HORNCASTLE PRIMARY SCHOOL
Subject Progression – Mathematics

<table>
<tr><td>Purpose & Aims</td><td colspan="3">The National Curriculum for mathematics aims to ensure that all pupils:
become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately;
reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language;
can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on. The national curriculum for mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof.</td></tr>
<tr><td rowspan="2">Curriculum Drivers</td><td>Community</td><td>Creative Thinking</td><td>Confident and Resilient Learners</td></tr>
<tr><td>Children know that maths can contribute to their success in school and the workplace and recognise the relevance of maths in the outside world.</td><td>We believe critical and creative thinking is something we cannot ignore if we want our students to be prepared for a world that is constantly changing. Not only does it equip them for the future, it promotes higher levels of student engagement, and makes mathematics more relevant and meaningful.
Creative thinking goes beyond memorisation of facts to sense-making mathematics. Pupils are encouraged to connect the dots between concepts, solve problems, think creatively, and apply knowledge in new ways
Our pupils are encouraged to:
Ask questions
Make decisions
Work in groups (demonstrating there's no one right way to approach a problem)</td><td>Children aspire to be successful in maths.
They know that good thinkers are resilient, they don't give up easily, and are motivated to work hard and keep going when faced with challenges.
They learn that the solutions may not be immediately obvious, and they may need to persevere.
Children show confidence and believe they can learn about a new maths concept and apply the knowledge and skills they already have to progress in their learning.</td></tr>
<tr><td>EYFS</td><td colspan="3">We acknowledge that early maths forms the foundations for success, confidence, and fluency within all areas of mathematics throughout children's development and education. The Foundation Stage maths curriculum is based on the Development Matters and Early Years Foundation Stage Profile 2020/21. A planned sequence of learning is delivered daily and builds on knowledge, skills, and application. In line with Key Stages 1 and 2, the skills progression is taken from the White Rose Maths scheme to enable children to have the prior learning they need to successfully access a Year 1 curriculum. Children are given opportunities to embed their learning and explore concepts through carefully planned continuous provision. In the Early Years, maths is practical, physical, and relevant.</td></tr>
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	EYFS	YEAR 1		YEAR 3	YEAR 4	YEAR 5	YEAR 6
Focus Areas	Number Counting Comparing number Subitise Automatic recall Explore patterns	Number Counting Place Value Addition and Subtraction (concrete and pictorials) Multiplication and Division (concrete and pictorial) Fractions (Halves and quarters of shape and number) Measurement (non-standard units) Use and Apply(in practical contexts a range of measures, including time) Use of Measuring Tools Language of Time (Hour and half past) Geometry Position and Direction Properties of 2-D and 3-D Shape	Number Counting Place Value Addition and Subtraction (pictorial, mental methods and written) Multiplication and Division (tables) Multiplication and Division (pictorial and mental methods) Fractions (Up to ¾) Measurement (Standard units) Use and apply in practical contexts a range of measures Time – Analogue and Digital Money Geometry Position and Direction Properties of 2-D and 3-D shape Statistics Handle Data (in practical contexts) Record, Interpret, Collate, Organise & Compare Information	Number Counting Place Value Addition and Subtraction (mental methods) Addition and Subtraction (formal written methods) Use the inverse to check addition and subtraction calculations. Multiplication and Division (tables) Multiplication and Division (mental methods) Multiplication and Division (formal written methods) Fractions Measurement Use and apply measures to increasingly complex contexts Scaling (connected to multiplication) Money Time – Analogue and Digital Clock Use Roman Numerals with reference to time Geometry Describe position, direction and movement in increasingly precise ways Use the properties of shapes and angles in increasingly complex and practical contexts Know types of lines (horizontal/vertical/parallel/perpendicular) Statistics Gather, Organise and Interrogate data	Number Counting Place Value Addition and Subtraction (mental methods) Addition and Subtraction (formal written methods) Use the inverse to check addition and subtraction calculations. Multiplication and Division (tables) Multiplication and Division (mental methods) Multiplication and Division (formal written methods) Fractions and Decimals Measurement Be able to convert between different units of measure Use and apply measures to increasingly complex contexts Money - Decimal Notation Perimeter Geometry Describe position, direction and movement in increasingly precise ways – co ordinates and axes Use the properties of shapes and angles in increasingly complex and practical contexts Area of rectilinear shapes Statistics Gather, Organise and Interrogate data	Number Counting Place Value Addition and Subtraction (mental methods) Addition and Subtraction (formal written methods) Use the inverse to check addition and subtraction calculations. Multiplication and Division (tables) Multiplication and Division (mental methods) Multiplication and Division (formal written methods) Fractions Roman Numerals Use and apply measures to increasingly complex contexts – positive and negative integers Fractions, Decimals and Percentages Measurement Use and Apply measures to increasingly complex contexts Problem solving in all four operations involving money and time Perimeter and Area Recognise and estimate volume and capacity. Geometry Describe position, direction and movement in increasingly precise ways – reflection and translation Use the properties of shapes and angles in increasingly complex and practical contexts Statistics Gather, Organise and Interrogate data Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables, including timetables.	Number Place Value Addition and Subtraction (mental methods) Addition and Subtraction (formal written methods) Use the inverse to check addition and subtraction calculations. Multiplication and Division (tables) Multiplication and Division (mental methods) Multiplication and Division (formal written methods) Fractions Fractions, Decimals and Percentages Measurement Area Use formulae to find the area of shape Calculate the area of parallelograms and triangles Calculate volume of cubes and cuboids Geometry Describe position, direction and movement in increasingly precise ways – use all four quadrants Use the properties of shapes and angles in increasingly complex and practical contexts Illustrate and name parts of circles, including radius, diameter and circumference. Statistics Gather, Organise and Interrogate data Ratio and Proportion Recognise Proportionality Consolidate understanding of ratio Link percentages when calculating angles of pie chart. Algebra Understand the practical value of algebra

