

Lacewood Primary School Mathematics Number Progression Document



FS1
 FS2
 Year 1
 Year 2
 Year 3
 Year 4
 Year 5
 Year 6

Pre-entry to FS1 Observation Checkpoints

- Joins in with simple counting songs/rhymes.
- Recognises when an amount has changed (up to 3)
- Counts in everyday contexts, sometimes skipping numbers.
- Uses simple language to describe amounts e.g. “lots” “more”
- Counts in everyday contexts whilst playing

FS2	3 to 4 year olds – FS1	4 to 5 year olds – FS2
Knowledge, Skills and Understanding		
	<p>Counting</p> <ul style="list-style-type: none"> • To know how to recite number names in sequence to 10 and beyond. • To know stable order counting – 1 number for 1 object in order. • To know number recognition from 1 to 10. <p>Comparison</p> <ul style="list-style-type: none"> • To know which has most/least, more/less from a selection of 2 amounts. (up to 5) <p>Cardinality</p> <ul style="list-style-type: none"> • To know that the last number reached when counting objects states how many there are in total. • To know how to match numerals to amounts up to 5. <p>Composition</p> <ul style="list-style-type: none"> • To know that each counting number is one more than the one before. • To separate a group of 3 or 4 objects, recognising that the total remains the same. 	<p>Counting</p> <ul style="list-style-type: none"> • To know how to recite numbers to 10 and beyond in order. • To know how to count back from 10 to 0. • To know how to place numerals from 1 to 10, then 10 to 20 in order. • To know strategies for counting objects accurately. <p>Comparison</p> <ul style="list-style-type: none"> • To know the one more/one less relationship between 2 consecutive numbers. • To know how to use comparison to make sensible estimations of numbers within 1 to 20. <p>Cardinality</p> <ul style="list-style-type: none"> • To know how to subitise numbers to 5. • To know how to count out a given number of objects from a larger group. • To know how to match numerals to amounts to 10 and then beyond <p>Composition</p> <ul style="list-style-type: none"> • To know how to partition numbers to 10 in different ways. • To know how to subitise smaller numbers within a larger number. • To know number bonds from 1 to 10 (addition and subtraction facts)

- To know how to combine 2 groups and work out the total.
- To know how to add by counting on and subtract by counting back.

End Points/Skills Check

Counting

- So that I can use some number names and number language in my play.
- So that I can count aloud in sequence to 10.
- So that when I count objects, I say one number for one item in order.
- So that I can Show fingers to represent a number to 5.

Comparison

- So that I can identify which of 2 amounts of an object/item is the most. (up to 5)

Cardinality

- So that I can count up to 5 items, recognising that the last number reached represents the total.
- So that I can Link numerals with amounts up to 5 and maybe beyond.

Composition

- So that, through play and exploration, I am beginning to recognise that numbers are made up of smaller numbers.

Counting

- So that I can orally recite numbers forwards and backwards in sequence to 10 and then beyond.
- So that I can orders and sequence numerals within 0 to 10 and then 10 to 20 accurately.
- So that I can count objects accurately by moving, touching or placing them in a line

Comparison

- So that I can identify the number one more or one less than any number to 10 and then beyond.
- So that I can make sensible estimations of numbers to 20.

Cardinality

- So that I can subitise amounts up to 5 speedily
- So that I can count out a given number from a set of objects when asked.
- So that I can recognise and match numerals and amounts to 10 and beyond.

Composition

- So that I can explore partitioning any number to 10 in different ways using a range of materials.
- So that I can subitise numbers to 5 within larger numbers.
- So that I know number bonds from 1 to 10 (including subtraction facts) and uses these skills to solve practical problems and calculations.
- So that I can solve simple addition and subtractions using known number facts.

