

# Knypersley First School



## Progressive Mathematics curriculum

### Nursery skills progression

Number	Shape, Space and measure
I can recite numbers in order to 10 (30-50m).	I show an interest in shape and space by playing with shapes or making arrangements with objects (30-50m).
I know that numbers identify how many objects are in a set (30-50m).	I can use positional language (30-50m).
Beginning to represent numbers using fingers, marks on paper or pictures (30-50m).	I can use shapes appropriately for tasks (30-50m).
I sometimes matches numeral and quantity correctly (30-50m).	I am beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall' (30-50m).
I can compares two groups of objects, saying when they have the same number (30-50m).	
I show an interest in number problems (30-50m).	
I can separate a group of three or four objects in different ways, beginning to recognise that the total is still the same (30-50m).	
I can show an interest in numerals in the environment (30-50m).	
I show an interest in representing numbers (30-50m).	
I can realise not only objects, but anything can be counted, including steps, claps or jumps (30-50m).	

### Reception mathematics skills progression

Number	Shape, Space and measure
I can recognise numerals 1 to 5 (40-60m).	I can begin to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes (40-60m).
I can recognise some numerals of personal significance (40-60m).	I can select a particular named shape (40-60m).
I can count up to three or four objects by saying one number name for each item (40-60m).	I can describe relative position such as 'behind' or 'next to' (40-60m).
I can count actions or objects which cannot be moved (40-60m).	I can order two or three items by length or height (40-60m).
I can count objects to 10, and beginning to count beyond 10 (40-60m) .	I can use familiar objects and common shapes to create and recreate patterns and build models (40-60m).
I can count out up to six objects from a larger group (40-60m).	I can use everyday language related to time (40-60m).
I can select the correct numeral to represent 1 to 5, then 1 to 10 objects (40-60m).	I can order and sequences familiar events (40-60m).
I can count an irregular arrangement of up to ten objects (40-60m).	I can measure short periods of time in simple ways (40-60m).
I can estimate how many objects they can see and check by counting them (40-60m).	I can use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems (ELG).
I can use the language of 'more' and 'fewer' to compare two sets of objects (40-60m).	I can recognise, create and describe patterns (ELG).
I can find the total number of items in two groups by counting all of them (40-60m).	
I can say the number that is one more than a given number (40-60m).	
I can find one more or one less from a group of up to five objects, then ten objects (40-60m).	

I can in practical activities and discussion, begin to use the vocabulary involved in adding and subtracting (40-60m).	
I can record, using marks that I can interpret and explain (40-60m).	
I can recognise numerals 1 to 5 (40-60m).	
I can recognise some numerals of personal significance (40-60m).	
I can count up to three or four objects by saying one number name for each item (40-60m).	
I can count actions or objects which cannot be moved (40-60m).	
I can count objects to 10, and beginning to count beyond 10 (40-60m) .	
I can count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number (ELG).	
I can use quantities and objects, then add and subtract two single-digit numbers and count on or back to find the answer (ELG).	
I can solve problems, including doubling, halving and sharing (ELG).	
I can estimate a number of objects and check quantities by counting up to 20 (Exc).	
I can solve practical problems that involve combining groups of 2, 5 or 10, or sharing into equal groups (Exc).	

