Priory Rise Maths Progression

Curriculum Intent

At Priory Rise we aim for all children to:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

- solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Priory Rise Maths Progression Nursery and Early Years

	Nursery / 3-4 Years	Reception / 4-5 Years
Number	-Fast recognition of up to 3 objects, without having to count them individually ('subitising'). -Recite numbers past 5. -Say one number for each item in order: 1,2,3,4,5. -Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). -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. -Solve real world mathematical problems with numbers up to 5.	-Count objects, actions and sounds -Subitise. -Link the number symbol (numeral) with its cardinal number value. -Count beyond ten. -Understand the 'one more than/one less than' relationship between consecutive numbers. -Explore the composition of numbers to 10. -Automatically recall number bonds for numbers 0–10. **ELG: Number** **• Have a deep understanding of number to 10, including the composition of each number.** **• Subitise (recognise quantities without counting) up to 5** **• 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.**

Numerical Patterns	Experiment with their own symbols and marks as well as numerals. -Compare quantities using language: 'more than', 'fewer than'. -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'. -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'. -Make comparisons between objects relating to size, length, weight and capacity. -Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc. -Combine shapes to make new ones - an arch, a bigger triangle etc. -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. -Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then…'	-Compare numbers. -Select, rotate and manipulate shapes in order to develop spatial reasoning skills. -Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. -Continue, copy and create repeating patterns. -Compare length, weight and capacity. **ELG: Number Patterns** **• Verbally count beyond 20, recognising the pattern of the counting system** **• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.** **• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.**

Priory Rise Maths Progression Years 1 to 6

Place Value	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value: Counting	• 1NPV–1 Count within 100, forwards and backwards, starting with any number.		• 3NPV–1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three digit multiples of 10.	• 4NPV–1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.	• 5NPV–1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.	• 6NPV–1 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).

	• Count across 100 • Count numbers to 100 in numerals; count in multiples of 2s, 5s and 10s.	• Count in steps of 2,3 and 5 from 0, and in 10s 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 backwards through zero to include negative numbers.	• Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. • Count forwards and backwards with positive and negative whole numbers, including through zero.	
Place Value	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Place Value: Represent	• Identify and represent numbers using objects and pictorial representations (including tens and units at the end of the year) • Read and write numbers to 1000 in numerals • Read and write numbers from 1 to 20 in numerals and words	• Read and write numbers to at least 100 in numerals and words • Identify, represent and estimate numbers using different representations, including the number line	• Identify, represent and estimate numbers using different representations • Read and write numbers up to 1000 in numerals and words	• Identify, represent and estimate numbers using different representations • Read Roman numerals to 100 (I to C) and know that over time, the numeral system has changed to include the concept of zero and place value	• Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals	• Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit

Use Place Value And Compare		• **2NPV–1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and nonstandard partitioning.**	• **3NPV–2 Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning.**	• **4NPV–2 Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and nonstandard partitioning.**	• **5NPV–2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and**	• **6NPV–2 Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using**

					nonstandard partitioning.	**standard and nonstandard partitioning.**
	• **1NPV–2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =**	• **2NPV–2 Reason about the location of any two digit number in the linear number system, including identifying the previous and next multiple of 10.**	• **3NPV–3 Reason about the location of any three digit number in the linear number system, including identifying the previous and next multiple of 100 and 10.**	• **4NPV–3 Reason about the location of any four digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.**	• **5NPV–3 Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.**	• **6NPV–3 Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.**
	• Given a number, identify one more or less	• Recognise the place value of each digit in a two-digit number (tens, units) • Compare and order numbers from 0 up to 10; use <, > and =	• Recognise the place value of each digit in a three-digit number (hundreds, tens and units) • Compare and order numbers up to 1000	• 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 units) • Order and compare numbers beyond 1000	• 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
Place Value	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Problems and Rounding			• **3NPV–4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.**	• **4NPV–4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.**	• **5NPV–4 Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.**	• **6NPV–4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.**

					• **5NPV–5 Convert between units of measure, including using common decimals and fractions.**	
		• Use place value and number facts to solve problems	• Solve problems and practical problems involving the above ideas	• Round any number to the nearest 10,100 or 1000 • Solve number and practical problems that involve all of the above and with increasingly large numbers • Round decimals with one decimal place to the nearest whole number	• Interpret negative numbers in context • 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 • Round decimals with 2 decimal places to the nearest whole number and to one decimal place	• 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

