
• explain linear sequences using term to term rules.
• understand how algebraic expressions generate sequences and find the algebraic (nth) term of a linear sequence

Fractions, Decimals and Percentages:
• order fractions and decimals
• calculate fractions and percentages of amounts
• calculate with fractions, decimals and percentages.
• Multiply and divide with fractions and decimals

values using basic formulae including rearrangement and the use of Pythagoras' Theorem.

Half Term 4: Mathemapping
Student will also learn about different mappings in Maths. From how linear equations can be drawn on a coordinate grid to the transformation of shapes, students will have learn how to change between different representations.

SKILLS
Further Algebra:
• Construct expressions, expand brackets and factorise algebraic terms
• Solve one and two step equations moving onto multi step equations including those involving brackets and fractions.
• Use and construct simple formulae. Change the subject of a formula
• Expand and factorise quadratic expressions.
• Learn and apply Pythagoras' Theorem
• Construct and solve inequalities including those involving brackets and fractions.

Mappings:
• Plot linear functions and learn the general equation of a straight line $y = mx + c$
• Understand gradients, intercepts and parallel lines
• Learn how to reflect, rotate, translate and enlarge objects

their problem-solving skills and understanding of real-life Maths.

In the Spring half terms 3 and 4 we provide students with the opportunity to revisit and master topics from Year 7 and 8 Number and Geometry before developing skills in applying their knowledge to problems in context and solving problems within mathematical and real-life contexts.

SKILLS
Higher Tier
• Interpret percentages and percentage changes as a fraction or decimal and interpret these multiplicatively.
• Express one quantity as a percentage of another.
• Compare two quantities using percentages.
• Identify properties of the faces, surfaces, edges and vertices of: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres.
• Calculate the perimeter of a 2D shapes and composite shapes. Find the surface area of pyramids and composite shapes.
• Know and apply formulae to calculate area of triangles, parallelograms and trapezia.
• 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

formally and within their lessons.

In Term 2 we provide students with the opportunity to revisit and master topics and advance their understanding of key concepts introduced at KS3 in Number and Geometry. Students will then begin to develop understanding of the key links between different areas of Mathematics through the interleaving topics from the GCSE curriculum in order to improve their learning whilst supporting the retrieval of key concepts already met through their KS3 education.

SKILLS
Higher Tier
• Use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS).
• Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides including the base angles of an isosceles triangle are equal, and use known results to obtain simple proofs.
• Apply and use the concepts of congruence and similarity, including the relationships between lengths, areas and volumes in similar figures.
• Know the formula for Pythagoras' Theorem and apply it to find angles and lengths in right angled triangles and, where possible, general

wide breadth of topics within GCSE Mathematics. Teachers will equip students with a variety of techniques to develop their approach to answering increasingly complex mathematical problems using the skills and knowledge developed in previous years of study at the school.

In Term 1 we provide students with the opportunity to revisit and master topics and advance their understanding of key concepts introduced in previous years in Algebra and Geometry.

A baseline assessment will collate and highlight areas of strength whilst suggesting and directing students to topics they need to develop through independent study. Students should aim to develop complete familiarity and confidence with GCSE questions, with a heavy focus on multi-step problem-solving elements of the course in order to fully prepare for their mock examination in the second half term.
Both Tiers of entry will begin to receive weekly past papers as part of their revision programme as they begin to

