

Standards Correlation: Symphony Math[®] and the National Curriculum in England

National Curriculum		Symphony Math	
Key Stage and Year	Pupils should be taught to:	Stage References	Concepts
Key stage 1-year 1: Number-number and place value	count to and across 100, forwards and backwards, beginning with 0, or 1, or from any given number	1.1, 1.3, 1.4,	Sequencing, counting forward, counting backward
	count, read and write numbers to 100 in numerals: count in multiples of 2s, 5s, and 10s	1.2, 11.1	Identifying numbers, Skip counting by 2s, 5s, 10s
	given a number, identify 1 more and 1 less	2.1, 2.2	Find 'one more, find 'one less'
	identify and represent numbers using objects and pictorial representations including the number line, and use language of: equal to, more than, less than, most, least	1.2, 2.3, 2.4, 2.5	Identifying numbers, find more, find less, same (equal to): use of pictorial representations (dot cards, unit bars, number line) and then number, pervasive throughout all content
	read and write numbers from 1 to 20 in numerals and words.	1.1, 1.2	Sequencing, identifying numbers

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Key Stage and Year	Pupils should be taught to:	Stage References	Concepts
Key Stage 1-year 1: Number-addition and subtraction	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	3.1, 3.3, 4.3, 4.4, 6.1, 6.3	Addition; missing whole Subtraction: missing result, first to 5, then 10, then 20
	represent and use number bonds and related subtraction facts within 20	6.1, 6.3, 6.5, Mastery Round Level 5, 6	Addition to 20; missing whole Subtraction to 20: missing result, fact families Fluency with add. and sub. within 20
	add and subtract one-digit and two-digit numbers to 20, including 0	3.1, 3.3, 4.3, 4.4, 6.1- 6.4, 7.8	Addition and Subtraction to 5, 10, and 20, with missing wholes, missing part(s), with objects in word problem contexts: Add & sub. teens and ones
	solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$.	3.2, 3.4, 6.2, 6.4	Connection between pictorial representations and number pervasive throughout: Add & sub.to 5 and 20; missing wholes and parts (missing number problems)
	Pupils memorize 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 realize the effect of adding or subtracting zero. This establishes addition and subtraction as related operations.	3.2, 3.5, 4.1, 4.2, 6.1-6.5	Addition and Subtraction to 5, 10, and 20, with missing wholes, missing part(s), Fact families

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Key Stage and Year	Pupils should be taught to:	Stage References	Concepts
Key stage 1-year 1: Number-multiplication and division	solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	11.3, 13.1, 13.4	Word problems throughout/Use of pictorial representations pervasive: Skip counting, Intro to mult.; Intro to division
Key stage 1-year 1: Number-fractions	recognize, find and name a half as 1 of 2 equal parts of an object, shape or quantity	14.1, 14.2	Dividing a whole; Creating unit fractions: Pictorial representations and number, including intro of Fraction Bar & Number Line for fractions
	recognize, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity.	14.1, 14.2	Dividing a whole; Creating unit fractions; Use of Fraction Bar and Number Lines
Key stage 1-Year 2: number and place value	count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward	7.2, 7.3, 7.4, 11.1	Counting forward and backward by 10s, Find 'Ten more,' Skip counting
	recognise the place value of each digit in a two-digit number (10s, 1s)	4.3, 7.8	10 Plus, Add and subtract teens and ones
	identify, represent and estimate numbers using different representations, including the number line	Throughout	Content throughout ; Number Line constant pictorial model
	compare and order numbers from 0 up to 100; use <, > and = signs	5.1, 5.2, 5.3, 8.9	Equals, Greater than, Less than, Compare 2-Digit numbers
	read and write numbers to at least 100 in numerals and in words	8.5	Part to Whole with 1s and 10s

