Year 7 Curriculum Overview:
Mathematics

RESPECT
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	Topics / Content Outline	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	**(1)** Developing Number Sense **(2)** Number Properties **(3)** Place Value **(4)** Directed Number	• Order of operations • Factors, multiples & primes • Prime factors, HCF & LCM • Square & triangular numbers • Compare & order integers & decimals • Rounding to powers of 10 • Rounding to significant figures • Estimation • Four operations with negative numbers	A 'skills check' will be completed in the first few weeks of the year, which will help us assess the knowledge retained from KS2 topics so we can plan any amendments to the curriculum (if necessary). End of topic tests will be completed in lessons every 2 – 3 weeks.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework, promoting resilience by encouraging students to try the homework independently using the attached support videos if needed.
Spring Term	**(5)** Algebraic Thinking **(6)** Solving Equations **(7)** Sequences **(8)** FDP Equivalence	• Like & unlike terms • Function machines • Substitution • One-step & two-step equations • Continuing sequences • Linear & non-linear sequences • Nth term of a linear sequence • Understanding tenths, fifths & quarters • Converting fluently between FDP	A mid-year assessment will be completed on the topics covered up to that point in the year. Students will receive a revision checklist two weeks before and full information will be posted as a homework. End of topic tests will be completed in lessons every 2 – 3 weeks.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework, promoting resilience by encouraging students to try the homework independently using the attached support videos if needed. Support students with revision (as required) ahead of the assessment.
Summer Term	**(9)** … Of Amounts **(10)** Working With Shape **(11)** Fractional Thinking **(12)** Working With Angles **(13)** Representing Data	• Fractions & percentages of amounts • Understand & draw angles • Types of triangle & quadrilateral • Area & perimeter • Mixed numbers & improper fractions • Adding & subtracting fractions • Key angle facts • Angles in parallel lines • Frequency trees, two-way tables & charts	An end of year assessment will be completed on the topics covered across the year. Students will receive a revision checklist two weeks before and full information will be posted as a homework. End of topic tests will be completed in lessons every 2 – 3 weeks.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework, promoting resilience by encouraging students to try the homework independently using the attached support videos if needed. Support students with revision (as required) ahead of the assessment.

Year 8 Curriculum Overview:
Mathematics

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	Topics / Content Outline	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	**(1)** Multiply & Divide Fractions **(2)** Ratio **(3)** Working With Percentages **(4)** Proportion **(5)** Brackets & Expressions	• Multiply fractions by integers & fractions • Divide fractions by integers & fractions • Simplify ratio • Divide into a given ratio • Percentage increase and change • Conversion graphs & currency • Pie charts • Expanding brackets • Factorising into a bracket	End of topic tests will be completed in lessons every 2 – 3 weeks.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework, promoting resilience by encouraging students to try the homework independently using the attached support videos if needed.
Spring Term	**(6)** Probability Basics **(7)** Equations **(8)** Further Angles **(9)** Inequalities	• Probability scale • Sample space • Probability of single events • Two-step equations & inequalities • Forming & solving equations & inequalities • Equations & inequalities (x on both sides) • Multi-step angle problems • Angles in parallel lines • Angles in polygons	A mid-year assessment will be completed on the topics covered up to that point in the year. Students will receive a revision checklist two weeks before and full information will be posted as a homework. End of topic tests will be completed in lessons every 2 – 3 weeks.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework, promoting resilience by encouraging students to try the homework independently using the attached support videos if needed. Support students with revision (as required) ahead of the assessment.
Summer Term	**(10)** Further Shape **(11)** Constructions **(12)** Real World Maths **(13)** Sets & Venns **(14)** Graphs & Symmetry	• Constructing triangles & angles • Triangles, parallelograms & trapezia • Circumference & area of a circle • Area of compound shapes • Surface area & volume of cuboids • Metric units • Mean, median and range • Probability from Venn diagrams • Plotting coordinates & key equations	An end of year assessment will be completed on the topics covered across the year. Students will receive a revision checklist two weeks before and full information will be posted as a homework. End of topic tests will be completed in lessons every 2 – 3 weeks.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework, promoting resilience by encouraging students to try the homework independently using the attached support videos if needed. Support students with revision (as required) ahead of the assessment.

