KS4 Curriculum Map	Subject	Mathematics (Foundation)

Year 10 Autumn	Year 10 Spring	Year 10 Summer
Half term 1 **Number properties:** Factors, multiples, primes, HCF,LCM and indices, **Place value:** multiplying with powers of ten, standard form, rounding and dividing decimals **Equivalent Fractions:** comparing, adding, subtracting, multiplying, dividing, using mixed numbers **Percentages:** increases and decreases, interest, reverse percentage and applying percentages. **Main home learning tasks:** There will be one homework per week. Sometimes this will be written and be a check on either the skills from the week or mixed questions. Sometimes this will be set as assignments online e.g Mathswatch **Key assessment:** Pupils will be practicing GCSE questions in lessons and will be tested before the end of the term. (with some mini topic tests in lesson) **Half Term 2** **Ratio:** Convert between units, real life scales, share in a ratio, best value, bar modelling and problem solving. **Algebra:** simplifying, expanding single and double brackets, substitution, identities and factorising. **Balance method:** Solving equations including; fractional, algebra on both sides, brackets and inequalities. **Main home learning tasks:** There will be one homework per week. Sometimes this will be written and be a check on either the skills from the week or mixed questions. Sometimes this will be set as assignments online e.g Mathswatch **Key assessment:** One exam per term. Pupils will have access to a topic list on Show My Homework. A mathswatch assignment is created to support pupils with revision. **Assessment conditions:** In class in exam conditions.	**Half Term 3** **Dimensions:** including perimeter, area, volume, plans, nets and elevations and surface area and Pythagoras **360 degrees:** Angle properties (right angles, straight lines, full turn) Parallel lines, bearings and angles in polygons, **Properties of shapes:** Recap shape properties e.g symmetry, rotational. Parallel and perpendicular properties and Vectors. **Main home learning tasks:** There will be one homework per week. Sometimes this will be written and be a check on either the skills from the week or mixed questions. Sometimes this will be set as assignments online e.g Mathswatch **Key assessment:** Pupils will be practicing GCSE questions in lessons and will be tested before the end of the term. (with some mini topic tests in lesson) **Half Term 4** **Probability**: Using Fraction decimal and percentage to represent probabilities. Listing outcomes, Sample space diagrams, relative frequency , Venn diagrams, frequency trees, and tree diagrams **Sequences:** spotting patterns in number, naming and generating sequences (nth term). Recognise square, cube, Fibonacci and quadratic sequences. Graph- Plotting a variety of graphs (straight line, quadratic, cubic) Understanding the equation of a straight line (y=mx+ c) and simultaneous equations graphically. **Main home learning tasks:** There will be one homework per week. Sometimes this will be written and be a check on either the skills from the week or mixed questions. Sometimes this will be set as assignments online e.g Mathswatch **Key assessment:** Assessment 2 will occur after February half term We will be doing a revision week in the run up to the exam and then an Improvement Task week to “Close any Gaps”. A topic list will be given so pupils know what will be on the assessment.	**Half Term 5** **Compound Measures:** time, distance, speed, density, rates of pay and conversion graphs, **Data**: averages, scatter graphs, two way tables, pie charts and estimating mean from grouped data **Main home learning tasks:** There will be one homework per week. Sometimes this will be written and be a check on either the skills from the week or mixed questions. Sometimes this will be set as assignments online e.g Mathswatch **Key assessment:** Pupils will be practicing GCSE questions in lessons and will be tested before the end of the term. (with some mini topic tests in lesson) **Half Term 6** **Loci and constructions**- Draw a range of locus for given rules. Be able to construct; triangles, angle bisectors and line bisectors, **Transformations:** Rotations, reflections, translations, enlargements and combinations. **Revision:** Time will be given to revise topics covered throughout the year in preparation for the final assessment including GCSE style questions. **Main home learning tasks:** There will be one homework per week. Sometimes this will be written and be a check on either the skills from the week or mixed questions. Sometimes this will be set as assignments online e.g Mathswatch **Key assessment:** The summer assessment happens after half term. We will be doing a revision week in the run up to the exam and then an Improvement Task week to “Close any Gaps”. A topic list will be given so pupils know what will be on the assessment.