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	use place value and number facts to solve problems.	Content Throughout	Fluency with add and sub within 20 including missing parts and change; Add. and subtract teens and ones; Part-whole add. and sub, Place value add. and sub.
Key stage 1-Year 2: number and place value (non-statutory)	Pupils should partition numbers in different ways (for example, $23 = 20 + 3$ and $23 = 10 + 13$) to support subtraction. They become fluent and apply their knowledge of numbers to reason with, discuss and solve problems that emphasize the value of each digit in two-digit numbers. They begin to understand zero as a place holder.	8.1-8.5	Students develop an understanding of quantity, the composition of numbers and their inter-relatedness, the organization of tens and ones, and ten as a benchmark number.
Key stage 1-Year 2: Number-addition and subtraction	solve problems with addition and subtraction: <ul style="list-style-type: none"> •using concrete objects and pictorial representations..... •applying their increasing knowledge of mental and written methods 	Content Throughout	Content throughout; Pictorial models, word problems employ pervasive visual-to-symbolic bridge
	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	7.6, 7.7, Mastery Round Level 5, 6	Fluency with add and sub within 20 including missing change; Related 1s and 10s combinations; Combinations of 100
	add and subtract numbers using concrete objects, pictorial representations, and mentally, including:	Content Throughout	Content throughout; Pictorial models, word problems employ pervasive visual-to-symbolic bridge
	<ul style="list-style-type: none"> • a two-digit number and 1s 	7.8, 8.1, 8.2, 8.3, 8.4	Addition and subtraction to 20 then 100 with missing whole and part

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	<ul style="list-style-type: none"> a two-digit number and 10s 	8.6, 8.7	Addition and subtraction to 100, parts to whole with 1s and 10s (+ 10, -10)
	<ul style="list-style-type: none"> 2 two-digit numbers 	8.8,	Adding with multiples of 10
	<ul style="list-style-type: none"> adding 3 one-digit numbers 	6.6,	3-part addition and subtraction
	show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot be done	6.5, 6.6	Fact families, 3-part addition and subtraction
	recognize and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	6.2-6.5	Parts to whole to 20 with addition and subtraction; Fact families;
Key stage 1-Year 2: Number-multiplication and division	recall and use mult. and division facts for the 2,5 and 10 multiplication tables, including recognizing odd and even numbers	Mastery Round Level 9, 10	Multiply and divide within 30 and 100, fluent retrieval of basic facts
	calculate mathematical statements for multi. and division within the mult. tables and write them using the multi (x), division (\div) and equals (=) signs	13.1-13.6	Multiplication and division, Repeated equal groupings; Products, factors, dividends and deviders unknown; Story problems throughout
	show that multiplication of 2 numbers done in any order (commutative) and division of 1 number by another cannot	13.7, 15.7	Multiplication and the commutative property

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Key Stage and Year	Pupils should be taught to:	Stage References	Concepts
	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	13.1-13.6	Multiplication and division, Repeated equal groupings; Products, factors, dividends and devisors unknown; Story problems throughout
Key stage 1-Year 2: Number-fractions	recognize, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of a length, shape, set of objects or quantity	14.1- 14.3	Find fractions of lengths and shapes, (Divide a whole), Create unit fractions, Create non-unit fractions
	write simple fractions, for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	14.6	Equivalent fractions
Year 3: Number-number and place value	count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	7.4, 7.5, 9.4, 9.5, 11.1	Find '10 more,' Find '10 less,' Find '100 more,' 100 less,' Skip count by 2s,5s,10s, 50, 100
	recognize the place value of each digit in a 3-digit number (100s, 10s, 1,s)	10.1-10.8	Part to Whole with 1s, 10s and 100s; decomposing 3-digit numbers into varying parts (partitioning related to place value)
	compare and order numbers up to 1,000	10.8	Compare 3-Digit numbers
	identify, represent and estimate numbers using different representations	10.5, 12.1, 12.2, 12.3	Part to Whole with 1s, 10s and 100s, Regroup with 1, 2, and 3-digit numbers (partition related to place value)
	read and write numbers up to 1,000 in numerals and in words	12.1-12.7	Addition and subtraction word problems with 2-digit and 3-digit numbers with regrouping (partitioning related to place value)

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	solve number problems and practical problems involving these ideas.	12.1-12.7	Addition and subtraction word problems with 2-digit and 3-digit numbers with regrouping (partitioning related to place value)
Year 3: Number-number and place value (non-statutory)	students use larger numbers to at least 1000, applying partitioning related to place value using varied and increasingly complex problems, building on work in year 2 (for example, $146 = 100 + 40 + 6$, $146 = 130 + 16$).	10.1-10.8, 12.1-12.7	Hierarchical groupings with parts-to-whole
Year 3: Number-addition and subtraction	add and subtract numbers mentally, including: <ul style="list-style-type: none"> • a 3-digit number and 1 • a 3-digit number and 10s • a 3-digit number and 100s 	12.1-12.7	Addition and subtraction word problems with 2- and 3-digit numbers with regrouping (partitioning related to place value)
	add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction	21.1-21.7	
	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	12.1-12.7	Addition and subtraction word problems with 2- and 3-digit numbers with regrouping (partitioning related to place value)
Year 3: Number-multiplication and division	recall and use multiplication and division facts for the 3,4 and 8 mult tables	Mastery Round Level 9, 10	Multiply and divide within 30 and 100, fluent retrieval of basic facts

