



St Joseph's RC Voluntary Academy, Todmorden

Whole School Curriculum and Progression Map for Mathematics



Curriculum area		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Number and Place Value	NC	<p>Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5. Recognise 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. Verbally count, (recognising the pattern of the counting system). Verbally count beyond 20, recognising the pattern of the counting system.</p>	<p>Identify and represent numbers using concrete objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Read and write numbers from 1 to 20 in numerals and words. Given a number, identify one more and one less Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Recognise the place value of each digit in a two-digit number (tens, ones). Compare and order numbers from 0 up to 100; use and = signs</p>	<p>Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s. Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s. Recognise the place value of each digit in a 2-digit number (10s, 1s). Compare and order numbers from 0 up to 100; use and = signs. Count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward. Use place value and number facts to solve problems.</p>	<p>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Read and write numbers up to 1,000 in numerals and in words. Identify, represent and estimate numbers using different representations. Compare and order numbers up to 1,000. Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. Solve number problems and practical problems involving these ideas.</p>	<p>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). Round any number to the nearest 10, 100 or 1,000. Count in multiples of 6, 7, 9, 25 and 1,000. Identify, represent and estimate numbers using different representations. Order and compare numbers beyond 1,000. Read roman numerals to 100 (i to c) and know that over time, the numeral system changed to include the concept of zero and place value. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.</p>	<p>Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit. Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. Solve number problems and practical problems that involve all of the above. Read roman numerals to 1,000 (m) and recognise years written in roman numerals. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. Solve number problems and practical problems that involve all of the above.</p>	<p>Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. Round any whole number to a required degree of accuracy. Use negative numbers in context and calculate intervals across zero.</p>
	Skills	<p>Counting to 10. Comparing quantities of identical and non-identical objects. Comparing groups up to 10. Counting on and counting back. Numbers to 20.</p>	<p>Sorting objects. Counting objects to 10. Counting and writing numbers to 10. Counting backwards from 10 to 0. Counting one more and one less. Counting, comparing and ordering numbers of objects. First, second and third. The number line. Counting and writing numbers to 20, 50 and 100. Tens and ones. Comparing and ordering numbers. Counting in 2's and 5's and 10's to 100. Partitioning numbers.</p>	<p>Counting and representing numbers to 100. Tens and ones. Representing numbers on a place value grid. Comparing and ordering numbers. Counting in 2's, 5's, 10's and 3's. Using number facts and equivalence. Using a 100 square.</p>	<p>Counting in 1's, 10's and 100's. Counting, ordering and comparing numbers to 1000. Number line to 1000. Finding 1, 10 and 100 more or less. Counting in 50's.</p>	<p>Round any number to the nearest 10 or 100. Counting in 1000's. Representing 4-digit numbers. Number line to 10000. Roman numerals to 100. Compare and order numbers to 10000. 100 more and 1000 less. Counting in 25's. Solve number problems using rounding. Negative numbers.</p>	<p>Read, write, order and compare numbers to 1000000. Round numbers within 1000000. Roman numerals to 10000. Number line to 1,000,000. Negative numbers. Number sequences.</p>	<p>Read, write, order, compare and round numbers up to 10000000. Negative numbers. Solve problems involving place value.</p>