National Curriculum Progression

Years 1 to 6

#MathsEveryoneCan

2019-20



## Primary Progression – Place Value

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value: Counting	<ul style="list-style-type: none"> <li>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</li> <li>Count numbers to 100 in numerals; count in multiples of twos, fives and tens</li> </ul> <p>Autumn 1 Autumn 4 Spring 2 Summer 4</p>	<ul style="list-style-type: none"> <li>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number</li> </ul> <p>Autumn 1 Autumn 3</p>	<ul style="list-style-type: none"> <li>count in multiples of 6, 7, 9, 25 and 1000</li> <li>count backwards through zero to include negative numbers</li> </ul> <p>Autumn 1 Autumn 4</p>	<ul style="list-style-type: none"> <li>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</li> <li>count forwards and backwards with positive and negative whole numbers, including through zero</li> </ul> <p>Autumn 1</p>	
Place Value: Represent	<ul style="list-style-type: none"> <li>identify and represent numbers using objects and pictorial representations</li> <li>read and write numbers to 100 in numerals</li> <li>read and write numbers from 1 to 20 in numerals and words.</li> </ul> <p>Autumn 1 Autumn 4 Spring 2 Summer 4</p>	<ul style="list-style-type: none"> <li>read and write numbers to at least 100 in numerals and in words</li> <li>identify, represent and estimate numbers using different representations, including the number line</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>identify, represent and estimate numbers using different representations</li> <li>read and write numbers up to 1000 in numerals and in words</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>identify, represent and estimate numbers using different representations</li> <li>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</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit</li> <li>read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit</li> </ul> <p>Autumn 1</p>

## Primary Progression – Place Value

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value : Use PV and Compare	<ul style="list-style-type: none"> <li>given a number, identify one more and one less</li> </ul> <p>Autumn 1 Autumn 4 Spring 2 Summer 4</p>	<ul style="list-style-type: none"> <li>recognise the place value of each digit in a two-digit number (tens, ones)</li> <li>compare and order numbers from 0 up to 100; use <math>&lt;</math>, <math>&gt;</math> and <math>=</math> signs</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</li> <li>compare and order numbers up to 1000</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>find 1000 more or less than a given number</li> <li>recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)</li> <li>order and compare numbers beyond 1000</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>(read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>(read, write), order and compare numbers up to 10 000 000 and determine the value of each digit</li> </ul> <p>Autumn 1</p>
Place Value: Problems & Rounding		<ul style="list-style-type: none"> <li>use place value and number facts to solve problems.</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>solve number problems and practical problems involving these ideas</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>round any number to the nearest 10, 100 or 1000</li> <li>solve number and practical problems that involve all of the above and with increasingly large positive numbers</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>interpret negative numbers in context</li> <li>round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000</li> <li>solve number problems and practical problems that involve all of the above</li> </ul> <p>Autumn 1</p>	<ul style="list-style-type: none"> <li>round any whole number to a required degree of accuracy</li> <li>use negative numbers in context, and calculate intervals across zero</li> <li>solve number and practical problems that involve all of the above</li> </ul> <p>Autumn 1</p>

## Primary Progression – Addition & Subtraction

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Addition &amp; Subtraction: Recall, Represent, Use</b>	<ul style="list-style-type: none"> <li>read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs</li> <li>represent and use number bonds and related subtraction facts within 20</li> </ul> <p>Autumn 2 Spring 1</p>	<ul style="list-style-type: none"> <li>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</li> <li>show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</li> <li>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>estimate the answer to a calculation and use inverse operations to check answers</li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>estimate and use inverse operations to check answers to a calculation</li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy</li> </ul> <p>Autumn 2</p>	



## Primary Progression – Addition & Subtraction

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Addition &amp; Subtraction: Calculations</b>	<ul style="list-style-type: none"> <li>add and subtract one-digit and two-digit numbers to 20, including zero</li> </ul> <p>Autumn 2 Spring 1</p>	<ul style="list-style-type: none"> <li>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:               <ul style="list-style-type: none"> <li>a two-digit number and ones</li> <li>a two-digit number and tens</li> <li>two two-digit numbers</li> <li>adding three one-digit numbers</li> </ul> </li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>add and subtract numbers mentally, including:               <ul style="list-style-type: none"> <li>a three-digit number and ones</li> <li>a three-digit number and tens</li> <li>a three-digit number and hundreds</li> </ul> </li> <li>add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</li> <li>add and subtract numbers mentally with increasingly large numbers</li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>perform mental calculations, including with mixed operations and large numbers</li> <li>use their knowledge of the order of operations to carry out calculations involving the four operations</li> </ul> <p>Autumn 2</p>

