Progression of Key Learning in Mathematics (last reviewed Spring 2022)

	Reception	Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number - Number and place value	**Number – Counting** **Rote counting** ■ Rote count from 1 ■ Rote count on from a given number between 1 and 20 ■ Rote count back from 20 to 0 ■ Rote count back from a given number between 0 and 20 ■ Know what number comes before or after a given number ■ Say a number between two given numbers ■ Rote count beyond 20 **Counting objects** ■ Understand that counting is to find out how many ■ Use one to one correspondence when counting ■ Understand the last number said is the number in the set ■ Count up to 20 objects, pictures, sounds and actions ■ Understand and use conservation of number ■ Use the word 'zero' to represent 'none' ■ Compare two sets of different objects saying which set is more, greater, fewer, less, same, equal ■ Order three or more sets of objects ■ State without counting (subitise) quantities within 5 ■ Make a sensible guess of quantities within 10 **Number – Number Sense** ■ Partition a set of objects in different ways using the terminology part - part - whole ■ Explore and represent the patterns in odd and even numbers ■ Understand that 'teen' numbers are a group of 10 plus another number ■ Understand 20 is the same as two groups of 10 ■ Recognise repeating patterns in the counting sequence i.e. 6, 7, 8, 9 and 16, 17, 18, 19 and 26, 27, 28, 29 etc. **Number – Number Recognition** ■ Recognise and identify numerals 0 to 20 ■ Select the numeral that represents a set of objects ■ Order numerals 0 to 20 **Number – Graphics** ■ Represent amounts in their own ways, explaining what they mean ■ Represent and explain their thinking in their own ways ■ Write numerals 0 to 20	Children at the expected level of development will: **ELG - Number** ■ Have a deep understanding of number to 10, including the composition of each number; ■ Subitise (recognise without counting) up to 5; **ELG – Numerical 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.	Previous year group and: **Counting** ■ Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. ■ Count in multiples of twos, fives and tens. **Place Value** ■ Read and write numbers to 100 in numerals. ■ Read and write numbers from 1 to 20 in numerals and words. ■ *Begin to recognise the place value of numbers beyond 20 (tens and ones).* ■ Identify and represent numbers using objects and pictorial representations including the number line *(numbers to at least 30).* **Comparing and ordering** ■ Use the language of: equal to, more than, less than (fewer), most, least. ■ Given a number, identify one more and one less. **Sequences and patterns** ■ *Recognise and create repeating patterns with numbers, objects and shapes.* ■ *Identify odd and even numbers linked to counting in twos from 0 and 1.* **Solving number problems** ■ *Solve problems and practical problems involving all of the above.*	Previous year group and: **Counting** ■ Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. ■ *Describe and extend simple sequences involving counting on or back in different steps.* **Place value** ■ Read and write numbers to at least 100 in numerals and in words. ■ Recognise the place value of each digit in a two-digit number (tens, ones). ■ Identify, represent and estimate numbers using different representations, including the number line. ■ *Partition numbers in different ways (e.g. 23 = 20 + 3 and 23 = 10 + 13).* **Comparing and ordering** ■ Compare and order numbers from 0 up to 100; use <, > and = signs. ■ *Find 1 or 10 more or less than a given number.* **Multiplying by powers of 10** ■ *Understand the connection between the 10 multiplication table and place value.* **Rounding, approximation and estimation** ■ *Round numbers to at least 100 to the nearest 10.* **Solving number problems** ■ Use place value and number facts to solve problems.	Previous year group and: **Counting** ■ Count from 0 in multiples of 4, 8, 50 and 100. ■ Count up and down in tenths. **Place value** ■ Read and write numbers up to 1000 in numerals and in words. ■ *Identify the value of each digit to one decimal place.* ■ *Read and write numbers with one decimal place.* ■ Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). ■ *Partition numbers in different ways (e.g. 146 = 100+ 40+6 and 146 = 130+16).* ■ Identify, represent and estimate numbers using different representations *(including the number line).* **Comparing and ordering** ■ Compare and order numbers up to 1000. ■ *Compare and order numbers with one decimal place.