• solve percentage change problems	• Describe reflections, rotations, translations and enlargements	acceleration including problems requiring a graphical solution. • Interpret the gradient of a straight-line graph as a rate of change. **Foundation Tier** • Interpret and construct tables, charts and diagrams for categorical data such as frequency tables, bar charts and pie charts. • Interpret and compare the distributions of data sets through appropriate graphical representation. • Know and understand the terms primary data, secondary data, discrete data and continuous data. • Generate terms of a sequence from either a term-to-term or a position-to-term rule. • Recognise different types of sequence such as triangular, square and cube numbers, Fibonacci type sequences. • Calculate the `nth term of a linear sequence. • Interpret percentages and percentage changes as a fraction or a decimal. • Express one quantity as a percentage of another. • Compare two quantities using percentages. • Interpret fractions and percentages as operators, including interpreting percentage problems using a multiplier. • Identify properties of the faces, surfaces, edges and vertices of: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres.	triangles in two and three dimensional figures. • Know and use the trigonometric ratios and apply them to find angles and lengths in right-angled triangles in two dimensional figures. • Learn the exact values of some trigonometric functions. • Apply ideas of relative frequency, sample spaces and the 'AND' 'OR' probability rules. • Construct Venn Diagrams to enumerate sets and calculate probabilities. • Work with Histograms, Tree Diagrams and other statistical diagrams (Y9 Recap) **Foundation Tier** Manipulate algebraic expressions (including those involving surds) by collecting like terms, expanding brackets and factorisation. • Calculate the nth term of a linear sequence. • Solve linear equations in one unknown algebraically including those with the unknown on both sides of the equation (review of Year 9) • Use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS). Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides. • Know and use the trigonometric ratios and apply them to find angles and lengths in right-angled triangles in two dimensional figures.	increase their level of independent study. *SKILLS* **<u>Higher Tier</u>** • To be able to interpret the gradient of a straight line as a rate of change. • Calculate or estimate gradients of graphs and areas under graphs including quadratic and other non-linear graphs. • To be able to simplify and manipulate algebraic expressions involving algebraic fractions where the denominator is numerical or algebraic. • To be able to understand the vector notation, draw and identify a vector, to be able to find the magnitude of a vector, to know what a scalar is and to be able to multiply a vector by a scalar. • To be able to add and subtract multiple vectors and sketch the corresponding diagram. **<u>Foundation Tier</u>** • Know the equation for direct and indirect proportion as $y = kx$ and $y = k/x$ respectively • Calculate the value of k by substituting given values into the equation and solving. • Review Year 10 right angled trigonometry: - Use SOH CAH TOA to calculate the value of trig functions

			• Calculate the perimeter of a 2D shape and composite shapes. • Calculate the area of composite shapes. • Know and apply formulae to calculate area of triangles, parallelograms and trapezia.	• Use the form y = mx + c to identify parallel lines • Find the equation of the line through two given points, or through one point with a given gradient. • Identify and interpret Gradients and Intercepts of linear functions graphically and algebraically • Know and use the formulae relating to circles. • Calculate the perimeter of 2D shapes including circles and composite shapes • Calculate areas of circles and composite shapes (Review of Year 9) • Calculate the surface area of spheres, cones and composite solids • Calculate arc lengths, angles and areas of sectors of circles	- Use trig functions to calculate unknown sides - Use trig functions to calculate unknown angles • Review of simple interest • Calculate final investment value when earning compound interest by calculating interest year on year • Recognise graphs of growth and decay • Write translations as column vectors • Represent column vectors diagrammatically • Add and subtract vectors.
Term 3	*TOPIC/KNOWLEDGE* **Half Term 5: Bits and Pieces** **Half Term 6: Statistically Speaking** Students will also build upon their knowledge of all things fractional. They will revisit and consolidate the skills required to work with fractions, decimals and percentages. They will then begin to apply these skills to enable them to perform calculations using standard methods. Students will apply these skills to answer questions in real life settings using these skills. Students will review and extend on the work introduced in Year 6	*TOPIC/KNOWLEDGE* **Half Term 5: A Sense of Proportion** **Half Term 6: Statistically Speaking 2** Students will begin a deep focus on all things proportional. This will include working with ratios, scale for drawings and enlargements right down to working out the best buy from a range of options using the unitary method to solve worded problems. The most able students will learn how to use multiplicative reasoning to solve more complicated proportionality questions alongside being able to	*TOPIC/KNOWLEDGE* **Half Term 5: Scatter Graphs, Transformations, Pythagoras and Standard Form** **Half Term 6: Plans, Elevations, Construction and Loci and Financial Maths** Students in Year 9 will study a range of topics from each of the core Mathematical strands: Number, Algebra, Geometry, Ratio and Proportion and Statistics. To support students in their transition from Key Stage 3 to the beginning of their GCSE Mathematics course next year, students will begin to gain	*TOPIC/KNOWLEDGE* **Half Term 5** **Higher:** Rearranging Formulae, Volume and Surface Area, Equation of a Circle, Transformations (Recap) **Foundation:** Simultaneous Equations, Properties of Polygons and Real-Life Graphs **Half Term 6** **Higher:** Graphical representations, Inequalities and End of Year Review	*TOPIC/KNOWLEDGE* **Content Review and GCSE Examination Programme** Students in year 11 finalise their study of the Mathematics GCSE course by reviewing each of the core Mathematical strands at GCSE: Number, Algebra, Geometry, Ratio and Proportion and Statistics. Students will be presented with a full suite of GCSE assessment materials to develop confidence with the wide breadth of topics within GCSE Mathematics. Teachers

on statistics. Students will learn how to present data in a range of statistical diagrams, learn how to calculate a variety of averages and develop their understanding of probability to enable them to calculate probabilities of equally likely events.