NUMBER AND PLACE VALUE

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
COUNTING	Count objects, actions and sounds. Subitise (recognise quantities without counting) up to 5 Link the number symbol with it's cardinal number value Explore the composition of numbers to 10 Verbally count beyond 20, recognising the pattern of the counting system	To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. To identify one more and one less than a given number. Count numbers to 100 in numerals; count in multiples of twos, fives and tens.	To count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.	To count from 0 in multiples of 4, 8, 50 and 100. Find 10 or 100 more or less than a given number	To count in multiples of 6, 7, 9, 25 and 1000. To count backwards through zero to include negative numbers. To find 1000 more or less than a given number.	To count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. To interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.	
READING AND WRITING NUMBERS		To read and write numbers from 1 to 20 in numerals and words. To count, read and write numbers to 100 in numerals.	To read and write numbers to at least 100 in numerals and in words.	To read and write numbers up to 1000 in numerals and in words.		To read and write numbers to at least 1 000 000 and determine the value of each digit.	To say, read and write, numbers up to 10 000 000 accurately and determine the value of each digit.
COMPARE AND ORDER NUMBERS	Compare quantities up to 10 in different contexts. Understand the 'one more than/one less than' relationship between numbers		To compare and order numbers from 0 up to 100; use <, > and = signs.	To compare and order numbers up to 1000.	To order and compare numbers beyond 1000.	To order and compare numbers to at least 1 000 000 and determine the value of each digit.	To order and compare numbers up to 10 000 000 accurately and determine the value of each digit.
UNDERSTANDING PLACE VALUE	Have an understanding of the numbers to 10, including the composition of each number.		To recognise the place value of each digit in a two-digit number (tens, ones) .	To recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	To recognise the place value of each digit in a four-digit number.		To use negative numbers in context, and calculate intervals across zero.
ROUNDING					To round any number to the nearest 10, 100 or 1000.	To round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.	To round any whole number to a required degree of accuracy.

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
ROMAN NUMBERALS				To read Roman numerals to 12 and recognise on a clock face	To 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.	To read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	
SOLVE PROBLEMS		.	To use place value and number facts to solve problems	To solve number problems and practical problems involving these ideas.	To solve number and practical problems that involve all of the above and with increasingly large positive numbers.	To solve number problems and practical problems that involve all of the above.	To solve number and practical problems that involve all of the above.

