Years 5 & 6 Programme of Study

Mathematics is the art of explaining: a creative and highly-interconnected discipline providing the solution to some of history’s most intriguing problems. We seek to provide a foundation for understanding the world, the ability to reason mathematically, an appreciation of the power and beauty of mathematics, and a sense of curiosity and enjoyment of the subject.

We follow a mastery curriculum and each unit encompasses previously learnt knowledge to highlight the relational nature of mathematics.

In years 5 and 6, pupils will

* extend their understanding of the number system and place value;
* develop connections between multiplication and division with fractions, decimals, percentages and ratio;
* develop their ability to solve problems involving increasingly complex properties of number and arithmetic;
* solve problems demanding efficient methods of mental and written calculation;
* be introduced to algebra as a language for solving a variety of problems;
* classify shapes with increasingly complex geometric properties.

YEAR 5

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| **Autumn Term** | **Spring Term** | **Summer Term** |
| **Numbers to 1,000,000:**  Reading, writing, comparing numbers to 1 million; making number patterns; rounding. | **Fractions cont.:**  Divide to make fractions; write improper fractions and mixed numbers; find equivalent fractions; compare and order; add and subtract fractions; multiply fractions and mixed numbers by whole numbers. | **Measurements cont.:**  Converting units of length, mass and time. Temperature. |
| **Whole Numbers: Addition and Subtraction**  Within 1 million | **Decimals:**  Reading and writing decimals; comparing; writing fractions as decimals; adding and subtracting decimals; rounding. | **Area and Perimeter:**  Finding perimeter; using scale diagrams; measuring and estimating area |
| **Whole Numbers: Multiplication and Division:**  Find multiples, factors, common factors, prime numbers, square and cube numbers; multiply by 10, 100 and 1,000; short and long multiplication; short division; division with remainders. | **Percentages:**  Comparing quantities; finding percentages | **Volume:**  Volume of solids; capacity of rectangular boxes; converting units of volume. |
| **Whole Number Word Problems:**  A range of more challenging problem structures pulling together learning so far. | **Geometry:**  Types of angles; measure angles; investigate angles on a line and at a point; drawing angles and lines; investigating angles in squares and rectangles; investigate regular polygons. | **Roman Numerals:**  Writing Roman Numerals to 1000; writing years in Roman Numerals. |
| **Graphs:**  Reading tables and line graphs. | **Position and movement**:  Naming and plotting points; describing translations, movements and successive reflections. | The final part of the year is available to review topics as necessary. |
| **Fractions** continue into Spring term: | **Measurements:**  Converting units of length, mass and time. Temperature. |

YEAR 6

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| **Autumn Term** | **Spring Term** | **Summer Term** |
| **Numbers to 10 Million:**  Reading, writing, comparing, ordering and rounding integers to 10,000,000. | **Problem-solving:**  A variety of more challenging problem structures encompassing the Autumn term’s learning. | **Graphs and averages cont.:**  Understand averages; calculate the mean; show information on graphs; read pie charts and line graphs; convert miles into kilometres. |
| **Four Operations on Whole Numbers**:  Mixed operations; long multiplication; long division; solving word problems; finding common multiples and prime numbers. | **Percentages:**  Finding percentages of a number or quantity; finding percentage change; using percentage to compare. | **Negative numbers**:  Adding, subtracting and using negative numbers. |
| **Ratio:**  Comparing quantities; comparing numbers; solving worded problems. |  |
| **Fractions:**  Simplification; comparing and ordering; adding and subtracting; multiplying; dividing fractions by a whole number. | **Algebra:**  Describing a pattern; writing and evaluating algebraic expressions; writing formulae; using formulae; solving equations. | Post-SATS year 6 review topics depending on need; prepare for secondary school and engage in a range of STEM based investigations combining maths, science and design and technology. |
| **Area and Perimeter:**  Find the area and perimeter of rectangles; parallelograms and triangles. |
| **Decimals:**  Writing and reading; dividing whole numbers; fractions as decimals; multiplying decimals; dividing decimals; multiplying and dividing decimals by 2-digit numbers. | **Volume:**  Find the volume of cubes and cuboids; solve problems involving the volume of solids. |
| **Geometry:**  Vertically opposite angles; angles in triangles and quadrilaterals; parts of a circle; angles in a circle; drawing quadrilaterals, triangles and nets of 3D shapes. |
| **Measurements:**  Converting units of length, mass, volume and time. | **Position & Movement:**  Negative numbers, describing positions on a coordinate grids, describing translations, reflections and movements; use algebra to describe position and movement. |
| **Graphs and averages:**  Understand averages; calculate the mean; show information on graphs; read pie charts and line graphs; convert miles into kilometres. |