## Primary Progression – Addition & Subtraction

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition & Subtraction: Solve Problems	<ul style="list-style-type: none"> <li>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \square - 9</math></li> </ul> <p>Autumn 2 Spring 1</p>	<ul style="list-style-type: none"> <li>solve problems with addition and subtraction:               <ul style="list-style-type: none"> <li>➤ using concrete objects and pictorial representations, including those involving numbers, quantities and measures</li> <li>➤ applying their increasing knowledge of mental and written methods</li> </ul> </li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction</li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> <li>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul> <p>Autumn 2</p>	<ul style="list-style-type: none"> <li>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</li> </ul> <p>Autumn 2</p>

## Primary Progression – Multiplication & Division

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Multiplication &amp; Division: Recall, Represent, Use</b>		<ul style="list-style-type: none"> <li>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</li> <li>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</li> </ul> <p>Autumn 4 Spring 1</p>	<ul style="list-style-type: none"> <li>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</li> </ul> <p>Autumn 3</p>	<ul style="list-style-type: none"> <li>recall multiplication and division facts for multiplication tables up to <math>12 \times 12</math></li> <li>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</li> <li>recognise and use factor pairs and commutativity in mental calculations</li> </ul> <p>Autumn 4 Spring 1</p>	<ul style="list-style-type: none"> <li>identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers</li> <li>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</li> <li>establish whether a number up to 100 is prime and recall prime numbers up to 19</li> <li>recognise and use square numbers and cube numbers, and the notation for squared (<math>^2</math>) and cubed (<math>^3</math>)</li> </ul> <p>Autumn 4</p>	<ul style="list-style-type: none"> <li>identify common factors, common multiples and prime numbers</li> <li>use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</li> </ul> <p>Autumn 2</p>

## Primary Progression – Multiplication & Division

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication & Division: Calculations		<ul style="list-style-type: none"> <li>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (<math>\times</math>), division (<math>\div</math>) and equals (<math>=</math>) signs</li> </ul> <p>Autumn 4 Spring 1</p>	<ul style="list-style-type: none"> <li>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</li> </ul> <p>Autumn 3 Spring 1</p>	<ul style="list-style-type: none"> <li>multiply two-digit and three-digit numbers by a one-digit number using formal written layout</li> </ul> <p>Spring 1</p>	<ul style="list-style-type: none"> <li>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</li> <li>multiply and divide numbers mentally drawing upon known facts</li> <li>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</li> <li>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</li> </ul> <p>Autumn 4 Spring 1 Summer 1</p>	<ul style="list-style-type: none"> <li>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</li> <li>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</li> <li>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</li> <li>perform mental calculations, including with mixed operations and large numbers</li> </ul> <p>Autumn 2</p>

## Primary Progression – Multiplication & Division

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multiplication & Division: Solve Problems	<ul style="list-style-type: none"> <li>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</li> </ul> <p>Summer 1</p>	<ul style="list-style-type: none"> <li>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</li> </ul> <p>Autumn 4 Spring 1</p>	<ul style="list-style-type: none"> <li>solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which <math>n</math> objects are connected to <math>m</math> objects</li> </ul> <p>Spring 1</p>	<ul style="list-style-type: none"> <li>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 <math>n</math> objects are connected to <math>m</math> objects</li> </ul> <p>Spring 1</p>	<ul style="list-style-type: none"> <li>solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</li> <li>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates</li> </ul> <p>Autumn 4 Spring 1</p>	<ul style="list-style-type: none"> <li>solve problems involving addition, subtraction, multiplication and division</li> </ul> <p>Autumn 2</p>
Multiplication & Division: Combined Operations					<ul style="list-style-type: none"> <li>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</li> </ul> <p>Spring 1</p>	<ul style="list-style-type: none"> <li>use their knowledge of the order of operations to carry out calculations involving the four operations</li> </ul> <p>Autumn 2</p>

