



## Maths Department Curriculum and Assessment Map 2021-2022

	Half Term 1	Half-Term 2	Half Term 3		Half Term 4	Half Term 5	Half Term 6
Year 9	Reasoning with Algebra	Constructing in 2 and 3 Dimensions	Reasoning with Number		Reasoning with Geometry	Reasoning with Proportion	Representations
Fundamental Knowledge	<b>Straight line graphs</b> <ul style="list-style-type: none"><li>Interpret straight line graphs</li><li>Find and use the equation of a straight line</li><li>Reduce equations to the form <math>y = mx + c</math></li><li>Compare to linear sequences and finding the rule for the <math>n^{\text{th}}</math> term</li></ul> <b>Forming and solving equations and inequalities</b> <ul style="list-style-type: none"><li>Revisit and extend to equations and inequalities with unknowns on both side using all previous contexts: angles, probability, area etc.</li><li>Change the subject of a formula</li></ul> <b>Testing conjectures</b> <ul style="list-style-type: none"><li>Test conjectures in a wide range of context e.g.<ul style="list-style-type: none"><li>Sums and products of odd and even numbers</li><li>Is a given number in a sequence?</li><li>Is this shape...?</li><li>Are these lines parallel?</li><li>What would happen if...?</li></ul></li></ul>	<b>Three dimensional shapes</b> <ul style="list-style-type: none"><li>Understand the language of faces, edges and vertices</li><li>Know the names of common prisms and non-prisms</li><li>Identify 2-D shapes within 3-D shapes</li><li>Work out the volume and surface area of cuboids and cylinders</li><li>Work out the volume of any prism</li><li>Work out missing lengths given area and/or volume</li></ul> <b>Constructions and congruency</b> <ul style="list-style-type: none"><li>Construct 3-D shapes from nets, and construct the net of a given 3-D shape</li><li>Construct and use scale drawings</li><li>Construct perpendiculars and bisectors</li><li>Understand congruency</li><li>Exploring congruency via construction</li></ul>	<b>Numbers</b> <ul style="list-style-type: none"><li>Revisit types of number – extend to include rational and real numbers</li><li>Revisit fraction arithmetic</li><li>Extend knowledge of HCF and LCM</li><li>Revisit standard form</li></ul> <b>Using percentages</b> <ul style="list-style-type: none"><li>Revisit percentage increase and decrease</li><li>Use percentages over 100%</li><li>Find percentage changes</li><li>Use multipliers in a variety of contexts</li><li>Solve "reverse percentage" problems</li></ul> <b>Mathematics and money</b> <ul style="list-style-type: none"><li>Explore financial mathematics including:<ul style="list-style-type: none"><li>Bills and bank statements</li><li>Interest</li><li>Unit pricing (best buys)</li></ul></li></ul>		<b>Deduction</b> <ul style="list-style-type: none"><li>Revisit angles rules, including within special quadrilaterals</li><li>Find angles using algebraic methods</li><li>Use chains of reasoning to evaluate angles</li></ul> <b>Rotation and translation</b> <ul style="list-style-type: none"><li>Identify the order of rotational symmetry of a shape</li><li>Find the result of rotating a shapes</li><li>Translate points and shapes by a given vector</li><li>Understand variance and invariance in the context of transformations</li></ul> <b>Pythagoras' theorem</b> <ul style="list-style-type: none"><li>Identify the hypotenuse of a right-angled triangle</li><li>Determine whether a triangle is right-angled</li><li>Calculate missing sides in right-angled triangles</li></ul>	<b>Enlargement and similarity</b> <ul style="list-style-type: none"><li>Enlarge shapes by a positive scale factor, from a given point</li><li>Calculate the lengths of missing sides in s shapes</li></ul> <b>Solving ratio and proportion problems</b> <ul style="list-style-type: none"><li>Direct proportion problems and graphs</li><li>Conversion graphs</li><li>Solve ratio problems given the whole or</li><li>Simple inverse proportion</li><li>Unit pricing problems ('best buys')</li></ul> <b>Rates</b> <ul style="list-style-type: none"><li>Work with speed, distance, time</li><li>Solve problems involving density</li><li>Work with compound units</li></ul>	<b>Probability</b> <ul style="list-style-type: none"><li>Relative frequency</li><li>Expected number of outcomes</li><li>Independent events</li></ul> <b>Algebraic representation</b> <ul style="list-style-type: none"><li>Drawing and reading from quadratics</li><li>Interpreting other graphs e.g. reciprocal, piece-wise</li><li>Representing inequalities</li></ul>
	Revision of topics highlighted from the Trust Assessment through Assertive Mentoring.						
Learning Checkpoint Tasks	Learning checks will take place after each unit.	Learning checks will take place after each unit.	Learning checks will take place after each unit.	Learning checks will take place after each unit.		Learning checks will take place after each unit.	Learning checks will take place after each unit.
Common Assessment Task		CA1 Trust Assessment		N/A		CA2 Trust Assessment	
Interleaved Knowledge	<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Link equations of graphs to solving equations</li><li>Revisit key topics through equations</li><li>Review use of brackets</li><li>Review geometric properties and rules</li></ul>	<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Revisit estimation</li><li>Revisit rounding to nearest integer, decimal places, significant figures</li><li>Revisit unit conversions, including area and volume units</li></ul>	<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Add and subtract fractions (lowest common denominator)</li><li>Working out fractions of amounts</li><li>FDP equivalence</li><li>Ratio</li></ul>		<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Revisit fractions and directed number in the context of rotation</li><li>Compare and contrast rotational symmetry with line symmetry</li><li>Identify 2-D and 3-D shapes</li><li>Link constructions and geometric reasoning</li></ul>	<b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Links to ratio notation</li><li>Revisit circumference</li><li>Revisit <math>y = mx</math></li><li>Revisit unit pricing</li></ul> <b>Notes/Links/Interleaving</b> <ul style="list-style-type: none"><li>Revisit frequency trees, tables and Venn diagrams</li><li>Inequalities</li></ul>	