Curriculum area	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition and Subtraction	NC	<p>Subitise (recognise quantities without counting) up to 5. Automatically recall number bonds up to 5 and some number bonds to 10, including double facts. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. Have a deep understanding of number to 10, including the composition of each number. Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds to 10, including double facts.</p>	<p>Represent and use number bonds and related subtraction facts within 20. Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = _ - 9$. Add and subtract one-digit and two-digit numbers to 20, including zero.</p>	<p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures. Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a 2-digit number and 10s. Solve problems with addition and subtraction: applying their increasing knowledge of mental and written methods. Add and subtract numbers using concrete objects, pictorial representations and mentally, including adding three 1-digit numbers.</p>	<p>Add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds. Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. Add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds. Estimate the answer to a calculation and use inverse operations to check answers.</p>	<p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Solve number and practical problems that involve all of the above and with increasingly large positive numbers. Round any number to the nearest 10, 100 or 1,000. Estimate and 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.</p>	<p>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p>
	Skills	<p>One more and one less. Part-whole model. Combining two groups to find a whole. Using a ten frame. Part-whole model to ten. Adding by counting on. Taking away by counting back. Sorting in to two groups. Subtracting.</p>	<p>The part-whole model. Finding, comparing and making number bonds. Finding the whole. Finding the parts. Addition facts. Addition and subtraction word and picture problems. Subtraction – how many are left? Breaking apart. Counting back. Finding the difference. Related addition and subtraction facts. Add by making 10. Subtracting tens and ones. Subtraction crossing the ten. Addition and subtraction facts to 20.</p>	<p>Related addition and subtraction facts. Using number facts to check calculations. Comparing number sentences. Number bonds to 100. Adding and subtracting 1's and 10's. 10 more and 10 less. Add and subtract 2 digits and 1-digit numbers. Add and subtract two 2-digit numbers. Add three 1-digit numbers. Solve problems using the bar model. Missing numbers. Mental addition and subtraction. Efficient subtraction.</p>	<p>Adding and subtracting 100's. Adding and subtracting a 3-digit number and 1's and 10's. Adding and subtracting a 3-digit and 2-digit number. Addition and subtraction patterns. Adding and subtracting two 3-digit numbers. Estimating answers to addition and subtraction calculations. Checking strategies. Solving problems involving addition and subtraction.</p>	<p>Adding and subtracting 1s, 10s, 100s, 1,000s. Adding two 4-digit numbers. Subtracting two 4-digit numbers. Estimating and checking strategies.# Problem solving using addition and subtraction.</p>	<p>Add and subtract numbers with more than 4-digits using mental and written methods. Use inverse to check calculations. Problem solving using addition and subtraction.</p>

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Multiplication and Division	NC	<p>Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.</p>	<p>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. Non-statutory guidance: Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.</p>	<p>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs. Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.</p>	<p>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. Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. 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. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</p>	<p>Recall multiplication and division facts for multiplication tables up to 12×12. 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. Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Recognise and use factor pairs and commutativity in mental calculations.</p>	<p>Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3). Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. 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. Multiply and divide numbers mentally drawing upon known facts. 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>	<p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Identify common factors, common multiples and prime numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations. Perform mental calculations, including with mixed operations and large numbers.</p>
	Skills	<p>Doubling. Halving and sharing. Odds and Evens.</p>	<p>Making and adding equal groups. Making simple arrays. Making doubles. Sharing equally.</p>	<p>Solving problems with multiplication and division. Making and adding equal groups. Multiplication as equal groups. Multiplication sentences. Using arrays. 2-, 5- and 10-times tables. Sharing and grouping. Odd and even numbers. Dividing by 2, 5 and 10. Bar modelling – grouping and sharing.</p>	<p>Equal grouping. Multiplying and dividing by 3. 3 times tables. Multiplying and dividing by 4. 4 times tables. Multiplying and dividing by 8. 8 times tables. Problem solving using multiplication and division. Understanding divisibility. Related multiplication and division facts, calculations and statements. Multiplying 2-digits by 1-digit. Mixed problem solving.</p>	<p>Multiplying and dividing by multiples of 10 and 100. Multiplying and dividing by 0 and 1. Multiplying and dividing by 6. 6 times tables. Multiplying and dividing by 9. 9 times tables. Multiplying and dividing by 7. 7 times tables. 11 and 12 times-tables. Problem solving using multiplication and division. Using written methods to multiply and divide a 2 and 3-digit number by a single digit.</p>	<p>Using multiples and factors. Prime numbers. Squares and cubes. Inverse operations involving squares and cubes. Multiplying and dividing whole numbers by 10, 100 and 1000. Multiply a 4-digit number by a single or two-digit number. Divide a 4-digit number by a single digit number. Calculate division with remainders. Solve problems involving division with remainders.</p>	<p>Multiply and divide a 4-digit number by a one or two digit number using written and mental methods. Division with remainders as fractions. Common factors and multiples. Squares. Cubes. Brackets. Mental calculations and reasoning from known facts.</p>