* ■ Find 1, 10 or 100 more or less than a given number. **Multiplying by powers of 10** ■ *Find the effect of multiplying a one- or two-digit number by 10 and 100, identify the value of the digits in the answer.* **Rounding, approximation and estimation** ■ *Round numbers to at least 1000 to the nearest 10 or 100.* **Roman numerals** ■ *Read Roman numerals from I to XII.* **Solving number problems** ■ Solve number problems and practical problems involving these ideas. **Sequences and patterns** ■ *Describe and extend number sequences involving counting on or back in different steps.*	Previous year group and: **Counting** ■ Count in multiples of 6, 7, 9, 25 and 1000. ■ Count backwards through zero to include negative numbers. ■ Count up and down in hundredths. **Place value** ■ *Read and write numbers to at least 10 000.* ■ *Read and write numbers with up to two decimal places.* ■ Recognise the place value of each digit in a four-digit number. ■ *Identify the value of each digit to two decimal places.* ■ *Partition numbers in different ways (e.g. 2.3 = 2+0.3 & 1+1.3).* ■ Identify, represent and estimate numbers using different representations *(including the number line).* **Comparing and ordering** ■ Order and compare numbers beyond 1000. ■ *Order and* compare numbers with the same number of decimal places up to two decimal places. ■ Find *0.1, 1, 10, 100 or* 1000 more or less than a given number. **Rounding, approximation and estimation** ■ Round any number to the nearest 10, 100 or 1000. ■ Round decimals (one decimal place) to the nearest whole number. **Multiplying by powers of 10** ■ 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. **Sequences and patterns** ■ *Describe and extend number sequences involving counting on or back in different steps, including sequences with multiplication and division.* **Roman numerals** ■ Read Roman numerals to 100 and know that over time, the numeral system changed to include the concept of zero and place value. **Solving number problems** ■ Solve number and practical problems that involve all of the above and with increasingly large positive numbers.	Previous year group and: **Counting** ■ Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. ■ *Count forwards and backwards in decimal steps.* **Place value** ■ 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 with up to 3 decimal places. ■ *Identify the value of each digit to three decimal places.* ■ *Identify represent and estimate numbers using the number line.* **Comparing and ordering - also refer to place value section** ■ *Find 0.01, 0.1, 1, 10, 100, 1000 and other powers of 10 more or less than a given number.* **Rounding, approximation and estimation** ■ Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. ■ Round decimals with two decimal places to the nearest whole number and to one decimal place. **Multiplying by powers of 10** ■ Multiply/divide whole numbers and decimals by 10, 100 and 1000. **Negative numbers** ■ Interpret negative numbers in context, count on and back with positive and negative whole numbers, including through zero. **Sequences and patterns** ■ *Describe and extend number sequences including those with multiplication/division steps and where the step size is a decimal.* **Roman numerals** ■ Read Roman numerals to 1000 (M); recognise years written as such. **Solving number problems** ■ Solve number and practical problems that involve all of the above.	Previous year group and: **Counting** ■ *Count forwards or backwards in steps of integers, decimals, powers of 10 for any number.* **Place value** ■ Read, write and compare numbers up to 10 000 000 and determine the value of each digit. ■ Identify the value of each digit to three decimal places. ■ *Identify, represent and estimate numbers using the number line.* **Comparing and ordering** ■ Order and compare numbers up to 10 000 000 and determine the value of each digit. ■ *Order and compare numbers including integers, decimals and negative numbers.* ■ *Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more/less than a given number.* **Rounding, approximation and estimation** ■ Round any whole number to a required degree of accuracy. ■ *Round decimals with three decimal places to the nearest whole number or one or two decimal places.* **Multiplying by powers of 10** ■ Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. **Negative numbers** ■ Use negative numbers in context, and calculate intervals across zero. **Sequences and patterns** ■ *Describe and extend number sequences including those with multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decimal.* **Solving number problems** ■ Solve number and practical problems that involve all of the above.

