

Addition and subtraction

Year 3	Year 4
Mental calculation	
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	
Written methods	
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
Inverse operations, checking and estimating answers	
estimate the answer to a calculation and use inverse operations to check answers	estimate and use inverse operations to check answers to a calculation
Problem solving	
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

Algebra

Year 3	Year 4
Equations	
solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. (copied from Addition and Subtraction)	
solve problems, including missing number problems, involving multiplication and division, including integer scaling (copied from Multiplication and Division)	
Formula	
	<i>Perimeter can be expressed algebraically as $2(a + b)$ where a and b are the dimensions in the same unit. (Copied from NSG measurement)</i>

Fractions (including decimals and percentages)

Year 3	Year 4
Counting in fractional steps	
count up and down in tenths	count up and down in hundredths
Recognising fractions	
recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten
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	
Comparing fractions	
compare and order unit fractions, and fractions with the same denominators	
Comparing decimals	
	compare numbers with the same number of decimal places up to two decimal places
Rounding including decimals	
	round decimals with one decimal place to the nearest whole number
Equivalence (including fractions, decimals and percentages)	
recognise and show, using diagrams, equivalent fractions with small denominators	recognise and show, using diagrams, families of common equivalent fractions
	recognise and write decimal equivalents of any number of tenths or hundredths
	recognise and write decimal equivalents to $\frac{1}{4}$; $\frac{1}{2}$; $\frac{3}{4}$
Addition and subtraction of fractions	
add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)	add and subtract fractions with the same denominator
Multiplication and division of decimals	
	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
Problem solving	
solve problems that involve all of the above	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
	solve simple measure and money problems involving fractions and decimals to two decimal places.

Geometry: position and direction

Year 3	Year 4
Position, direction and movement	
	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

Geometry: properties of shapes

Year 3	Year 4
Identifying shapes and their properties	
	identify lines of symmetry in 2-D shapes presented in different orientations
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	complete a simple symmetric figure with respect to a specific line of symmetry
Comparing and classifying	
	compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
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 acute and obtuse angles and compare and order angles up to two right angles by size
identify horizontal and vertical lines and pairs of perpendicular and parallel lines	

Measurement

Year 3	Year 4
Comparing and estimating	
	estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)
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)	
Measuring and calculating	
measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	estimate, compare and calculate different measures, including money in pounds and pence (appears also in Comparing)
measure the perimeter of simple 2-D shapes	measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
add and subtract amounts of money to give change, using both £ and p in practical contexts	
	find the area of rectilinear shapes by counting squares
Telling the time	
tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	read, write and convert time between analogue and digital 12 and 24-hour clocks (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 & Estimating)	
	solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting)
Converting	
know the number of seconds in a minute and the number of days in each month, year and leap year	convert between different units of measure (e.g. kilometre to metre; hour to minute)
	read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)
	solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)

Multiplication and division

Year 3	Year 4
Multiplication and division facts	
<i>count from 0 in multiples of 4, 8, 50 and 100</i> (copied from Number and Place Value)	<i>count in multiples of 6, 7, 9, 25 and 1 000</i> (copied from Number and Place Value)
recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	recall multiplication and division facts for multiplication tables up to 12×12
Mental calculation	
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)	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
	recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)
Written calculation	
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)	multiply two-digit and three-digit numbers by a one-digit number using formal written layout
Properties of numbers: multiples, factors, primes, square and cube numbers	
	recognise and use factor pairs and commutativity in mental calculations (repeated)
Inverse operations, estimating and checking answers	
<i>estimate the answer to a calculation and use inverse operations to check answers</i> (copied from Addition and Subtraction)	<i>estimate and use inverse operations to check answers to a calculation</i> (copied from Addition and Subtraction)
Problem solving	
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	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

Place value

Year 3	Year 4
Counting	
	count backwards through zero to include negative numbers
count from 0 in multiples of 4, 8, 50 and 100;	count in multiples of 6, 7, 9, 25 and 1000
find 10 or 100 more or less than a given number	find 1000 more or less than a given number
Comparing numbers	
compare and order numbers up to 1000	order and compare numbers beyond 1000
	<i>compare numbers with the same number of decimal places up to two decimal places</i> (copied from Fractions)
Identifying, estimating and representing numbers	
identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations
Reading and writing numbers	
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)	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.
Understanding place value	
recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
	<i>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 units, tenths and hundredths</i> (copied from Fractions)
Rounding	
	round any number to the nearest 10, 100 or 1 000
	<i>round decimals with one decimal place to the nearest whole number</i> (copied from Fractions)
Problem solving	
solve number problems and practical problems involving these ideas.	solve number and practical problems that involve all of the above and with increasingly large positive numbers

Statistics

Year 3	Year 4
Interpreting, constructing and presenting data	
interpret and present data using bar charts, pictograms and tables	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs
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.	solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.