

Progression of Skills and Knowledge in Mathematics – Based on Development Matters, Lancashire KLIPs / NC

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Mathematical Vocabulary	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> Rec – Learn new vocabulary. Rec – Use new vocabulary throughout the day. ELG - Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. 	N/A	N/A	N/A	N/A	N/A	N/A
Number and place value	<p>Knowledge I know how to: -</p> <p><u>Counting</u></p> <ul style="list-style-type: none"> Rec - Count objects, actions and sounds. Rec - Count beyond ten. ELG - Verbally count beyond 20, recognising the pattern of the counting system. <p><u>Identifying, Representing and Estimating Numbers</u></p> <ul style="list-style-type: none"> Rec - Subitise. Rec - Link the number symbol (numeral) with its cardinal number value. ELG - Subitise (recognising quantities without counting) up to 5. <p><u>Reading and Writing Numbers</u></p> <ul style="list-style-type: none"> Rec - Link the number symbol (numeral) with its cardinal number value. <p><u>Compare and Order Numbers</u></p> <ul style="list-style-type: none"> Rec – Compare numbers ELG - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. <p><u>Understanding Place Value</u></p> <ul style="list-style-type: none"> Rec - Understand the 'one more than/one less than' relationship between consecutive numbers. Rec - The composition of numbers to 10. ELG - Have a deep understanding of numbers to 10, including the composition of each number. <p>Skills - application</p> <ul style="list-style-type: none"> Explore the composition of numbers to 10 Secure understanding of the concept of 0 Encourage the children to count the things that they see beyond 10 Explore greater than and less than and equal to within a variety of contexts 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> 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. Read and write numbers to 100 in numerals. Read and write numbers from 1 to 20 in numerals and words. Identify odd and even numbers linked to counting in twos from 0 and 1. Recognise and create repeating patterns with numbers, objects and shapes. Use the language of: equal to, more than, less than (fewer), most, least. Given a number, identify one more and one less. <p>Skills - application</p> <ul style="list-style-type: none"> 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. Solve problems and practical problems involving all of the above. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. 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 $23 = 10 + 13$). Compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs. Find 1 or 10 more or less than a given number. Round numbers to at least 100 to the nearest 10. <p>Skills - application</p> <ul style="list-style-type: none"> Understand the connection between the 10-multiplication table and place value. Describe and extend simple sequences involving counting on or back in different steps. Use place value and number facts to solve problems. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> Count from 0 in multiples of 4, 8, 50 and 100. Count up and down in tenths. Read and write numbers up to 1000 in numerals and in words. Read and write numbers with one decimal place. Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Identify the value of each digit to one decimal place. Partition numbers in different ways (e.g. $146 = 100 + 40 + 6$ and $146 = 130 + 16$). Find 1, 10 or 100 more or less than a given number. Round numbers to at least 1000 to the nearest 10 or 100. Read Roman numerals from I to XII. Compare and order numbers up to 1000. Compare and order numbers with one decimal place. <p>Skills - application</p> <ul style="list-style-type: none"> Identify, represent and estimate numbers using different representations (including the number line). Find the effect of multiplying a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer. Describe and extend number sequences involving counting on or back in different steps. Solve number problems and practical problems involving these ideas. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> Count in multiples of 6, 7, 9, 25 and 1000. Count backwards through zero to include negative numbers. Count up and down in hundredths. 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. $2.3 = 2 + 0.3$ & $1 + 1.3$). 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. Round any number to the nearest 10, 100 or 1000. Round decimals (one decimal place) to the nearest whole number. Read Roman numerals to 100 and know that over time, the numeral system changed to include the concept of zero and place value. <p>Skills - application</p> <ul style="list-style-type: none"> Identify, represent and estimate numbers using different representations (including the number line). Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer. Describe and extend number sequences involving counting on or back in different steps, including sequences with multiplication and division steps. Solve number and practical problems that involve all of the above and with increasingly large positive numbers. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> 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. 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. Find 0.01, 0.1, 1, 10, 100, 100 and other powers of 10 more or less than a given number. 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. Multiply/divide whole numbers and decimals by 10, 100 and 1000. Read Roman numerals to 1000 (M); recognise years written as such. <p>Skills - application</p> <ul style="list-style-type: none"> Interpret negative numbers in context, count on and back with positive and negative whole numbers, including through zero. Identify represent and estimate numbers using the number line. Describe and extend number sequences including those with multiplication/division steps and where the step size is a decimal. Solve number and practical problems that involve all of the above. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> Count forwards or backwards in steps of integers, decimals, powers of 10. Read, write, order 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. Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more/less than a given number. Round decimals with three decimal places to the nearest whole number or one or two decimal places. Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. Order and compare numbers including integers, decimals and negative numbers. <p>Skills - application</p> <ul style="list-style-type: none"> Identify, represent and estimate numbers using the number line. Round any whole number to a required degree of accuracy. Use negative numbers in context, and calculate intervals across zero. 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. Solve number and practical problems that involve all of the above.