## Primary Progression – Fractions, Decimals, Percentages

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Recognise and Write	<ul style="list-style-type: none"> <li>recognise, find and name a half as one of two equal parts of an object, shape or quantity</li> <li>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity</li> </ul> <p>Summer 2</p>	<ul style="list-style-type: none"> <li>recognise, find, name and write fractions <math>\frac{1}{3}</math>, <math>\frac{1}{4}</math>, <math>\frac{2}{4}</math> and <math>\frac{3}{4}</math> of a length, shape, set of objects or quantity</li> </ul> <p>Spring 4</p>	<ul style="list-style-type: none"> <li>count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10</li> <li>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</li> <li>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</li> </ul> <p>Spring 5</p>	<ul style="list-style-type: none"> <li>count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</li> <li>recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements <math>&gt; 1</math> as a mixed number [for example, <math>\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}</math>]</li> </ul> <p>Spring 2</p>	
Fractions: Compare		<ul style="list-style-type: none"> <li>Recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{1}{2}</math></li> </ul> <p>Spring 4</p>	<ul style="list-style-type: none"> <li>recognise and show, using diagrams, equivalent fractions with small denominators</li> <li>compare and order unit fractions, and fractions with the same denominators</li> </ul> <p>Summer 1</p>	<ul style="list-style-type: none"> <li>recognise and show, using diagrams, families of common equivalent fractions</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>compare and order fractions whose denominators are all multiples of the same number</li> </ul> <p>Spring 2</p>	<ul style="list-style-type: none"> <li>use common factors to simplify fractions; use common multiples to express fractions in the same denomination</li> <li>compare and order fractions, including fractions <math>&gt; 1</math></li> </ul> <p>Autumn 3</p>

## Primary Progression – Fractions, Decimals, Percentages

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Calculations		<ul style="list-style-type: none"> <li>write simple fractions for example, <math>\frac{1}{2}</math> of 6 = 3</li> </ul> <p>Spring 4</p>	<ul style="list-style-type: none"> <li>add and subtract fractions with the same denominator within one whole [for example, <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math>]</li> </ul> <p>Summer 1</p>	<ul style="list-style-type: none"> <li>add and subtract fractions with the same denominator</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>add and subtract fractions with the same denominator and denominators that are multiples of the same number</li> <li>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>]</li> <li>divide proper fractions by whole numbers [for example, <math>\frac{1}{3} \div 2 = \frac{1}{6}</math>]</li> </ul> <p>Autumn 3</p>
Fractions: Solve Problems			<ul style="list-style-type: none"> <li>solve problems that involve all of the above</li> </ul> <p>Spring 5 Summer 1</p>	<ul style="list-style-type: none"> <li>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</li> </ul> <p>Spring 3</p>		



# Primary Progression – Fractions, Decimals, Percentages

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Decimals: Recognise and Write				<ul style="list-style-type: none"> <li>recognise and write decimal equivalents of any number of tenths or hundredths</li> <li>recognise and write decimal equivalents to <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math></li> </ul> <p>Spring 4 Summer 1</p>	<ul style="list-style-type: none"> <li>read and write decimal numbers as fractions [for example, <math>0.71 = \frac{71}{100}</math>]</li> <li>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>identify the value of each digit in numbers given to three decimal places</li> </ul> <p>Spring 1</p>
Decimals: Compare				<ul style="list-style-type: none"> <li>round decimals with one decimal place to the nearest whole number</li> <li>compare numbers with the same number of decimal places up to two decimal places</li> </ul> <p>Summer 1</p>	<ul style="list-style-type: none"> <li>round decimals with two decimal places to the nearest whole number and to one decimal place</li> <li>read, write, order and compare numbers with up to three decimal places</li> </ul> <p>Spring 3</p>	



