Year 8 Curriculum Grid

Mathematics

Year/Term	Unit	Intent			
Overall		Foundation	Foundation Plus	Higher	Higher Plus
Autumn 1	Number	Know square numbers, roots and prime numbers. Convert between simple ordinary numbers and standard form.	Know square numbers, roots and prime numbers. Convert between ordinary numbers and standard form.	HCF and LCM of two numbers. Prime decomposition. Calculate with positive integer indices. Add, subtract multiply and divide with surds. Add, subtract, multiply and divide numbers written in standard form.	HCF and LCM of two numbers. Prime decomposition. Reciprocals of numbers. Calculate with negative indices. Add, subtract multiply and divide with surds. Add, subtract, multiply and divide numbers written in standard form.
	Sequences	Linear sequences, simple geometric sequences, special sequences (triangular, square, cube, Fibonacci)	Linear sequences, simple geometric sequences, special sequences (triangular, square, cube, Fibonacci)	Find nth term of simple linear sequences and simple patterns. Identify if a term is in a sequence.	Find nth term of linear sequences and simple patterns. Identify if a term is in a sequence.
	Algebra Skills	Form expressions from context. Simplify expressions. Expand single brackets. Write expressions using powers.	Form expressions from context. Simplify expressions. Expand single brackets. Write expressions using powers.	Form expressions from context. Expand one or more brackets by a single term. Factorise expressions by taking out a common factor. Simplify expression involving positive indices.	Form expressions from context. Expand one or more brackets by a single term. Factorise expressions by taking out a common factor. Simplify expression involving indices including negative indices.
	Ratio & Proportion	Direct proportion in real contexts. Simplify ratios. Relate ratios to fractions.	Direct proportion in real contexts. Simplify ratios. Relate ratios to fractions. Share a quantity in a ratio.	Proportion in real context including inverse. Share a quantity in a ratio. Apply ratio to real contexts and problems.	Proportion in real context including inverse. Apply ratio to real contexts and problems. Use equivalent ratios.

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Autumn 2	Measures & Estimation	Solve simple arithmetic problems involving units of measure. Round to decimal places and significant figure. Estimate calculations. Speed, distance, time calculations. Perimeter of simple compound shapes.	Estimate calculations. Speed, distance, time calculations. Perimeter of compound shapes.	Error intervals using inequality notation. Upper and lower bounds, including of calculations. Density, mass, volume calculations. Circumference of a circle. Perimeter of semi-circles and quadrants.	Error intervals using inequality notation. Upper and lower bounds, including of calculations. Density, mass, volume calculations. Circumference of a circle. Perimeter of semi-circles and quadrants.
	Functions & Equations	Solve simple two-step linear equations.	Solve two-step linear equations.	Solve multi-step linear equations, including those involving brackets. Solve two linear simple simultaneous equations algebraically.	Solve multi-step linear equations, including those involving brackets and in context. Solve two linear simple simultaneous equations algebraically.
	Translations & Vectors	Translate a simple shape using column vectors. Describe a translation using a column vector.	Translate any shape using column vectors. Describe a translation using a column vector.	Represent column vectors graphically. Multiply column vectors by a scalar.	Represent column vectors graphically. Multiply column vectors by a scalar.
	Angles	Angles sum of polygons. Angles on a straight line, vertically opposite angles and angles around a point.	Angles sums of polygons. Angles in a triangle, including isosceles and equilateral.	Interior and exterior angles of polygons including problem solving. Angles in a triangle. Parts of a circle. Measure and draw bearings.	Interior and exterior angles of polygons including problem solving. Angles in parallel lines. Parts of a circle. Measure and draw bearings.
Spring 1	Graphs & Tables	Coordinates in all four quadrants.	Find missing coordinates and midpoints. Plot and recognise vertical and horizontal lines on a coordinate grid.	Straight line graphs of the form $y = mx + c$. Solve simple linear simultaneous equations graphically. Distance-time graphs.	Straight line graphs of the form $y = mx + c$. Solve linear simultaneous equations graphically. Distance-time graphs.
	Statistics	Two-way tables for numerical information. Averages and range from list of data and charts. Dual bar charts. Pie charts.	Two-way tables for numerical information. Averages and range from list of data and charts. Pie charts.	Averages and range from discrete data in a table. Mean and median for simple grouped data. Compare data.	Averages and range from discrete data in a table. Mean and median for grouped data. Compare data. Stem-and-leaf