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	write and calculate mathematical statements for multiplication and division using the mult. tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods	15.1, 15.4, 15.7, 15.8	Multiplication and division to 100; missing result, Commutative and Distributive Property and multiplication
	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems.	15.2, 15.3, 15.5-15.8	Multiplication and division to 100, missing numbers (factors, dividend, divisor), Connection between mult and division, Partitioning models, Commutative and distributive properties
Year 3: Numbers-fractions	count up and down in tenths; recognize that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10	19.1	
	recognise, find and write fractions of a discrete set of objects: unit fractions and non- unit fractions with small denominators	17.3, 18.1	Recognize fractions in the context of parts of a whole, a shape, and unit fractions as a division of a quantity and as numbers on the number line
	recognise and show, using diagrams, equivalent fractions with small denominators	17.1	Equivalent fractions, use of Fraction Bar, Number Line
	add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]	17.3-17.6 18.1-18.4	Addition and subtraction of fractions; find missing parts, missing wholes and missing relationships; Unit and non-unit fractions

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Key Stage and Year	Pupils should be taught to:	Stage References	Concepts
	compare and order unit fractions, and fractions with the same denominators	17.2	Compare fractions
	solve problems that involve all of the above.	17.1-17.6, 18.1-18.4	
Year 4: Number - addition and subtraction	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate; estimate to check calculation, solve 2-step problems etc	21.1-21.8	Standard Algorithm: addition and subtraction up to 4-digits
	solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	21.1-21.8	Standard Algorithm: addition and subtraction up to 4-digits- Contextual Story Problems
Year 4: Number - multiplication and division	recall multiplication and division facts for multiplication tables up to 12×12	Mastery Round Level 9, 10	Multiply and divide within 100, Fact retrieval fluency
	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	16.1-16.4	Multiplying and dividing by 1, 10, 100
	recognise and use factor pairs and commutativity in mental calculations	15.7, 15.8	Commutative and Distributive Properties
	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	22.1, 22.3	Expanded Mode Multiplication: 1 digit x 2 digits, 1 digit x 3 digits

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Key Stage and Year	Pupils should be taught to:	Stage References	Concepts
	solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	15.8	Distributive property
Year 4: Number-multiplication and division (non-statutory)	Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency.	Mastery Round Level 9, 10, and 11	Multiply and divide within 100, Fact retrieval fluency (timed)
	Pupils practice mental methods and extend this to three-digit numbers to derive facts, (for example $600 \div 3 = 200$ can be derived from $2 \times 3 = 6$).	16.1-16.5	Multiply and Divide with 1s, 10s, 100s
Year 4: Number-fractions (including decimals)	recognise and show, using diagrams, families of common equivalent fractions	17.1	Families of equivalent fractions, using Fraction Bars, Number Lines
	count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	19.1-19.3	Sequencing, and Identifying decimals, Equivalence with 10ths and 100ths, Dividing a whole into 10 tenths or 100 hundredths
	solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number	18.1-18.4, 20.1-20.4	Add and subtract non-unit fractions, Compose and decompose fractions greater than 1 whole and mixed numbers

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	add and subtract fractions with the same denominator	18.1-18.4, 20.1-20.4	Add and subtract non-unit fractions, Compose and decompose fractions greater than 1 whole and mixed numbers
	recognise and write decimal equivalents of any number of tenths or hundredths	19.3	Equivalence with 10ths and 100ths
	recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$	19.5	Decimal notation with 10ths and 100ths
	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	16.3, 16.4	Divide by 1, 10, 100
	compare numbers with the same number of decimal places up to two decimal places.	19.6	Comparing decimal numbers
Year 5: Number and Place Value (non-statutory)	Continue to use number in context, including measurement. Pupils extend and apply their understanding of the number system to the decimal numbers and fractions that they have met so far.	24.2, 24.3	Repeated equal groupings and Hierarchical Groupings -extended to quantities < 1
	Recognize and describe linear number sequences (for example, 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$...), including those involving fractions and decimals, and find the term-to-term rule in words (for example, add $\frac{1}{2}$).	20.1-20.4	Repeated equal groupings with fractions greater than 1 whole,
Year 5: Addition and Subtraction	add and subtract numbers mentally with increasingly large numbers	Mastery Round Level 7, 8	Add and subtract within 200 (timed)

