Number and Place Value Progression of Skills and Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting	○ Recite numbers past 5 ○ Say one number for each item in order: 1, 2, 3, one-to-one correspondence) ○ Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle')	○ Count objects, actions and Sounds ○ Count objects to 10 and beginning to count beyond 10 ○ ELG - Verbally count beyond 20, recognising the pattern of the counting system. WRM: Autumn and Spring	○ 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. ○ Given a number, identify one more and one less WRM: Autumn Block 1 Spring Block 1 and 3 Summer Block 4	○ Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward WRM: Autumn Block 1	○ Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number ○ Find 10 or 100 more or less than a given number WRM: Autumn Block 1	○ Count in multiples of 6, 7, 9, 25 and 1000 ○ Count backwards through zero to include negative numbers - this has been moved to Year 5 ○ Find 1,000 more or less than a given number WRM: Autumn Block 1 and Block 4	○ Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 ○ Count backwards through zero to include negative numbers - moved from Year 4 ○ Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero WRM: WRM: Autumn Block 1 Summer Block 4	○ Use negative numbers in context, and calculate intervals across zero
Representations, and Estimating (including reading and writing	○ Fast recognition of up to 3 objects, without having to count them individually ('subitising'). ○ Show 'finger numbers' up to 5. ○ Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. ○ Experiment with their own symbols and marks as well as numerals (repeated in reading and writing numbers)	○ Explore the composition of numbers to 10. ○ Link the number symbol (numeral) with its cardinal number value. (repeated in reading and writing numbers) ○ ELG - Have a deep understanding of number to 10, Including the composition of each number (repeated in understanding place value) Link the number symbol (numberal) to its cardinal value ○ ELG - Subitise (recognise quantities without counting) up to 5. WRM: Autumn and Spring	○ Identify and represent numbers using objects and pictorial representations. ○ Read and write numbers from 1 to 20 in numerals and words WRM: Autumn Block 1 Spring Block 1 and 3 Summer Block 4	○ Read and write numbers to at least 100 in numerals and in words ○ Identify, represent and estimate numbers using different representations, including the number line WRM: Autumn Block 1	○ Identify, represent and estimate numbers using different representations ○ Read and write numbers up to 1000 in numerals and in words ○ Tell and write the time from an analogue clock **including using Roman Numerals from I to XII**, and 12-hour clock and 24-hour clocks WRM: Autumn Block 1	○ Identify, represent and estimate numbers using different representations ○ 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. WRM: Autumn Block 1	○ Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals ○ Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit ○ WRM: Autumn Block 1	○ Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit WRM: Autumn Block 1
Understanding Place Value	○	○ Have a deep understanding of number to 10, including the composition of each number. WRM: Spring and Summer	○ WRM: Autumn Block	○ Recognise the place value of each digit in a two-digit number (tens, ones) WRM: Autumn Block	○ Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) WRM: Autumn Block 1	○ Recognise the place value of each digit in a four-digit number (hundreds, tens, ones) WRM: Autumn Block 1 ○ 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. WRM: Spring Block 4	○ Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit WRM: Autumn Block 1 ○ Recognise and use thousandths and relate them to tenths, hundredths and decimals equivalents	○ Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit WRM: Autumn Block 1 ○ Identify the value of each digit in numbers given to three decimal places. ○ Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. WRM: Spring Block 3

Primary Mathematics Progression of skills and knowledge (Taken from Development Matters, NRICH and NCETM Primary Progression Maps)