+ and -	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition and Subtraction: Recall, Represent, Use	• **1NF–1 Develop fluency in addition and subtraction facts within 10.**	• **2NF–1 Secure fluency in addition and subtraction facts within 10, through continued practice.**	• **3NF–1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice.**			
			• **3NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).**	• **4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)**	• **5NF–2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).**	

	• **1AS–1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.**	• **2AS–1 Add and subtract across 10.**	• **3AS–1 Calculate complements to 100.**			• **6AS/MD–1 Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).**
	• Read, write and interpret mathematical statements involving addition(+), subtractions (-) and equals (=) signs • Represent and use number bonds and related subtraction facts within 20	• Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts to 100 • Show that addition of 2 numbers can be done in any order (commutative) and subtraction of one number from another cannot • 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	

+ and -	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition and Subtraction: Calculations 1 of 2	• 1AS–2 Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.	• 2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?".	• 3AS–2 Add and subtract up to three-digit numbers using columnar methods.			• 6AS/MD–2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.
	• 2AS–3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a twodigit number.	• 3AS–3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.				• 6AS/MD–3 Solve problems involving ratio relationships.
		• 2AS–4 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two digit numbers.				• 6AS/MD–4 Solve problems with 2 unknowns.

+ and -	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition and Subtraction: Calculations 2 of 2	• Add and subtract one-digit and two-digit numbers to 20, including zero	• Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • A 2-digit number and units • A 2-digit number and ten • Two 2-digit number • Adding three 1-digit numbers	• Add and subtract numbers mentally, including: ○ A 3-digit number and units ○ A 3-digit number and tens ○ A 3-digit number and hundreds • 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) • Add and subtract numbers mentally with increasingly large numbers	• Perform mental calculations, including with mixed operations and large numbers • Use knowledge of the order of operations to carry out calculations involving the 4 operations.

+ and -	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition and Subtractions; Solve Problems	• Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? - 9	• Solve problems with addition and subtraction: • Using concrete objects and pictorial representations, including those involving number quantities and measures • Applying 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 2-step problems in context, deciding which operation 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 and a combination of these, including understanding the meaning of the equals sign • Use all 4 operations to solve problems involving measure (for example, lengths, mass, volume, money) using decimal notation, including scaling	• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

X and ÷	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and Division: Recall, Represent, Use 1 of 2	• 1NF–2 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers	•	• 3NF–2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	• 4NF–1 Recall multiplication and division facts up to 12 x 12, and recognise products in multiplication tables as multiples of the corresponding number.	• 5NF–1 Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	•
				• 4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.		
			• 3NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).	• 4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)	• 5NF–2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).	

X and ÷	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and Division: Recall, Represent, Use 2 of 2		• Recall and use multiplication and division facts for the 3,5 and 10 multiplication tables, including recognising odd and even numbers • Show that multiplication of 2 numbers can be done in any order (commutative) and division of one number by another cannot	• Recall and use multiplication facts for the 3,4 and 8 multiplication tables	• Recall multiplication and division facts for multiplication tables up to 12 x 12 • Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers • 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 2 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})	• Identify common factors, common multiples and prime numbers • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

X and ÷	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and Division: Calculations		• Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs	• Write and calculate mathematical statements for multiplication and division using the multiplication tables that are known, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods	• Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout	• Multiply numbers up to 4 digits by a 1 or 2-digit number using a formal written method, including long multiplication for 2-digit numbers • Multiply and divide numbers mentally drawing upon known facts • Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context • Multiply and divide whole numbers and those involving decimals by 10,100 and 1000	• Multiply numbers up to 4 digits by a 2-digit whole number using the formal written method of long multiplication • Divide numbers up to 4 digits by a 2-digit whole number using the formal method of long division, and interpret remainders and whole number remainders, fractions or by rounding, as appropriate, for the context • Use written division methods in cases where the answer has up to two decimal places • Perform mental calculations, including with mixed operations and large numbers

