



	By the end of Y2 children should be able to...	By the end of of year 3 children should be able to...	At mastery Level in Year3 Children Should be able to...
Number and Place Value	<ul style="list-style-type: none"> ▪ <u>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</u> ▪ recognise the place value of each digit in a two-digit number (tens, ones) ▪ identify, represent and estimate numbers using different representation including the number line ▪ compare and order numbers from 0 up to 100; use <, > and = signs ▪ read and write numbers to at least 100 in numerals and in words ▪ Practise counting, reading, writing and comparing numbers to at least 100 ▪ <u>Count in multiples of three to support later understanding of a third.</u> ▪ represent larger numbers in different ways, including spatial representations ▪ partition numbers in to T (Eg. $23 = 20 + 3$ and $23 = 10 + 13$) ▪ Solve problems that emphasise the value of each digit in two-digit numbers. begin to understand zero as a place holder. 	<ul style="list-style-type: none"> ▪ <u>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</u> ▪ recognise the place value of each digit in a three-digit number (hundreds, tens, ones) ▪ compare and order numbers up to 1000 ▪ identify, represent and estimate numbers using different representation ▪ read and write numbers up to 1000 in numerals and in words ▪ solve number problems and practical problems involving these ideas. ▪ <u>use multiples of 2, 3, 4, 5, 8, 10, 50 and 100</u> <u>continue to count in ones, tens and hundreds, to become fluent in the order and place value of numbers to 1000.</u> 	<p>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, $146 = 100 + 40$ and 6, $146 = 130 + 16$).</p> <ul style="list-style-type: none"> ▪ count in multiples of 6, 7, 9, 25 and 1000 ▪ find 1000 more or less than a given number ▪ count backwards through zero to include negative numbers ▪ recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) ▪ order and compare numbers beyond 1000 ▪ identify, represent and estimate numbers using different representation ▪ round any number to the nearest 10, 100 or 1000 ▪ solve number and practical problems that involve all of the above and with increasingly large positive numbers ▪ begin to extend knowledge of the number system to include the decimal numbers and fractions met so far ▪ connect estimation and rounding numbers to the use of measuring instruments
Addition and	<ul style="list-style-type: none"> ▪ <u>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</u> ▪ <u>add and subtract numbers using concrete objects, pictorial representation and mentally, including:</u> 	<ul style="list-style-type: none"> ▪ <u>add and subtract numbers mentally, including:</u> <ul style="list-style-type: none"> ➤ <u>a three-digit number and ones;</u> ➤ <u>a three-digit number and tens;</u> 	<ul style="list-style-type: none"> ▪ <u>add and subtract numbers mentally, including:</u> <ul style="list-style-type: none"> -a three-digit number and ones; -a three-digit number and tens; -a three-digit number and hundreds

2(Year 3)

	<ul style="list-style-type: none"> ➤ <u>a two-digit number and ones;</u> ➤ <u>a two-digit number and tens;</u> ➤ <u>two two-digit numbers;</u> ➤ <u>adding three one-digit numbers</u> ■ solve problems with addition and subtraction using concrete objects and pictorial representation including those involving numbers, quantities and measures ■ 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 . ■ use the language of addition and subtraction to include sum and difference. ■ <u>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 $70 = 100 - 30$.</u> ■ check calculations, including by adding to check subtraction and adding numbers in a different order to check addition (for example, $5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5$) to establish commutativity and associativity of addition. 	<ul style="list-style-type: none"> ■ add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction ■ solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. ■ practise solving varied addition and subtraction questions, for mental calculations with two-digit numbers, the answers could exceed 100. 	<ul style="list-style-type: none"> ■ estimate the answer to a calculation and use inverse operations to check answers ■ use understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent ■ add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate ■ solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
Multiplicati and division	<ul style="list-style-type: none"> ■ <u>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</u> ■ <u>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs</u> 	<ul style="list-style-type: none"> ■ <u>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</u> ■ <u>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</u> 	<ul style="list-style-type: none"> ■ <u>recall multiplication and division facts for multiplication tables up to 12×12</u> ■ <u>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</u> ■ <u>recognise and use factor pairs and commutativity in mental calculations</u>

3(Year 3)

