No Nonsense Number Facts

Links to the National Curriculum Programme of Study

Block	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
1	Given a number, identify one more and one less. Identify and represent numbers using concrete objects and pictorial representations including the number line, and use the language of: *equal to, more than, less than (fewer), most, least*. Read and write numbers from 1 to 20 in numerals and words. Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs. Solve one-step problems that involve addition and subtraction, using concrete objects.	Represent and use number bonds and related subtraction facts within 20 (Y1). Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs (Y1). 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 methods. Recall and use addition and subtraction facts to 20 fluently.	Use place value and number facts to solve problems (Y2). Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (Y2). 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 methods (Y2). Add and subtract numbers mentally. Identify, represent and estimate numbers using different representations.	Add and subtract numbers mentally (Y3). Identify, represent and estimate numbers using different representations (Y3). Recognise the place value of each digit in a three-digit number (Y3). Add and subtract numbers with up to three digits (Y3). Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. (Y3).	Recognise the place value of each digit (Y4). Add and subtract numbers with up to 4 digits (Y4). Identify, represent and estimate numbers using different representations (Y4). Recognise and write decimal equivalents of any number of tenths or hundredths (Y4). Add and subtract numbers mentally with increasingly large numbers.	Add and subtract numbers mentally with increasingly large numbers (Y5). Solve problems involving numbers with up to three decimal places (Y5). Perform mental calculations, including with mixed operations and large numbers. Use, read and write and convert between standard units, converting measurements of length, mass, volume (and time) from a smaller unit of measure to a larger unit and vice versa, using decimal notation up to three decimal places.

Block	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
2	Represent and use number bonds and related subtraction facts within 20. Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs. Read and write numbers from 1 to 20 in numerals and words. Solve one-step problems that involve addition and subtraction, using concrete objects.	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including adding three one digit numbers. Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. 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 methods. 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 solve missing number problems.	Recall and use multiplication and division facts for the 2 and 10 multiplication tables (Y2). Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs (Y2). Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot (Y2). Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts (Y2). Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know. Solve problems, including missing number problems, involving multiplication and division.	Recall multiplication and division facts for multiplication tables up to 12 × 12. Use place value, known and derived facts to multiply and divide mentally.	Recall multiplication and division facts for multiplication tables up to 12 × 12 (Y4). Multiply and divide numbers mentally drawing upon known facts. Identify multiples and factors, including all factor pairs of a number, and common factors of two numbers. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime numbers). Recognise and use square and cube numbers and the notation for squared (^{2}) and cubed (^{3}). Solve problems involving multiplication and division including their knowledge of factors, multiples, squares and cubes.	Identify multiples and factors, including all factor pairs of a number, and common factors of two numbers (Y5). Know and use the vocabulary of prime numbers, prime factors and composite (non-prime numbers) (Y5). Recognise and use square and cube numbers and the notation for squared (^{2}) and cubed (^{3}) (Y5). Solve problems involving multiplication and division including their knowledge of factors, multiples, squares and cubes (Y5). Perform mental calculations, including with missed operations and large numbers. Identify common factors, common multiples and prime numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations. Solve problems involving addition, subtraction, multiplication and division.

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3	Represent and use number bonds and related subtraction facts within 20. Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. Read and write numbers from 1 to 20 in numerals and words. Solve one-step problems that involve addition and subtraction, using concrete objects.	Use place value and number facts to solve problems. Count in steps of tens from any number, forward and backward. Recognise the place value of each digit in a two-digit number (tens, ones) 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 methods.	Find 10 or 100 more or less than a given number. Identify, represent and estimate numbers using different representations. Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	Recognise the place value of each digit in a four-digit number. Add and subtract numbers with up to 4 digits.	Recognise the place value of each digit (Y4). Add and subtract numbers with up to 4 digits (Y4). Identify, represent and estimate numbers using different representations (Y4). Recognise and write decimal equivalents of any number of tenths or hundredths (Y4). Add and subtract numbers mentally with increasingly large numbers. Solve problems involving numbers with up to three decimal places.	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. Identify the value of each digit in numbers given to three decimal places. Perform mental calculations, including with mixed operations and large numbers. Use, read and write and convert between standard units, converting measurements of length, mass, volume (and time) from a smaller unit of measure to a larger unit and vice versa, using decimal notation up to three decimal places.

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4	Represent and use number bonds and related subtraction facts within 20. Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs. Read and write numbers from 1 to 20 in numerals and words. Solve one-step problems that involve addition and subtraction, using concrete objects.	Count in steps of twos and in tens from zero, forward and backward. Recall and use multiplication and division facts for the 2 and 10 multiplication tables. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	Recall and use multiplication and division facts for the 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental methods. Solve problems, including missing number problems, involving multiplication and division. Identify, represent and estimate numbers using different representations	Recall multiplication and division facts for multiplication tables up to 12 × 12. Use place value, known and derived facts to multiply and divide mentally. Recognise and use factor pairs and commutativity in mental calculations.	Find the effect of dividing a one or two digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths (Y4). Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Convert between different units of metric measure.	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. Solve problems involving the calculation of percentages (for example, of measure and such as 15% of 360) and the use of percentages for comparison.

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5	Represent and use number bonds and related subtraction facts within 20. Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. Read and write numbers from 1 to 20 in numerals and words. Solve one-step problems that involve addition and subtraction, using concrete objects.	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 methods. Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • a two-digit number and ones • a two-digit number and tens • two two-digit numbers. Use place value and number facts to solve problems.	Add and subtract numbers mentally. Identify, represent and estimate numbers using different representations. Recognise the place value of each digit in a three-digit number. Add and subtract numbers with up to three digits. Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	Recognise the place value of each digit. Add and subtract numbers with up to 4 digits. Identify, represent and estimate numbers using different representations.	Recognise the place value of each digit (Y4). Add and subtract numbers with up to 4 digits (Y4). Identify, represent and estimate numbers using different representations (Y4). Recognise and write decimal equivalents of any number of tenths or hundredths (Y4). Add and subtract numbers mentally with increasingly large numbers. Solve problems involving numbers with up to three decimal places.	Solve problems involving numbers with up to three decimal places (Y5). Perform mental calculations, including with mixed operations and large numbers. Use, read and write and convert between standard units, converting measurements of length, mass, volume (and time) from a smaller unit of measure to a larger unit and vice versa, using decimal notation up to three decimal places.

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6	Count in different multiples including ones, twos, fives and tens Solve simple one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. Recognise, find and name a half as one of two equal parts of an object, shape or quantity	Count in steps of twos, fives and in tens from zero, forward and backward. Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know.	Recall multiplication and division facts for multiplication tables up to 12×12. Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.	Recall multiplication and division facts for multiplication tables up to 12×12 (Y4). Multiply and divide numbers mentally drawing upon known facts. Identify multiples and factors, including all factor pairs of a number, and common factors of two numbers. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime numbers). Recognise and use square and cube numbers and the notation for squared (^{2}) and cubed (^{3}). Solve problems involving multiplication and division including their knowledge of factors, multiples, squares and cubes.	Identify multiples and factors, including all factor pairs of a number, and common factors of two numbers (Y5). Know and use the vocabulary of prime numbers, prime factors and composite (non-prime numbers) (Y5). Recognise and use square and cube numbers and the notation for squared (^{2}) and cubed (^{3}) (Y5). Solve problems involving multiplication and division including their knowledge of factors, multiples squares and cubes (Y5). Perform mental calculations, including with missed operations and large numbers. Identify common factors, common multiples and prime numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations> Solve problems involving addition, subtraction, multiplication and division.