

Year 7 Curriculum Map

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Solve word problems (add and subtract)	Explain and investigate (multiply and divide)	Geometry	Fractions	Applications of algebra	Percentages and statistics
Place value (including decimals) Add and subtract (including decimals) Rounding Perimeter Mental strategies	Factors and multiples Multiply and divide (including decimals) Area of rectangle, triangle and parallelogram Calculate the mean Further mental strategies	Draw and measure angles Find unknown angles (straight lines, at a point, vertically opposite) Properties of triangles and quadrilaterals Unit conversions (linear) Symmetry and tessellation	Equivalent fractions Compare and order fractions and decimals Change mixed numbers to improper fractions and vice versa Fraction of a quantity Multiply and divide fractions	Order of operations Substitution Form and simplify algebraic expressions Expand over a single bracket, and factorise Sequences (term-to-term, not nth term)	Construct and interpret statistical diagrams including pie charts Convert between percentages, vulgar fractions and decimals Percentage of a quantity Find the whole, given the part and the percentage

Example suggestions for depth:

Investigate how numbers are represented in different bases. Consider the advantages/disadvantages of addition and subtraction in these bases.	Explore and compare different multiplication methods: Vedic, Russian peasant, Egyptian, Napier's Bones etc.	Use geoboards to find different types of triangles with a given area. e.g. try to find obtuse-angled, right-angled and acute-angled triangles with an area of 8.	Show me an equivalent calculation to: $18 \div \frac{3}{5}$ which: - uses fractions - does not use fractions	Discuss the ambiguous sequence: 3, 7, 15, ... What assumptions do we make? What is the least amount of information we need to define a sequence?	Kieran, Tyrell and Sian were sharing a pizza. Kieran's share was 80% the size of Tyrell's. Sian's share was 25% the size of Kieran. What percentage of the pizza did they each receive?
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Year 8 Curriculum Map

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number	Algebraic expressions	Ga=geometry	Proportional reasoning	Pa=geometry	Statistics
<p>Primes and indices</p> <p>Prime factorisation, squares and cubes</p> <p>Use of Venn diagrams to find LCM and HCF</p> <p>Add and subtract fractions</p>	<p>Order and calculate with negative numbers</p> <p>Form and solve linear equations (unknowns on one side)</p> <p>Use more complex algebraic expressions</p> <p>Linear sequences: nth term</p>	<p>Construct triangles and quadrilaterals</p> <p>Calculate unknown angles (including parallel lines)</p> <p>Unit conversions (including area)</p> <p>Area of a trapezium</p> <p>Areas and perimeters of composite figures</p>	<p>Percentage increase and decrease, including multipliers</p> <p>Reverse percentage problems</p> <p>Ratio (equivalent, of a quantity) and rate</p> <p>Scaling and multipliers</p> <p>Speed, distance, time</p>	<p>Use of significant figures and estimation</p> <p>Circumference and area of a circle</p> <p>Visualise and identify 3-D shapes and their nets</p> <p>Volume of cuboid, prism, cylinder, composite solids</p> <p>Surface area</p>	<p>Collect and organise data, including surveys</p> <p>Interpret and compare statistical representations</p> <p>Mean, median and mode averages</p> <p>The range and outliers</p>

Example suggestions for depth:

Find a multiple of 5 and a multiple of 6 that have a difference of 11, find a multiple of 7 and a multiple of 4 that add to make a total of 100.

How many squares (of all sizes) are there on a chessboard?

Investigate, recording the frequency of different sized squares.

Four rods, two of length a and two of length b are linked to form a kite.

The linkage is moveable so that the angles change. What is the maximum area of the kite?

Which is the better special offer?

20% extra free
or
15% off?

The areas of the faces of a cuboid are 3, 12 and 25 cm^2 .

What is the volume of the box?

There are several sets of five positive whole numbers with the following properties: $mean = 4$, $median = 3$, $mode = 3$

Can you find all the different sets that satisfy these conditions?

