

NUMBER BONDS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Represent and use number bonds and related subtraction facts within 20	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Recall and use addition and subtraction facts to 100 fluently, and derive and use related facts up to 1000	Recall and use addition and subtraction facts to 1000 fluently, and derive and use related facts up to 10000	Recall and use addition and subtraction facts to 1000 fluently, and derive and use related facts up to 100000	Recall and use addition and subtraction facts to 1000 fluently, and derive and use related facts up to 1000000
MENTAL CALCULATION					
Add and subtract one-digit and two-digit numbers to 20, including zero	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers 	Add and subtract numbers mentally, including: <ul style="list-style-type: none"> * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds 	Add and subtract numbers mentally, including: <ul style="list-style-type: none"> * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds 	Add and subtract numbers mentally with increasingly large numbers	Perform mental calculations, including with mixed operations and large numbers
Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot				Use their knowledge of the order of operations to carry out calculations involving the four operations

WRITTEN METHODS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)	Read, write and interpret mathematical statements involving addition (+), subtraction (-), multiplication (x) and division (÷) and equals (=) signs	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS					
	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	Estimate the answer to a calculation and use inverse operations to check answers	Estimate and use inverse operations to check answers to a calculation	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.

PROBLEM SOLVING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	Solve problems with addition and subtraction: <ul style="list-style-type: none"> * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods 	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

	<i>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</i> <i>(copied from Measurement)</i>				Solve problems involving addition, subtraction, multiplication and division
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Year 1 Number – Addition and Subtraction

<p>Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs</p>	<p>Represent and use number bonds and related subtraction facts within 20</p>	<p>Add and subtract one-digit and two-digit numbers to 20, including zero</p>	<p>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$.</p>
<p>To know that '+' means combining two collections to make a larger amount</p> <p>To know that '-' means taking away an amount from a group to make a smaller amount</p> <p>To know that '=' means the same as 'balanced' and 'equals to' so both sides must be the same.</p> <p>To practically demonstrate how to carry out the correct operation when given a number sentence.</p> <p>To record the correct number sentence after completing a practical activity.</p> <p>To understand subtraction is the inverse of addition.</p> <p>Presenting calculations in different ways ($3+7=10$, $7+3=10$, $10=3+7$)</p>	<p>Derive all number bonds up from 1 to 10 (up to 2, 3, 4, etc) and derive all number bonds from 11 to 20</p> <p>To know the subtraction (inverse) facts from 1 to 10 and derive all facts from 11 to 20.</p> <p>Recording all possible outcomes</p>	<p>To understand, through practical demonstrations that addition can be done in any order but practically subtraction cannot (1 take away 9)</p> <p>To use equipment to solve addition and subtraction calculations.</p> <p>To use number lines, 100 square or other support to calculate</p>	<p>Recognise different vocabulary for each operation (key words).</p> <p>To be able to write a number sentence from a word problem.</p> <p>To interpret the context of the problem.</p> <p>To calculate with support from pictures and objects.</p>

Year 2 Number-Addition and Subtraction

<p>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</p>	<p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p>	<p>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 adding three one-digit numbers</p>	<p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p>	<p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p>
<p>Present problems in different contexts.</p> <p>Find a starting point and begin to pick out key facts.</p> <p>Model how to use a systematic approach and give opportunities to apply this</p> <p>Use apparatus, diagrams or role play to represent</p>	<p>To derive number bonds from 20 to 100 - Fact Families ($25 + 75 = 100$, $75 + 25 = 100$, $100 - 75 = 25$, $100 - 25 = 75$)</p> <p>To be able to recall and derive complements to 100.</p>	<p>To be able to count forwards and count backwards from any given number</p> <p>To add a 1 digit number to a 2 digit number within the decade</p> <p>To add a 1 digit number to a 2 digit number over the decade</p> <p>To add a multiply to 10 to a 2 digit number over</p>	<p>To consolidate, through practical demonstrations that addition can be done in any order, but practically subtraction cannot (1 take away 9)</p> <p>To record calculation as a number sentence</p>	<p>Understand the term of addition / subtraction and the associated vocabulary</p> <p>To be able to make related number sentences</p> <p>To calculate the value of an unknown number in a number sentence.</p> <p>To understand that subtraction is the inverse</p>

<p>a problem.</p> <p>Respond to questions and ideas from peers and adults.</p> <p>Use pictures, diagrams and symbols to communicate their thinking.</p>		<p>the decade</p> <p>Need to be able to count in steps of 10 from different starts on and off the decades</p> <p>To record calculation as a number sentence</p> <p>Use partitioning and recombining</p> <p>To know how to use a number line to solve addition and subtraction number calculations</p>		<p>of addition and vice versa.</p>
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Year 3 Number, Place Value & Rounding

