

## Addition and subtraction

Year 2	Year 3
<b>Number bonds</b>	
recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	
<b>Mental calculation</b>	
add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> <li>* a two-digit number and ones</li> <li>* a two-digit number and tens</li> <li>* two two-digit numbers</li> <li>* adding three one-digit numbers</li> </ul>	add and subtract numbers mentally, including: <ul style="list-style-type: none"> <li>* a three-digit number and ones</li> <li>* a three-digit number and tens</li> <li>* a three-digit number and hundreds</li> </ul>
show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	
<b>Written methods</b>	
	add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
<b>Inverse operations, checking and estimating answers</b>	
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
<b>Problem solving</b>	
solve problems with addition and subtraction: <ul style="list-style-type: none"> <li>* using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li> </ul> 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
<i>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)</i>	

## Algebra

Year 2	Year 3
<b>Equations</b>	
<p><i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and <b>missing number</b> problems.</i> (copied from Addition and Subtraction)</p>	<p>solve problems, including <b>missing number</b> problems, using number facts, place value, and more complex addition and subtraction. (copied from Addition and Subtraction)</p>
	<p>solve problems, including <b>missing number</b> problems, involving multiplication and division, including integer scaling (copied from Multiplication and Division)</p>
<p><i>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</i> (copied from Addition and Subtraction)</p>	
<b>Sequences</b>	
<p><i>compare and sequence intervals of time</i> (copied from Measurement)</p>	
<p><i>order and arrange combinations of mathematical objects in patterns</i> (copied from Geometry: position and direction)</p>	

## Fractions (including decimals and percentages)

Year 2	Year 3
<b>Counting in fractional steps</b>	
<i>Pupils should count in fractions up to 10, starting from any number and using the <math>\frac{1}{2}</math> and <math>\frac{2}{4}</math> equivalence on the number line (Non Statutory Guidance)</i>	count up and down in tenths
<b>Recognising fractions</b>	
recognise, 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	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
	recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.
	recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
<b>Comparing fractions</b>	
	compare and order unit fractions, and fractions with the same denominators
<b>Equivalence (including fractions, decimals and percentages)</b>	
write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ .	recognise and show, using diagrams, equivalent fractions with small denominators
<b>Addition and subtraction of fractions</b>	
	add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ )
<b>Problem solving</b>	
	solve problems that involve all of the above

## Geometry: position and direction

Year 2	Year 3
Position, direction and movement	
use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)	
Pattern	
order and arrange combinations of mathematical objects in patterns and sequences	

## Geometry: properties of shapes

Year 2	Year 3
Identifying shapes and their properties	
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, [for example, a circle on a cylinder and a triangle on a pyramid]	
Drawing and constructing	
	draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
Comparing and classifying	
compare and sort common 2-D and 3-D shapes and everyday objects	
Angles	
	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

## Measurement

Year 2	Year 3
<b>Comparing and estimating</b>	
compare and order lengths, mass, volume/capacity and record the results using >, < and =	
compare and sequence intervals of time	compare durations of events, for example to calculate the time taken by particular events or tasks
	estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time)
<b>Measuring and calculating</b>	
choose and use appropriate standard units to estimate and measure <b>length/height</b> in any direction (m/cm); <b>mass</b> (kg/g); <b>temperature</b> (°C); <b>capacity</b> (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	measure, compare, add and subtract: <b>lengths</b> (m/cm/mm); <b>mass</b> (kg/g); <b>volume/capacity</b> (l/ml)
	measure the <b>perimeter</b> of simple 2-D shapes
recognise and use symbols for pounds ( <b>£</b> ) and <b>pence (p)</b> ; combine amounts to make a particular value	add and subtract amounts of <b>money</b> to give change, using both £ and p in practical contexts
find different combinations of coins that equal the same amounts of money	
<b>solve simple problems</b> in a practical context involving addition and subtraction of money of the same unit, including giving change	
<b>Telling the time</b>	
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.	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
know the number of minutes in an hour and the number of hours in a day. (appears also in Converting)	estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating)
<b>Converting</b>	
know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time)	know the number of seconds in a minute and the number of days in each month, year and leap year

## Multiplication and division

Year 2	Year 3
<b>Multiplication and division facts</b>	
count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value)	count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value)
recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
<b>Mental calculation</b>	
	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 (appears also in Written Methods)
show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	
<b>Written calculation</b>	
calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ( $\times$ ), division ( $\div$ ) and equals (=) signs	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 (appears also in Mental Methods)
<b>Inverse operations, estimating and checking answers</b>	
	estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)
<b>Problem solving</b>	
solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	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

## Place value

Year 2	Year 3
<b>Counting</b>	
count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	count from 0 in multiples of 4, 8, 50 and 100;
	find 10 or 100 more or less than a given number
<b>Comparing numbers</b>	
compare and order numbers from 0 up to 100; use $<$ , $>$ and $=$ signs	compare and order numbers up to 1000
<b>Identifying, estimating and representing numbers</b>	
identify, represent and estimate numbers using different representations, including the number line	identify, represent and estimate numbers using different representations
<b>Reading and writing numbers</b>	
read and write numbers to at least 100 in numerals and in words	read and write numbers up to 1000 in numerals and in words
	<i>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</i> (copied from Measurement)
<b>Understanding place value</b>	
recognise the place value of each digit in a two-digit number (tens, ones)	recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
<b>Problem solving</b>	
use place value and number facts to solve problems	solve number problems and practical problems involving these ideas.

## Statistics

Year 2	Year 3
Interpreting, constructing and presenting data	
interpret and construct simple pictograms, tally charts, block diagrams and simple tables	interpret and present data using bar charts, pictograms and 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	
Solving problems	
	solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.