

Year 9

		Number	Algebra	Geometry	Probability
Lowest 20%	3:1	<i>Level 3 content from Year 8, plus...</i>	<i>Level 3 content from Year 8, plus...</i>	<i>Level 3 content from Year 8, plus...</i>	<i>Level 3 content from Year 8, plus...</i>
	3:2				
	3:3	<p>Proportional reasoning Find the multiplier connecting two amounts</p> <p>Solve simple worded problems about value for money/amounts required using proportional reasoning</p> <p>Read and draw pie charts</p> <p>Represent inequalities on a number line</p> <p>Rounding and inequalities List integer solutions to an inequality</p> <p>Find the upper and lower bounds of a rounded number</p> <p>Index form Find the reciprocal of an integer or fraction</p> <p>Convert large numbers between standard form and ordinary form</p>	<p>Inequalities Solve simple linear inequalities where unknown appears once</p> <p>Identities Expand two brackets</p> <p>Sequences Identify and extend 'Fibonacci'-type sequences</p> <p>Identify and extend geometric sequences, including finding the common ratio</p> <p>Identify and extend quadratic sequences</p>	<p>Transformations Translate shapes from worded descriptions and vectors</p> <p>Enlarge shapes by a given scale factor (>1)</p> <p>Similarity Prove that two triangles are/not similar</p> <p>Know when it is/not possible to show that two shapes are similar</p> <p>Find unknown lengths on similar shapes where multiplier is an integer</p> <p>Congruence Determine whether two shapes are congruent, given a complete set of lengths and angles</p> <p>Pythagoras' theorem Find missing lengths on a right-angled triangle using Pythagoras' theorem</p> <p>Arc and sectors Find the area of a sector</p> <p>Find the length of an arc</p> <p>Units of measure</p>	<p>Probability Find probability of multiple-event outcomes by listing outcomes</p> <p>Representing data Read and draw frequency trees</p> <p>Read and draw bar charts</p> <p>Read and draw time-series graphs</p> <p>Read and draw frequency polygons</p> <p>Read and draw scatter graphs</p>

				<p>Convert between metric units of length</p> <p>Trigonometry Find missing angles in a right-angled triangle using sine, cosine and tangent ratios</p> <p>Bearings Measure the bearing from one point to another</p> <p>Make scale drawings where the instructions include a bearing</p> <p>Loci Construct loci based on the distance from a given point</p>	
	4:1	<i>Level 4 content from Year 8, plus...</i>	<i>Level 4 content from Year 8, plus...</i>	<i>Level 4 content from Year 8, plus...</i>	<i>Level 4 content from Year 8, plus...</i>
Low middle 40%	4:2	<p>Proportional reasoning Make calculations using speed-distance-time</p> <p>Make calculations using density-mass-volume</p> <p>Use other compound measures</p> <p>Compare data using two or more pie charts</p> <p>Calculate compound appreciation and depreciation</p> <p>Solve problems based on 'reverse' percentage change</p>	<p>Inequalities Solve harder linear inequalities where unknown appears once</p> <p>Identities Expand two brackets, including use of laws of indices</p> <p>Factorise quadratic expressions</p> <p>Sequences Find missing terms in a 'Fibonacci'-type sequence</p> <p>Find missing terms in a geometric sequence</p>	<p>Transformations Enlarge shapes by a given scale factor (>1) from a given point</p> <p>Similarity Identify similar triangles using parallel lines</p> <p>Find unknown lengths on similar shapes where multiplier is not an integer</p> <p>Congruence Find a missing length or angle, given two congruent shapes</p> <p>Pythagoras' theorem</p>	<p>Probability For independent events use $P(A \text{ and } B) = P(A) \times P(B)$</p> <p>Find probability of multiple-event outcomes of non-conditional events using</p> <ul style="list-style-type: none"> • frequency trees • probability trees • two-way tables • Venn diagrams <p>Representing data Identify instances when a bar chart might be misleading</p> <p>Make and interpret predictions from time-series graphs</p>
	4:3				