Use Place Value to Compare	○ Compare quantities using language: 'more than', 'fewer than' ○	○ Says the number that is one more than a given number up to 5 ○ Finds one more or one less from a group of up to 5 objects, then 10 objects ○ ELG: Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. WRM: Autumn and Spring	○ Use the language of: equal to, more than, less than (fewer), most, least WRM: Autumn Block 1 Spring Block 1 and 3 Summer Block 4	○ Compare and order numbers from 0 up to 100; use <, > and = signs WRM: Autumn Block 1	○ Compare and order numbers up to 1000 ○ Compare numbers with the same number of decimal places WRM: Autumn Block 1	○ Find 1000 more or less than a given number ○ Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) ○ Order and compare numbers beyond 1000 WRM: Autumn Block 1	○ Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit WRM: Autumn Block 1	○ Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit WRM: Autumn Block 1
Problems and Rounding	○ Solve real world mathematical problems with numbers up to 5			○ Use place value and number facts to solve problems WRM: Autumn Block 1	○ Solve number problems and practical problems involving these ideas WRM: Autumn Block 1	○ Round any number to the nearest 10, 100 or 1000 ○ Solve number and practical problems that involve all of the above and with increasingly larger positive numbers WRM: Autumn Block 1 ○ Round decimals with one decimal place to the nearest whole number. WRM: Summer Block 1	○ Interpret negative numbers in context ○ Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 ○ Solve number problems and practical problems that involve all of the above WRM: Autumn Block 1 ○ Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place. WRM: Spring Block 3	○ Round any whole number to a required degree of accuracy ○ Use negative numbers in context, and calculate intervals across zero ○ Solve number and practical problems that involve all of the above WRM: Autumn Block 1 ○ Solve problems which require answers to be rounded to specified degrees of accuracy. WRM: Spring Block 3

Addition and Subtraction Progression of Skills and Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number Bonds	○ Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers	○ ELG: Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. WRM: Spring and Summer	○ Represent and use number bonds and related subtraction facts within 20. WRM: Autumn Block 2 Spring Block 2	○ recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100. WRM: Autumn Block 2				
Mental Calculations			Add and subtract one-digit and two-digit numbers to 20, including zero ○ Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs WRM: Autumn Block 2 Spring Block 2	○ Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: ➢ a two-digit number and ones ➢ a two-digit number and tens ➢ two two-digit numbers ➢ adding three one-digit numbers ○ show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. WRM: Autumn Block 2	○ Add and subtract numbers mentally, including: ➢ a three-digit number and ones ➢ a three-digit number and tens a three-digit number and hundreds WRM: Autumn Block 2		○ Add and subtract numbers mentally with increasingly large numbers. WRM: Autumn Block 2	○ 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. WRM: Autumn Block 2
Written Methods			○ Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs WRM: Autumn Block 2 Spring Block 2	○	○ Add and subtract numbers with up to three digits using the formal written methods of columnar addition and subtraction WRM: Autumn Block 2	○ Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. WRM: Autumn Block 2	○ Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) WRM: Autumn Block 2	
Inverse Operations, Estimating and Checking				○ recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. WRM: Autumn Block 2	○ Estimate the answer to a calculation and use inverse operations to check answers. WRM: Autumn Block 2	○ Estimate and use inverse operations to check answers to a calculation. WRM: Autumn Block 2	○ Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. WRM: Autumn Block 2	○ Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy WRM: Autumn Block 2

Solve Problems	Solve real world mathematical problems within numbers to 5		Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? – 9 WRM: Autumn Block 2 Spring Block 2	○ 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 WRM: Autumn Block 2 ○ Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. WRM: Spring Block 1	○ Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. WRM: Autumn Block 2	○ Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. WRM: Autumn Block 2	○ 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 and a combination of these, including understanding the meaning of the equals sign. WRM: Autumn Block 2	○ 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 WRM: Autumn Block 2

Multiplication and Division Progression of Skills and Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and Division Facts			○ Count in multiples of twos, fives and tens WRM: Autumn Block 1 Spring Block 1 and 3 Summer Block 4	○ Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward WRM: Autumn Block 1 ○ Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. WRM: Spring Block 2	○ Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number WRM: Autumn Block 1 ○ Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. WRM: Autumn Block 3	○ Count in multiples of 6, 7, 9, 25 and 1000 WRM: Autumn Block 1 and Block 4 ○ Recall multiplication and division facts for multiplication tables up to 12 × 12 WRM: Autumn Block 4 Spring Block 1	○ Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 WRM: Autumn Block 1	
Mental Calculations				○ Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. WRM: Spring Block 2	○ 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. WRM: Autumn Block 3 Spring Block 1	○ 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. WRM: Autumn Block 4 Spring Block 1 ○	○ Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. WRM: Autumn Block 3 Spring Block 1 Summer Block 3	○ Associate a fraction with division and calculate decimal fraction equivalents (0.375) for a simple fraction (3/8) WRM: Spring Block 3
Written Methods				○ Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs WRM: Spring Block 2	○ 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. WRM: Autumn Block 3 Spring Block 1	○ Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. WRM: Spring Block 1	○ 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. ○ Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. WRM: Autumn Block 3 Spring Block 1	○ Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. ○ Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. ○ Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. WRM: Autumn Block 2