SKILLS
Fractions, Decimals and Percentages:
• order fractions and decimals.
• calculate fractions and percentages of amounts.
• be able to add, subtract, multiply and divide with fractions, decimals and percentages.
• add and subtract with mixed numbers.
• convert between fractions, decimals and percentages.
• solve percentage change problems.

Presenting Data, Averages and Probability
• Represent data in frequency tables, bar charts and pictograms and pie charts.
• calculate averages an understand the difference between the mode, median and mean.
• calculate the range of a dataset.
• Use numbers to describe probability.
• List the set of all possible outcomes to create a sample space diagram to help calculate probabilities more easily.

share a quantity into a given ratio.

Student will revisit, upgrade and extend their knowledge of statistical diagrams, averages and probability. In addition to work already met, students will meet new ways of displaying data and begin to calculate averages from tables instead of lists for larger data sets.

The work already done on probability will be extended to include an understanding of the difference between theoretical and experimental probability and how we are able to predict the probability of an event using relative frequency for events with non-equal outcomes.

SKILLS
A Sense of Proportion:
• work with quantities in proportion such as scaling up recipes.
• Use the unitary method and multiplicative reasoning to solve harder proportional problems
• Understand and simplify ratio notation
• Divide quantities into a given ratio.
• Draw accurate scale diagrams and interpret scale diagrams to calculate real life lengths of objects.
• Understand the meaning of congruence and similarity and use this to find missing lengths in similar shapes.

familiarity with GCSE style exam questions and develop both their problem-solving skills and understanding of real-life Maths.

In the Summer term we provide students with the opportunity to revisit and master topics taught throughout Year 7 and 8 before developing skills in applying their knowledge to problems in context and solving problems within mathematical and real-life contexts.

All students will study a two-week financial maths course to develop understanding of credit, debt, budgeting, tax and payslips. The course develops a students knowledge of the important role that money plays in our daily lives , how to be a critical consumer and how to make informed decisions surrounding spending and saving.

SKILLS
Recognise correlation and know that it does not indicate causation Be able to identify positive vs negative and strong vs weak correlation from scatter graph
• Make predictions using line of best fit and understand the limitations of predicting from scatter graphs
• Interpolate and extrapolate apparent trends whilst knowing the dangers of doing so
• Transform shapes using translation, reflection, rotation and enlargement

Foundation: Probability Review and Extension and End of Year Review

Students in year 10 continue to study a range of topics from each of the core Mathematical strands at GCSE: Number, Algebra, Geometry, Ratio and Proportion and Statistics.

To develop confidence with the wide breadth of topics within GCSE Mathematics, students will experience a more dedicated focus on assessment and GCSE exam questions both in formal assessment and within their lessons.

In Term 3 we provide students with the opportunity to revisit and master topics and advance their understanding of key concepts introduced at KS3 in Number and Geometry. Students will then begin to develop understanding of the key links between different areas of Mathematics through the interleaving topics from the GCSE curriculum to improve their learning whilst supporting the retrieval of key concepts already met through their KS3 education.

Towards the end of the year all students in Year 10 will review their learning since the start of the year and will complete an End of Year assessment. The assessment is based solely on past GCSE paper questions

will equip students with a variety of techniques to develop their approach to answering increasingly complex mathematical problems using the skills and knowledge developed in previous years of study at the school.

In Term 3 we provide students with the opportunity to revisit and master topics from the whole course using detailed question level analysis of their performance during the mock assessments in the Spring Term.

Students should aim to develop complete familiarity and confidence with GCSE questions, with a heavy focus on multi-step problem-solving elements of the course to fully prepare for their final examinations.

Both Tiers of entry will begin to receive weekly past papers as part of their revision programme as they begin to increase their level of independent study.