Progression of Key Learning in Mathematics (last reviewed Spring 2022)

	Reception	Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number - Addition and subtraction	**Number – Calculating** ■ Understand the concept of addition by practically combining sets of objects to find how many and use the terminology part – part – whole ■ Understand the concept of subtraction by practically removing one amount from within another to find how many are left and use the terminology part – part – whole ■ Relate subtraction to addition in practical situations using the terminology part – part – whole ■ Identify one more and one less than a given number ■ Identify two more and two less than a given number ■ Add two single-digit numbers totalling up to 10, using practical equipment ■ Add two single-digit numbers totalling greater than 10, using practical equipment ■ Subtract a single-digit number from a number up to 10, using practical equipment. ■ Subtract a single-digit number from a number greater than 10, using practical equipment ■ Automatically recall addition and subtraction facts up to 5 and some addition and subtraction facts to 10	**ELG – Number** ■ 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.	Previous year group and: **Understanding addition and subtraction** ■ Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. **Addition and subtraction facts** ■ Represent and use number bonds and related subtraction facts within 20. **Mental methods** ■ Add and subtract one-digit and two-digit numbers to 20, including zero *(using concrete objects and pictorial representations).* **Solving addition and subtraction problems including those with missing numbers** ■ Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ - 9.	Previous year group and: **Understanding addition and subtraction** ■ Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. ■ *Understand subtraction as take away and difference (how many more, how many less/fewer).* **Addition and subtraction facts** ■ Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 *(bonds totalling 5, 10 and 20).* ■ *Recall and use number bonds for multiples of 5 totalling 60 (to support telling time to nearest 5 minutes).* **Mental methods** ■ 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. ■ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting).* ■ *Select a mental strategy appropriate for the numbers involved in the calculation.* **Written methods** (see mental methods) **Estimating and checking calculations** ■ Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. **Solving addition and subtractions problems including those with missing numbers** ■ Solve problems with addition and subtraction *including with missing numbers:* - using concrete objects and pictorial representations, including those involving numbers, quantities and measures. - applying their increasing knowledge of mental and written methods.	Previous year group and: **Mental methods** ■ Add and subtract numbers mentally, including: - a three-digit number and ones. - a three-digit number and tens. - a three-digit number and hundreds. ■ *Select a mental strategy appropriate for the numbers involved in the calculation.* ■ *Recall/use addition/subtraction facts for 100 (multiples of 5 and 10).* ■ *Derive and use addition and subtraction facts for 100.* ■ *Derive and use addition and subtraction facts for multiples of 100 totalling 1000.* **Written methods** ■ Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. ■ *Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context.* **Estimating and checking calculations** ■ Estimate the answer to a calculation and use inverse operations to check answers. **Solving addition and subtraction problems including those with missing numbers** ■ Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. ■ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).*	Previous year group and: **Understanding addition and subtraction** ■ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* **Addition and subtraction facts** ■ *Recall and use addition and subtraction facts for 100.* ■ *Recall and use +/- facts for multiples of 100 totalling 1000.* ■ *Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place).* **Mental methods** ■ *Select a mental strategy appropriate for the numbers involved in the calculation.* ■ *Add and subtract mentally combinations of two and three digit numbers and decimals to one decimal place.* **Written methods** ■ Add and subtract numbers with up to 4 digits *and decimals with one decimal place* using the formal written methods of columnar addition and subtraction where appropriate. **Estimating and checking calculations** ■ Estimate: use inverse operations to check answers to a calculation. **Solving addition and subtraction problems including those with missing numbers** ■ Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. ■ *Solve addition and subtraction problems involving missing numbers.*	Previous year group and: **Understanding addition and subtraction** ■ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* **Addition and subtraction facts** ■ *Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place).* ■ *Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places).* **Mental Methods** ■ *Select a mental strategy appropriate for the numbers involved in the calculation.* ■ Add and subtract numbers mentally with increasingly large numbers *and decimals to two decimal places.* **Written Methods** ■ Add and subtract whole numbers with more than 4 digits *and decimals with two decimal places,* including using formal written methods (columnar addition and subtraction). **Estimating and checking calculations** ■ Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. **Solving addition and subtraction problems including those with missing numbers.** ■ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ■ *Solve addition and subtraction problems involving missing numbers.*	Previous year group and: **Understanding addition and subtraction** ■ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* **Addition and subtraction facts** ■ *Recall and use addition and subtraction facts for 1 (with decimals to two decimal places).* **Mental methods** ■ *Select a mental strategy appropriate for the numbers in the calculation.* ■ Perform mental calculations including with mixed operations and large numbers *and decimals.* **Written methods** ■ *Add and subtract whole numbers and decimals using formal written methods (columnar addition and subtraction).* **Estimating and checking calculations** ■ Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. **Order of operations** ■ Use knowledge of the order of operations to carry out calculations. **Solving addition and subtraction problems including those with missing numbers** ■ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ■ Solve problems involving all four operations, *including those with missing numbers.*

