

Subject Progression Statement

Subject: Maths

Year: 8

Term: Summer



Assessment Areas	Mastery Steps		
	Foundation	Secure	Mastery
Number Skills	<ul style="list-style-type: none"> • apply the four operations to simple fractions and mixed numbers • interpret percentages and percentage changes as a fraction or a decimal • compare two quantities using percentages • solve problems involving percentage change, including percentage increase/decrease 	<ul style="list-style-type: none"> • Identify the multiplier for a percentage increase or decrease when the percentage is greater than 100% • Use calculators to increase an amount by a percentage greater than 100% • Solve problems involving reverse percentages • Solve problems that require exact calculation with fractions 	<ul style="list-style-type: none"> • Use the multiplier to solve complex problems involving all forms of percentage increase or decrease • Use of the multiplier to solve complex problems involving a variety of comparisons and 'best offer' style questions. • Solve problems involving standard form within percentage style questions.
Algebra	<ul style="list-style-type: none"> • Plot co-ordinates and look for patterns to start to try and find simple equations of lines • understand and use lines parallel to the axes, $y = x$ and $y = -x$ • recognise and use relationships between operations, including inverse operations • solve linear equations in one unknown algebraically 	<ul style="list-style-type: none"> • plot straight line graphs • identify and interpret gradients and intercepts of linear functions • recognise, sketch and interpret graphs of linear functions and simple quadratic functions • plot and interpret graphs and use them to solve equations 	<ul style="list-style-type: none"> • use the form $y = mx + c$ to identify parallel lines • find the equation of the line through two given points, or through one point with a given gradient • interpret the gradient of a straight line graph as a rate of change • recognise, sketch and interpret graphs of quadratic functions • recognise, sketch and interpret graphs of simple cubic functions and reciprocal functions • solve linear simultaneous equations algebraically • derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution
Shape, space and measures	<ul style="list-style-type: none"> • use standard units of measure • calculate perimeters of 2D shapes • Calculate area of triangles, parallelograms, trapezia • calculate surface area of cuboids • solve geometrical problems on coordinate axes • identify, describe and construct shapes using rotation, reflection and translation • describe translations as 2D vectors 	<ul style="list-style-type: none"> • compare lengths, areas and volumes using ratio notation • calculate perimeters of 2D shapes, including circles • identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference • know the formulae for circumference and area of a circle • calculate areas of circles and composite shapes • calculate volume of right prisms (including cylinders) 	<ul style="list-style-type: none"> • Apply angle facts to derive results about angles and sides • Create a geometrical proof • Know the conditions for triangles to be congruent • Use the conditions for congruent triangles • Use congruence in geometrical proofs • Solve geometrical problems involving similarity
Data Handling	<ul style="list-style-type: none"> • interpret and construct tables, charts and diagrams, including frequency tables, bar charts, pie charts and pictograms. • interpret, analyse and compare the data distributions using averages and range. • to be able to work out basic theoretical probability and use the fact that all probability sums to 1 to solve problems 	<ul style="list-style-type: none"> • use and interpret scatter graphs of bivariate data • recognise correlation • to be able to identify and interpret outliers • apply statistics to describe a population • apply systematic listing strategies • record describe and analyse the frequency of outcomes of probability experiments using frequency trees • draw and use Venn diagrams • construct theoretical possibility spaces for combined experiments 	<ul style="list-style-type: none"> • interpret and construct tables, charts and diagrams, including tables and line graphs for time series data • draw estimated lines of best fit; make predictions • understand the limits when interpreting scatter graphs. • calculate the probability using tree diagrams and other representations, and know the underlying assumptions • understand that real life data tends towards theoretical probability distributions, with increasing sample size