EYFS Vocabulary

Number
Count
How many?
One
Each
First
Last
More
Less
One more
Before
After
Altogether
Next
Then

Compare
Subitising
Amount
Total
Altogether
Whole
Part
Most
Least
Sequence
Order
Total
Add/Addition
Take away/Subtraction
How many left?
How many now?
Value
Digit
Twos
Tens
Fives
Unit
Groups of
Sharing
Grouping
Times/lots of
Double
Half

	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions (including decimals and percentages)
	Year 1			
	<p>I know: numbers to 100</p> <p>I know: numbers can be written in numerals and words and how to read them.</p> <p>I know: that we can count in different ways in equal sequences. 1, 2, 5 and 10.</p> <p>I know: that a number line can be used to count on or backwards.</p>	<p>I know that: Symbols represent mathematical commands add (+), subtract (-) and equals (=) signs</p> <p>I know that: concrete objects and pictorial representations can help solve problems.</p> <p>I know that: I mentally add and subtract numbers up to 20.</p>	<p>I know that: concrete objects, pictorial representations and arrays can be shared and grouped into equal groups.</p>	<p>I know: objects can be shared into two equal groups and this is $\frac{1}{2}$.</p> <p>I know: objects can be shared into four equal groups and this is $\frac{1}{4}$.</p>
	<p>So that I can: Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</p> <p>So that I can: Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens</p> <p>So that I can: identify one more and one less</p> <p>So that I can: Identify and represent numbers using objects and pictures including the number line, and use the language of: equal to, more than, less than (fewer), most, least</p> <p>So that I can: Read and write numbers from 1 to 20 in numerals and words.</p>	<p>So that I can: Read, write and interpret mathematical statements</p> <p>So that I can: Represent and use number bonds and related subtraction facts within 20</p> <p>So that I can: Add and subtract one-digit and two-digit numbers to 20, including zero</p> <p>So that I can: Solve one-step problems that involve addition and subtraction</p>	<p>So that I can: Solve one-step problems involving multiplication and division.</p>	<p>So that I can: Recognise, find and name a half as one of two equal parts of an object, shape or quantity</p> <p>So that I can: Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity</p>
	<u>Vocabulary</u> Sort	<u>Vocabulary</u> Addition/add	<u>Vocabulary</u> Multiplication	<u>Vocabulary</u> Whole

<p>Represent Multiples Partitioning More than / less than Fewer Most Least Ones Tens</p>	<p>Subtraction Difference Equals Facts Problems Missing number problems 2-digit number Inverse</p>	<p>Multiply Division Divide Array</p>	<p>Half Quarter Equal parts</p>
Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions (including decimals and percentages)
Year 2			
<p>I know that: each digit in a number represents a different value and can identify them all to a hundred.</p> <p>I know that: to count forward/backwards in multiples of 2, 3, 5 and 10 we must increase/decrease by the same difference each time.</p> <p>I know that: there are ten hundreds in a thousand.</p> <p>I know that: < Means smaller than, > means bigger than and = represents the same value.</p>	<p>I know: my number bonds to 100.</p> <p>I know that: problems require different methods of calculation and how column addition/subtraction is applied for larger numbers.</p> <p>I know that: to mentally calculate additions and subtractions we must partition the tens and the ones.</p> <p>I know that: addition can be done in any order, but to perform subtraction the smaller number has to be taken from the larger number.</p> <p>I know that: subtraction is the inverse of addition.</p>	<p>I know that: Symbols represent mathematical commands multiplication (\times), division (\div) and equals (=) signs</p> <p>I know that: Number sentences can be shown through materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p> <p>I know: my 2, 5 and 10 times tables and their division facts. I know that: fact families can be used to prove that multiplication of two numbers can be done in any order.</p> <p>I know that: division is the inverse of multiplication.</p>	<p>I know that: a length, shape, set of objects or quantity can be split up into equal parts and that these are called fractions.</p> <p>I know that: when we split a shape into: 2 parts = $\frac{1}{2}$, 4 parts = $\frac{1}{4}$ and 3 parts = $\frac{1}{3}$.</p> <p>I know that: when writing a fraction, the numerator expresses the amount of parts and the denominator expresses the total amount of parts.</p>