Curriculum area	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Fractions, Decimals and Percentages	<p style="text-align: center;">NC</p>	<p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity. Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</p>	<p>recognise, find and name a half as one of two equal parts of an object, shape or quantity. recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. 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 $\frac{1}{2}$. Non-statutory guidelines: Pupils should count in fractions up to 10, starting from any number.</p>	<p>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. Compare and order unit fractions, and fractions with the same denominators. Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Recognise and show, using diagrams, equivalent fractions with small denominators. Add and subtract fractions with the same denominator within one whole (for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)</p>	<p>Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. Recognise and show, using diagrams, families of common equivalent fractions. 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. Add and subtract fractions with the same denominator. Recognise and write decimal equivalents of any number of tenths or hundredths. 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. Compare numbers with the same number of decimal places up to two decimal places. Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$. Solve simple measure and money problems involving fractions and decimals to two decimal places.</p>	<p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$]ths. Compare and order fractions whose denominators are all multiples of the same number. Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Read, write, order and compare numbers with up to three decimal places. Read and write decimal numbers as fractions [for example, $= \frac{71}{100}$. Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. 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. Solve problems which require knowing percentage and decimal equivalents of 1 2 , 1 4 , 1 5 , 2 5 , 4 5 and those fractions with a denominator of a multiple of 10 or 25. Solve problems involving number up to three decimal places.</p>	<p>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions > 1. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$). Divide proper fractions by whole numbers (for example, $\frac{1}{3} \div 2 = \frac{1}{6}$). Use written division methods in cases where the answer has up to two decimal places. Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]. Use written division methods in cases where the answer has up to two decimal places. Multiply one-digit numbers with up to two decimal places by whole numbers. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.</p>	<p>Simplifying fractions. Ordering and comparing fractions on a number line.</p>
		<p style="text-align: center;">Skills</p>	<p>Finding halves and quarters. Solve word problems involving halves and quarters.</p>	<p>Introducing wholes and parts. Making equal parts. Recognise and find a half.</p>	<p>Unit and non-unit fractions. Making wholes. Tenths. Fractions as numbers.</p>	<p>Equivalent fractions. Simplifying fractions. Fractions greater than 1.</p>	<p>Equivalent fractions. Converting improper fractions to mixed numbers.</p>	<p>Simplifying fractions. Ordering and comparing fractions on a number line.</p>

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	Skills		<p>Recognise and find a quarter. Unit fractions. Understanding other fractions. $\frac{1}{2}$ and $\frac{2}{4}$. Finding $\frac{3}{4}$. Counting in halves and quarters.</p>	<p>Fractions of a set of objects. Problem solving involving fractions. Equivalent fractions. Comparing and ordering fractions. Adding and subtracting fractions with the same denominator. Solving problems involving fractions of measures.</p>	<p>Adding and subtracting fractions. Problem solving involving adding and subtracting fractions. Calculating fractions of a quantity. Recognising tenths and hundredths and dividing by 10 and 100. Writing, ordering and comparing numbers to two decimal places. Rounding decimals. Finding decimal equivalents to fractions. Problem solving involving decimals.</p>	<p>Converting mixed numbers to improper fractions. Comparing and ordering fractions. Fractions for division. Add and subtract fractions with the same denominator. Multiplying fractions. Calculate fractions of amounts. Using fractions as operators. Read, write, order and compare decimal numbers to 3 decimal places. Rounding decimals. Understanding percentages. Represent decimals as percentages and fractions. Add and subtract decimals. Multiply and divide decimals by 10, 100 and 1000.</p>	<p>Adding and subtracting fractions. Problem solving involving addition and subtraction of fractions. Multiply a fraction by a fraction and a whole number. Divide a fraction by a whole number. Calculate fractions of amounts. Solve problems involving fractions of amounts. Multiply and divide by 10, 100 and 1000. Show fractions as decimals. Show decimals as fractions. Multiply and divide decimals. Find percentages of amounts. Convert between fractions, decimals and percentages.</p>	
Measurement	NC	<p>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> <p>Compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]. Measure and begin to record the following: lengths, heights and weights. Compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than] Compare, describe and solve practical problems for: capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]. Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]. Recognise and use language relating to dates, including days of the week, weeks, months and years. Measure and begin to record the following: time (hours, minutes, seconds). Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later]. Money - Recognise and know the value of different</p>	<p>Compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]. Measure and begin to record the following: lengths, heights and weights. Compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than] Compare, describe and solve practical problems for: capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]. Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]. Recognise and use language relating to dates, including days of the week, weeks, months and years. Measure and begin to record the following: time (hours, minutes, seconds). Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later]. Money - Recognise and know the value of different</p>	<p>Recognise and use signs for pounds (£) and pence (p); combine amounts to make a particular value. Recognise and know the value of different denominations of coins and notes. Find different combinations of coins that equal the same amounts of money. Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/ capacity and record the results using >, < and =. Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures. Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p>	<p>Add and subtract amounts of money to give change, using both £ and p in practical contexts. Measure, compare, add and subtract: lengths (m/ cm/mm); mass (kg/g); volume/capacity (l/ml). Measure the perimeter of simple 2-d shapes. 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 and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight. Compare durations of events (for example to calculate the time taken by particular events or tasks). Measure, compare, add and subtract: lengths (m/ cm/mm); mass (kg/g); volume/capacity (l/ml).</p>	<p>Convert between different units of measure [for example, kilometre to metre; hour to minute]. Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares. Estimate, compare and calculate different measures, including money in pounds and pence. Solve simple measure and money problems involving fractions and decimals to two decimal places. Convert between different units of measure [for example, kilometre to metre; hour to minute].</p>	<p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes. Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Solve problems involving converting between units of time. Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water].</p>	<p>Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. Convert between miles and kilometres. Recognise that shapes with the same areas can have different perimeters and vice versa. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³]. Recognise when it is possible to use formulae for area and volume of shapes.</p>