Progression of Key Learning in Mathematics (last reviewed Spring 2022)

	Reception	Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number - Multiplication and division			Previous year group and: **Multiplication and division facts** ■ *Recall and use doubles of all numbers to 10 and corresponding halves.* **Solving multiplication and division problems including those with missing numbers** 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.	Previous year group and: **Understand multiplication and division** ■ *Understand multiplication as repeated addition* ■ *Understand division as sharing and grouping and that a division calculation can have a remainder.* ■ Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. **Multiplication and division facts** ■ Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. ■ Recognise odd and even numbers. ■ *Derive and use doubles of simple two-digit numbers (numbers in which the ones total less than 10).* ■ *Derive and use halves of simple two-digit even numbers (numbers in which the tens are even).* **Mental methods** ■ Calculate mathematical statements for multiplication *using repeated addition)* and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. **Solving multiplication and division problems including those with missing numbers** ■ Solve problems involving multiplication and division *(including those with remainders)*, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	Previous year group and: **Understanding multiplication and division** ■ *Understand that division is the inverse of multiplication and vice versa.* ■ *Understand how multiplication and division statements can be represented using arrays.* ■ *Understand division as sharing and grouping and use each appropriately.* **Multiplication and division facts** ■ Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. ■ *Derive and use doubles of all numbers to 100 and corresponding halves.* ■ *Derive and use doubles of all multiples of 50 to 500.* **Mental and written methods** ■ 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. ■ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* **Solving multiplication and division problems including those with missing numbers** ■ Solve problems, including missing number problems, involving multiplication and division *(and interpreting remainders),* including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. ■ *Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.*	Previous year group and: **Understanding multiplication and division** ■ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* ■ Recognise and use factor pairs and commutativity in mental calculations. **Multiplication and division facts** ■ Recall multiplication and division facts for multiplication tables up to 12 × 12. ■ *Use partitioning to double or halve any number, including decimals to one decimal place.* **Mental methods** ■ 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. **Written methods** ■ Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. ■ *Divide numbers up to 3 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.* **Estimating and checking calculations** ■ *Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.* **Solving multiplication and division problems including those with missing numbers** ■ Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, *division (including interpreting remainders),* integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	Previous year group and: **Understand multiplication and division** ■ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* ■ Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. **Multiplication and division facts** ■ 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 (^{2}) and cube (^{3}) numbers, and notation. ■ *Use partitioning to double or halve any number, including decimals to two decimal places.* **Mental methods** ■ Multiply and divide numbers mentally drawing upon known facts. ■ Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. **Written methods** ■ 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. **Estimating and checking calculations** ■ *Use estimation/inverse to check answers to calculations; determine, in the context of a problem, an appropriate degree of accuracy.* **Solving multiplication and division problems including those with missing numbers.** ■ 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.	Previous year group and: **Understanding multiplication and division** ■ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* **Multiplication and division facts** ■ Identify common factors, common multiples and prime numbers. ■ *Use partitioning to double or halve any number.* **Mental methods** ■ Perform mental calculations, including with mixed operations and large numbers. **Written methods** ■ Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. ■ Multiply one-digit numbers with up to two decimal places by whole numbers. ■ Divide numbers up to 4 digits by a two-digit whole number using the formal written methods of short or long division, and interpret remainders as 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. **Estimating and checking calculations** ■ Use estimation *and inverse* to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. **Order of operations** ■ Use knowledge of the order of operations to carry out calculations. **Solving multiplication and division problems including those with missing numbers** ■ Solve problems involving all four operations, *including those with missing numbers.*