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				Stem-and-leaf diagrams. Frequency polygons.	diagrams. Frequency polygons.
	Decimals	Convert between familiar decimals and fractions. Order decimals. Add and subtract decimals.	Convert between decimals and fractions. Order decimals. Add and subtract decimals.	Multiply and divide decimals by familiar decimals.	Multiply and divide decimals by decimals.
Spring 2	Fractions	Compare two fractions. Order simple fractions.	Compare two or more fractions. Order fractions.	Numbers as a fraction of another. Convert between mixed numbers and improper fractions. Multiply and divide integers by simple fractions.	Numbers as a fraction of another. Convert between mixed numbers and improper fractions. Multiply and divide integers by fractions.
	Construction & Loci	Construct accurate triangles when given SSA, AAS, SSS.	Construct accurate triangles when given SSA, AAS, SSS.	Construct perpendicular bisectors and angle bisectors.	Construct perpendicular bisectors and angle bisectors.
	Probability	Simple probabilities using fractions and decimals. Link between probability of events occurring and not occurring.	Probabilities using fractions and decimals. Link between probability of events occurring and not occurring.	Sample spaces and theoretical probabilities. Probabilities from two-way tables, Venn diagrams and frequency trees.	Sample spaces and theoretical probabilities. Probabilities from two-way tables, Venn diagrams and frequency trees.
Summer 1	Further Algebra Skills	Substitute +/- integer values into formulae and expressions including those with brackets and indices. Inequalities on number lines. Solve one variable, one operation linear inequalities with positive integer answers.	Substitute +/- integer values into formulae and expressions including those with brackets and indices. Inequalities on number lines. Solve one variable, multiple operation linear inequalities with positive integer answers.	Substitute any values into formulae and expressions including those with brackets and indices. Solve one variable, multiple operation linear inequalities with integer answers.	Rearrange formula where subject appears only once. Solve one variable, multiple operation linear inequalities with fractional answers.
	Trigonometry			Pythagoras' Theorem in 2D.	Pythagoras' Theorem in 2D including real life problems.
	Shapes & Transformations	Compare and classify geometric shapes based on properties. Rotational symmetry. Simple congruent shapes. Reflect simple 2D shapes in mirror line on	Compare and classify geometric shapes based on properties. Rotational symmetry. Congruent shapes. Find missing sides or angles in congruent shapes. Reflect	Plans and elevations of 3D shapes. Show triangles are congruent. Transform simple 2D shapes using a combination of translations, rotations and reflections.	Plans and elevations of 3D shapes. Show triangles are congruent. Transform 2D shapes using a combination of translations, rotations and reflections.

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		coordinate grid. Rotate simple 2D shapes on a coordinate grid. Describe rotations.	simple 2D shapes in mirror line on coordinate grid. Describe reflections. Rotate simple 2D shapes on a coordinate grid. Describe rotations.		
Summer 2	Area & Volume	Area of rectangles and triangles. Surface area of triangular and other prisms and square-based pyramids. Volume of a cube or cuboid.	Area of rectangles, parallelograms and trapeziums. Surface area of triangular and other prisms and square-based pyramids. Volume of a prism.	Area of a circle, semi-circle and quadrant. Surface area of a cylinder and cone. Volume of a cylinder.	Area of a circle, semi-circle, quadrant and composite circle shapes. Surface area of a cylinder and cone. Volume of a cylinder.
	Percentages	Simple percentage of a quantity. Increase/decrease by a simple percentage.	Any percentage of a quantity. Increase/decrease by a percentage.	Number as a percentage of another. FDP conversions. Simple percentage change.	Number as a percentage of another. FDP conversions. Percentage change.
	Enlargement & Similarity	Enlarge 2D shape by positive scale factor. Similar 2D shapes. Find missing sides in simple similar 2D shapes.	Enlarge 2D shape by positive scale factor, including fractions. Similar 2D shapes. Find missing sides in simple similar 2D shapes.	Enlarge a simple 2D shape by positive scale factor on a coordinate grid. Describe a simple positive scale factor enlargement.	Enlarge 2D shape by positive scale factor on a coordinate grid. Describe a positive scale factor enlargement.