ADDITION AND SUBTRACTION

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
MENTAL CALCULATIONS		To add and subtract one-digit and two-digit numbers to 20, including zero.	To show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. To add and subtract numbers using an efficient strategy, explaining their method verbally using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, add three one-digit numbers.	To add and subtract numbers mentally, including: two-digit numbers, where the answers could exceed 100, a three-digit number and ones, a three-digit number and tens and a three-digit number and hundreds.	To continue to practise both mental methods and columnar addition and subtraction with increasingly large numbers to aid fluency.	To add and subtract numbers mentally with increasingly large numbers.	To perform mental calculations, including with mixed operations and large numbers.
NUMBER BONDS	Recall number bonds for number 0 -5 (including subtraction facts) and some number bonds to 10, (including double facts).	To memorise, represent and use number bonds and related subtraction facts within 20.	To recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships. To recall and use addition and subtraction facts to 20 to become fluent in deriving associative facts (e.g. 10 – 7 = 3, 100 – 70 = 30) and derive and use related facts up to 100.				
WRITTEN CALCULATIONS		To read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.	To begin to record addition and subtraction in columns to support place value and prepare for formal written methods with larger numbers.	To use the understanding of place value and partitioning to enable adding and subtracting numbers with up to three digits, using formal written methods of columnar addition and subtraction to become fluent.	To add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate.	To add and subtract whole numbers with more than four digits, including using formal written methods of columnar addition and subtraction fluently.	
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS			To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	To estimate the answer to a calculation and use inverse operations to check answers.	To estimate and use inverse operations to check answers to a calculation.	To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
ORDER OF OPERATIONS							To use their knowledge of the order of operations to carry out calculations involving the four operations.
SOLVE PROBLEMS		To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems. Problems include the terms: put together, add, altogether, total, take away, distance between, difference between, more than and less than..	To solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods.				

MULTIPLICATION AND DIVISION

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
MENTAL CALCULATIONS			To begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations. To show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	To 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 efficient mental methods, and progressing to formal written methods of short multiplication and division.	To recognise and use factor pairs and commutativity in mental calculations. To 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.	To multiply and divide numbers mentally drawing upon known facts.	To perform mental calculations, including with mixed operations and large numbers.
MULTIPLICATION AND DIVISION FACTS		To make connections between arrays, number patterns, and counting in twos, fives and tens.	.To count from 0 in multiples of 4, 8, 50 and 100. To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers and use them to solve simple problems, demonstrating an understanding of commutativity as necessary. .	To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables To connect the 2, 4 and 8 multiplication tables through doubling.	To recall multiplication and division facts for multiplication tables up to 12 × 12	To apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.	To continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.
WRITTEN CALCULATIONS			To calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.	To 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 efficient mental methods,	To multiply two-digit and three-digit numbers by a one-digit number using the formal written layout To become fluent in the formal written method of short division	To multiply numbers up to four digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers fluently. To divide numbers up to four digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context fluently. To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	To multiply multi-digit numbers up to four digits by a two-digit whole number using the formal written method of long multiplication. To divide numbers up to four digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. To divide numbers up to four digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Perform mental calculations, including with mixed operations and large numbers.
PROPERTIES OF NUMBER						To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. To know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. To establish whether a number up to 100 is prime and recall prime numbers up to 19. To recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).	To identify common factors, common multiples and prime numbers.

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
ORDER OF OPERATIONS							To use their knowledge of the order of operations to carry out calculations involving the four operations.
SOLVE PROBLEMS		To 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.	To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	To solve simple problems in contexts, deciding which of the four operations to use and why. These include missing number problems, involving multiplication and division, including measuring and positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	To solve two-step 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.	To solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. To solve problems, including in missing number problems, involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign (to indicate equivalence). To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To solve problems involving addition, subtraction, multiplication and division. To use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