Progression of Key Learning in Mathematics (last reviewed Spring 2022)

	Reception	Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number - Fraction, decimals and percentages	**Number – Fractions** ■ Understand that sharing is splitting an amount into equal parts ■ Understand that halving is sharing into two equal parts ■ Understand that doubling is adding the same number to itself ■ Automatically recall double facts to double 5	**ELG – Number** ■ 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.	Previous year group and: **Understanding fractions** ■ *Understand that a fraction can describe part of a whole.* ■ *Understand that a unit fraction represents one equal part of a whole.* **Fractions of objects, shapes and quantities** ■ Recognise, find and name a half as one of two equal parts of an object shape or quantity *(including measure).* ■ Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity *(including measure).*	Previous year group and: **Understanding fractions** ■ *Understand and use the terms numerator and denominator.* ■ *Understand that a fraction can describe part of a set.* ■ *Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be.* **Fractions of objects, shapes and quantities** ■ Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. **Counting, comparing and ordering fractions** ■ *Count on and back in steps of* $\frac{1}{2}$ *and* $\frac{1}{4}$. **Equivalence** ■ Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	Previous year group and: **Understanding fractions** ■ *Understand that finding a fraction of an amount relates to division.* **Fractions of objects, shapes and quantities** ■ 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. ■ Recognise that tenths arise from dividing objects into 10 equal parts and in dividing one-digit numbers or quantities by 10. **Counting, comparing and ordering fractions** ■ *Count on and back in steps of* $\frac{1}{2}$, $\frac{1}{4}$ *and* $\frac{1}{3}$. ■ Compare and order unit fractions, and fractions with the same denominators *(including on a number line).* **Equivalence** ■ Recognise and show, using diagrams, equivalent fractions with small denominators. ■ *Show practically or pictorially that a fraction is one whole number divided by another (e.g.* $\frac{3}{4}$ *can be interpreted as 3 ÷ 4).* **Calculating with fractions** ■ Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7}+\frac{1}{7}=\frac{6}{7}$]. **Solving problems involving fractions, decimals and percentages** ■ Solve problems that involve all of the above.	Previous year group and: **Understanding fractions** ■ *Understand that a fraction is one whole number divided by another (e.g.* $\frac{3}{4}$ *can be interpreted as 3 ÷ 4).* **Fractions of objects, shapes and quantities** ■ *Recognise, find and write fractions of a discrete set of objects including those with a range of numerators and denominators.* ■ Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. **Counting, comparing and ordering fractions** ■ *Count on and back in steps of unit fractions.* ■ *Compare and order unit fractions and fractions with the same denominators (including on a number line).* **Equivalence** ■ Recognise and show, using diagrams, families of common equivalent fractions. ■ Recognise and write decimal equivalents of any number of tenths or hundredths. ■ Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$. **Calculating with fractions** ■ Add and subtract fractions with the same denominator *(using diagrams).* **Solving problems involving fractions, decimals and percentages** ■ Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. ■ Solve simple measure and money problems involving fractions and decimals to two decimal places.	Previous year group and: **Fractions of objects, shapes and quantities** ■ Recognise mixed numbers and improper fractions and convert from one form to the other. ■ Read and write decimal numbers as fractions (e.g. 0.71=$\frac{71}{100}$). **Counting, comparing and ordering fractions** ■ *Count on and back in mixed number steps such as* $1\frac{1}{2}$. ■ Compare and order fractions whose denominators are all multiples of the same number *(including on a number line).* **Equivalence** ■ Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. ■ Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. **Calculating with fractions** ■ Add and subtract fractions with denominators that are the same and that are multiples of the same number *(using diagrams).* ■ Write statements > 1 as a mixed number (e.g. $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$). ■ Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. **Percentages** ■ 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. **Solving problems involving fractions, decimals and percentages.** ■ Solve problems involving fractions and decimals to three places. ■ Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and fractions with a denominator of a multiple of 10 or 25.	Previous year group and: **Counting, comparing and ordering fractions** ■ Compare and order fractions, including fractions > 1 *(including on a number line).* **Equivalence** ■ Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. ■ Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. ■ Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375 and $\frac{3}{8}$). **Calculating with fractions** ■ 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 (e.g. $\frac{1}{4}$ x $\frac{1}{2}=\frac{1}{8}$). ■ Divide proper fractions by whole numbers (e.g. $\frac{1}{3}\div 2=\frac{1}{6}$). **Percentages** ■ *Find simple percentages of amounts.* **Solving problems involving fractions, decimals and percentages** ■ *Solve problems involving fractions.* ■ Solve problems which require answers to be rounded to specified degrees of accuracy. ■ Solve problems involving the calculation of percentages (e.g. of measures and such as 15% of 260) and the use of percentages for comparison.

