



Year Five Mathematics	Intent	Implementation	Impact
	At St John Vianney Catholic Primary School, we recognise that Mathematics is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. We aim to provide a high-quality mathematics education with a mastery approach so that all children: • become fluent in the fundamentals of mathematics; • reason mathematically; • can solve problems by applying their mathematics. (National Curriculum 2014) Our intent for mathematics is to teach a rich, balanced and progressive curriculum using Maths to reason, problem solve and develop fluent conceptual understanding in each area. Staff are supported and aided in their roles ensuring confidence in the skills and facts they are required to teach. Lessons are child focused and maths is kept fun and current in school. Our curriculum allows children to better make sense of the world around them relating the pattern between mathematics and everyday life. Our policies, resources and schemes support our vision e.g. our calculations policy linked to our Mastery Text Book resource, Power Maths, which is based on White Rose Maths, and NCETM Teaching for Mastery. The mapping of Mathematics across school shows clear progression in line with age-related expectations and the National Curriculum. Mathematics in our school is enhanced by our focus on additional practise of key mathematics skills through Assertive Mentoring Weekly Skills Checks and our focus on key instant recall facts (KIRFs). We promote and encourage over learning of key facts through our use of Numbots and TT Rockstars competitions. We constantly seek to improve our provision and we are proud of enhancements made through our collaboration with partner schools within our M.A.C. and our work to develop our mastery approach to mathematics through our involvement with the Central Maths Hub.	The curriculum hours for mathematics are non-negotiable and followed by all staff. Teachers plan three lessons with a number focus per week and two lessons linked to either geometry, statistics or measures. Knowledge organisers linked to each of the mathematical areas, support the children with their learning. High quality teaching responds to the needs of children. Teachers use questioning well and aim to identify and address any misconceptions at an early stage. Planning: Lessons are planned and sequenced so that new knowledge and skills build on previous learning. Staff refer to the Calculation Policy when teaching formal methods but also understand that sometimes children find their own efficient methods along the way. Number bonds and times tables practice take place weekly to give children the opportunity to practise and improve their rapid recall of key mathematics facts. Teaching: At St John Vianney we employ a variety of teaching styles and opportunities for children to learn and develop their Mathematical skills and competencies, both individually and collaboratively. Our pupils are encouraged to physically represent mathematical concepts. Objects and pictures are used to demonstrate and visualise abstract ideas, alongside numbers and symbols. Concrete – children have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing. Pictorial – children then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems. Abstract – With the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence.	The impact of our mathematics curriculum is that children understand the relevance of what they are learning in relation to real world concepts. We have fostered an environment where Maths is fun and where it is accepted that sometimes we will make errors on our journey to finding an answer. The children understand that learning from mistakes is a key skill. The children's Mathematics books demonstrate the use of a range of activities and show evidence of fluency, reasoning and problem solving. Positive verbal and written feedback and early intervention support the children to strive to be the best mathematicians they can be and ensure that a greater proportion of children are on track. The Mathematics leader, in collaboration with the Senior Leadership Team, takes responsibility for the monitoring of the Mathematics curriculum and the standards achieved by the children. The Mathematics leader monitors for appropriate pitch and progression at least once every half term. This monitoring takes the form of: • Lesson observations with written feedback; • Learning walks and pupil voice conversations; • Planning scrutiny followed by support where necessary; • Book scrutiny per term; • Termly data analysis; • Moderation with other Mathematic Subject Leaders with the M.A.C. Data is collected half-termly and reported to SLT. All teachers contribute to a termly Pupil Progress Meetings, where the data is analysed to highlight those pupils not meeting expectations. The meetings focus on target setting and identifying the next steps to support the children to make good or better progress.



Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions	Geometry (including Position and Direction)	Geometry – Statistics	Measurement
I can read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.	I can add whole numbers with more than 4 digits, including using the formal written method (columnar addition).	I can identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	I can compare and order fractions whose denominators are all multiples of the same number.	I can identify 3-D shapes including cubes and other cuboids, from 2-D representations.	I can solve comparison, sum and difference problems using information presented in a line graph.	I can convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).
I can count forwards and backwards in steps of powers of ten for any given number to 1 000 000.	I can subtract whole numbers with more than 4 digits, including using the formal written method (columnar subtraction).	I can use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.	I can identify, name and write equivalent fractions of a give fraction, represented visually, including tenths and hundredths.	I can use the properties of rectangles to deduce related facts and find missing lengths and angles.	I can complete, read and interpret information in tables, including timetables.	I can understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.
I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.	I can add numbers mentally with increasingly large numbers.	I can establish whether a number up to 100 is prime and recall prime numbers up to 19.	I can recognise mixed numbers and improper fractions and convert from one form to the other and written mathematical statements > 1 as a mixed number (For example, $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$).	I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.		I can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.
I can round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.	I can subtract numbers mentally with increasingly large numbers.	I can multiply and divide numbers mentally drawing upon known facts.	I can add and subtract fractions with the same denominator and denominators that are multiples of the same number.	I can identify that angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.		I can calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm ²) and square metres (m ²) and estimate the area or irregular shapes.
I can solve number problems and practical problems that involve all of the above.	I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	I can draw given angles, and measure the in degrees (°).		I can estimate volume (for example, using 1 cm ³ blocks to build cuboids, including cubes) and capacity (for example, using water).



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I can read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	I can recognise and use square numbers and cube numbers and the notations for squared (2) and cubed (3).	I can read and write decimal numbers as fractions (for example, $0.71 = \frac{71}{100}$).	I can identify angles at a point and one whole turn (total 360°).		I can solve problems involving converting between units of time.
		I can multiply numbers up to 4 digits by a one or two-digit number using a formal written method, including long multiplication for two-digit numbers.	I can recognise and use thousandths and relate the to tenths, hundredths and decimal equivalents.	I can identify angles at a point on a straight line and half a turn (total 180°).		I can use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling.
		I can divide numbers up to 4 digits by a one or two-digit number using a formal written method of short division and interpret remainders appropriately in context.	I can round decimals with two decimal places to the nearest whole number and to one decimal place.	I can identify other multiples of 90° .		
		I can solve problems involving multiplication and division including using my knowledge of factors and multiples, squares and cubes.	I can read, write, order and compare numbers with up to three decimal places.	I can identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.		
		I can solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.	I can solve problems involving numbers up to three decimal places.			



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		I can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	I can recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.			
			I can solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{5}$, $\frac{4}{5}$, and those fractions with a denominator of a multiple of 10 or 25.			

End of Upper Key Stage 2 Outcomes

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.