		<p>Rounding and inequalities Write error intervals as inequalities</p> <p>Index form Understand that the reciprocal of x is denoted by x^{-1}</p> <p>Evaluate x^{-1} for non-integers and negative numbers</p> <p>Convert small numbers between standard form and ordinary form</p> <p>Use the four operations with large numbers in standard form</p>	<p>Find missing terms in a quadratic sequence</p> <p>Substitute into the nth term of a quadratic sequence</p>	<p>Solve problems using Pythagoras' theorem more than once</p> <p>Arc and sectors Find the perimeter of a sector</p> <p>Units of measure Solve problems by first rewriting lengths on matching units of measure</p> <p>Trigonometry Find missing lengths in a right-angled triangle using sine, cosine and tangent ratios</p> <p>Bearings Given the bearing of A from B, find the bearing of B from A</p> <p>Loci Construct loci based on the distance from two points or from a shape</p>	<p>Make and interpret estimates from scatter-graphs</p> <p>Interpret correlation in context; know that correlation doesn't imply causation</p>
High middle 40%	5:1 5:2 5:3	<p><i>Level 5 content from Year 8, plus...</i></p> <p>Proportional reasoning Solve problems using speed-distance-time</p> <p>Solve problems using density-mass-volume</p> <p>Calculate the percentage change arising from a series of compound percentage changes</p>	<p><i>Level 5 content from Year 8, plus...</i></p> <p>Inequalities Solve linear inequalities where unknown appear more than once</p> <p>Identities Expand three brackets</p> <p>Factorise the difference of two squares</p> <p>Factorise quadratic expressions with $a \neq 1$</p>	<p><i>Level 5 content from Year 8, plus...</i></p> <p>Transformations Enlarge shapes by a scale factor (<1) from a given point</p> <p>Similarity Identify embedded similar triangles using complementary angles</p> <p>Solve problems by finding the scale factor between two embedded similar shapes</p>	<p><i>Level 5 content from Year 8, plus...</i></p> <p>Probability Find probability of multiple-event outcomes of conditional events using</p> <ul style="list-style-type: none"> • frequency trees • probability trees • two-way tables • Venn diagrams <p>Representing data Understand the distinction between a lack of correlation and a lack of relationship</p>

		<p>Solve simple problems (informally) using inverse proportional reasoning</p> <p>Rounding and inequalities Find the bounds of a calculation made using rounded numbers</p> <p>Index form Evaluate negative powers of integers and non-integers</p> <p>Use the laws of indices with negative indices</p> <p>Use the four operations with small numbers in standard form</p>	<p>Factorise using a common factor which is in brackets</p> <p>Sequences Describe a 'Fibonacci'-type sequence using recursive notation</p> <p>Describe a geometric sequence using recursive notation</p> <p>Find the nth term of a quadratic sequence</p> <p>Add/subtract simple algebraic fractions</p> <p>Equations Solve linear equations with more than one algebraic fraction</p>	<p>Use similarity to solve problems in context</p> <p>Congruence Determine whether two triangles are congruent given SSS, ASA, or SAS information</p> <p>Pythagoras' theorem Solve problems using Pythagoras' theorem when the right-angled triangle is not explicit</p> <p>Arc and sectors Find the angle or radius of a sector/arc of given area/length</p> <p>Trigonometry Use trigonometric ratios in a 2D context</p> <p>Use trigonometric ratios in multi-step problems</p> <p>Bearings Deduce bearings using angle facts</p> <p>Construct the shortest path from a point to a line</p> <p>Construct loci based on the distance between two lines</p> <p>Loci Solve worded problems by constructing loci</p>	
	6:1	<i>Level 5 content from Year 8, plus...</i>	<i>Level 5 content from Year 8, plus...</i>	<i>Level 5 content from Year 8, plus...</i>	<i>Level 5 content from Year 8, plus...</i>
	6:2	<i>Level 5 content from Year 8, plus...</i>	<i>Level 5 content from Year 8, plus...</i>	<i>Level 5 content from Year 8, plus...</i>	<i>Level 5 content from Year 8, plus...</i>

<p>Top 20%</p>	<p>6:3</p>	<p>Proportional reasoning Solve harder problems based on speed-distance-time from context</p> <p>Solve harder problems based on density-mass-volume from context</p> <p>Given the amount arising from a compound percentage change, find the percentages involved by trial and error</p> <p>Solve problems using direct and inverse proportional reasoning</p> <p>Rounding and inequalities Solve problems from a context by reasoning about the bounds of calculations</p> <p>Index form Solve problems from a context using standard form</p>	<p>Inequalities Solve 'two-ended' linear inequalities</p> <p>Identities Equate coefficients of expanded/factorised expressions to find an unknown value</p> <p>Factorise expressions into two brackets using laws of indices / where coefficients are algebraic</p> <p>Create simple proofs by expanding/factorising double brackets</p> <p>Add/subtract algebraic fractions where numerator or denominator of sum/difference is quadratic</p> <p>Sequences Solve problems using 'Fibonacci'-type sequences</p> <p>Describe geometric sequences using an nth term</p> <p>Solve problems using geometric sequences</p> <p>Solve problems using quadratic sequences, including the triangle numbers</p> <p>Equations</p>	<p>Transformations Enlarge shapes by a scale factor (<1) from a given point, without the aid of a grid</p> <p>Similarity Find the missing lengths on two similar shapes where one pair of corresponding lengths is not explicitly given, using an algebraic method</p> <p>Congruence Determine whether two triangles are congruent using angle facts, parallel lines, properties of shapes, and Pythagoras' theorem</p> <p>Pythagoras' theorem Recount at least one proof of Pythagoras' theorem</p> <p>Solve harder problems using Pythagoras' theorem</p> <p>Arc and sectors Solve harder problems based on arcs and sectors</p> <p>Trigonometry Use trigonometric ratios in a simple 3D context</p> <p>Use trigonometric ratios in harder multi-step problems</p> <p>Bearings Deduce bearings using trigonometry</p>	<p>Probability Solve harder problems based on multiple-event outcomes</p>
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