Number – addition / subtraction	<p>Knowledge I know how to: -</p> <p><u>Mental Calculations</u></p> <ul style="list-style-type: none"> Rec - Automatically recall number bonds for numbers 0-5 and some to 10. ELG - Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. <p><u>Solve Problems</u></p> <ul style="list-style-type: none"> ELG - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly. <p>Skills - application</p> <ul style="list-style-type: none"> Count on and back to find the answer Problem solving and applying opportunities Provide opportunities for children to make own problems develop the concept of addition by practically combining sets of objects 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. Add and subtract one-digit and two-digit numbers to 20, including zero (using concrete objects and pictorial representations). <p>Skills - application</p> <ul style="list-style-type: none"> Represent and use number bonds and related subtraction facts within 20. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. Recognise subtraction as take away and difference (how many more, how many less/fewer). Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. Recall and use number bonds for multiples of 5 totalling 60 (to support telling time to nearest 5 minutes). Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> - a two-digit number and ones. - a two-digit number and tens. - two two-digit numbers. - adding three one-digit numbers. Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context. 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. Add and subtract numbers mentally, including: <ul style="list-style-type: none"> - a three-digit number and ones. - a three-digit number and tens. - a three-digit number and hundreds. Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. <p>Skills - application</p> <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method). Select a mental strategy appropriate for the numbers involved in the calculation. Estimate the answer to a calculation and use inverse operations to check answers. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> 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). Add and subtract mentally combinations of two and three digit numbers and decimals to one decimal place. 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. <p>Skills - application</p> <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method). Select a mental strategy appropriate for the numbers involved in the calculation. Estimate; use inverse operations to check answers to a calculation. 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. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> 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). Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places. 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). Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. <p>Skills - application</p> <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method). Select a mental strategy appropriate for the numbers involved in the calculation. 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. 	<p>Knowledge I know how to: -</p> <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method). Select a mental strategy appropriate for the numbers in the calculation. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. Use knowledge of the order of operations to carry out calculations. 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.

			<p>Skills - application</p> <ul style="list-style-type: none"> 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. Solve problems with addition and subtraction including with missing numbers: <ul style="list-style-type: none"> using concrete objects and pictorial representations, including those involving numbers, quantities and measures. applying their increasing knowledge of mental and written methods. 	<ul style="list-style-type: none"> Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. 			