				<p>I know that: a fraction can hold an equal value with another fraction. I.e. $2/4 = 1/2$</p>
	<p>So that I can: count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</p> <p>So that I can: recognise the place value of each digit in a two-digit number (tens, ones)</p> <p>So that I can: identify, represent and estimate numbers using different representations, including the number line</p> <p>So that I can: compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs</p> <p>So that I can: read and write numbers to at least 100 in numerals and in words</p> <p>So that I can: use place value and number facts to solve problems.</p>	<p>So that I can: solve problems with addition and subtraction: using concrete objects and pictorial representations</p> <p>So that I can: recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</p> <p>So that I can: add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones</p> <p>So that I can: show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p>	<p>So that I can: recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p> <p>So that I can: calculate mathematical statements for multiplication and division within the multiplication tables and write them</p> <p>So that I can: show that multiplication of two numbers can be done in any order and division of one number by another cannot</p> <p>So that I can: solve problems involving multiplication and division</p>	<p>So that I can: recognise, find, name and write fractions $1/2$, $1/4$, $2/4$ and $3/4$ of a length, shape, set of objects or quantity</p> <p>So that I can: write simple fractions e.g. $1/2$ of 6 = 3 and recognise the equivalence of two quarters and one half.</p>

		<p>So that I can: recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p>		
	<p><u>Vocabulary</u> Count in steps Count in multiples Place value Estimate Compare</p>	<p><u>Vocabulary</u> Sum 3-digit number Commutative</p>	<p><u>Vocabulary</u> Multiplication tables Commutative Repeated addition</p>	<p><u>Vocabulary</u> Three quarters Third Equivalent fractions Unit fractions Non unit fractions Numerator Denominator One whole</p>
	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions (including decimals and percentages)
	Year 3			
	<p>I know that: each digit in a number represents a different value and can identify them all to a thousand.</p>	<p>I know that: problems require different methods of calculation and</p>	<p>I know: my 3, 4 and 8 times tables and their division facts.</p>	<p>I know that: a tenth follows a one and how they are</p>

	<p>I know that: to count in multiples we must increase by the same difference each time.</p> <p>I know that: there are ten hundreds in a thousand.</p>	<p>how column addition/subtraction is applied for larger numbers.</p> <p>I know that: mental calculation strategies can help with additions and subtractions less than three digits.</p> <p>I know that: Inverse can be used to check problems and which calculation to select. I.e. add/subtract, subtract/subtract.</p>	<p>I know that: the grid method is used to multiply 2 digit by 1 digit problems and how to apply them.</p> <p>I know that: division is the inverse of multiplication and that fact families are used to solve missing number problems.</p>	<p>created when a whole is divided into ten equal parts.</p> <p>I know that: a discrete set of objects can be expressed as unit fractions or non-unit fractions.</p> <p>I know that: common denominators must be used to add/subtract fractions.</p> <p>I know that: fractions can be equal even if they have different denominators and how doubling/halving denominators can be used to prove this.</p> <p>I know that: fractions can be added and subtracted and that only the numerator will be affected.</p> <p>I know that: fractions with the same denominator can be ordered and compared using the value of their numerator.</p>
	<p>So that I can: count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</p>	<p>So that I can: add and subtract numbers mentally, including: a three-digit number and ones a three-digit</p>	<p>So that I can: recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p>	<p>So that I can: count up and down in tenths; recognise that tenths arise from dividing an object into 10</p>