FRACTIONS DECIMALS AND PERCENTAGES

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
COUNTING			To count in fractions up to 10, starting from any number and using the $\frac{1}{2}$ and $\frac{2}{4}$ equivalence on the number line.	To count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by ten.	To count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	To extend counting from year 4, using decimals and fractions including bridging zero, for example on a number line. To continue to practise counting forwards and backwards in simple fractions.	
RECOGNISING, FINDING AND NAMING FRACTIONS		To recognise, find and name a half as one of two equal parts of an object, shape or quantity To recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	To recognise, find, name, identify and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of a length, number, shape, set of objects or quantity and know that all parts must be equal parts of the whole. To connect unit fractions to equal sharing and grouping, to numbers when they can be calculated, and to measures, finding fractions of lengths, quantities, sets of objects or shapes. They meet $\frac{3}{4}$ as the first example of a non-unit fraction.	To recognise, understand and use fractions as numbers: unit fractions and non-unit fractions with small denominators as numbers on the number line (going beyond 0 -1 and relating this to measure), and deduce relations between them, such as size and equivalence. To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.	To make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities. To know that decimals and fractions are different ways of expressing numbers and proportions. To understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths.	To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.	
COMPARING AND ORDERING				To compare and order unit fractions, and fractions with the same denominators.		To compare and order fractions whose denominators are all multiples of the same number.	To compare and order fractions, including fractions > 1.
ADDING AND SUBRACTING FRACTIONS				To add and subtract fractions with the same denominator within one whole	To add and subtract fractions with the same denominator	To add and subtract fractions with the same denominator and denominators that are multiples of the same number. To recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number.	To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
MULTIPLYING AND DIVIDING FRACTIONS						. To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	To multiply simple pairs of proper fractions, writing the answer in its simplest form To divide proper fractions by whole numbers.

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
EQUIVALENCE			To write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence $\frac{2}{4}$ and $\frac{1}{2}$.	To recognise and show, using diagrams, equivalent fractions with small denominators.	To use factors and multiples to recognise equivalent fractions and simplify where appropriate. To recognise and show, using diagrams, families of common equivalent fractions. To recognise and write decimal equivalents of any number of tenths or hundredths. To recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$.	To read and write decimal numbers as fractions. To recognise and use thousandths and relate them to tenths, hundredths, decimal equivalents and measures. To 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.	To recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. To use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
COMPARING AND ORDERING DECIMALS					To learn decimal notation and the language associated with it, including in the context of measurements. To represent numbers with one or two decimal places in several ways, such as on number lines. To compare numbers, amounts and quantities with the same number of decimal places up to two decimal places.	To read, say, write, order and compare numbers with up to three decimal places.	To identify the value of each digit in numbers given to three decimal places.
ROUNDING DECIMALS					To round decimals with one decimal place to the nearest whole number.	To round decimals with two decimal places to the nearest whole number and to one decimal place.	
ADDING AND SUBTRACTING DECIMALS						To mentally add and subtract tenths, and one-digit whole numbers and tenths. To practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1.	

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
MULTIPLYING AND DIVIDING DECIMALS					To 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.		To multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. To associate a fraction with division and calculate decimal fraction equivalents for a simple fraction. To multiply one-digit numbers with up to two decimal places by whole numbers To use written division methods in cases where the answer has up to two decimal places.
SOLVE PROBLEMS				To solve problems that involve all of the above.	To 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. To solve simple measure and money problems involving fractions and decimals to two decimal places.	To solve problems involving numbers up to three decimal places. To make connections between percentages, fractions and decimals and relate this to finding 'fractions of' to solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.	To solve problems which require answers to be rounded to specified degrees of accuracy and checking the reasonableness of their answers.

ALGEBRA

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
ALGREBRA							To introduce the language of algebra as a means for solving a variety of problems. To use simple formulae. To generate and describe linear number sequences. To express missing number problems algebraically. To find pairs of numbers that satisfy an equation with two unknowns. To enumerate possibilities of combinations of two variables.

