KS3 Mathematics Curriculum Coverage: 2023 – 2024

Year 8 Autumn Term

Sequenced	Block 1: Ratio and scale	Block 2: Multiplicative change	Block 3: Multiplying and dividing fractions	Block 4: Working in the Cartesian plane	Block 5: Representing data	Block 6: Introduction to probability
Key Knowledge	To know: • the term ratio relates to the relationship between 2 or more things • a colon is used for ratio notation	To know: • what is meant by direct proportion • how to read a conversion graph • what a scale factor is • similar shapes have the same corresponding angles and length scale factor • how to read scales	To know: • the meaning of the reciprocal • how to find equivalent fractions • **know how to convert between improper fractions and mixed numbers (H)**	To know: • the x axis, y axis and origin • how to plot coordinates in all 4 quadrants • x=a lines are vertical through a • y=b lines are horizontal through b • the gradient is a measure of how steep a line is • positive gradients slope up, left to right • negative gradients slope down left to right • the y-intercept is the co-ordinate where the graph crosses the y-axis	To know: • the features of scatter diagrams including correlation and line of best fit • A line of best fit in maths is straight and does not need to pass through (0,0) • the differences between discrete and continuous data • the differences, advantages and disadvantages of representations of data such as bar charts, line graphs, pie charts and scatter graphs	To know: • probability vocab, impossible, unlikely, even, likely and certain • probabilities lie between 0 and 1 on a scale • probabilities are given as fractions, decimals or percentages • sum of probabilities for all possible outcomes is equal to 1
Key Skills	To be able to: • use ratio notation • solve problems 1:n • solve problems m:n • use bar models to share values into a given ratio • compare ratio and fractions	To be able to: • read and interpret conversion graphs • use ratio to find lengths in similar shapes • find and use scale factors • draw and interpret scale diagrams	To be able to: • represent multiplication of fractions. • multiply and divide integers and fractions by a fraction or integer. • understand and use reciprocals. • **multiply and divide improper and mixed fractions. (H)** • **multiply and divide algebraic fractions. (H)**	To be able to: • identify and draw lines that are parallel to the x and y axis. • recognise and use the lines of the form y=x and y=kx • link y=kx to direct proportion problems. • recognise and use lines of the form y = x + c • explore graphs with negative gradients • link graphs to linear sequences. • plot graphs of the form y=mx+c • **find the midpoint of a line segment.(H)** • **explore non-linear graphs.(H)**	To be able to: • draw a scatter diagram • draw a line of best fit • draw a frequency table for ungrouped discrete, grouped discrete and continuous data • interpret scatter graphs, bar charts and pie charts • represent data in a two way table	To be able to: • use the probability scale and associated vocabulary • read and create sample spaces • find probabilities of single events • calculate the probability of an event not happening
	Tier 2 and 3 key vocabulary	Tier 2 and 3 key vocabulary	Tier 2 and 3 key vocabulary	Tier 2 and 3 key vocabulary	Tier 2 and 3 key vocabulary	Tier 2 and 3 key vocabulary
Subject specific	ratio, proportion, equal parts, colon, divide, multiply, part, perimeter, circumference, gradient	proportion, ratio, linear, variable, conversion, exchange rate, scale factor	numerator denominator product commutative integer quotient divide estimate reciprocal convert unit fractions simplify	quadrant coordinates horizontal vertical axes origin equation graph diagonal scale slope substitute proportion gradient input output intercept linear	variable, relationship, origin, scale, correlation, frequency, grouped, tally, class, extrapolate, outlier, non-linear, qualitative, quantitative, discrete, continuous.	universal, set, element, intersection, union, element, mutually exclusive, bias, fair, outcomes, probability, impossible, unlikely, even, likely, certain