Curriculum area	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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			denominations of coins and notes.	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. Compare and sequence intervals of time.				
	Skills	Length, height, distance and weight. Volume and capacity. Time – my day.	Comparing lengths and heights and weights. Non-standard units of measure. Using a ruler. Measuring height and weight. Compare and measure capacity. Solve problems involving length, height, weight and capacity. Using before and after. Using a calendar. Telling the time to the half hour and hour. Writing, comparing and solving word problems involving time. Recognising and counting with coins.	Counting coins and notes. Showing equal amounts of money. Comparing amounts of money. Calculating the total amount of money. Calculating change. Solving two step word problems involving money. Measuring in cm and m. Compare and order length. Solve problems involving length. Telling and writing the time to a quarter, half and whole hour. Telling the time to 5 minutes. Minutes in an hour. Comparing durations. Start and end time. Hours in a day. Comparing and measuring mass in grams and kilograms. Comparing and measuring volume in millilitres and litres. Measuring and reading temperature using a thermometer.	Converting pounds and pence. Adding and subtracting amounts of money. Problem solving with money. Measuring and comparing lengths. Equivalent lengths in cm, mm and m. Adding and subtracting lengths. Measuring perimeter. Problem solving involving lengths. Months and years. Estimating the time. Telling the time to 5 minutes. Telling the time to the minute. Finding and comparing duration. Telling the time in seconds. Finding start and end times. Measure, compare, add and subtract mass and capacity. Solve problems involving mass and capacity.	Perimeter of rectilinear shapes. Calculating and comparing area by counting squares. Pounds, tenths and hundredths. Ordering money. Rounding money. Problem solving using money. Converting units of time. Problem solving time.	Calculate, estimate and measure the perimeter and area of shapes. Learn about metric units of measure, mass and capacity. Learn about imperial units of measure, mass and capacity. Convert units of time. Understand timetables. Read, write, order, compare and estimate volume and capacity.	Convert between metric and imperial units of measure. Calculate area and perimeter. Calculate the areas of parallelograms and triangles. Solve problems involving area and perimeter. Calculate the volume of a cuboid.
Geometry – Properties of shape	NC	Development Matters statement Select, rotate and manipulate shapes in order to develop spatial reasoning. Development Matters statement Continue, copy and create repeating patterns.	Recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles]; 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. Recognise and create repeating patterns with objects and with shapes.	Compare and sort common 2D and 3D shapes and everyday objects. Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line. Order and arrange combinations of mathematical objects in patterns and sequences. Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.	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. Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them. Identify horizontal and vertical lines and pairs of	Identify acute and obtuse angles and compare and order angles up to two right angles by size. Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. Identify lines of symmetry in 2D shapes presented in different orientations. Complete a simple symmetric figure with respect to a specific line of symmetry.	Identify: –angles at a point and one whole turn (total 360°) –angles at a point on a straight line and 1 2 a turn (total 180°) –other multiples of 90°. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in degrees (°). Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	Draw 2-D shapes using given dimensions and angles. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.