	<p>So that I can: recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</p> <p>So that I can: compare and order numbers up to 1000</p> <p>So that I can: identify, represent and estimate numbers using different representations</p> <p>So that I can: read and write numbers up to 1000 in numerals and in words</p> <p>So that I can: solve number problems and practical problems involving these ideas.</p>	<p>number and tens a three-digit number and hundreds</p> <p>So that I can: add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</p> <p>So that I can: estimate the answer to a calculation and use inverse operations to check answers</p> <p>So that I can: solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p>	<p>So that I can: 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 and progressing to formal written methods</p> <p>So that I can: solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems</p>	<p>equal parts and in dividing one-digit numbers or quantities by 10</p> <p>So that I can: recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</p> <p>So that I can: recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</p> <p>So that I can: recognise and show, using diagrams, equivalent fractions with small denominators</p> <p>So that I can: add and subtract fractions with the same denominator within one whole (for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)</p> <p>So that I can: compare and order unit fractions, and fractions with the same denominator</p>
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				So that I can: solve problems that involve all of the above.
<u>Vocabulary</u> Ascending Descending 10 or 100 more 10 or 100 less Hundreds	<u>Vocabulary</u> Column addition Column subtraction Exchange Estimate	<u>Vocabulary</u> Exchange Mathematical statements Missing number problems Integer scaling problems Correspondence problems Derived facts	<u>Vocabulary</u> Tenths	
Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions (including decimals and percentages)	
Year 4				
<p>I know that: each digit in a number represents a different value and can identify them all to a million.</p> <p>I know that: ones round to tens, tens round to hundreds, hundreds round to thousands, thousands round to hundred thousands and hundred thousands round to millions.</p> <p>I know that: numbers can be smaller than zero and how they are represented as negatives.</p> <p>I know that: numbers can be represented as numerals and that M = 1000, C = 100, X = 10 and V = 5.</p>	<p>I know that: problems require different methods of calculation and how column addition/subtraction is applied for larger numbers.</p> <p>I know that: mental calculation strategies can help with additions and subtractions less than three digits.</p> <p>I know that: Inverse can be used to check problems and which calculation to select. I.e. add/subtract, subtract/subtract.</p>	<p>I know that: the short multiplication columnar method and the grid method and how to apply them.</p> <p>I know that: short division requires the bus stop calculation.</p> <p>I know that: factor pairs are found by dividing a number and that multiples are found by multiplying a number.</p> <p>I know: my times tables for 1 – 12 and their division facts.</p>	<p>I know that: fractions can be equal even if they have different denominators and how multiplication/division can be used to prove this.</p> <p>I know that: whole numbers can be divided/multiplied to find fractions of amounts.</p> <p>I know that: common denominators must be used to add/subtract fractions.</p> <p>I know that: decimal places are a continuation of a whole number and operate infinitely.</p>	

				<p>I know that: fractions and decimals can hold the same value and know that $\frac{1}{2}=0.5$ etc.</p> <p>I know that: a whole number can be divided by 10 and 100 and how its place value may move into tenths and hundredths and how to identify them.</p> <p>I know that: a tenth follows a one, a hundredth follows a tenth hundredth and how to compare their value.</p> <p>I know that: a tenth would be used to round to the nearest one.</p> <p>I know that: pounds and pence are represented with decimals up to two decimal places.</p>
	<p>So that I can: count in multiples of 6, 7, 9, 25 and 1000</p> <p>So that I can: find 1000 more or less than a given number</p> <p>So that I can: count backwards through zero to include negative numbers</p>	<p>So that I can: add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</p>	<p>So that I can: recall multiplication and division facts for multiplication tables up to 12×12</p> <p>So that I can: use place value, known and derived facts to multiply and divide mentally, including:</p>	<p>So that I can: recognise and show, using diagrams, families of common equivalent fractions</p> <p>So that I can: count up and down in hundredths; recognise that hundredths</p>