SKILLS
For both tiers of entry, assessment objectives are embedded within each topic. These are:

| | | **Statistically Speaking 2:**
• Plot pie charts, two-way tables, frequency polygons and scatter graphs to represent data and compare datasets.
• Understand the meaning of correlation and how it can be used to describe the relationship between two variables.
• Calculate and solve problems pertaining to the mode, median and mean of a dataset.
• Calculate the mode, median, mean and range from a frequency table, including grouped frequency tables.
• List outcomes to create sample spaces to find theoretical probabilities.
• Understand the difference between theoretical and experimental probability and answer worded questions relating to each.
• Calculate the probability of non-equally likely events using relative frequency. | • Perform composite transformations
• Describe transformations of shapes through:
• Stating the line of symmetry for reflection
• Stating the column vector for translation
• Stating the centre of rotation, direction and angle of turn for rotation
• Stating the scale factor and centre of enlargement for enlargements
• Understand and use place value when working with very large or very small numbers
• Convert between ordinary numbers and standard form
• Multiply and divide numbers in standard form without a calculator
• Add and subtract in standard form without a calculator by converting to basic number
• Use a calculator to undertake calculations in standard form and interpret the calculator display
• Understand the theory behind Pythagoras' Theorem and it's uses in calculating missing lengths in right angled triangles
• Using Pythagoras' theorem to find both the longest and shortest sides of right-angled triangles
• Construct accurate diagrams using standard ruler and compass techniques
• Use the standard techniques to construct accurate diagrams to solve loci problems and identify regions of interest | across two papers, non-calculator and calculator. This experience is designed to closely resemble the GCSE assessment experience in style, format and difficulty.

SKILLS
Higher Tier
• To be able to rearrange formulae involving factorising to change the subject
• To know and apply the formulae to calculate the volume and surface area of prisms, including cylinders and composite solids
• To know and apply the formulae to calculate the volume and surface area of spheres, pyramids and cones.
• To apply the knowledge of volume of cones to calculate the volume of frustums, using scale factors and making links to similar triangles
• To be able to identify, describe and translate a shape in a single or combined transformation
• To be able to identify, describe and rotate a shape in a single or combined transformation
• To be able to identify, describe and reflect a shape in a single or combined transformation.
• To be able to identify, describe and enlarge a shape with a positive or fractional scale factor in a single or combined transformation, | AO1: Use and apply standard techniques
AO2: Reason, interpret and communicate Mathematically
AO3: Solve Problems withing Mathematical and other contexts

In addition to reviewing the full list of topics covered in the Mathematics GCSE course, students should ensure a healthy diet of answering short and longer form questions from each topic to cover the different assessment objectives being tested at each point.

Through the completion of the full suite of past papers, available through hard copy or via MS Teams student should feel well prepared as they move into the summer examination period. |

| | | | | • Understand key vocabulary surrounding finance including; budgets, credit, debt, inflation, tax and pensions.
• Understand how to manage money through effective budgeting to meet the cost of living
Make connections between the world of work, future economic wellbeing, personal finance and public spending through developing an understand of personal taxation, pensions and inflation | including with negative scale factors
• Recognise and use the equation of a circle with the centre at the origin
• Find the equation of a tangent to a circle at a given point
• Use the form y = mx+c to identify parallel and perpendicular lines
• Plot and recognise the distinct features of linear, quadratic, cubic, reciprocal and exponential graphs
• Plot and interpret real life graphs and find approximate solutions to problems involving distance, speed and acceleration
• To be able to solve linear and quadratic inequalities and represent the solution set on a number line, knowing the conventions of an open and closed circle
• To be able to represent inequalities graphically

Foundation Tier
• Solve two linear simultaneous equations in two variables algebraically
• Find approximate solutions to two linear simultaneous equations graphically
• Translate simple situations or procedures into algebraic expressions or formulae
• Derive two simultaneous equations, solve the equations and interpret the solutions
• Know the properties of the special triangles: isosceles, | |

				equilateral, scalene and right-angled • Derive and use the sum of angles in a triangle • Deduce and use the angle sum in any polygon and derive properties of regular polygons • Derive and apply the properties and definitions of the special types of quadrilaterals (including Square, Rectangle, Parallelogram, Trapezium, Kite and Rhombus) • Plot co-ordinates and draw a conversion graph • Read a value from a conversion graph • Interpret the gradient of a straight-line graph as a rate of change • Plot and interpret graphs in real contexts, to find approximate solution to problems involving distance, speed and acceleration • Calculate Theoretical Probabilities and Relative Frequency. • Understand that unbiased samples tend towards theoretical probability distributions with increasing sample size • Enumerate sets and combinations of sets systematically using Tables and Venn Diagrams • Construct frequency trees and use them to calculate probabilities • Calculate the probability of independent and dependent combined events, including	

			using tree diagrams and other representations and know the underlying assumptions • Know when to add and when to multiply two or more probabilities	
Career Pathways				