X and ÷	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication and Division: Solve Problems	• Solve one step problems involving multiplication and division, by 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 mussing 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 addition, including using the distributive law to multiply 2-digit numbers by 1 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 knowledge of factors and multiplies, squares and cubes • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • Use all 4 operations to solve problems involving measure (for example, lengths, mass, volume, money) using decimal notation, including scaling	• Solve problems involving addition and subtraction, multiplication and division • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate

Fractions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Recognise and Write			• **3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.**			• **6F–1 Recognise when fractions can be simplified, and use common factors to simplify fractions.**
	• Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	• Recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity	• Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and dividing 1-digit numbers or quantities by 10 • Recognise, find and write fractions of a discrete set of objects; unit and non-unit fractions with small denominators • Recognise and use fractions as numbers: unit and non-unit fracs with small denominators	• Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10	• Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • 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: 2/5 + 4/5 = 6/5 = 1 1/5).	

Fractions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Compare			• **3F–3 Reason about the location of any fraction within 1 in the linear number system.**	• **4F–1 Reason about the location of mixed numbers in the linear number system.**		• **6F–3 Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.**
		• Recognise the equivalence of 2/4 and ½	• Recognise and show, using diagrams, equivalent fractions with small denominators • Compare and order unit fractions, and fractions with the same denominators	• Recognise and show, using diagrams, families of common equivalent fractions	• Compare and order fractions whose denominators are all multiples of the same number	• Use common factors to simplify fractions; use common multiples to express fractions in the same denomination • Compare and order fractions, including fractions > 1

Fractions	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Calculations			• **3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency).**		• **5F–1 Find non-unit fractions of quantities.**	• **6F–2 Express fractions in a common denomination and use this to compare fractions that are similar in value.**
			• **3F–4 Add and subtract fractions with the same denominator, within 1.**	• **4F–3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.**	• **5F–3 Recall decimal fraction equivalents for 1/2,1/4 , 1/5 and 1/10, and for multiples of these proper fractions.**	
		• Write simple fractions, for example, ½ of 6 = 3	• Add and subtract fractions with the same denominator within one whole (for example, 5/7 + 1/7 = 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 • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	• 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, ¼ x ½ = 1/8) • Divide proper fractions by whole numbers (for example, 1/3 ÷ 2 = 1/6)
Fractions: Solve Problems			• Solve problems that involve all of the above • Find fractions of amounts with small denominators (e.g. ¼ of 12)	• 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		• Find the whole when a fraction of the whole is known (eg. If ¼ of a length is 36cm, then the whole length is 36 x 4 = 144cm).

Decimals	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Decimals: Recognise and Write				• Recognise and write decimal equivalents of any number of tenths or hundredths • Recognise and write decimal equivalents to ¼, ½, 3/4	• Read and write decimal numbers as fractions (for example, 0.71 = 71/100) • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	• Identify the value of each digit in numbers given to three decimal places
Decimals: Compare				• Round decimals with one decimal place to the nearest whole number • Compare numbers with the same numbers of decimal places up to 2 decimal places	• Round decimals with 2 decimal places to the nearest whole number and to one decimal place • Read, write, order and compare numbers with up to 3 decimal places	

Decimals	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Decimals: Calculations and Problems				• Find the effect of dividing a 1 or 2-digit number by 10 and 100, identifying the value of the digits in the answers as units, tenths and hundredths	• Solve problems involving number up to 3 decimal places	• Multiply and divide numbers by 10,100 and 1000, giving the answers up to 3 decimal places • Multiply 1-dgit numbers with up to 2 decimal places by whole numbers • Use written division methods in cases where the answer has up to two decimal places • Solve problems which require answers to be rounded to specified degrees of accuracy

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions, Decimals and Percentages				• Solve simple measure and money problems involving fractions and decimals to 2 decimal places	• Recognise the percent (%) symbol and understand that per cent relates to 'numbers of parts per hundred', and write percentages as a fraction with a denominator of 100, and as a decimal • Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of 10 or 25	• Associate a fraction with division and calculate decimal fraction equivalents (for example 0.375) for a simple fraction (for example, 1/8) • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

	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 similar shapes where the scale factor is known or can be found • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Algebra	• Solve one-step pronlems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? - 9	• Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	• Solve problems including missing number problems			• Use simple formulae • Generate and describe linear number sequences • Express missing number problems algebraically • Find pairs of numbers that satisfy an equation with two unknowns • Enumerate possibilities of combinations of two variables