Combined Operations							○ *Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.* *WRM: Spring Block 1*	○ *Use their knowledge of the order of operations to carry out calculations involving the four operations.* *WRM: Autumn Block 2*
Properties of Numbers (Multiples, Factors, Primes, Square and Cube)						○ *Recognise and use factor pairs and commutativity in mental calculations.* *WRM: Autumn Block 4 Spring Block 1*	○ *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* ○ *Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)* *WRM: Autumn Block 3*	○ *Identify common factors, common multiples and prime numbers.* *WRM: Autumn Block 2*
Inverse Operations, Estimating and Checking				○ *Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems* *WRM: Autumn Block 2*	○ *Estimate the answer to a calculation and use inverse operations to check answers* *WRM: Autumn Block 2*	○ *Estimate and use inverse operations to check answers to a calculation* *WRM: Spring Block 1*	○ *Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy* *WRM: Spring Block 1*	○ *Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.* *WRM: Autumn Block 2*

Solve Problems	○	○	○ *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.* *WRM: Summer Block 1*	○ *Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.* *WRM: Spring Block 2*	○ *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 object.* *WRM: Spring Block 1*	○ *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.* *WRM: Spring Block 1*	○ *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.* *WRM: Autumn Block 3 Spring Block 1*	○ *Solve problems involving addition, subtraction, multiplication and division.* *WRM: Autumn Block 2* ○ *Solve problems involving similar shapes where the scale factor is known or can be found.* *WRM: Spring Block 1 and 4*

Fractions, Decimals and Percentages Progression of Skills and Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions and Decimals: Counting					○ Count up and down in tenths WRM: Spring Block 3	○ Count up and down in hundredth WRM: Spring Block 3		
Fractions: Recognise and Write			○ 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. WRM: Summer Block 2	○ Recognise, find, name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape, set of objects or quantity. WRM: Summer Block 2	○ Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. ○ 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. WRM: Spring Block 3	○ Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. WRM: Spring Block 3	○ Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. WRM: Spring Block 3	
Fractions: Compare and Equivalence				○ Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2 WRM: Summer Block 2	○ Recognise and show, using diagrams, equivalent fractions with small denominators. ○ Compare and order unit fractions, and fractions with the same denominators. WRM: Summer Block 1	○ Recognise and show, using diagrams, families of common equivalent fractions. ○ Recognise and write decimal equivalents of any number of tenths or hundredths. WRM: Spring Block 3 and 4	○ Compare and order fractions whose denominators are all multiples of the same number. ○ Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. WRM: Autumn Block 4	○ Use common factors to simplify fractions; use common multiples to express fractions in the denomination. ○ Compare and order fractions including fractions > 1 WRM: Autumn Block 3
Fractions: Addition and Subtraction					○ Add and subtract fractions with the same denominator within one whole- for example 5/7 + 1/7 = 6/7 WRM: Summer Block 1	○ Add and subtract fractions with the same denominator. WRM: Spring Block 3	○ 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, $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$ WRM: Autumn Block 4 Spring Block 2	○ Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. ○ Multiply simple pairs of proper fractions, writing the answer in its simplest form for example, 1/4 × 1/2 = 1/8 ○ Divide proper fractions by whole numbers for example, 1/3÷2=1/6 WRM: Autumn Block 3 and 4