	<ul style="list-style-type: none"> ■ 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. ■ use a variety of language to describe multiplication and division. ■ <u>begin to become familiar with multiplication tables and practise to become fluent in the 2, 5 and 10 x tables and connect them to each other.</u> ■ connect the 10 x table to place value, and the 5 x table to the divisions on the clock face. ■ work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. 	<ul style="list-style-type: none"> ■ solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. ■ continue to practise mental recall of multiplication tables when calculating mathematical statements in order to improve fluency. ■ <u>connect the 2, 4 and 8 multiplication tables through doubling</u> ■ solve simple problems in contexts, deciding which of the four operations to use and why including measuring and scaling contexts, (Eg. four times as high, eight times as long etc.) and correspondence problems (in which m objects are connected to n objects Eg. 3 hats and 4 coats, how many different outfits?; 12 sweets shared equally between 4 children; 4 cakes shared equally between 8 children) develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to formal written methods of short multiplication and division. 	<ul style="list-style-type: none"> ■ multiply two-digit and three-digit numbers by a one-digit number using formal written layout ■ 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 ■ <u>continue to practise recalling and using multiplication tables and related division facts to aid fluency</u> ■ <u>practise mental methods and extend this to three-digit numbers to derive facts, (for example $600 \div 3 = 200$ can be derived from $2 \times 3 = 6$)</u> ■ become fluent in the formal written method of short multiplication and short division with exact answers through practise ■ write statements about the equality of expressions (for example, use the distributive law $39 \times 7 = 30 \times 7 + 9 \times 7$ and associative law $(2 \times 3) \times 4 = 2 \times (3 \times 4)$). ■ <u>combine knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, $2 \times 6 \times 5 = 10 \times 6 = 60$</u> solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers, solving correspondence questions such as the numbers of choices of a meal on a menu, or three cakes shared equally between 10 children
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4(Year 3)

Fractions	<ul style="list-style-type: none"> ■ recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ of a length, shape, set of objects or quantity ■ write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ ■ use fractions as 'fractions of' discrete and continuous quantities by solving problems using shapes, objects and quantities. ■ connect unit fractions to equal sharing and grouping, to numbers when they can be calculated, and to measures, finding fractions of lengths, quantities, sets of objects or shapes, $\frac{3}{4}$ as the first example of a non-unit fraction. 	<ul style="list-style-type: none"> ■ count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 ■ connect tenths to place value, decimal measures and to division by 10 ■ recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators ■ begin to understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence, going beyond the [0, 1] interval, and relate this to measure ■ recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators ■ recognise and show, using diagrams, equivalent fractions with small denominators ■ add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$] ■ compare and order unit fractions, and fractions with the same denominators ■ solve problems involving all of the above. ■ understand the relation between unit fractions as operators (fractions of), and division by integers. ■ continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity practise adding and subtracting fractions with the same denominator through a variety of increasingly complex problems to improve fluency 	<ul style="list-style-type: none"> ■ recognise and show, using diagrams, families of common equivalent fractions ■ count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. ■ 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 ■ add and subtract fractions with the same denominator ■ recognise and write decimal equivalents of any number of tenths or hundredths ■ relate decimal notation to division of whole number by 10 and later 100 ■ recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ ■ 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 ■ round decimals with one decimal place to the nearest whole number ■ compare numbers with the same number of decimal places up to two decimal places ■ solve simple measure and money problems involving fractions and decimals to two decimal places ■ connect hundredths to tenths and place value and decimal measure ■ use number lines to connect fractions, numbers and measures
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5(Year 3)

			<ul style="list-style-type: none"> understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Measurements</p>	<ul style="list-style-type: none"> choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$ recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value find different combinations of coins that equal the same amounts of money solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times know the number of minutes in an hour and the number of hours in a day. 	<ul style="list-style-type: none"> measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) measure the perimeter of simple 2-D shapes add and subtract amounts of money to give change, using both £ and p in practical contexts tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight know the number of seconds in a minute and the number of days in each month, year and leap year compare durations of events [Eg. calculate time taken by particular events or tasks] continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed units (Eg. 1 kg and 	<ul style="list-style-type: none"> convert between different units of measure [Eg. km to m; ml to l; hour to minute] measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares estimate, compare and calculate different measures, including money in pounds and pence read, write and convert time between analogue and digital 12- and 24-hour clocks solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days build on understanding of place value and decimal notation to record metric measures, including money use multiplication to convert from larger to smaller units express perimeter algebraically as $2(a + b)$ where a and b are the dimensions in the same unit relate area to arrays and multiplication

6(Year 3)

