Busy Ant Maths Curriculum Comparison Map – Years 4 and 5

Number – Number and place value	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
• 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
	• recognise and describe linear number sequences, including those involving fractions and decimals, and find the term-to-term rule *
• 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
• 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
• order and compare numbers beyond 1000	
• identify, represent and estimate numbers using different representations	
• round any number to the nearest 10, 100 or 1000	• round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
• 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
• 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

* National curriculum Notes and guidance (non-statutory)

Busy Ant Maths Curriculum Comparison Map – Years 4 and 5

Number – Addition and subtraction	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
• add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate	• add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction)
	• practise adding and subtracting decimals, including a mix of whole numbers and decimals * [Number – Fractions (including decimals and percentages)]
• practise mental methods with increasingly large numbers to aid fluency *	• add and subtract numbers mentally with increasingly large numbers
	• mentally add and subtract tenths, and one-digit whole numbers and tenths * [Number – Fractions (including decimals and percentages)]
	• practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 [for example, 0·83 + 0·17 = 1] * [Number – Fractions (including decimals and percentages)]
• 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
• 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

* National curriculum Notes and guidance (non-statutory)

Busy Ant Maths Curriculum Comparison Map – Years 4 and 5

Number – Multiplication and division	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
• 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
• 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
	• know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
	• establish whether a number up to 100 is prime and recall prime numbers up to 19
• multiply two-digit and three-digit numbers by a one-digit number using formal written layout	• multiply numbers up to four digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
• practise to become fluent in the formal written method of short division with exact answers *	• divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
• 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 [Number – Fractions (including decimals and percentages)]	• multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
	• recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})

* National curriculum Notes and guidance (non-statutory)

Busy Ant Maths Curriculum Comparison Map – Years 4 and 5

Number – Multiplication and division Continued	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
• 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 in which 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

Number – Fractions (including decimals and percentages)	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
	• compare and order fractions whose denominators are all multiples of the same number
• 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 factors and multiples to recognise equivalent fractions and simplify where appropriate [for example, $\frac{6}{9} = \frac{2}{3}$ or $\frac{1}{4} = \frac{2}{8}$] *	
• count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10	• practise counting forwards and backwards in simple fractions *
	• recognise and describe linear number sequences, including those involving fractions and decimals, and find the term-to-term rule * [Number – Number and place value]
	• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

* National curriculum Notes and guidance (non-statutory)

Busy Ant Maths Curriculum Comparison Map – Years 4 and 5

Number – Fractions (including decimals and percentages) Continued	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
	• connect equivalent fractions >1 that simplify to integers with division, and other fractions >1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions *
	• 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]
• understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths *	• develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities *
• 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	• add and subtract fractions with the same denominator and denominators that are multiples of the same number
	• multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
• extend the use of the number line to connect fractions, numbers and measures *	
• 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 [Number – Multiplication and division]

* National curriculum Notes and guidance (non-statutory)

Busy Ant Maths Curriculum Comparison Map – Years 4 and 5

Number – Fractions (including decimals and percentages) Continued	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
• extend understanding of the number system and decimal place value to tenths then hundredths * • recognise and write decimal equivalents of any number of tenths or hundredths • recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$	• recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • read and write decimal numbers as fractions [for example, 0.71 = $\frac{71}{100}$]
• 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
• 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
	• mentally add and subtract tenths, and one-digit whole numbers and tenths *
	• practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 [for example, 0·83 + 0·17 = 1] *
• solve simple measure and money problems involving fractions and decimals to two decimal places	• solve problems involving number up to three decimal places
	• recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
	• solve problems that require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25
	• make connections between percentages, fractions and decimals *

* National curriculum Notes and guidance (non-statutory)

Busy Ant Maths Curriculum Comparison Map – Years 4 and 5

Measurement	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
• 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)
	• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
• 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
• 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
• relate area to arrays and multiplication *	
	• estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
• read, write and convert time between analogue and digital 12- and 24-hour clocks	
• convert between different units of measure [for example, kilometre to metre; hour to minute]	• solve problems involving converting between units of time
• solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	
• 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

* National curriculum Notes and guidance (non-statutory)

Busy Ant Maths Curriculum Comparison Map – Years 4 and 5

Geometry – Properties of shapes	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
	• identify 3-D shapes, including cubes and other cuboids, from 2-D representations
• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	• distinguish between regular and irregular polygons based on reasoning about equal sides and angles
• 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°
	• use the properties of rectangles to deduce related facts and find missing lengths and angles
	• use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems *
	• use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals *
	• use conventional markings for parallel lines and right angles *
• 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	• 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 [Geometry – Position and direction]

* National curriculum Notes and guidance (non-statutory)

Busy Ant Maths Curriculum Comparison Map – Years 4 and 5

Geometry – Position and direction	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
• 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	• 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
• complete a simple symmetric figure with respect to a specific line of symmetry [Geometry – Properties of shapes]	
• plot specified points and draw sides to complete a given polygon	

Statistics	
Year 4 National Curriculum attainment targets Pupils should be taught to:	**Year 5 National Curriculum attainment targets** Pupils should be taught to:
• 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
• 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

* National curriculum Notes and guidance (non-statutory)