## Primary Progression – Fractions, Decimals, Percentages

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Decimals: Calculations & Problems				<ul style="list-style-type: none"> <li>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</li> </ul> <p>Spring 4</p>	<ul style="list-style-type: none"> <li>solve problems involving number up to three decimal places</li> </ul> <p>Summer 1</p>	<ul style="list-style-type: none"> <li>multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places</li> <li>multiply one-digit numbers with up to two decimal places by whole numbers</li> <li>use written division methods in cases where the answer has up to two decimal places</li> <li>solve problems which require answers to be rounded to specified degrees of accuracy</li> </ul> <p>Spring 1</p>

## Primary Progression – Fractions, Decimals, Percentages

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions, Decimals and Percentages				<ul style="list-style-type: none"> <li>solve simple measure and money problems involving fractions and decimals to two decimal places</li> </ul> <p>Spring 3 Spring 4 Summer 1</p>	<ul style="list-style-type: none"> <li>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</li> <li>solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, <math>\frac{3}{8}</math>]</li> <li>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</li> </ul> <p>Spring 1 Spring 2</p>

## Primary Progression – Ratio and Proportion

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ratio and Proportion						<ul style="list-style-type: none"> <li>• solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</li> <li>• solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison</li> <li>• solve problems involving similar shapes where the scale factor is known or can be found</li> <li>• solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</li> </ul> <p>Spring 6</p>

## Primary Progression – Algebra

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Algebra	<ul style="list-style-type: none"> <li>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as <math>7 = \square - 9</math></li> </ul>	<ul style="list-style-type: none"> <li>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</li> </ul>	<ul style="list-style-type: none"> <li>solve problems, including missing number problems</li> </ul>			<ul style="list-style-type: none"> <li>use simple formulae</li> <li>generate and describe linear number sequences</li> <li>express missing number problems algebraically</li> <li>find pairs of numbers that satisfy an equation with two unknowns</li> <li>enumerate possibilities of combinations of two variables.</li> </ul> <p>Spring 3</p>

Note – although algebraic notation is not introduced until Y6, algebraic thinking starts much earlier as exemplified by the ‘missing number’ objectives from Y1/2/3

## Primary Progression – Measurement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Using Measures	<ul style="list-style-type: none"> <li>compare, describe and solve practical problems for:               <ul style="list-style-type: none"> <li>lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]</li> <li>mass/weight [for example, heavy/light, heavier than, lighter than]</li> <li>capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]</li> <li>time [for example, quicker, slower, earlier, later]</li> </ul> </li> <li>measure and begin to record the following:               <ul style="list-style-type: none"> <li>lengths and heights</li> <li>mass/weight</li> <li>capacity and volume</li> <li>time (hours, minutes, seconds)</li> </ul> </li> </ul> <p>Spring 3 Spring 4 Summer 6</p>	<ul style="list-style-type: none"> <li>choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (<math>^{\circ}\text{C}</math>); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</li> <li>compare and order lengths, mass, volume/capacity and record the results using <math>&gt;</math>, <math>&lt;</math> and <math>=</math></li> </ul> <p>Spring 5 Summer 4</p>	<ul style="list-style-type: none"> <li>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</li> </ul> <p>Spring 4 Summer 4</p>	<ul style="list-style-type: none"> <li>Convert between different units of measure [for example, kilometre to metre; hour to minute]</li> <li>estimate, compare and calculate different measures</li> </ul> <p>Autumn 3 Spring 2 Summer 3</p>	<ul style="list-style-type: none"> <li>convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</li> <li>understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</li> <li>use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling</li> </ul> <p>Summer 1 Summer 4 Summer 5</p>	<ul style="list-style-type: none"> <li>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</li> <li>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</li> <li>convert between miles and kilometres</li> </ul> <p>Spring 4</p>