Fractions: Multiplication and Division				○ *Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2* *WRM: Summer Block 2*	○	○	○ *Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.* *WRM: Spring Block 2*	○ *Multiply simple pairs of proper fractions, writing the answer in its simplest form for example, 1/4 × 1/2 = 1/8* ○ *Divide proper fractions by whole numbers for example, 1/3÷2=1/6* *WRM: Autumn Block 3 and 4*
Decimals: Recognise and Write						○ *Recognise and write decimal equivalents of any number of tenths or hundredths.* ○ *Recognise and write decimal equivalents to ¼ , ½, ¾* *WRM: Spring Block 4 Summer Block 1*	○ *Read and write decimal numbers as fractions for example, 0.71 = $\frac{71}{100}$* ○ *Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.* *WRM: Spring Block 3*	
Decimals: Compare, Rounding and Equivalence						○ *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.* *WRM: Summer Block 1*	○ *Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place* ○ *Read, write, order and compare numbers with up to 3 decimal places.* *WRM: Spring Block 3*	○ *Identify the value of each digit in numbers given to three decimal places.* *WRM: Spring Block 3*
Decimals: Multiplication and Division						○ *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.* *WRM: Spring Block 4*		○ *Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.* ○ *Multiply one-digit numbers with up to two decimal places by whole numbers* ○ *Use written division methods in cases where the answer has up to two decimal places.* *WRM: Spring Block 3*
Fractions. Decimals and Percentages							○ *Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction.* *WRM: Spring Block 3*	○ *Associate a fraction with division and calculate decimal fraction equivalents (0.375) for a simple fraction (3/8)* ○ *Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.* *WRM: Spring Block 3 and 4*

Problem Solving					○ Solve problems that involve all of the above WRM: Spring Block 3 Simmer Block 1	○ 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. WRM: Spring Block 3 ○ Solve simple measure and money problems involving fractions and decimals to two decimal places. WRM: Spring Block 4 Summer Block 1	○ Solve problems involving numbers up to 3 decimal places. WRM: Summer Block 3	○ Solve problems which require answers to be rounded to specified degrees of accuracy. WRM: Spring Block 3

Ratio and Proportion Progression of Skills and Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ratio and Proportion								○ Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts ○ Solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison ○ Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples WRM: Spring Block 1 and 4
Scaling							○ Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates WRM: Spring Block 1	○ Solve problems involving similar shapes where the scale factor is known or can be found WRM: Spring Block 1 and 4

Algebra Progression of Skills and Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Pattern	○ Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc ○ Extend and create ABAB patterns – stick, leaf, stick, leaf ○ Notice and correct an error in a repeating pattern.	○ Continue, copy and create repeating patterns (Spots patterns in the environment, beginning to identify the pattern "rule") ○ Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat		○ Order and arrange combinations of mathematical objects in patterns and sequences				
Sequences		○ Understand the 'one more than/one less than' relationship between consecutive numbers. ○ ELG – Verbally count beyond 20, recognising the pattern of the counting system ○ ELG - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.						○ Generate and describe linear number sequences
Formulae						○ Perimeter can be expressed algebraically as 2 (a + b) where a and b are the dimensions in the same unit WRM: Spring Block 2		○ Use simple formulae WRM: Spring Block 2 ○ Recognise when it is possible to use formulae for area and volume of shapes WRM: Spring Block 5
Equations			○ Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and **missing number problems** such as 7 = □ - 9 **(copied from Addition and Subtraction)** WRM: Autumn Block 2 Spring Block 2	○ Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and **missing number problems.** **(copied from Addition and Subtraction)** WRM: Autumn Block 2	○ 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)**		○ Use the properties of rectangles to deduce related facts and **find missing lengths and angles** **(copied from Geometry: Properties of Shapes)**	○ Express missing number problems algebraically ○ Find pairs of numbers that satisfy an equation with two unknowns. ○ Enumerate possibilities of combinations of two variables. WRM: Spring Block 2

Algebraic notation is introduced in Year 6, but algebraic thinking is introduced by finding missing numbers from calculations.