Progression of Key Learning in Mathematics (last reviewed Spring 2022)

	Reception	Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry - Properties of shape	**Shape** ■ Name common 2-D shapes (circle, triangle, square rectangle, oblong rectangle) ■ Name common 3-D shapes (sphere, cube, cuboid) ■ Talk about shapes using mathematical language (straight, curved, sides, flat, solid) ■ Sort shapes according to their own criteria		Previous year group and: **Properties of shape** ■ Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles. ■ Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres.	Previous year group and: **Properties of shape** ■ 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, [for example, a circle on a cylinder and a triangle on a pyramid]. ■ Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. **Sorting shapes** ■ Compare and sort *objects, numbers and* common 2-D and 3-D shapes and everyday objects.	Previous year group and: **Properties of shape** ■ Draw 2-D shapes and describe them. ■ Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. ■ Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. **Angles** ■ 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. **Sorting shapes** ■ *Use sorting diagrams to compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects.*	Previous year group and: **Properties of shape** ■ 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. ■ Complete a simple symmetric figure with respect to a specific line of symmetry. ■ *Continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines.* **Angles and rotation** ■ Identify acute and obtuse angles and compare and order angles up to two right angles by size.	Previous year group and: **Properties of shape** ■ 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. ■ Identify 3-D shapes from 2-D representations. **Angles and rotation** ■ Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. ■ Draw given angles, and measure them in degrees (°). ■ Identify: - angles at a point and one whole turn (total 360°). - angles at a point on a straight line and half a turn (total 180°). - other multiples of 90°.	Previous year group and: **Properties of shape** ■ Compare/classify geometric shapes based on the properties and sizes. ■ Draw 2-D shapes using given dimensions and angles. ■ Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. ■ Recognise, describe and build simple 3-D shapes, including making nets. **Angles and rotation** ■ Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. ■ Find unknown angles in any triangles, quadrilaterals, regular polygons.
Geometry - Position and direction	**Shape** ■ Know that shapes can appear in different ways and be different sizes ■ Build and make models with 3-D shapes ■ Create and describe pictures using 2-D shapes **Space** ■ Understand and use positional language in everyday situations ■ Understand and use ordinal numbers when describing position ■ Understand and use the language of movement/direction ■ Describe and recognise patterns made of objects, numbers and shapes ■ Create patterns made of objects, numbers and shapes		Previous year group and: **Angles and rotation** ■ Describe movement, including whole, half, quarter and three-quarter turns. **Patterns** ■ *Recognise and create repeating patterns with objects and shapes.* **Position and direction** ■ Describe position and direction.	Previous year group and: **Patterns** ■ Order/arrange combinations of mathematical objects in patterns/sequences. **Position and direction** ■ 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).	Previous year group and: **Coordinates (including reflection and translation)** ■ *Describe positions on a square grid labelled with letters and numbers.*	Previous year group and: **Coordinates (including reflection and translation)** ■ Describe positions on a 2-D grid as coordinates in the first quadrant. ■ Plot specified points and draw sides to complete a given polygon. ■ Describe movements between positions as translations of a given unit to the left/right and up/down.	Previous year group and: ***Coordinates (including reflection and translation)*** ■ *Describe positions on the first quadrant of a coordinate grid.* ■ *Plot specified points and complete shapes.* ■ 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.	Previous year group and: **Coordinates including reflection ad translation** ■ 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.