	<p>So that I can: recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)</p> <p>So that I can: order and compare numbers beyond 1000</p> <p>So that I can: identify, represent and estimate numbers using different representations So that I can: round any number to the nearest 10, 100 or 1000</p> <p>So that I can: solve number and practical problems that involve all of the above and with increasingly large positive numbers</p> <p>So that I can: read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.</p>	<p>So that I can: estimate and use inverse operations to check answers to a calculation</p> <p>So that I can: solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p>	<p>multiplying by 0 and 1; dividing by 1; multiplying together three numbers</p> <p>So that I can: recognise and use factor pairs and commutativity in mental calculations</p> <p>So that I can: multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p> <p>So that I can: 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.</p>	<p>arise when dividing an object by one hundred and dividing tenths by ten.</p> <p>So that I can: 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</p> <p>So that I can: add and subtract fractions with the same denominator</p> <p>So that I can: recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>So that I can: recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$</p> <p>So that I can: 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</p>
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				<p>So that I can: round decimals with one decimal place to the nearest whole number</p> <p>So that I can: compare numbers with the same number of decimal places up to two decimal places</p> <p>So that I can: solve simple measure and money problems involving fractions and decimals to two decimal places.</p>
	<p><u>Vocabulary</u> Negative numbers Roman numerals 1000 more 1000 less Thousands Round</p>	<p><u>Vocabulary</u> 4-digit number Operations Methods</p>	<p><u>Vocabulary</u> Factor pairs Formal written layout Distributive law Remainders</p>	<p><u>Vocabulary</u> Decimal equivalence Hundredths Convert Proper fractions Improper fractions Decimal point</p>
	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions (including decimals and percentages)
	Year 5			
	<p>I know that: each digit in a number represents a different value and can identify them all to a million.</p> <p>I know that: ones round to tens, tens round to hundreds, hundreds round to thousands, thousands</p>	<p>I know that: problems require different methods of calculation and how column addition/subtraction is applied for larger numbers.</p>	<p>I know that: short and long multiplication require different calculation methods and how to apply them.</p>	<p>I know that: fractions can be represented as both mixed and improper fractions and they are both equal.</p>

	<p>round to hundred thousands and hundred thousands round to millions.</p> <p>I know that: numbers can be smaller than zero and how they are represented as negatives.</p> <p>I know that: numbers can be represented as numerals and that M = 1000, C = 100, X = 10 and V = 5.</p>	<p>I know that: mental calculation strategies can help with additions and subtractions less than three digits.</p> <p>I know that: rounding can be used to create an estimate.</p>	<p>I know that: short division requires the bus stop calculation.</p> <p>I know that: factor pairs are found by dividing a number and that multiples are found by multiplying a number.</p> <p>I know that: a prime number only is divisible by one and itself.</p> <p>I know that: a square number is the result of a number multiplied by itself.</p> <p>I know that: when a number is multiplied and divided by 10, 100 and 1,000 the place value is moved to the left/right accordingly.</p>	<p>I know that: to compare fractions multiplication/division must be used to create common denominators.</p> <p>I know that: common denominators must be used to compare and order fractions.</p> <p>I know that: common denominators must be used to add and subtract fractions.</p> <p>I know that: when a fraction is multiplied by a fraction the answer will be a smaller fraction.</p> <p>I know that: when a fraction is divided by a whole number the answer will be a smaller fraction.</p> <p>I know that: decimal places are a continuation of a whole number and operate infinitely.</p> <p>I know that: a tenth follows a one, a hundredth follows a</p>
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				<p>tenth and thousandth follows a hundredth and how to compare their value.</p> <p>I know that: percentage means 'number of parts per hundred'</p> <p>I know that: fractions divide to create decimals and how a percentage is also a representation out of 100.</p>
	<p>So that I can: read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</p> <p>So that I can: count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p>So that I can: interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero</p> <p>So that I can: round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</p> <p>So that I can: solve number problems and practical problems that involve all of the above</p>	<p>So that I can: add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</p> <p>So that I can: add and subtract numbers mentally with increasingly large numbers</p> <p>So that I can: use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</p> <p>So that I can: solve addition and subtraction multi-step problems in</p>	<p>So that I can: identify multiples and factors:</p> <p>So that I can: identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers</p> <p>So that I can: use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</p> <p>So that I can: establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>So that I can: multiply numbers up to 4 digits by a one- or two-digit number using a formal written</p>	<p>So that I can: compare and order fractions whose denominators are all multiples of the same number</p> <p>So that I can: identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>So that I can: recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example, $2\frac{2}{5} + 4\frac{4}{5} = 6\frac{6}{5} = 11\frac{1}{5}$]</p>