## Primary Progression – Measurement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Money	<ul style="list-style-type: none"> <li>recognise and know the value of different denominations of coins and notes</li> </ul> <p>Summer 5</p>	<ul style="list-style-type: none"> <li>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</li> <li>find different combinations of coins that equal the same amounts of money</li> <li>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</li> </ul> <p>Autumn 3</p>	<ul style="list-style-type: none"> <li>add and subtract amounts of money to give change, using both £ and p in practical contexts</li> </ul> <p>Spring 2</p>	<ul style="list-style-type: none"> <li>estimate, compare and calculate different measures, including money in pounds and pence</li> </ul> <p>Summer 2</p>	<ul style="list-style-type: none"> <li>use all four operations to solve problems involving measure [for example, money]</li> </ul> <p>Summer 1</p>	

## Primary Progression – Measurement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Time	<ul style="list-style-type: none"> <li>sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</li> <li>recognise and use language relating to dates, including days of the week, weeks, months and years</li> <li>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times</li> </ul>	<ul style="list-style-type: none"> <li>compare and sequence intervals of time</li> <li>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</li> <li>know the number of minutes in an hour and the number of hours in a day</li> </ul>	<ul style="list-style-type: none"> <li>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</li> <li>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</li> <li>know the number of seconds in a minute and the number of days in each month, year and leap year</li> <li>compare durations of events [for example to calculate the time taken by particular events or tasks]</li> </ul>	<ul style="list-style-type: none"> <li>read, write and convert time between analogue and digital 12- and 24-hour clocks</li> <li>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days</li> </ul>	<ul style="list-style-type: none"> <li>solve problems involving converting between units of time</li> </ul>	<ul style="list-style-type: none"> <li>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</li> </ul>
	Summer 6	Summer 3	Summer 2	Summer 3	Summer 4	Year 5 Summer 4

## Primary Progression – Measurement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measurement: Perimeter, Area, Volume			<ul style="list-style-type: none"> <li>measure the perimeter of simple 2-D shapes</li> </ul> <p>Spring 4</p>	<ul style="list-style-type: none"> <li>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</li> <li>find the area of rectilinear shapes by counting squares</li> </ul> <p>Autumn 3 Spring 2</p>	<ul style="list-style-type: none"> <li>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</li> <li>calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (<math>\text{cm}^2</math>) and square metres (<math>\text{m}^2</math>) and estimate the area of irregular shapes</li> <li>estimate volume (for example, using <math>1 \text{ cm}^3</math> blocks to build cuboids (including cubes)) and capacity (for example, using water)</li> </ul> <p>Autumn 5 Summer 5</p>	<ul style="list-style-type: none"> <li>recognise that shapes with the same areas can have different perimeters and vice versa</li> <li>recognise when it is possible to use formulae for area and volume of shapes</li> <li>calculate the area of parallelograms and triangles</li> <li>calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (<math>\text{cm}^3</math>) and cubic metres (<math>\text{m}^3</math>), and extending to other units (for example, <math>\text{mm}^3</math> and <math>\text{km}^3</math>)</li> </ul> <p>Spring 5</p>



## Primary Progression – Geometry

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: 2-D Shapes	<ul style="list-style-type: none"> <li>recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles]</li> </ul> <p>Autumn 3</p>	<ul style="list-style-type: none"> <li>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</li> <li>identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]</li> <li>compare and sort common 2-D shapes and everyday objects</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>draw 2-D shapes</li> </ul> <p>Summer 3</p>	<ul style="list-style-type: none"> <li>compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</li> <li>identify lines of symmetry in 2-D shapes presented in different orientations</li> </ul> <p>Summer 5</p>	<ul style="list-style-type: none"> <li>distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</li> <li>use the properties of rectangles to deduce related facts and find missing lengths and angles</li> </ul> <p>Summer 2</p>	<ul style="list-style-type: none"> <li>draw 2-D shapes using given dimensions and angles</li> <li>compare and classify geometric shapes based on their properties and sizes</li> <li>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius</li> </ul> <p>Summer 1</p>
Geometry: 3-D Shapes	<ul style="list-style-type: none"> <li>recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]</li> </ul> <p>Autumn 3</p>	<ul style="list-style-type: none"> <li>recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].</li> <li>compare and sort common 3-D shapes and everyday objects</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them</li> </ul> <p>Summer 3</p>		<ul style="list-style-type: none"> <li>identify 3-D shapes, including cubes and other cuboids, from 2-D representations</li> </ul> <p>Summer 2</p>	<ul style="list-style-type: none"> <li>recognise, describe and build simple 3-D shapes, including making nets</li> </ul> <p>Summer 1</p>