	EYF	Y1	Y2	Y3	Y4	Y5	Y6
Number – Multiplication and division	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> ELG - Double facts and how quantities can be distributed evenly. <p>Skills – application</p> <ul style="list-style-type: none"> Concrete - Problem solving and using and applying opportunities Provide opportunities for children to make own problems Use nursery rhymes and songs that involve counting on and counting back in for example in 1's, 2's, 5's and 10 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Recall and use doubles of all numbers to 10 and corresponding halves. <p>Skills - application</p> <ul style="list-style-type: none"> 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. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising 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). <p>Skills - application</p> <ul style="list-style-type: none"> Calculate mathematical statements for multiplication using repeated addition) and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. 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. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. 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. <p>Skills - application</p> <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method). 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. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. 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. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Recognise and use factor pairs and commutativity in mental calculations. 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. Use place value, known and derived facts to multiply and divide mentally, including: <ul style="list-style-type: none"> multiplying by 0 and 1. dividing by 1. multiplying together three numbers. 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. <p>Skills - application</p> <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method). Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. 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. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. 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. Multiply and divide numbers mentally drawing upon known facts. 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. <p>Skills – application</p> <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method). Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. Use estimation/inverse to check answers to calculations; determine, in the context of a problem, an appropriate degree of accuracy. 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. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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 common factors, common multiples and prime numbers. Use partitioning to double or halve any number. Perform mental calculations, including with mixed operations and large numbers. 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. <p>Skills – application</p> <ul style="list-style-type: none"> Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. Use knowledge of the order of operations to carry out calculations. Solve problems involving all four operations, including those with missing numbers.
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Number Fractions – decimals and percentages	N/A	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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). <p>Skills - application</p> <ul style="list-style-type: none"> Understand that a fraction can describe part of a whole. Understand that a unit fraction represents one equal part of a whole. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Understand and use the terms numerator and denominator. 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. Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. Count on and back in steps of $\frac{1}{2}$ and $\frac{1}{4}$. <p>Skills - application</p> <ul style="list-style-type: none"> 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. Solve problems involving fractions 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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). Recognise that tenths arise from dividing objects into 10 equal parts and in dividing one-digit numbers or quantities by 10. Add and subtract fractions with the same denominator within one whole (for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$). Compare and order unit fractions, and fractions with the same denominators (including on a number line). Count on and back in steps of $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$. <p>Skills – application</p> <ul style="list-style-type: none"> Understand that finding a fraction of an amount relates to division. Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Understand that a fraction is one whole number divided by another (e.g. $\frac{3}{4}$ can be interpreted as 3 ÷ 4). Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. 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). Recognise equivalent fractions Recognise and write decimal equivalents of any number of tenths or hundredths. Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{3}{4}$ Add and subtract fractions with the same denominator (using diagrams). <p>Skills – application</p> <ul style="list-style-type: none"> Recognise, find and write fractions of a discrete set of objects including those with a range of numerators and denominators. Recognise and show, using diagrams, families of common equivalent fractions 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Recognise mixed numbers and improper fractions and convert from one form to the other. Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths Read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$). 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). Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. 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 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Compare and order fractions, including fractions > 1 (including on a number line). Use common factors to simplify fractions; use common multiples to express fractions in the same denominator. 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. $0.375 = \frac{3}{8}$). 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. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$). Divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$). Find simple percentages of amounts. <p>Skills – application</p> <ul style="list-style-type: none"> Solve problems involving fractions/ decimals and percentages .

				<ul style="list-style-type: none"> Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. Recognise and show, using diagrams, equivalent fractions with small denominators Solve problems that involve all of the above. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. <p>Skills – application</p> <ul style="list-style-type: none"> Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{4}{5}$ and fractions with a denominator of a multiple of 10 or 25 Solve problems involving fractions and decimals to three places 	<ul style="list-style-type: none"> 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