Year 11 Autumn	Year 11 Spring	Year 11 Summer
Half term 1 • Extend knowledge of number work to surds, law of indices, standard form and limits of accuracy. • In addition to the above higher tier will cover; • Rationalising surds, fractional and negative indices, and 4 operations with algebraic fractions including simplification. • Extend percentages work to reverse percentages and percentage change. Students will become confident in real life context questions with percentages including simple interest, compound interest and growth and decay. • Extend work on ratio to include linear functions, direct and inverse proportion. • In addition to the above higher tier will cover; • Relationship between variables algebraically and graphically. **Main home learning tasks:** There will be one homework per week. This will be using Hegarty Maths where students will be required to revisit topics previously taught to consolidate knowledge. Revision homework for upcoming assessment. Post assessment: students will be expected to address areas for development using the Assessment Cycle (Completion of PLCs YouTube Videos and Improvement tasks.) **Key assessment:** Students will have a half termly GCSE Paper. Students will have AQA topic tests through the scheme of learning to check understanding after topics taught. **Assessment conditions:** In class in exam conditions. PPEs will take place in the hall.	**Half Term 3** • Extend work on dimensions to include fractional scale factors for enlargement of shape (including negative scale factors for higher tier) .Describe combinations of transformations. (Including invariance for higher tier. Understand 2D vectors and use 2D vectors to describe translations. Students will learn about the addition and subtraction of vectors and the multiplication of vectors by a scalar. Students will be apply to apply this to a diagram. (higher tier will construct geometric arguments and proofs using vectors) • Extend work on area and circumference of circle to calculating arc lengths and area of sectors. (higher tier including finding the angle of a sector and area of a segment) • Use and apply concepts of congruency and similarity, including the relationships between lengths. (higher tier will look at the effect of enlargements on area and volume in similar shapes) • Extend work on shape to calculate areas and volumes of spheres, pyramids cones and composite solids. • Higher tier will be able to apply and prove the standard circle theorems, being able to calculate angles and lengths. • Use and apply work ion Pythagoras' Theorem and trigonometry to find angles and lengths inn right angle triangles in 2D and 3D shapes. • Extend to the use of the Sine and Cosine Rules for calculating angles and lengths in non-right angles triangles. Be able to apply the ½ abSinC for area of a triangle. • Extend work on probability to include relative frequency, use relative frequency and theoretical probability to predict future events of an experiment. Represent probabilities on tree diagrams. Calculate probabilities of independent and dependant combined events. • Link work on probability to Venn diagrams. **Main home learning tasks:** There will be one homework per week. This will be using Hegarty Maths where students will be required to revisit topics previously taught to consolidate knowledge. Revision homework for upcoming assessment.	**Half Term 5** • Develop and extend work in statistics. • When looking at scatter graphs, extend work on correlation to understand that correlation does not imply causation. Interpolate and extrapolate trends and understand the limitations of doing so. • Deduce properties of populations and distributions. Understand the limitations of sampling. Be able to describe a population using statistics. • Higher tier will extend work on constructing and interpreting cumulative frequency graphs and histograms. • Be able to interpret, analyse and compare data sets which include discrete, continuous and grouped data. Use appropriate measures to do this including mode and for higher tier quartile sand inter quartile range. **Main home learning tasks**: There will be one homework per week. This will be using Hegarty Maths where students will be required to revisit topics previously taught to consolidate knowledge. Revision homework for upcoming assessment. Post assessment: students will be expected to address areas for development using the Assessment Cycle (Completion of PLCs YouTube Videos and Improvement tasks.) **Key assessment:** Students will have a half termly GCSE Paper. Students will have AQA topic tests through the scheme of learning to check understanding after topics taught. **Assessment conditions:** In class in exam conditions.

Half Term 2 Developing knowledge of algebra further to include quadratic expressions, functions and identities. Extend knowledge of solving to quadratic equations. In addition to the above higher tier will cover; Functions, composite functions, inverse functions and the multiplication of two or more binomial expressions. **Main home learning tasks:** There will be one homework per week. This will be using Hegarty Maths where students will be required to revisit topics previously taught to consolidate knowledge. Revision homework for upcoming assessment. Post assessment: students will be expected to address areas for development using the Assessment Cycle (Completion of PLCs YouTube Videos and Improvement tasks.) **Key assessment:** Students will have a half termly GCSE Paper. Students will have AQA topic tests through the scheme of learning to check understanding after topics taught.	Post assessment: students will be expected to address areas for development using the Assessment Cycle (Completion of PLCs YouTube Videos and Improvement tasks.) **Key assessment:** Students will have a half termly GCSE Paper. Students will have AQA topic tests through the scheme of learning to check understanding after topics taught. **Assessment conditions:** In class in exam conditions. **Half Term 3** • Extend work on dimensions to include fractional scale factors for enlargement of shape (including negative scale factors for higher tier) .Describe combinations of transformations. (Including invariance for higher tier. Understand 2D vectors and use 2D vectors to describe translations. Students will learn about the addition and subtraction of vectors and the multiplication of vectors by a scalar. Students will be apply to apply this to a diagram. (higher tier will construct geometric arguments and proofs using vectors) • Extend work on area and circumference of circle to calculating arc lengths and area of sectors. (higher tier including finding the angle of a sector and area of a segment) • Use and apply concepts of congruency and similarity, including the relationships between lengths. (higher tier will look at the effect of enlargements on area and volume in similar shapes) • Extend work on shape to calculate areas and volumes of spheres, pyramids cones and composite solids. • Higher tier will be able to apply and prove the standard circle theorems, being able to calculate angles and lengths. • Use and apply work ion Pythagoras' Theorem and trigonometry to find angles and lengths inn right angle triangles in 2D and 3D shapes. • Extend to the use of the Sine and Cosine Rules for calculating angles and lengths in non-right angles triangles. Be able to apply the ½ abSinC for area of a triangle. • Extend work on probability to include relative frequency, use relative frequency and theoretical probability to predict future events of an experiment. Represent	

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