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Measurement	**Distance** ■ Understand that measures of distance can have different names including length, width, height ■ Understand and use language to compare the length/width of two objects ■ Understand and use language to compare the height of two objects ■ Understand and use language of comparison when ordering three objects of different lengths/widths/heights ■ Understand the concept of the conservation of length/width/height **Weight/Mass** ■ Understand the measurement of weight/mass (heavy/light) ■ Understand and use language to compare the weight/mass of two objects ■ Understand the concept of conservation of weight/mass **Volume/capacity** ■ Understand the measurement of volume/capacity (empty/full/nearly) ■ Understand and use language to compare two of the same container holding different amounts ■ Understand and use the language of comparison when ordering three of the same container holding different amounts ■ Understand the concept of the conservation of volume/capacity **Money** ■ Understand that we need to pay for goods ■ Talk about things they want to spend their money on ■ Talk about different ways we can pay for things ■ Recognise that there are different coins ■ Recognise 1p coin ■ Use 1p coins to pay for objects **Time** ■ Talk about significant times of the day, e.g. home time, lunch time, snack time, bed time, etc. ■ Understand and use language – before, after, yesterday, today, tomorrow ■ Use the language of comparison when talking about time, e.g. longer/ shorter; faster/slower		Previous year group and: **Length / height** ■ Measure and begin to record: - lengths and heights, *using non-standard and then manageable standard units (m/cm) within children's range of counting competence.* ■ Compare, describe and solve practical problems for: - lengths and heights (for example, long / short, longer / shorter. tall / short, double / half). **Mass** ■ Measure and begin to record: - mass/weight, *using non-standard and then manageable standard units (kg/g) within children's range of counting competence.* ■ Compare, describe and solve practical problems for: - mass/weight (for example, heavy / light, heavier than, lighter than). **Capacity / volume** ■ Measure and begin to record: - capacity and volume *using non-standard and then manageable standard units (litres/ml) within children's range of counting competence.* ■ Compare, describe and solve practical problems for: - capacity and volume (for example, full/empty, more than, less than, half, half full, quarter). **Time** ■ Measure and begin to record: - time (hours/minutes/seconds) *within children's range of counting competence.* ■ Compare, describe and solve practical problems for: - time (for example, quicker, slower, earlier, later). ■ Recognise and use language relating to dates, including days of the week, weeks, months and years. ■ Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. ■ Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. **Money** ■ Recognise and know the value of different denominations of coins and notes.	Previous year group and: **Length / height** ■ Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit, using rulers, scales, *(within children's place value competence).* ■ Compare and order lengths and record the results using >, < and =. **Mass** ■ Choose and use appropriate standard units to estimate and measure mass (kg/g) to the nearest appropriate unit scales *(within children's place value competence).* ■ Compare and order mass and record the results using >, < and =. **Capacity / volume** ■ Choose and use appropriate standard units to estimate and measure capacity and volume (litres/ml) to the nearest appropriate unit, using measuring vessels *(within children's place value competence).* ■ Compare and order volume/capacity and record the results using >, < and =. **Temperature** ■ Choose and use appropriate standard units to estimate and measure temperature (°C) to the nearest appropriate unit, using thermometers *(within children's place value competence).* **Time** ■ Compare and sequence intervals of time. ■ Know the number of minutes in an hour and the number of hours in a day. ■ 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. **Money** ■ 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. **Solving problems involving money and measures** ■ Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change *and measures (including time).*	Previous year group and: **Length / height** ■ Measure, compare (using <, > and =), add and subtract lengths (m/cm/mm). **Perimeter** ■ *Understand perimeter is a measure of distance around the boundary of a shape.* ■ Measure the perimeter of simple 2-D shapes. **Mass** ■ Measure, compare (using <, > and =), add and subtract mass (kg/g). **Capacity / volume** ■ Measure, compare (using <, > and =), add and subtract volume/capacity (l/ml). **Temperature** ■ *Continue to estimate and measure temperature to the nearest degree (°C) using thermometers.* **Time** ■ Record/compare time in terms of seconds, minutes, hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon, midnight. ■ Know the number of seconds in a minute and the number of days in each month, year and leap year. ■ 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/read time with increasing accuracy to the nearest minute. ■ Compare durations of events [for example to calculate the time taken by particular events or tasks]. **Money** ■ *Continue to recognise and use the symbols for pounds (£) and pence (p) and understand that the decimal point separates pounds/pence.* ■ *Recognise that ten 10p coins equal £1 and that each coin is $\frac{1}{10}$ of £1.* ■ Add and subtract amounts of money to give change, using both £ and p in practical contexts. **Solving problems involving money and measures** ■ *Solve problems involving money and measures and simple problems involving passage of time.*	Previous year group and: **Length and height** ■ Estimate and calculate lengths. ■ Compare lengths (using <, > and =). **Perimeter** ■ Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. **Area** ■ *Know area is a measure of surface within a given boundary.* ■ Find the area of rectilinear shapes by counting squares. **Mass** ■ Estimate and calculate mass. ■ Compare mass (using <, > and =). **Capacity and volume** ■ Estimate and calculate capacity and volume. ■ Compare capacity and volume (using <, > and =). **Temperature** ■ *Order temperatures including those below 0°C.