Measurement Progression of Skills and Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Comparing and Estimating	○ Make comparisons between objects relating to size, length, weight and capacity ○ Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'	○ Compare length, weight and capacity (tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy) ○ Increasingly able to order and sequence events using everyday language related to time	➢ Compare, describe and solve practical problems for: ➢ lengths and heights (long/short, longer/shorter, tall/short, double/half) ➢ mass/weight (heavy/light, heavier than, lighter than) ➢ capacity and volume (full/empty, more than, less than, half, half full, quarter) ➢ time ([quicker, slower, earlier, later) ○ Sequence events in chronological order using language (before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening) WRM: Spring Block 4 and Block 5 Summer Block 6	○ Compare and order lengths, mass, volume/capacity and record the results using >, < and = WRM: Spring Block 3 and 4 ○ Compare and sequence intervals of time. WRM: Summer Block 4	○ 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 and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. WRM: Summer Block 3	○ Estimate, compare and calculate different measures, including money in pounds and pence. WRM: Spring Block 2 Summer Block 2 and 3	○ Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²) estimate the area of irregular shapes. ○ Estimate volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), WRM: Spring 4 Summer Block 6	○ Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units for example, mm3 and km3. WRM: Spring Block 5

Measuring, Converting Calculating	○ *In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items*	○ *Becomes familiar with measuring tools in everyday experiences and play* ○ *Beginning to experience measuring time with timers and calendars*	○ *Measure and begin to record the following:* ➢ *lengths and heights* ➢ *mass/weight* ➢ *capacity and volume* ➢ *time (hours, minutes, seconds)* ○ *Recognise and know the value of different denominations of coins and notes.* **WRM: Spring Block 4 and Block 5** **Summer Block 5 and 6**	○ *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.* **WRM: Spring Block 3 and 4** ○ *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.* **WRM: Spring Block 1**	○ *Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)* ○ *Measure the perimeter of simple 2-D shapes.* **WRM: Spring Block 2** **Spring Block 4** ○ *Add and subtract amounts of money to give change, using both £ and p in practical contexts.* **WRM: Summer Block 2**	○ *Estimate, compare and calculate different measures, including money in pounds and pence.* ○ *Measure and calculate the perimeter of a rectilinear figure (including squares)* **WRM: Spring Block 2** **Summer Block 2 and 3** ○ *Find the area of rectilinear shapes by counting squares.* **WRM: Autumn Block 3**	○ *Use all four operations to solve problems involving measure (length, mass, volume, money) using decimal notation, including scaling.* ○ *Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.* ○ *Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²) estimate the area of irregular shapes.* ○ *Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)* ○ *Convert between different units of metric measure (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.* **WRM: Autumn Block 3** **Spring Block 4** **Summer Block 5 and 6**	○ *Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.* ○ *Recognise that shapes with the same areas can have different perimeters and vice versa.* ○ *Calculate the area of parallelograms and triangles* ○ *Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units for example, mm3 and km3.* ○ *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 to up to three decimal places.* ○ *Convert between miles and kilometres.* **WRM: Autumn Block 5** **Spring Block 5**
Money			○ *Recognise and know the value of different denominations of coins and notes.* **WRM: Summer Block 5**	○ *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.* **WRM: Spring Block 1**	○ *Add and subtract amounts of money to give change, using both £ and p in practical contexts.* **WRM: Summer Block 2**	○ *Estimate, compare and calculate different measures, including money in pounds and pence.* **WRM: Summer Block 2**	○ *Use all four operations to solve problems involving measure (money)* **WRM: Summer Block 3**	

Time		○ Beginning to experience measuring time with timers and calendars	○ Sequence events in chronological order using language (before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening) ○ Recognise and use language relating to dates, including days of the week, weeks, months and years. ○ Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. WRM: Summer Block 6	○ 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. WRM: Summer Block 4	○ 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 (for example to calculate the time taken by particular events or tasks) WRM: Summer Block 3	○ 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. WRM: Summer Block 3	○ Solve problems involving converting between units of time. WRM: Summer Block 5	○ Use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa. WRM: Autumn Block 5
Perimeter, Area and Volume					○ Measure the perimeter of simple 2-D shapes. WRM: Spring Block 2	○ Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. ○ Find the area of rectilinear shapes by counting squares. WRM: Autumn Block 3 Spring Block 2	○ Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. ○ Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²) estimate the area of irregular shapes. ○ Estimate volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), WRM: Spring 4 Summer Block 6	○ Recognise that shapes with the same areas can have different perimeters and vice versa. ○ c. ○ Calculate the area or parallelograms ad triangles. ○ Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units for example, mm3 and km3. WRM: Spring Block 5