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Geometry - Property of Shape	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Rec - Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Rec - Compose and decompose shapes Begin to say the names / vocabulary of simple 2D and 3D shapes and the properties to describe the shapes <p>Skills – application</p> <ul style="list-style-type: none"> Through rotation and manipulation of shapes - develop spatial reasoning skills. Provide activities so that the children can recognise a shape can have other shapes within it, just as numbers can. Children to use the terms to describe the shapes Problem solving and applying opportunities 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. <p>Skills - application</p> <ul style="list-style-type: none"> Describe the properties of 2D and 3D shapes Begin to explore - organise and sort shapes 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. <p>Skills - application</p> <ul style="list-style-type: none"> Further explore and -Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]. Solve problems involving 2D and 3D shapes 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. Recognise angles as a property of shape or a description of a turn. Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. <p>Skills - application</p> <ul style="list-style-type: none"> Solve problems involving 2D and 3D shapes Solve problems involving angles Solve problems involving horizontal and vertical lines and pairs of perpendicular and parallel lines 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. Continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines. Identify acute and obtuse angles and compare and order angles up to two right angles by size. <p>Skills - application</p> <ul style="list-style-type: none"> Complete a simple symmetric figure with respect to a specific line of symmetry. Within a problem-solving context continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines. Solve problems involving 2D (in different orientations) and 3D shapes 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in degrees (°). Identify: <ul style="list-style-type: none"> 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° <p>Skills – application</p> <ul style="list-style-type: none"> Solve problems involving regular and irregular polygons – also 3D shape and nets Solve problems involving calculating missing lengths and sides Solve problems involving angles and rotations 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. 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. <p>Skills – application</p> <ul style="list-style-type: none"> Solve problems involving regular and irregular polygons – also 3D shape and nets Solve problems involving calculating missing lengths and sides Solve problems involving angles and rotations involving finding missing angles
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Geometry – position and direction	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Rec - Draw information from a simple map. Rec - Continue, copy and create repeating patterns. <p>Skills - application</p> <ul style="list-style-type: none"> Describe position for example as behind, in front or next to Recognise, create and recreate patterns and build models 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Describe movement, including whole, half, quarter and three-quarter turns. Recognise and create repeating patterns with objects and shapes. <p>Skills - application</p> <ul style="list-style-type: none"> Describe position and direction. Simple problem-solving involving position and direction 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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). <p>Skills - application</p> <ul style="list-style-type: none"> Order/arrange combinations of mathematical objects in patterns/sequences. Solve problems involving position and direction 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Describe positions on a square grid labelled with letters and numbers. <p>Skills - application</p> <ul style="list-style-type: none"> Solve problems involving position and direction Solve problems involving simple coordinates 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. <p>Skills - application</p> <ul style="list-style-type: none"> Estimate, compare and calculate different measures, including money in pounds and pence. Solve problems involving coordinates /shape 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Describe positions on the first quadrant of a coordinate grid. Plot specified points and complete shapes. <p>Skills - application</p> <ul style="list-style-type: none"> 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. Solve problems involving coordinates 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. <p>Skills – application</p> <ul style="list-style-type: none"> Solve problems involving coordinates (all four quadrants). Solve problems involving translation and reflection
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Measurement	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Rec - Compare length, weight and capacity. <p>Skills - application</p> <ul style="list-style-type: none"> Use every day language to talk about size, weight capacity, position, distance, time and money Order 2 items by weight or capacity Use everyday language related to time – measure short periods of time in simple ways Problem solving and applying opportunities 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Measure and begin to record: <ul style="list-style-type: none"> lengths and heights, using non-standard and then manageable standard units (m/cm) mass/weight, using non-standard and then manageable standard units (kg/g) capacity and volume using non-standard and then manageable standard units (litres/ml) time (hours/minutes/seconds) within children's range of counting competence. Recognise and use language relating to dates, including days of the week, weeks, months and years. Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Compare and order lengths, mass, volume/capacity and record the results using >, < and =. 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. Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. Know the number of minutes in an hour and the number of hours in a day. <p>Skills - application</p> <ul style="list-style-type: none"> Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). Continue to estimate and measure temperature to the nearest degree (°C) using thermometers. Understand perimeter is a measure of distance around the boundary of a shape. Measure the perimeter of simple 2-D shapes. Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. 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. Continue to recognise and use the symbols for pounds (£) and pence (p) and understand that the decimal point separates pounds/pence. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Order temperatures including those below 0°C. Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Know area is a measure of surface within a given boundary. Find the area of rectilinear shapes by counting squares. Convert between different units of measure [e.g. kilometre to metre; hour to minute]. Read, write and convert time between analogue and digital 12- and 24-hour clocks. 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. <p>Skills – application</p> <ul style="list-style-type: none"> Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days and problems involving money and measures. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Use, read and write standard units of length and mass. Estimate (and calculate) volume ((e.g. using 1 cm³ blocks to build cuboids (including cubes)) and capacity (e.g. using water). Understand the difference between liquid volume and solid volume. Continue to order temperatures including those below 0°C. Convert between different units of metric measure. Measure/calculate the perimeter of composite rectilinear shapes. Calculate and compare the area of rectangle, use standard units' square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes. Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks. <p>Skills – application</p> <ul style="list-style-type: none"> Solve problems involving converting between units of time. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Use, read and write standard units of length, mass, volume and time using decimal notation to three decimal places. Convert between standard units of length, mass, volume and time using decimal notation to three decimal places. Convert between miles and kilometres. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units (e.g. mm³ and km³). <p>Skills – application</p> <ul style="list-style-type: none"> Within problem solving contexts - Recognise that shapes with the same areas can have different perimeters and vice versa. Within problem solving contexts - Recognise when it is possible to use formulae for area and volume of shapes.