Year 9 Curriculum Overview:
Mathematics

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	Topics / Content Outline	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	**(1) Factors, Multiples and Primes** **(2) Indices** **(3) Formulae** **(4) 3D Shapes – surface area** **(5) Surds** **(6) Direct Proportion** **(7) Linear Graphs** **(8) Problem Solving with Coordinates**	• Product of Prime factors, HCF, LCM • Apply index laws including negative & fractional indices • Work with numbers in standard form • Form, rearrange and apply formulae • Plans and elevations • Surface area of cuboids, cones and spheres • Pressure • Simplify, add, subtract and multiply surds • Expand brackets with surds and rationalise the denominator • Understand the gradient and y-intercept of linear graphs • Plot linear graphs • Solve coordinate geometry problems	Review assessments will take place twice a term towards the end of each half term. Assessments will cover content that has been taught in the current half term as well as some key concepts from earlier in the year or in previous years.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Spring Term	**(9) Pythagoras' Theorem** **(10) Ratio** **(11) Percentage change** **(12) Transformations** **(13) Congruence** **(14) Data Analysis**	• Calculate missing sides in a right-angled triangles • Use Pythagoras' theorem to solve problems in context • Problem solving with ratios including three part ratios • Percentage multipliers, repeated percentage change, simple and compound interest • Column vectors and translation • Reflections, rotations and combinations of transformation, including invariant points • Congruent triangles and proofs of congruency • Frequency trees • Frequency polygons • Estimating averages from ungrouped and grouped frequency tables	Review assessments will take place twice a term towards the end of each half term. Assessments will cover content that has been taught in the current half term as well as some key concepts from earlier in the year or in previous years.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Summer Term	**(15) Similar Shapes** **(16) Enlargement** **(17) Similarity** **(18) Trigonometry in right-angled triangles** **(19) Probability** **(20) Volume** **(21) Data Representation and analysis**	• Similar Shapes and scale factor • Enlargement with positive integer and fractional scale factors. Enlargement with negative scale factors • Find missing sides and angles using trigonometric ratios (Sine, Cosine, Tangent) • Relative frequency and experimental probability • Volumes of cuboids, prisms and cylinders • Density • Scatter Graphs and lines of best fit • Stem and Leaf Diagrams • Quartiles and Interquartile range.	An end of year assessment will take place during the final term. Assessments will cover content that has been taught throughout the year building on knowledge from previous years.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths

Year 10 Core Curriculum Overview:
Mathematics

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	Topics / Content Outline	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	**(1)** Algebraic manipulation **(2)** Quadratic equations **(3)** Product rule for counting **(4)** Accuracy and Bounds **(5)** Surds **(6)** Exact trigonometry values and graphs **(7)** Data representation and analysis	• Expand double and triple brackets and factorise quadratic expressions • Solve quadratic equations • Plot quadratic functions • Use the product rule for counting to solve problems • Rationalise the denominator of a surd • Error intervals for rounded and truncated number • Find bounds for calculations • Know exact trigonometry values • Recognise and plot trigonometric graphs • Construct and interpret histograms • Cumulative frequency graphs and box plots	Review assessments will take place twice a term towards the end of each half term. Assessments will cover content that has been taught in the current half term as well as some key concepts from earlier in the year or in previous years.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Spring Term	**(8)** Quadratic Functions **(9)** Sketching quadratic graphs **(10)** Venn Diagrams and Set notation **(11)** Probability **(12)** Direct and Inverse proportion **(13)** Reciprocal graphs **(14)** Linear Graphs **(15)** Inequalities **(16)** Circles	• Completing the square • Quadratic formula • Identify roots and turning points of functions • Venn diagrams, set notation • Probability tree diagrams • Direct and inverse proportion (word problems, algebraic representation and graphs) • Plot and understand reciprocal graphs • Find equations of parallel and perpendicular lines • Solve linear and quadratic inequalities. Represent inequalities graphically • Circle mensuration, arcs and sectors, and Circle Theorems	Review assessments will take place twice a term towards the end of each half term. Assessments will cover content that has been taught in the current half term as well as some key concepts from earlier in the year or in previous years.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Summer Term	**(17)** Equation of a circle and simultaneous equations **(18)** Loci and bearings **(19)** Further Trigonometry **(20)** Circle theorems	• Know the equation of a circle centred at (0,0) • Solve linear simultaneous equations by elimination and substitution • Solve simultaneous equations one of which is non-linear • Construct line and angle bisectors • Measure and draw bearings • Sine rule, cosine rule, area of triangle formula • Use angle properties involving circles to find missing angles	An end of year assessment will take place during the final term. Assessments will cover content that has been taught throughout the year building on knowledge from previous years.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths

Year 10 Support Curriculum Overview:
Mathematics

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	Topics / Content Outline	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	**(1)** Algebraic manipulation **(2)** Quadratic equations **(3)** Angle properties and bearings **(4)** Data representation and analysis **(5)** Accuracy and Bounds **(6)** Fraction operations **(7)** Percentage change	• Collect like terms • Expand single and double brackets • Factorise quadratic expressions • Know and use angle properties to find missing angles • Construct and interpret composite and dual bar charts • Round values to varying degrees of accuracy and use these to perform estimations • Represent and solve linear inequalities • Find error intervals for rounded and truncated values • Find fractions of amounts and be able to calculate with fractions • Find percentages of amounts with and without a calculator • Calculate percentage change	Review assessments will take place twice a term towards the end of each half term. Assessments will cover content that has been taught in the current half term as well as some key concepts from earlier in the year or in previous years.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Spring Term	**(8)** Quadratic Functions **(9)** Plotting quadratic graphs **(10)** Venn Diagrams and set notation **(11)** Probability tree diagrams **(12)** Direct and Inverse proportion **(13)** Reciprocal graphs **(14)** Linear Graphs **(15)** Find equations of parallel lines **(16)** Simultaneous equations	• Solve quadratic equations by factorising • Recognise and plot quadratic equations • Identify roots and turning points of quadratic equations • Use and understand Venn diagrams with set notation • Probability tree diagrams • Direct and inverse proportion (word problems, algebraic representation and graphs) • Plot and understand linear graphs including finding the gradient • Find equations of parallel lines • Solve simultaneous equations	Review assessments will take place twice a term towards the end of each half term. Assessments will cover content that has been taught in the current half term as well as some key concepts from earlier in the year or in previous years.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Summer Term	**(17)** Circle mensuration **(18)** Finding sector area and arc length **(19)** Volume of prisms and other 3D solids **(20)** Constructions and loci **(21)** Using mathematics in the real world	• Find the area and circumference of a circle • Find the area of a sector and calculate arc length • Find volumes of 3D solids and solve related shape problems • Construct line and angle bisectors • Measure and draw bearings • Use mathematics to solve functional problems set in real-world scenarios • Interpret worded questions	An end of year assessment will take place during the final term. Assessments will cover content that has been taught throughout the year building on knowledge from previous years.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths

Year 11 Curriculum Overview:
Foundation Mathematics

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	Topics / Content Outline	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	**(1)** Reading and interpreting tables **(2)** Solve problems involving time **(3)** Speed, distance, time **(4)** Laws of indices **(5)** Fraction operations **(6)** Fractions of amounts **(7)** Percentages of amounts **(8)** Interest rates percentage change **(9)** Shape and transformations	• Read, interpret and solve problems with clocks, timetables, energy bills • Speed, distance, time problems • Use the laws of indices to manipulate algebra • Use all four operations with fractions, including with mixed number fractions • Find percentages of amounts, with and without a calculator and solve real – life problems involving percentages • Problems involving fractions, mixed numbers, percentages, simple and compound interest. • Perform and describe transformations of shape	The Mock Examination in November will assess content from across the whole of the GCSE curriculum that has been taught so far.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Encourage students to attend lunch time and after-school revision sessions as required. Encourage students to complete the mixed practice revision homework Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Spring Term	**(10)** Standard form calculations **(11)** Problems involving direct and inverse proportion **(12)** Angle properties **(13)** Probability diagrams **(14)** Forming and solving equations to solve problems	• Convert to and from standard form • Calculate using values in standard form • Direct and inverse proportion problems • Finding missing sides in similar shapes • Consolidate angle properties in triangles, polygons, parallel lines • Know fundamental properties of probability and be able to use probability diagrams • Form equations from worded contexts and solve to find solutions to problems	The Mock Examination in February will assess content from across the whole of the GCSE curriculum.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Encourage students to complete past paper homeworks. Encourage students to attend lunch time and after-school revision sessions as required. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Summer Term	• **Revision** • **Problem Solving** • **Exam Preparation**	• Revision in class of specific topics • Practise of applying problem solving skills to examination style questions • Completing past examination papers	Paper 1- No Calculator Allowed – 90 minutes Paper 2 - Calculator Allowed – 90 minutes Paper 3 - Calculator Allowed – 90 minutes	Encourage students to complete past paper homeworks. Encourage students to attend lunch time and after-school revision sessions as required. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths

Year 11 Curriculum Overview:
Higher Mathematics

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	Topics / Content Outline	Powerful Knowledge (key concepts, skills)	What will you be assessed on?	How can you help at home?
Autumn Term	**(1)** Speed, distance time **(2)** Functions **(3)** Trigonometric Functions **(4)** Transformations of graphs **(5)** Equations of circles **(6)** Estimating gradients and area under curved graphs **(7)** Volume of 3D solids **(8)** Area and volume scale factors	• Function notation, composite functions, inverse functions, • Graphs of trigonometric functions, exact values of trigonometric functions. • Reflections and translations of graphs • Circle theorems and proofs of circle theorems • Estimate gradients of curved graphs and velocity from distance-time graphs etc • Estimate area under curved graphs and distance from velocity-time graphs • Solve problems involving speed, distance, time • Solve problems involving volume of 3D solids • Use scale factors to find missing areas and volumes	The Mock Examination in November will assess content from across the whole of the GCSE curriculum that has been taught so far.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Encourage students to attend lunch time and after-school revision sessions as required. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Spring Term	**(9)** Vectors and vector proof **(10)** Constructions and loci **(11)** Algebraic proof **(9)** Ratio and algebra problems **(10)** Problem solving using combinations of disciplines	• Represent vector journeys using formal notation • Formally prove statements using vectors • Use algebra to prove algebraic statements • Perform angle and line bisectors and use these to solve problems involving loci • Use algebra and ratio to solve complex problems involving proportion	The Mock Examination in February will assess content from across the whole of the GCSE curriculum.	Encourage active participation in weekly Sparx Maths 'Compulsory' homework. Encourage students to complete the mixed practice revision homework Encourage students to attend lunch time and after-school revision sessions as required. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths
Summer Term	• **Revision** • **Problem Solving** • **Exam Preparation**	• Revision in class of specific topic • Practise of applying problem solving skills to examination style questions • Completing past examination papers	Paper 1- No Calculator Allowed – 90 minutes Paper 2 - Calculator Allowed – 90 minutes Paper 3 - Calculator Allowed – 90 minutes	Encourage students to complete past paper homeworks. Encourage students to attend lunch time and after-school revision sessions as required. Support students with revision (as required) ahead of the assessment using quality resources such at Maths Genie Dr Frost Maths Corbett Maths