Sacred Heart Catholic Primary School
Progression: Addition and subtraction
Programme of study (statutory requirements)

YN	YR	Early Learning Goals	Y1	Y2	Y3	Y4	Y5	Y6
Addition and subtraction • Pupils should be taught to: • Fast recognition of up to 3 objects, without having to count them (subitising) • Show finger numbers up to 5 Experiment with their own symbols and marks as well as numeral	**Addition and subtraction** Pupils should be taught to: • Explore the composition of numbers to 10 • Automatically recall number bonds for numbers 0-10 • Begin to understand the operations of addition and subtraction and use associated vocabulary. • Begin to understand mathematical symbols associated with addition and subtraction. • Subitise Automatically recall	Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some numbers bonds to 10 including double facts.	**Addition and subtraction** Pupils should be taught to: • read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs • represent and use number bonds and related subtraction facts within 20 • add and subtract one-digit and two-digit numbers to 20, including zero • solve one-step problems that involve addition and subtraction, using	**Addition and subtraction** Pupils should be taught to: • solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods • recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 • add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and ones	**Addition and subtraction** Pupils should be taught to: • add and subtract numbers mentally, including: - a three-digit number and ones - a three-digit number and tens - a three-digit number and hundreds • add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction • estimate the answer to a calculation and use	**Addition and subtraction** Pupils should be taught to: • add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate • estimate and use inverse operations to check answers to a calculation • solve addition and subtraction two-step problems in contexts, deciding which	**Addition and subtraction** Pupils should be taught to: • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem,	**Addition and subtraction** Pupils should be taught to: • perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations involving the four operations • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and

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s	number bonds for numbers 0 – 10 To understand and recall doubling facts up to 10. • To become familiar with and understand mathematical symbols linked to addition and subtraction. To begin to represent mathematical sentences with appropriate symbols.		concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9	- a two-digit number and tens - two two-digit numbers - adding three one-digit numbers • show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems	inverse operations to check answers • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	operations and methods to use and why	levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	why • solve problems involving addition and subtraction, use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Notes and guidance (non-statutory)

Y1	Y2	Y3	Y4	Y5	Y6
Addition and subtraction Pupils memorise and reason with number bonds to 10 and 20 in several forms (for example, 9 + 7 = 16; 16 - 7 = 9; 7 = 16 - 9). They should realise the effect of adding or subtracting zero. This establishes addition and subtraction as related operations.	**Addition and subtraction** Pupils extend their understanding of the language of addition and subtraction to include sum and difference. Pupils practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using 3 + 7 = 10, 10 - 7 = 3 and 7 = 10 - 3 to calculate 30 + 70 = 100, 100 - 70 = 30 and 70 = 100 - 30. They check their calculations, including by adding	**Addition and subtraction** Pupils practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100. Pupils use their understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large	**Addition and subtraction** Pupils continue to practise both mental methods and columnar addition and subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1).	**Addition and subtraction** Pupils practise using the formal written methods of columnar addition and subtraction with increasingly large numbers to aid fluency (see Mathematics Appendix 1). They practise mental	**Addition and subtraction** Pupils practise addition and subtraction for larger numbers, using the formal written methods of columnar addition and subtraction (see Mathematics Appendix 1). They undertake mental calculations with increasingly large numbers and more complex calculations.

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Pupils combine and increase numbers, counting forwards and backwards. They discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms: put together, add, altogether, total, take away, distance between, difference between, more than and less than, so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.	to check subtraction and adding numbers in a different order to check addition (for example, 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5). This establishes commutativity and associativity of addition. Recording addition and subtraction in columns supports place value and prepares for formal written methods with larger numbers.	numbers up to three digits to become fluent (see Appendix 1).		calculations with increasingly large numbers to aid fluency (for example, 12 462 – 2 300 = 10 162).	Pupils round answers to a specified degree of accuracy, for example, to the nearest 10, 20, 50 etc, but not to a specified number of significant figures. Pupils explore the order of operations using brackets; for example, 2 + 1 x 3 = 5 and (2 + 1) x 3 = 9.

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