Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

If a pupil has Not yet achieved (NYA) mastery or has Achieved and exceeded (A&E) mastery, refer to the 'Tracking back and forward through the Mathematics National Curriculum attainment targets' charts below and on pages 311–320 to determine at what year group they are currently working. Related Assessment Tasks and Assessment Exercises can be found in the corresponding Busy Ant Maths Assessment Guide.

Number – Number and place value

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward	count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	count in multiples of 6, 7, 9, 25 and 1000	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	
given a number, identify one more and one less		count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	find 1000 more or less than a given number		
			count backwards through zero to include negative numbers	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	use negative numbers in context, and calculate intervals across zero
	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)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones)	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
read and write numbers from 1 to 20 in numerals and words	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			
identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least	compare and order numbers from 0 up to 100; use <, > and = signs	compare and order numbers up to 1000	order and compare numbers beyond 1000		
identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least	identify, represent and estimate numbers using different representations, including the number line	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations		

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

If a pupil has Not yet achieved (NYA) mastery or has Achieved and exceeded (A&E) mastery, refer to the 'Tracking back and forward through the Mathematics National Curriculum attainment targets' charts below and on pages 310 and 312–320 to determine at what year group they are currently working. Related Assessment Tasks and Assessment Exercises can be found in the corresponding Busy Ant Maths Assessment Guide.

Number – Number and place value – continued

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			round any number to the nearest 10, 100 or 1000	round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000	round any whole number to a required degree of accuracy
	use place value and number facts to solve problems	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	solve number problems and practical problems that involve all of the above	solve number and practical problems that involve all of the above
			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	read Roman numerals to 1000 (M) and recognise years written in Roman numerals	

Number – Addition and subtraction

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		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)	
	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, an appropriate degree of accuracy
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: – 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 solve problems involving addition, subtraction, multiplication and division

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

If a pupil has Not yet achieved (NYA) mastery or has Achieved and exceeded (A&E) mastery, refer to the 'Tracking back and forward through the Mathematics National Curriculum attainment targets' charts below and on pages 310–311 and 313–320 to determine at what year group they are currently working. Related Assessment Tasks and Assessment Exercises can be found in the corresponding Busy Ant Maths Assessment Guide.

Number – Multiplication and division

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens [Domain: Number – 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	recall multiplication and division facts for multiplication tables up to 12 × 12		
			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	multiply and divide numbers mentally drawing upon known facts	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
	show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		recognise and use factor pairs and commutativity in mental calculations	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	identify common factors, common multiples and prime numbers
	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) 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	multiply two-digit and three-digit numbers by a one-digit number using formal written layout	multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication multiply one-digit numbers with up to two decimal places by whole numbers [Domain: Number – Fractions (including decimals and percentages)]

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

If a pupil has Not yet achieved (NYA) mastery or has Achieved and exceeded (A&E) mastery, refer to the 'Tracking back and forward through the Mathematics National Curriculum attainment targets' charts below and on pages 310–312 and 314–320 to determine at what year group they are currently working. Related Assessment Tasks and Assessment Exercises can be found in the corresponding Busy Ant Maths Assessment Guide.

Number – Multiplication and division – continued

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	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	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	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	solve problems involving addition, subtraction, multiplication and division

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

If a pupil has Not yet achieved (NYA) mastery or has Achieved and exceeded (A&E) mastery, refer to the 'Tracking back and forward through the Mathematics National Curriculum attainment targets' charts below and on pages 310–313 and 315–320 to determine at what year group they are currently working. Related Assessment Tasks and Assessment Exercises can be found in the corresponding Busy Ant Maths Assessment Guide.

Number – Fractions (including decimals)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	write simple fractions, for example, $\frac{1}{2}$ 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	recognise and show, using diagrams, families of common equivalent fractions	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	use common factors to simplify fractions; use common multiples to express fractions in the same denomination
		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	count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	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 write simple fractions, for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	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		
		add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and denominators that are multiples of the same number 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

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Number – Fractions (including decimals) – continued

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{3}$, $\frac{3}{4}$	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents read and write decimal numbers as fractions [for example, 0.71 = $\frac{71}{100}$]	identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving the answers up to three decimal places associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]
			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	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 [Domain: Number – Multiplication and division]	identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving the answers up to three decimal places
			round decimals with one decimal place to the nearest whole number	round decimals with two decimal places to the nearest whole number and to one decimal place	solve problems which require answers to be rounded to specified degrees of accuracy
			compare numbers with the same number of decimal places up to two decimal places	read, write, order and compare numbers with up to three decimal places	
		solve problems that involve all of the above	solve simple measure and money problems involving fractions and decimals to two decimal places	solve problems involving number up to three decimal places	solve problems which require answers to be rounded to specified degrees of accuracy

