

Year 6 to KS3 Progression

Marlborough Road Academy

Year 6 multiplication and division	KS3 multiplication and division
<p>Identify common factors and multiples and prime numbers Use estimation to check answers and determine a degree of accuracy. Solve problems using all four calculations. Use their knowledge of order of operations to solve calculations using the four operations.</p>	<p>Order, sort and interpret any number (including decimals and negatives). Use place value to multiply and divide any number by powers of 10. Understand and apply the concept of multiples, factors and primes individual, pairs or groups of numbers. For example, finding the Lowest Common Multiples of a pair of numbers. Use formal methods for addition, subtraction, multiplication and division fluently including increasingly complex decimals. Explore and understand rules for adding and subtracting positive and negative integers. Multiply and divide negative numbers. Use and apply BIDMAS to the number system, ensuring the calculations are carried out in order.</p>

Year 6 decimals	KS3 decimals
<p>Identify the value of each digit in numbers given to three decimal places. Multiply and divide by 10, 100 and 1000 up to 3 decimal places. Multiply one digit numbers with up to 2 decimal places by whole numbers. Use written division methods where the answer has up to 2 decimal places. Solve problems where the answers need to be rounded to a specified degree of accuracy. Associate a fraction with division and calculate decimal fraction equivalents. Recall and use equivalences between fractions, decimals and percentages in different context.</p>	<p>Round any number to any specified degree of accuracy, including decimals and measures. Understand the concept of percentages and use this to find percentages of a quantity. Compare the result of two percentage calculations. For example, 15% of 40 and 10% of 50. Understand the interrelated nature of fractions, decimals and percentages, converting between them and ordering with increasing fluency. Add, subtract and multiply fractions fluently.</p>

Year 6 geometry	KS3 geometry
<p>Draw 2D shapes using given dimensions and angles Compare and classify geometric shapes based on their properties and sizes. Illustrate and name parts of circles and know the diameter is twice the radius. Recognise, describe and build simple 3D shapes including making nets. Find unknown angles in triangles, quadrilaterals and regular polygons. Recognise angles where they meet at a point are on a straight line or are vertical opposite and find missing angles.</p>	<p>Use the properties and vocabulary of 3D shapes and their nets to solve problems. Calculate the area and perimeter of a variety of 2D and compound shapes, including triangles using a formula. Represent 3D shapes in 2D. Work with shapes on a 4 quadrant grid to translate, reflect and rotate in any direction or plane. Use a ruler and a protractor to draw accurately. Recognise, describe and name all common 2D shapes and apply angle facts to solve a variety of problems. Understand and use place value when using different measures of length, mass, time and volume changing freely between different units of metric measures.</p>

Describe positions on all 4 quadrants. Draw and translate simple shapes on the coordinate plane and reflect then in the axis	
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Year 6 statistics	KS3 statistics
Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret mean as an average.	Create, use and interpret a variety of different tables and graphs to observe and analyse statistical information including: stem and leaf diagrams, vertical line charts and pie charts. Use the mode, median, mean and range fluently to compare, describe and analyse groups of data.

Year 6 algebra	KS3 algebra
Use simple formulae. Generate and describe linear number sequences Express missing numbers algebraically. Find pairs of numbers that satisfy and equations with two unknowns. Enumerate possibilities of combinations of two variables	Use and interpret algebraic notation including ab ($a \times b$) $3y$ ($3 \times y$), substituting numerical values into formula to find the value of an equation. -Combine variables within an equation or expression and simplify by collecting like terms. Recognise and use the relationships between operations and use inverse to change the subject of a formula. Use and interpret bracket notation with algebraic equations, multiplying out a single bracket. Plot a linear function on a graph from an equation and interpret mathematically. Understand linear sequences and finding a formula to solve the next and nth terms.

Year 6 ratio	KS3 ratio
Solve problems involving the relative sizes of two quantities. Solve problems involving the calculation of percentages and use percentages for comparison. Solve problems using similar shapes where the scale factor is known or can be found. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	Understand and use ratio notation, including reducing it to its simplest form. - Understand a relationship between two quantities and use this information to solve problems involving direct proportion.