Year 9 Curriculum Map

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Graphs and proportion	Algebraic expressions	Geometry	Equations and inequalities	Geometry	Statistics
Cartesian coordinates including midpoint of a line segment Linear graphs Direct and inverse proportion Calculate with scales Standard form	Sequences including arithmetic and geometric Expand binomials and factorise simple quadratics Change the subject of familiar formulae	Construction and loci Congruence and similarity Angles in polygons Properties of shapes	Construct and solve equations and inequalities Graphical solutions to simultaneous linear equations Quadratic and other graphs	Pythagoras' theorem Transformations (translation, rotation, reflection) Use known angle and shape facts to obtain simple proofs Probability	Mean of grouped data Compare two data sets Stem-and-leaf diagrams Scatter graphs Exploring trigonometry

Example suggestions for depth:

Plot the lines

$$y = 2x$$

$$y = -0.5x$$

Add two more lines to make a square.

Write inequality statements for each of the four lines to describe the bounds of the square.

$$12 = 3 + 4 + 5$$

Can every integer be written as a sum of consecutive numbers?

Draw conclusions and explain them with convincing arguments.

Using only a ruler and a pair of compasses, construct a square inside any triangle so that one side of the square rests on one side of the triangle and the other two vertices of the square touch the other two sides of the triangle.

Water's freezing point is 0°C , 32°F and 273K and its boiling point is 100°C , 212°F and 373K .

Can you describe methods of converting between Celsius, Fahrenheit and Kelvin?

Which is a better fit, a square peg in a round hole or a round peg in a square hole?

The arithmetic mean of a and b is:

$$0.5(a + b)$$

The geometric mean of a and b is:

$$\sqrt{ab}$$

Investigate, for different values of a and b , when the two means are closest and when one is larger.

Year 10 Curriculum Map

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number	Geometry	Reasoning	Geometry & number	Sampling & probability	Applications of algebra
<p>Calculations with and rules of indices</p> <p>Calculations with standard form</p> <p>Geometric change including compound interest, growth and decay</p> <p>Standard non-linear sequences</p>	<p>Enlargement</p> <p>Similar shapes</p> <p>Bearings</p> <p>Trigonometry in right angled triangles</p>	<p>Algebraic arguments</p> <p>Geometric reasoning</p> <p>Equations of parallel lines</p> <p>Vectors</p>	<p>Properties of 3-D shapes; their plans and elevations</p> <p>Exact surface area and volume of pyramids, cones and spheres</p> <p>Estimation and limits of accuracy</p> <p>Loci</p> <p>Geometric proof</p>	<p>Populations and samples</p> <p>Theoretical and experimental probability</p> <p>Probability of combined events, including tree diagrams and use of Venn diagrams</p> <p>Sample spaces and listing</p>	<p>Expand and factorise binomials</p> <p>Quadratic equations</p> <p>Cubic and reciprocal graphs</p> <p>Linear simultaneous equations</p> <p>Graphical solutions of equations</p>

Example suggestions for depth:

Find the formula for the n th term of a quadratic sequence	Enlarge shapes from a given centre, using a combination of transformations, including negative integer and fractional scale factors	Use vector proofs and reasoning on two-dimensional shapes	Corinne's pencil tin is in the shape of a cuboid measuring 20 cm by 10 cm by 10 cm. Find the largest pencil length that would fit in her box.	Investigate conditional probability problems.	Explore quadratic inequalities. Plot the following inequalities graphically: $x^2 < 2x + 1$ $2x^2 > -x^2 + 4$ $x < x^2 < x + 10$
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Year 11 Curriculum Map

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Algebra and geometry	Number & statistics	Revision extension 1	Revision extension 2	Revision extension 3	Examinations
<p>Arcs and sectors of circles</p> <p>Direct and inverse variation</p> <p>Proof in algebra and geometry</p>	<p>Represent and describe distributions</p> <p>Identify misleading graphs</p> <p>Time series</p> <p>Correlation and lines of best fit</p> <p>Solve problems involving compound units</p>	Review and revision			

Example suggestions for depth:

The equation of a circle of radius 2 centred at (3,4) is:

$$(x-3)^2 + (y-4)^2 = 4$$

A straight line with gradient -2 is tangent to the circle. At what two points could it meet the circle?

Given a data set, students should attempt to construct a cumulative frequency graph and explain its shape.