* **Conversion** ■ Convert between different units of measure [e.g. kilometre to metre]. **Time** ■ Convert between different units of time [e.g. hour to minute]. ■ Read, write and convert time between analogue and digital 12- and 24-hour clocks. **Money** ■ *Write amounts of money using decimal notation.* ■ *Recognise that one hundred 1p coins equal £1 and that each coin is $\frac{1}{100}$ of £1.* ■ Estimate, compare and calculate money in pound and pence. **Solving problems involving money and measure** ■ Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days *and problems involving money and measures.*	Previous year group and: **Length/height** ■ *Use, read and write standard units of length* ■ Understand and use approximate equivalences between metric units and common imperial units such as inches. **Perimeter and Area** ■ Measure/calculate the perimeter of composite rectilinear shapes. ■ Calculate and compare the area of rectangle, use standard units square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes. **Mass** ■ *Use, read and write standard units of mass* ■ Understand and use approximate equivalences between metric units and common imperial units such as pounds. **Capacity/volume** ■ Estimate *(and calculate)* volume ((e.g., using 1 cm^3 blocks to build cuboids (including cubes)) and capacity (e.g. using water). ■ *Understand the difference between liquid volume and solid volume.* ■ Understand and use approximate equivalences between metric units and common imperial units such as pints. **Temperature** ■ *Continue to order temperatures including those below 0°C.* **Conversion** ■ Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) **Time** ■ *Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks.* ■ Solve problems involving converting between units of time. **Solving problems involving money and measures** ■ Use all four operations to solve problems involving measure using decimal notation, including scaling	Previous year group and: **Length and height and conversion** ■ Use, read and write standard units of length using decimal notation to three decimal places. ■ Convert between standard units of length using decimal notation to three decimal places. ■ Convert between miles and kilometres. **Perimeter** ■ Recognise that shapes with the same areas can have different perimeters and vice versa. **Area** ■ Calculate the area of parallelograms and triangles. ■ Recognise when it is possible to use formulae for area and volume of shapes. **Mass and conversion** ■ Use, read and write standard units of mass using decimal notation to three decimal places. ■ Convert between standard units of mass using decimal notation to three decimal places. **Capacity and volume and conversion** ■ Use, read and write standard units of volume using decimal notation to three decimal places. ■ Convert between standard units of capacity / volume using decimal notation to three decimal places. ■ 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 (e.g. mm^3 and km^3). **Temperature** ■ *Calculate differences in temperature, including those that involved a positive and negative temperature.* **Conversion** ■ Convert between standard units of length, mass, volume and time using decimal notation to three decimal places. **Time** ■ Use, read and write standard units of time using decimal notation to three decimal places. **Solving problems involving money and measures** ■ Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

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	■ Sequence two or three familiar events and describe the sequence ■ Know the names of the days of the week ■ Say the names of the days of the week in order							
Statistics	■ Sort objects and say what features they have in common		Previous year group and: **Sorting and classifying** ■ *Sort objects, numbers and shapes to a given criterion and their own.* **Present and interpret data** ■ *Present and interpret data in block diagrams using practical equipment.* **Solve problems using data** ■ *Ask and answer simple questions by counting the number of objects in each category.* ■ *Ask and answer questions by comparing categorical data.*	Previous year group and: **Present and interpret data** ■ Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. **Solve problems using data** ■ 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.	Previous year group and: **Present and interpret data** ■ Interpret and present data using bar charts, pictograms and tables. **Solve problems using data** ■ Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	Previous year group and: **Sorting and classifying** ■ *Use a variety of sorting diagrams to* compare and classify *numbers and* geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. **Present and interpret data** ■ Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts, time graphs. **Solve problems using data** ■ Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Previous year group and: **Sorting and classifying** ■ *Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes).* **Present and interpret data** ■ Complete, read and interpret information in tables and timetables. **Solve problems using data** ■ Solve comparison, sum and difference problems using information presented in all types of graph including a line graph. ***Averages*** ■ *Calculate and interpret the mode, median and range.*	Previous year group and: **Sorting and classifying** ■ *Continue to complete and interpret information in a variety of sorting diagrams (including sorting properties of numbers and shapes).* **Presenting and interpreting data** ■ Interpret and construct pie charts and line graphs and use these to solve problems. **Solve problems using data** ■ *Solve comparison, sum and difference problems using information presented in all types of graph.* **Averages** ■ Calculate and interpret the mean as an average.
Ratio and proportion								■ Solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication/division facts. ■ Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. ■ Solve problems involving similar shapes where the scale factor is known or can be found.
Algebra								■ 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.