Geometry (Properties of Shapes and Position and Direction): Progression of Skills and Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
2-D Shapes	○ Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.	○ Responds to both informal language and common shape names ○ Shows awareness of shape similarities and differences between objects	○ Recognise and name common 2-D including (rectangles - including squares -, circles and triangles WRM: Autumn Block 3	○ Identify and describe the properties of 2- D shapes, including the number of sides and line symmetry in a vertical line. ○ Identify 2-D shapes on the surface of 3-D shapes (a circle on a cylinder and a triangle on a pyramid ○ Compare and sort common 2-D and 3-D shapes and everyday objects. WRM: Autumn Block 3	○ Draw 2-D shapes WRM: Summer Block 4	○ 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. WRM: Summer Block 4	○ Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. ➢ Use the properties of rectangles to deduce related facts and find missing lengths and angles. WRM: Summer Block 1	○ Draw 2-D shapes using given dimensions and angles. ○ Compare and classify geometric shapes based on their properties and sizes. ○ Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. WRM: Summer Block 1
3-D Shapes	○ Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.	○ Responds to both informal language and common shape names ○ Shows awareness of shape similarities and differences between objects	○ Recognise and name common 3-D shapes for example, cuboids (including cubes), pyramids and spheres]. WRM: Autumn Block 3	○ Recognise and name common 3-D shapes for example, cuboids (including cubes), pyramids and spheres]. ○ Compare and sort common 2-D and 3-D shapes and everyday objects. WRM: Autumn Block 3	○ Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. WRM: Summer Block 4		○ Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. WRM: Summer Block 1	○ Recognise, describe and build simple 3-D shapes, including making nets. WRM: Summer Block 1
Angles and Lines					○ 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. WRM: Summer Block 4	○ identify acute and obtuse angles and compare and order angles up to two right angles by size. ○ 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. WRM: Summer Block 4	○ 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 1 whole turn (total 360°) ➢ angles at a point on a straight line and half a turn (total 180°) ➢ other multiples of 90° WRM: Summer Block 1	○ Find unknown angles in any triangles, quadrilaterals, and regular polygons. ○ Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. WRM: Summer Block 1
Position and Direction	○ Understand position through words alone - for example, "The bag is under the table," - with no pointing ○ Describe a familiar route ○ Discuss routes and locations, using words like 'in front of' and 'behind' ○ Talk about and identify the patterns around them ○ Extend and create ABAB patterns - stick, leaf, stick, leaf ○ Notice and correct an error in a repeating pattern	○ Select, rotate and manipulate shapes in order to develop spatial reasoning skills ○ Continue, copy and create repeating patterns	○ Describe position, direction and movement, including whole, half, quarter and three-quarter turns. WRM: Summer Block 3	○ 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). ○ Order and arrange combinations of mathematical objects in patterns and sequences. WRM: Summer Block 3		○ 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. WRM: Summer Block 6	○ 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. WRM: Summer Block 2	○ Describe positions on the full coordinate grid (all four quadrants) ○ Draw and translate simple shapes on the coordinate plane and reflect them in the axes. WRM: Summer Block 2

Statistics Progression of Skills and Knowledge

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Present and interpret				○ Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. WRM: Summer Block 1	○ Interpret and present data using bar charts, pictograms and tables. WRM: Summer Block 5	○ Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. WRM: Summer Block 5	○ Complete, read and interpret information in tables, including timetables. WRM: Spring Block 5	○ Interpret and construct pie charts and line graphs and use these to solve problems. WRM: Spring Block 6
Solve Problems	○ Solve real-world mathematical problems with numbers up to 5			○ 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. WRM: Summer Block 1	○ Solve one-step and two-step questions ('How many more?' and 'How many fewer?') using information presented in scaled bar charts and pictograms and tables. WRM: Summer Block 5	○ Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. WRM: Summer Block 5	○ Solve comparison, sum and difference problems using information presented in a line graph. WRM: Spring Block 5	○ Calculate and interpret the mean as an average. WRM: Spring Block 6