## Primary Progression – Geometry

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: Angles & Lines			<ul style="list-style-type: none"> <li>recognise angles as a property of shape or a description of a turn</li> <li>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</li> <li>identify horizontal and vertical lines and pairs of perpendicular and parallel lines</li> </ul>	<ul style="list-style-type: none"> <li>identify acute and obtuse angles and compare and order angles up to two right angles by size</li> <li>identify lines of symmetry in 2-D shapes presented in different orientations</li> <li>complete a simple symmetric figure with respect to a specific line of symmetry</li> </ul>	<ul style="list-style-type: none"> <li>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</li> <li>draw given angles, and measure them in degrees</li> <li>identify:               <ul style="list-style-type: none"> <li>angles at a point and one whole turn (total <math>360^\circ</math>)</li> <li>angles at a point on a straight line and <math>\frac{1}{2}</math> a turn (total <math>180^\circ</math>)</li> <li>other multiples of <math>90^\circ</math></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>find unknown angles in any triangles, quadrilaterals, and regular polygons</li> <li>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</li> </ul>
			Summer 3	Summer 5	Summer 2	Summer 1

## Primary Progression – Geometry

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Geometry: Position &amp; Direction</b>	<ul style="list-style-type: none"> <li>describe position, direction and movement, including whole, half, quarter and three-quarter turns</li> </ul> <p>Summer 3</p>	<ul style="list-style-type: none"> <li>order and arrange combinations of mathematical objects in patterns and sequences</li> <li>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)</li> </ul> <p>Spring 3 Summer 1</p>		<ul style="list-style-type: none"> <li>describe positions on a 2-D grid as coordinates in the first quadrant</li> <li>describe movements between positions as translations of a given unit to the left/right and up/down</li> <li>plot specified points and draw sides to complete a given polygon</li> </ul> <p>Summer 6</p>	<ul style="list-style-type: none"> <li>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</li> </ul> <p>Summer 3</p>	<ul style="list-style-type: none"> <li>describe positions on the full coordinate grid (all four quadrants)</li> <li>draw and translate simple shapes on the coordinate plane, and reflect them in the axes</li> </ul> <p>Autumn 4</p>

## Primary Progression – Statistics

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Statistics: Present and Interpret		<ul style="list-style-type: none"> <li>interpret and construct simple pictograms, tally charts, block diagrams and simple tables</li> </ul> <p>Spring 2</p>	<ul style="list-style-type: none"> <li>interpret and present data using bar charts, pictograms and tables</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</li> </ul> <p>Summer 4</p>	<ul style="list-style-type: none"> <li>complete, read and interpret information in tables, including timetables</li> </ul> <p>Autumn 3</p>	<ul style="list-style-type: none"> <li>interpret and construct pie charts and line graphs and use these to solve problems</li> </ul> <p>Summer 3</p>
Statistics: Solve Problems		<ul style="list-style-type: none"> <li>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</li> <li>ask and answer questions about totalling and comparing categorical data</li> </ul> <p>Spring 2</p>	<ul style="list-style-type: none"> <li>solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables</li> </ul> <p>Spring 3</p>	<ul style="list-style-type: none"> <li>solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</li> </ul> <p>Summer 4</p>	<ul style="list-style-type: none"> <li>solve comparison, sum and difference problems using information presented in a line graph</li> </ul> <p>Autumn 3</p>	<ul style="list-style-type: none"> <li>calculate and interpret the mean as an average</li> </ul> <p>Summer 3</p>