	<ul style="list-style-type: none"> ■ use standard units of measurement with increasing accuracy, using knowledge of the number system. ■ use the appropriate language and record using standard abbreviations (l, ml, m, cm, kg, g, km). ■ compare measures includes simple multiples such as 'half as high'; 'twice as wide'. ■ become fluent in counting and recognising all coins ■ read and say amounts of money confidently and use the symbols £ and p accurately, recording pounds and pence separately. 	<p>200g) and simple equivalents of mixed units (Eg. 5m = 500cm)</p> <ul style="list-style-type: none"> ■ simple scaling by integers (Eg. a given quantity or measure is twice as long or five times as high) and connect to multiplication. ■ continue to become fluent in recognising the value of coins, by adding and subtracting amounts, including mixed units, and giving change using manageable amounts. ■ record £ and p separately (formal decimal recording introduced in Year 4) use both analogue and digital 12-hour clocks to record times 	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Geometry properties of Shapes</p>	<ul style="list-style-type: none"> ■ handle and name a wide variety of common 2-D and 3-D shapes , and identify the properties of each shape ■ identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line ■ identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces ■ identify 2-D shapes on the surface of 3-D shapes ■ compare and sort common 2-D and 3-D shapes and everyday objects ■ draw lines and shapes using a straight edge ■ read and write names for shapes that are appropriate for their word reading and spelling 	<ul style="list-style-type: none"> ■ draw 2-D shapes and make 3-D shapes using modelling materials ■ recognise 3-D shapes in different orientations and describe them ■ recognise angles as a property of shape or a description of a turn ■ identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle ■ identify horizontal and vertical lines and pairs of perpendicular and parallel lines ■ extend knowledge of the properties of shapes to symmetrical and non-symmetrical polygons and polyhedra ■ extend their use of the properties of shapes to describe the properties of 2-D and 3-D shapes using accurate language, including lengths of lines and acute 	<ul style="list-style-type: none"> ■ compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes (Eg. isosceles, equilateral, scalene, parallelogram, rhombus, trapezium) ■ identify acute and obtuse angles' compare and order angles up to two right angles by size and decide if a polygon is regular or irregular ■ identify lines of symmetry in 2-D shapes presented in different orientations ■ complete a simple symmetric figure with respect to a specific line of symmetry <p>draw symmetric patterns using a variety of media to become familiar with different orientations of lines of symmetry; and recognise line symmetry in a variety of diagrams, including where the line of symmetry does not dissect the original shape</p>

7(Year 3)

		<p>and obtuse for angles greater or lesser than a right angle.</p> <p>connect decimals and rounding to drawing and measuring straight lines in centimetres, in a variety of contexts.</p>	
Geometry Position and Direction	<ul style="list-style-type: none"> ■ order and arrange combinations of mathematical objects in patterns and sequences ■ use mathematical vocabulary to describe position, direction and movement, including: <ul style="list-style-type: none"> ➤ movement in a straight line ➤ distinguishing between rotation as a turn ➤ right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). ■ work with patterns of shapes, including those in different orientations. 	<ul style="list-style-type: none"> ■ Consolidate work from year 2 ■ work with patterns of shapes, including those in different orientations. ■ use the concept and language of angles to describe 'turn' by applying rotations, including in practical contexts (for example, themselves moving in turns, giving instructions to others, using robots) 	<ul style="list-style-type: none"> ■ describe positions on a 2-D grid as coordinates in the first quadrant ■ describe movements between positions as translations of a given unit to the left/right and up/down ■ plot specified points and draw sides to complete a given polygon ■ draw a pair of axes in one quadrant, with equal scales and integer labels <p>read, write and use pairs of coordinates, for example (2, 5), including using coordinate-plotting ICT tools</p>
Data Handling	<ul style="list-style-type: none"> ■ interpret and construct simple pictograms, tally charts, block diagrams and simple tables ■ ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ■ ask and answer questions about totalling and comparing categorical data <p>record, interpret, collate, organise and compare information (for example, using many-to-one correspondence in pictograms with simple ratios 2, 5, 10)</p>	<ul style="list-style-type: none"> ■ interpret and present data using bar charts, pictograms and tables ■ solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables ■ understand and use simple scales (for example, 2, 5, 10 units per cm) in pictograms and bar charts with increasing accuracy ■ continue to interpret data presented in many contexts 	<ul style="list-style-type: none"> ■ interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs ■ solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs ■ understand and use a greater range of scales in their representations <p>begin to relate the graphical representation of data to recording change over time</p>

Key performance indicators are in **BOLD**.