	<p>So that I can: read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</p>	<p>contexts, deciding which operations and methods to use and why.</p>	<p>method, including long multiplication for two-digit numbers</p> <p>So that I can: multiply and divide numbers mentally, drawing upon known facts</p> <p>So that I can: divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</p> <p>So that I can: multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000</p> <p>So that I can: recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)</p> <p>So that I can: solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes</p>	<p>So that I can: add and subtract fractions with the same denominator and denominators that are multiples of the same number</p> <p>So that I can: multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p> <p>So that I can: read and write decimal numbers as fractions [for example, 0.71 = 71/100]</p> <p>So that I can: recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>So that I can: round decimals with two decimal places to the nearest whole number and to one decimal place</p> <p>So that I can: read, write, order and compare numbers with up to three decimal places</p>
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				<p>So that I can: solve problems involving number up to three decimal places</p> <p>So that I can: recognise the per cent symbol (%) and understand that per</p>
	<p>Vocabulary Ten thousand One hundred thousand Powers of Integer</p>	<p>Vocabulary Consolidation</p>	<p>Vocabulary Multiples Factors Prime numbers Square numbers Cube numbers Short division Product Dividend Divisor Quotient Operations</p>	<p>Vocabulary Fifth Thousandths Mixed numbers Per cent % Factors Integer Complements</p>
	Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions (including decimals and percentages)
Year 6				
	<p>I know that: each digit in a number represents a different value and can identify them all to a million.</p> <p>I know that: ones round to tens, tens round to hundreds, hundreds round to thousands, thousands round to hundred thousands and hundred thousands round to millions.</p>	<p>I know that: problems require different methods of calculation and how to apply them.</p> <p>I know that: inverse operations can help prove a calculation correct and how to apply them.</p>	<p>I know that: short and long multiplication require different calculation methods and how to apply them.</p> <p>I know that: short and long division require different calculation methods and how to apply them.</p>	<p>I know that: to compare fractions, multiplication/division must be used to create common denominators.</p> <p>I know that: common denominators must be used</p>

	<p>I know that: numbers can be smaller than zero and how they are represented as negatives.</p>	<p>I know that: rounding can be used to create an estimate.</p>	<p>I know that: factor pairs are found by dividing a number and that multiples are found by multiplying a number.</p> <p>I know that: a prime number only is divisible by one and itself.</p>	<p>to compare and order fractions.</p> <p>I know that: common denominators must be used to add and subtract fractions.</p> <p>I know that: when a fraction is multiplied by a fraction the answer will be a smaller fraction.</p> <p>I know that: when a fraction is divided by a whole number the answer will be a smaller fraction.</p> <p>I know that: fractions divide to create decimals and how a percentage is also a representation out of 100.</p>
	<p>So that I can: read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</p> <p>So that I can: round any whole number to a required degree of accuracy</p> <p>So that I can: use negative numbers in context, and calculate intervals across zero</p>	<p>So that I can: use their knowledge of the order of operations to carry out calculations involving the four operations</p> <p>So that I can: solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</p>	<p>So that I can: multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>So that I can: divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number</p>	<p>So that I can: use common factors to simplify fractions; use common multiples to express fractions in the same denomination</p> <p>So that I can: compare and order fractions, including fractions >1</p>

	<p>So that I can: solve number problems and practical problems that involve all of the above.</p>	<p>So that I can: solve problems involving addition, subtraction</p> <p>So that I can: use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p>	<p>remainders, fractions, or by rounding, as appropriate for the context</p> <p>So that I can: divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context</p> <p>So that I can: perform mental calculations, including with mixed operations and large numbers</p> <p>So that I can: identify common factors, common multiples and prime numbers</p>	<p>So that I can: add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p> <p>So that I can: multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$)</p> <p>So that I can: divide proper fractions by whole numbers (for example, $\frac{1}{3} \div 2 = \frac{1}{6}$)</p> <p>So that I can: associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375) for a simple fraction (for example, $\frac{3}{8}$)</p> <p>So that I can: 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</p>
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	<p><u>Vocabulary</u> Millions Ten millions</p>	<p><u>Vocabulary</u> Multi-digit numbers Long division</p>		<p><u>Vocabulary</u> consolidation</p>