



Year 9 Maths Curriculum Map						
Half Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Big Themes	Graphs, Direct Proportion, Standard form	Algebra, Sequences, Constructions	Congruence, Pythagoras, Angles in polygons	Inequalities, Probability, Graphical solutions	Averages, Correlation and Causation, Types of data	Transformations, Similar shapes, Trigonometry
Knowledge and skills covered	<ul style="list-style-type: none"> Plot coordinates in all four quadrants Use knowledge of 2D shapes to solve coordinate problems Find the midpoint of a line segment Find an endpoint of a line segment, given the midpoint and one endpoint Solve problems using coordinate grids Identify the equation of horizontal & vertical lines Plot coordinates from a rule to generate a straight line Identify key features of a linear graphs Make links between graphical and algebraic representation Identify parallel lines from algebraic equations Plot quadratic functions and recognise the shape of a quadratic graph Recognise when two quantities are directly proportional Interpret and use graphs 	<ul style="list-style-type: none"> Recognise that linear and quadratic expressions can be used to represent sequences of different types Recognise arithmetic and geometric sequences and appreciate other sequences that may arise Solve problems involving linear and non-linear sequences in a variety of contexts Multiply a term over a single bracket Expand products of two or more binomials Make links between area, perimeter and expanding brackets Factorise quadratic expressions where the coefficient of x is 1. Write expressions, equations and formulae to represent relationships in a given context Use informal substitution to find the value of one variable given other values 	<ul style="list-style-type: none"> Determine when 2 shapes are congruent Understand and use the criteria for congruent triangles. Emphasis on mathematical communication of proof and the correct use of technical language Give detailed reasons to justify congruence in increasingly complex problems Determining the minimum conditions for congruency Use the correct angle and side notation Investigating relationships in triangles and proving Pythagoras' theorem Deduce whether a triangle is right angled by considering its sides Use Pythagoras's theorem to calculate missing sides in triangles Solve problems in other shapes where right angled triangles exist Pythagoras' application in 3D shapes 	<ul style="list-style-type: none"> Form and solve linear equations with one unknown, including with unknown on both sides Rearrange and solve linear equations in any form including those with brackets and fractions Using prior knowledge of solving linear equations but emphasis on technical accuracy and solving equations in contexts. Express relationships using inequality notation Form and solve linear inequalities in one unknown, including those where the unknown appears on both sides Understand and use the probability scale from 0 to 1 Understand and use the language associated with probability Understand the relationship between relative frequency and theoretical probability Understand that different trials of an experiment may produce different outcomes Mutually exclusive events, exhaustive and complementary events Systematically list outcomes using a variety of 	<ul style="list-style-type: none"> Comparing various sources of data Appreciate the difference between discrete and continuous data Using averages and range in a variety of contexts to make inferences about sets of data Consolidate understanding of mean, moving on to calculating mean from grouped data and frequency tables Understand why you cannot calculate an exact mean from grouped data Find an estimate for the mean from grouped and continuous data Determine the modal class of grouped data Determine the class interval containing the median of grouped data writing succinct, precise and brief answers about interpreting averages. Introduction to bivariate data and idea of relationship between two data sets 	<ul style="list-style-type: none"> Enlarge shapes from a given centre, with and without coordinate grids, using rays where necessary Finding the centre of enlargement Using positive, negative and fractional scale factors Understand that the corresponding angles of similar shapes are equal Understand that the ratio of corresponding sides in similar shapes is constant. Solve problems involving similar triangles Consolidating work on equations of linear graphs and coordinate geometry including measuring and drawing angles Correct use of technical language and how to describe a transformation Translate a shape by a given vector Reflect a shape in a given



	<p>of directly proportional relationships.</p> <ul style="list-style-type: none">• Solve direct proportion problems• Interpret Distance time graphs• use the constant of proportionality to solve direct proportion problems• Use standard form to express large and small numbers• Convert between standard form and ordinary numbers• Order numbers in standard form• Use standard form to solve simple problems• Use scales to solve distance and area problems in context	<ul style="list-style-type: none">• Make links between solving linear equations and rearranging formulae• Manipulate familiar formulae such as known formulae for area and perimeter• Perpendicular bisector of a line segment• Perpendicular line from a given point• Bisecting a given angle	<ul style="list-style-type: none">• Derive the proof for the sum of the angles in a triangle• Discover the formula for the sum of the angles in a polygon• Understand and use the sum of exterior angles in a polygon• Understand the difference between regular and irregular shapes and can calculate missing angles accordingly.• Solve problems involving the angles/numbers of sides in a polygon	<p>representations - using space diagrams, two way tables</p> <ul style="list-style-type: none">• Use venn diagrams and understand the meaning of union and intersection. Use notation including Union, intersection, complement, universal set, empty set• Probability trees and frequency trees• Use linear graphs to find approximate solutions of simultaneous equation opportunity to revisit linear graphs understanding• Use linear and quadratic graphs to estimate values of y for given values of x• Find approximate solutions to contextual problems from given graphs of a variety of functions including linear, exponential and Reciprocal• knowledge of roots, intercepts, turning points• Can find the solution for a quadratic equation using the graph	<ul style="list-style-type: none">• Difference between correlation and causation.• Plotting scatter graphs• Describing the types of correlation observed• Interpreting correlation in the context of the data sets• Appreciate that correlation does not imply causation• Line of best fit - drawing and using to estimate	<p>line, including using equations on coordinate axes.</p> <ul style="list-style-type: none">• Rotate a shape around a centre including on coordinate axes• Identify the type of transformation carried out by comparing an object and an image• deepen understanding of congruence and similarity by considering trigonometric ratios in right angled triangles
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Knowledge organisers and more detailed topic resources can be found on all student [Google Classrooms](#)