Measures	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Using Measurement	• 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) ○ Time (for example, quicker, slower, earlier, later) • Measure and begin to record the following: • Lengths and heights • Mass / weight • Capacity and volume • Time (hours, minutes, seconds)	• 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 • Compare and order lengths, mass, volume / capacity and record the results using >,< and =	• Measure, compare, add and subtract lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	• Convert between different units of measure (for example, km to m; hour to minute) • Estimate, compare and calculate different measures	• Convert between different units of metric measure (for example, km and m; cm and m; cm and mm; g and kg; litre and ml) • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • Use all 4 operations to solve problems involving measure (for example, lengths, mass, volume, money) using decimal notation, including scaling	• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 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 3 decimal places. • Convert between miles and km.

Measures	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Money	• 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 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 money	

Measures	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Time	• Sequence events in chronological order)for example, 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	• Compare and sequence intervals of time • Tell and write the time to 5 minutes, including quarter past / to the hour and draw the hands on a clock face to show these time • Know the number of minutes in an hour and the number of hours in a day	• 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)	• 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 and weeks to days	• Solve problems involving converting between units of time • Complete, read and interpret information in tables, including timetables	• 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

Measures	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Perimeter, Area, Volume					• **5G–2 Compare areas and calculate the area of rectangles (including squares) using standard units.**	
			• Measure the perimeter of simple 2D shapes	• Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • Find the area of rectilinear shapes by counting squares	• Measure and calculate the perimeter of composite rectilinear shapes in cm and m • Estimate the area of irregular shapes • Estimate volume (for example, using 1cm^3 blocks to build cuboids) including cubes and capacity (for example, using water) • Recognise that shapes with the same area can have different perimeters and vice versa •	• Recognise when it is possible to use formulae for area and volume of shapes • Calculate the area of parallelograms and triangles • Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units (for example, mm^3 and km^3)

Geometry	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry : 2D Shapes 1 of 2	• 1G–1 Recognise common 2D and 3D shapes presented in diff. orientations, and knfgow that rectangles, triangles, cuboids and pyramids are not always similar to one another.	• 2G–1 Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.	• 3G–1 Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.		• 5G–1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.	
	• 1G–2 Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.		• 3G–2 Draw polygons by joining marked points, and identify parallel and perpendicular sides.	• 4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.	•	• 6G–1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.
				• 4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.		
				• 4G–3 Identify line symmetry in 2D shapes presented in diff. orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.		

Geometry	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry : 2D Shapes 1 of 2	• Recognise and name common 2D shapes (for example, rectangles – including squares – circles and triangles	• Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line • Identify 2D shapes on the surface of 3D shapes (for example, a circle on a cylinder and a triangle on a pyramid) • Compare and sort common 2D shapes and everyday objects	• Draw 2D shapes	• Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • Identify lines of symmetry in 2D shapes presented in different orientations	• 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 • Draw 2D 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
Geometry: 3D shapes		• Recognise and name common 3D shapes (for example cuboids – including cubes – pyramids and spheres • Compare and sort common 3D shapes and everyday objects	• Make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them		• Identify 3D shapes including cubes and other cuboids, from 2D representations	• Recognise, describe and build simple 3D shapes, including making nets

Geometry	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry : Angles and lines			• Recognise angles as a property of a shape or a description of a turn • Identify right angles, recognise that two right angles make a half 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	• Identify acute and obtuse angles and compare and order angles up to two right angles by size • Identify lines of symmetry in 2D shapes presented in different orientations • Complete a simple symmetric figure with respect to a specific line of symmetry	• 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 360^0) ○ Angles at a point on a straight line and ½ a turn (total 180^0) ○ Other multiples of 90^0	• 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

Geometry	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry : Position and Direction	• Describe position, direction and movement, including whole, half, quarter and three-quarter turns	• Order and arrange combinations of mathematical objects in patterns and sequences • 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)		• Describe positions on a 2D 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	• 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	• Describe positions on the full coordinate grid (all four quadrants) • Draw and translate shapes on the coordinate plane, and reflect them in the axes

Statistics	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Statistics: Present and Interpret		• Interpret and construct simple pictograms, tally charts, clock 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
Statistics: 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, 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	• Calculate and interpret the mean average