Read and write numbers up to 1000 in numerals and in words	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	Find 10 or 100 more or less than a given number	Compare and order numbers up to 1000	Identify, represent and estimate numbers using different representations Round a three digit number to the nearest 10 and 100.	Count from 0 in multiples of 4, 8, 50 and 100;	Solve number problems and practical problems involving these ideas.
Read and write numbers up to 100 in numerals and words Know the difference between teens and 'ties' numbers (17, 70) Recognise '0' as a place holder	Know place value of two digit numbers (tens, ones) Partition two digit numbers into tens and ones	Find one more and one less from given number to up 100 Bridge 10 and 100 Know place value of two digit numbers (tens, ones) Count in 10s from a given multiple of 10 Count in 100s from a given multiple of 100	Compare and order numbers to 100 Know place value of two and three digit numbers (hundred, tens, ones) Read and write numbers up to 1000 Recognise '0' as a place holder Use <, > and = signs	Know place value of two and three digit numbers (hundreds, tens, ones) Partition two and three digit numbers into hundreds, tens and ones Round a two digit number to the nearest 10. Know that 0-4 rounds down and 5-9 rounds up Know which digit to look at when rounding	Count forwards Count in steps of 2, 5 and 10 Understand odd and even numbers	Use place value and number facts to solve problems Solve number problems up to 100

Year 3 Number - Addition & Subtraction

<p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> •a three-digit number and ones •a three-digit number and tens •a three-digit number and hundreds 	<p>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p>	<p>Estimate the answer to a calculation and use inverse operations to check answers</p>	<p>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p>
<p>Count forwards and backwards in ones, tens and hundreds</p> <p>Know place value of two and three digit numbers (hundred, tens, ones)</p> <p>To be able to add/subtract multiples of 10 and adjust</p> <p>To be able to add/subtract multiples of 100 and adjust</p> <p>To know how to partition numbers in different ways</p>	<p>Know place value of two and three digit numbers (hundred, tens, ones)</p> <p>Read and write numbers up to 1000</p> <p>Recognise '0' as a place holder</p> <p>Add and subtract using a number line</p> <p>Follow school's calculation policy</p>	<p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations</p> <p>Round a two digit number to the nearest 10.</p> <p>Know that 0-4 rounds down and 5-9 rounds up</p> <p>Know which digit to look at when rounding</p> <p>Round a three digit number to the nearest 10</p> <p>Round a three digit number to the nearest 100</p>	<p>Read the question and identify the relevant information.</p> <p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p> <p>Understand and use vocabulary associated with addition and subtraction</p>

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 and use inverse operations to check answers to a calculation	Solve addition and subtraction 2-step problems in context deciding which operations and methods to use and why
<p>Can add/subtract TO and TO: mentally and written</p> <p>Can add/subtract HTO and O: mentally and written</p> <p>Can add/subtract HTO and TO: mentally and written</p> <p>Can add/subtract HTO and HTO: mentally and written</p> <p>Add/subtract ThHTO and O/TO/HTO/ThHTO: mentally and written</p> <p>Children to decide whether to apply written and mental strategies</p>	<p>Can round numbers to the nearest 10, 100 or 1000 to estimate</p> <p>Understand that addition is the inverse of subtraction and vice versa</p> <p>Know how to calculate the inverse - which numbers to use!!</p>	<p>Read the question and identify relevant information.</p> <p>Can solve missing number problems</p> <p>Can solve problems using number facts and/or place value</p> <p>Present problems and children to explain mathematical thinking using the correct vocabulary</p> <p>Recognise whether the answer is appropriate in the given context</p>

Year 5 Number - Addition and Subtraction

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, levels of accuracy	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
<p>To understand the place value of the digits of numbers greater than 1000.</p> <p>Be able to add: TO HTO ThHTO TThHTO HthTth Th HTO</p> <p>In all different combinations - using formal method</p>	<p>Apply number bonds to larger numbers. e.g. $7+3=10$ $70\ 000 + 30\ 000 = 100\ 000$</p> <p>Continue to use partitioning $12\ 462 - 2\ 300 = 10\ 162$</p> <p>To be able to use and apply place value</p> <p>Round and adjust</p>	<p>Use rounding skills to estimate.</p> <p>To know when the context requires an answer to be rounded up or down.</p> <p>Use the inverse to check a calculation</p>	<p>Read the question and identify relevant information.</p> <p>Be able to identify the calculations needed.</p> <p>Make decisions about which methods to apply (written/jottings, mental) for operations.</p> <p>Be able to explain and justify choices.</p> <p>Be able to identify whether the answer is appropriate in the given context.</p>

Year 6 Number - Addition and Subtraction

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.	Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	Solve problems involving addition, subtraction, multiplication and division.
To apply mental strategies confidently in all four operations and work on developing increasing complexity.	<p>BODMAS Brackets, orders, division, multiplication, addition, subtraction.</p> <p>Apply this to a range of examples and contexts.</p>	Use knowledge of rounding and approximation to understand what a reasonable answer would be for a given problem.	<p>Apply addition and subtraction methods to a range of multi-step problems.</p> <p>Make decisions to reason why they have chosen a particular method.</p> <p>Develop efficient methods.</p>	<p>Apply methods for all four operations to a range of multi-step problems.</p> <p>Make decisions to reason why they have chosen a particular method.</p> <p>Develop the use of efficient methods.</p>