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

If a pupil has Not yet achieved (NYA) mastery or has Achieved and exceeded (A&E) mastery, refer to the 'Tracking back and forward through the Mathematics National Curriculum attainment targets' charts below and on pages 310–315 and 317–320 to determine at what year group they are currently working. Related Assessment Tasks and Assessment Exercises can be found in the corresponding Busy Ant Maths Assessment Guide.

Measurement

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			convert between different units of measure [for example, kilometre to metre, hour to minute]	convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to three decimal places
		measure the perimeter of simple 2-D shapes	measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	recognise that shapes with the same areas can have different perimeters and vice versa
			find the area of rectilinear shapes by counting squares	calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes	calculate the area of parallelograms and triangles recognise when it is possible to use formulae for area and volume of shapes recognise that shapes with the same areas can have different perimeters and vice versa

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

If a pupil has Not yet achieved (NYA) mastery or has Achieved and exceeded (A&E) mastery, refer to the 'Tracking back and forward through the Mathematics National Curriculum attainment targets' charts below and on pages 310–316 and 318–320 to determine at what year group they are currently working. Related Assessment Tasks and Assessment Exercises can be found in the corresponding Busy Ant Maths Assessment Guide.

Measurement – continued

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
compare, describe and solve practical problems for: – lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] – mass/weight [for example, heavy/light, heavier than, lighter than] – capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] measure and begin to record the following: – lengths and heights – mass/weight – capacity and volume	compare and order lengths, mass, volume/capacity and record the results using >, < and = choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	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	use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to three decimal places
recognise and know the value of different denominations of coins and notes	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	add and subtract amounts of money to give change, using both £ and p in practical contexts	estimate, compare and calculate different measures, including money in pounds and pence	use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

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Measurement – continued

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	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	read, write and convert time between analogue and digital 12- and 24-hour clocks		
compare, describe and solve practical problems for: – time [for example, quicker, slower, earlier, later] measure and begin to record the following: – time (hours, minutes, seconds) recognise and use language relating to dates, including days of the week, weeks, months and years	know the number of minutes in an hour and the number of hours in a day	know the number of seconds in a minute and the number of days in each month, year and leap year 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	convert between different units of measure [for example, kilometre to metre; hour to minute] solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	solve problems involving converting between units of time	use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to three decimal places

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

If a pupil has Not yet achieved (NYA) mastery or has Achieved and exceeded (A&E) mastery, refer to the 'Tracking back and forward through the Mathematics National Curriculum attainment targets' charts below and on pages 310–318 and 320 to determine at what year group they are currently working. Related Assessment Tasks and Assessment Exercises can be found in the corresponding Busy Ant Maths Assessment Guide.

Geometry – Properties of shapes

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
recognise and name common 2-D and 3-D shapes, including: – 2-D shapes [for example, rectangles (including squares), circles and triangles]	compare and sort common 2-D and 3-D shapes and everyday objects identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line	draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes identify lines of symmetry in 2-D shapes presented in different orientations	use the properties of rectangles to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles	draw 2-D shapes using given dimensions and angles compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
		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	know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles draw given angles, and measure them in degrees (°) identify: – angles at a point and one whole turn (total 360°) – angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) – other multiples of 90°	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
			complete a simple symmetric figure with respect to a specific line of symmetry	identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed [Domain: Geometry – Position and direction]	draw and translate simple shapes on the coordinate plane, and reflect them in the axes [Domain: Geometry – Position and direction]

Tracking back and forward through the Mathematics National Curriculum attainment targets – Year 4

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Geometry – Position and direction

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			describe positions on a 2-D grid as coordinates in the first quadrant		describe positions on the full coordinate grid (all four quadrants)
			describe movements between positions as translations of a given unit to the left/right and up/down	identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	draw and translate simple shapes on the coordinate plane, and reflect them in the axes
			plot specified points and draw sides to complete a given polygon		

Statistics

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	interpret and construct simple pictograms, tally charts, block diagrams and simple tables	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	complete, read and interpret information in tables, including timetables	interpret and construct pie charts and line graphs and use these to solve problems
	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	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	solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	solve comparison, sum and difference problems using information presented in a line graph	