		<ul style="list-style-type: none"> Recognise and know the value of different denominations of coins and notes. <p>Skills - application</p> <ul style="list-style-type: none"> Compare, describe and solve practical problems for: <ul style="list-style-type: none"> lengths and heights (for example, long / short, longer / shorter, tall / short, double / half). mass/weight (for example, heavy / light, heavier than, lighter than). capacity and volume (for example, full/empty, more than, less than, half, half full, quarter). time (for example, quicker, slower, earlier, later). Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening). 	<p>mass (kg/g); temperature (°C); capacity and volume (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</p> <ul style="list-style-type: none"> Compare and sequence intervals of time. Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change and measures (including time). 	<ul style="list-style-type: none"> 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. <p>Skills - application</p> <ul style="list-style-type: none"> Solve problems involving money and measures and simple problems involving passage of time. Compare durations of events [for example to calculate the time taken by particular events or tasks]. Estimate/read time with increasing accuracy to the nearest minute. 		<ul style="list-style-type: none"> Use all four operations to solve problems involving measure using decimal notation, including scaling. Problem solving- involving area 	<ul style="list-style-type: none"> Within problem solving contexts - Calculate differences in temperature, including those that involve a positive and negative temperature. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Statistics	N/A	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Sort objects, numbers and shapes to a given criterion independently. Present and interpret data in block diagrams using practical equipment. <p>Skills - application</p> <ul style="list-style-type: none"> Ask and answer simple questions by counting the number of objects in each category. Ask and answer questions by comparing categorical data. 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Compare and sort <i>objects, numbers and</i> common 2-D and 3-D shapes and everyday objects. Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. <p>Skills - application</p> <ul style="list-style-type: none"> Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data. Solve simple problems involving statistics 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Use sorting diagrams to compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects. Interpret and present data using bar charts, pictograms and tables. <p>Skills - application</p> <ul style="list-style-type: none"> 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. 	<p>Knowledge I know how to:</p> <p><i>Use a variety of sorting diagrams to compare and classify numbers and geometric shapes based on their properties and sizes.</i></p> <ul style="list-style-type: none"> Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts, time graphs. <p>Skills - application</p> <ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes). Complete, read and interpret information in tables and timetables. Calculate and interpret the mode, median and range. <p>Skills - application</p> <ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in <i>all types of graph including</i> a line graph Solve problems involving mean. Median and mode and range 	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Continue to complete and interpret information in a variety of sorting diagrams (including sorting properties of numbers and shapes). Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average. <p>Skills - application</p> <ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in all types of graphs.
Ratio and Proportion	N/A	N/A	N/A	N/A	N/A	N/A	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> Calculate ratio and proportion <p>Skills - application</p> <ul style="list-style-type: none"> 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.
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Algebra	N/A	N/A	N/A	N/A	N/A	N/A	<p>Knowledge I know how to:</p> <ul style="list-style-type: none"> 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. <p>Skills - application</p> <ul style="list-style-type: none"> Enumerate possibilities of combinations of two variables. Within problem solving contexts- explore all of the above