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	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	21.1-21.8	Standard Algorithm: addition and subtraction up to 4-digits including story problems
Year 5: Addition and Subtraction (non-statutory)	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	21.1-21.8	Standard Algorithm: addition and subtraction up to 4-digits using columnar addition and subtraction
	multiply and divide numbers mentally drawing upon known facts	24.1-24.3	Magnitude and place value
	solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	21.1-21.8 24.1-24.3	Standard algorithm add. and subtraction. Magnitude and Place Value. Story problems throughout. Equivalencies throughout
Year 5: Multiplication and Division (non-statutory)	Distributivity can be expressed as $a(b + c) = ab + ac$.	22.1, 22.3, 22.5	Expanded mode of multiplication using the Distributive Property
Year 5: Fractions, (including decimals)	compare and order fractions whose denominators are all multiples of the same number	14.5, 24.2	Placing fractions within the same fraction/ number line model helps students visualize the size of the parts, making comparisons accessible. Multiplying by powers of 10 help students see connection between mult. and its inverse, division with fractions.

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	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	19.3, 19.5	Equivalence with 10ths and 100ths
	recognize mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$]	20.1-20.4	Fractions greater than 1 Whole
	add and subtract fractions with the same denominator and denominators that are multiples of the same number	20.1-20.4	Add and Subtract non-unit fractions
	multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	23.1-23.3	Multiply fractions and whole numbers
	read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]	24.1-24.3	Magnitude and place value
Year 5: Fractions, including decimals (non-statutory)	Pupils connect multiplication by a fraction to using fractions as operators (fractions of), and to division, building on work from previous years. This relates to scaling by simple fractions, including fractions > 1 .	23.1-23.3	Multiply fractions and whole numbers

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	Pupils practise adding and subtracting fractions to become fluent through a variety of increasingly complex problems. They extend their understanding of adding and subtracting fractions to calculations that exceed 1 as a mixed number.	20.1-20.4, Extension	Calculations with fractions and fractions greater than 1 whole
	They practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 (for example, $0.83 + 0.17 = 1$).	25.1-25.3	Hierarchical groupings with parts-to-whole of equal groupings: decimals to thousandths
Year 6: add. sub. mult. and division	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	21.1-21.8	Standard Algorithm: addition and subtraction up to 4-digits including story problems
	solve problems involving addition, subtraction, multiplication and division	21.1-21.8 22.1-22.5	Calculations with addition subtraction, multiplication, and division; contextual story problems throughout
Year 6: notes and guidance on add, sub, mult, and division (non-statutory)	Pupils continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.	MR 11	Multiply and divide with place value; timed
Year 6: Fractions, (including decimals)	compare and order fractions, including fractions > 1	20.1, 20,2	Composing improper fractions/fractions > 1 and mixed numbers

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Key Stage and Year	Pupils should be taught to:	Stage References	Concepts
	multiply simple pairs of proper fractions, writing the answer in its simplest form [for example , $1/4 \times 1/2 = 1/8$]	23.2	Repeated equal groupings with parts-to-whole
	identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places	24.1-24.3, 25.1	Magnitude and place value; mult and dividing by powers of 10 (including 0.10 and 0.01), Structure of decimal numbers
	multiply one-digit numbers with up to two decimal places by whole numbers	26.1, 26.2, 26.4	Multiplication of decimal quantities using multiples of ten and expanded notation/area model
Year 6: notes and guidance on fractions (including decimals) (non-statutory)	Pupils should use a variety of images to support their understanding of multiplication with fractions. This follows earlier work about fractions as operators (fractions of), as numbers, and as equal parts of objects, for example as parts of a rectangle.	23.1-23.3	Multiply fractions and whole numbers; visual models throughout
	Pupils are introduced to the division of decimal numbers by one-digit whole number, initially, in practical contexts involving measures and money. They recognise division calculations as the inverse of multiplication.	26.3	Division of decimals with area model; models enforce inverse relationship of multiplication and division