Curriculum area	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
				perpendicular and parallel lines. Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.		Identify 3D shapes, including cubes and other cuboids, from 2D representations.	Recognise, describe and build simple 3-D shapes, including making nets. Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.	
	Skills	2D shapes. 3D shapes. Spatial awareness. Making simple patterns. Exploring more complex patterns. Composing and decomposing shapes.	Name 2D and 3D shapes. Make patterns with shapes.	Recognise 2D and 3D shapes. Draw 2D shapes. Counting the sides and vertices on 2D shapes. Finding lines of symmetry. Sorting 2D shapes. Making patterns with 2D shapes. Counting edges, faces and vertices on 3D shapes. Sorting 3d shapes. Making patterns with 3D shapes.	Turns and angles. Right angles I shapes. Comparing angles. Drawing shapes and lines accurately. Types of lines. Recognise and describe 2D and 3D shapes. Construct 3D shapes.	Identify, order and compare angles. Identify regular and irregular shapes. Classify triangles. Classify and compare quadrilaterals. Deduce facts about shapes. Identify lines of symmetry inside shapes. Complete a symmetric shape.	Measure angles in degrees using a protractor. Draw lines and angles accurately. Calculate angles on a straight line. Calculate angles around a point. Calculate lengths and angles in a shape. Recognise and draw parallel and perpendicular lines. Reason about regular and irregular polygons and 3D shapes.	Draw with a protractor. Measure angles accurately. Explore angles within triangles. Explore angles within polygons. Explore vertically opposed angles. Explore angles within a circle and parts of a circle. Explore nets.
Geometry – position and direction	NC		Describe position, direction and movement, including whole, half, quarter and three-quarter turns. Non-statutory guidance: Pupils use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside.	Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three quarter turns (clockwise and anti-clockwise). Order and arrange combinations of mathematical objects in patterns and sequences.		Describe positions on a 2D 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.	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	Describe positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. Describe positions on the full coordinate grid (all four quadrants). Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
	Skills		Describing turns. Describing positions.	Describing movements and turns. Making patterns with shapes.		Describe, position, move and reason about movement on a 2D grid.	Use reflection and translation with coordinates.	Plot coordinates in the first quadrant. Plot coordinates in all quadrants. Plot translations and reflections. Reason about shapes with coordinates. Problem solving involving properties of shapes and missing angles.
Statistics	NC			Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.	Interpret and present data using bar charts, pictograms and tables. 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.	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Complete, read and interpret information in tables, including timetables. Solve comparison, sum and difference problems using information presented in a line graph.	Calculate and interpret the mean as an average. Interpret and construct pie charts and line graphs and use these to solve problems. Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and

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			Ask and answer questions about totalling and comparing categorical data.		Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.		the use of percentages for comparison.
	Skills		Making tally charts. Creating pictograms. Interpreting pictograms. Block diagrams. Solving problems.	Pictograms, bar charts and tables.	Charts, tables and line graphs. Solving problems involving charts, tables and line graphs.	Interpret tables, two-way tables and line graphs. Draw line graphs.	Calculate the mean. Investigate pie charts. Read and interpret pie charts. Explore fractions and percentages in pie charts. Interpret and construct line graphs.
Ratio and Proportion	NC						Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Solve problems involving similar shapes where the scale factor is known or can be found. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
	Skills						Calculate ratio. Draw scale drawings. Learn about scale factors. Look at similar shapes. Solve problems involving ratio and proportion.
Algebra	NC						Generate and describe linear number sequences. Use simple formulae. Express missing number problems algebraically. Find pairs of numbers that satisfy an equation with two unknowns. Enumerate possibilities of combinations of two variables.
	Skills						Finding and using a rule. Using formulae. Solving equations.