MEASUREMENT

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
DESCRIBE, MEASURE, COMPARE AND SOLVE	Compare length, weight and capacity	To compare, describe and solve practical problems for: lengths and heights, mass/weight, capacity and volume, time. To measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time. To move from using and comparing different types of quantities and measures using non-standard units, including discrete (for example, counting) and continuous (for example, liquid) measurement, to using manageable common standard units using measuring tools, such as a ruler, weighing scales and containers.	To 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. To compare and order lengths, mass, volume/capacity and record the results using >, < and =.	To measure using the appropriate tools and units, compare (including simple scaling by integers) add and subtract using mixed units: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	To estimate, compare and calculate different measures, including money in pounds and pence.	To use all four operations to solve problems involving measure using decimal notation, including scaling and conversions.	To use a number line, to add and subtract positive and negative integers for measures such as temperature. To solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.
CONVERTING UNITS OF MEASURE					To use multiplication to convert from larger to smaller units. To convert between different units of measure and build on their understanding of place value and decimal notation to record metric measures, including money.	To use the knowledge of place value and multiplication and division to convert between standard units. To convert between different units of metric measure. To understand and use approximate equivalences between metric units and common imperial units.	To 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. To convert between miles and kilometres. To know approximate conversions to tell if an answer is sensible.
TELLING THE TIME		To sequence events in chronological order using language. To recognise and use language relating to dates, including days of the week, weeks, months and years. To tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	To read, tell and write the time to five minutes, including quarter past/to the hour/half hour and draw the hands on a clock face to show these times. To know the number of minutes in an hour and the number of hours in a day. To compare and sequence intervals of time.	To tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours. To use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. To know the number of seconds in a minute and the number of days in each month, year and leap year. To compare durations of events.	To read, write and convert time between analogue and digital 12- and 24-hour clocks. To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	To solve problems involving converting between units of time.	

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6

MONEY		To recognise and know the value of different denominations of coins and notes.	To recognise and use symbols for pounds (£) and pence (p) accurately, recording pounds and pence separately; combine amounts to make a particular value. To find and use different combinations of coins that equal the same amounts of money. To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	To add and subtract manageable amounts of money, including mixed units, to give change, using both £ and p in practical contexts.			
PERIMETER, AREA AND VOLUME				To measure the perimeter of simple 2D shapes.	To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. To find the area of rectilinear shapes by counting squares.	To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres To calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2), use the area of rectangles to find unknown lengths and estimate the area of irregular shapes. To calculate the area from scale drawings using given measurements. To estimate volume.	To recognise that shapes with the same areas can have different perimeters and vice versa. To recognise when it is possible to use formulae for area and volume of shapes. To calculate the area of parallelograms and triangles. To calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units (for example, mm^3 and km^3).

PROPERTIES OF SHAPE

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
RECOGNISE 2D AND 3D SHAPES AND THEIR PROPERTIES	Select, rotate and manipulate shapes in order to develop spatial reasoning skills.	To recognise, handle and name common 2D and 3D shapes in different orientations/sizes and relate everyday objects fluently. To recognise that rectangles, triangles, cuboids and pyramids are not always similar to each other.	To handle, identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line. To handle, identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. To identify 2D shapes on the surface of 3D shapes.	To recognise 3D shapes in different orientations and describe them.	To identify lines of symmetry in 2D shapes presented in different orientations.	To identify 3D shapes, including cubes and other cuboids, from 2D representations.	To illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
COMPARE AND CLASSIFY SHAPES	Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can		To identify, compare and sort common 2D and 3D shapes and everyday objects on the basis of their properties		To compare and classify geometric shapes, including different quadrilaterals and triangles, based on their properties and sizes.	To distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	To compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons using known measurements.
DRAWING 2D SHAPES AND CONSTRUCTING 3D SHAPES			Pupils draw lines and shapes using a straight edge.	To identify horizontal and vertical lines and pairs of perpendicular and parallel lines. To draw 2D shapes and make 3D shapes using modelling materials.	To draw with increasing accuracy and develop mathematical reasoning to analyse shapes and their properties and confidently describe the relationships between them. To complete a simple symmetric figure with respect to a specific line of symmetry.	To become accurate in drawing lines with a ruler to the nearest millimetre, and measuring with a protractor. To use conventional markings for parallel lines and right angles.	To draw 2D shapes and nets accurately using given dimensions and angles using measuring tools, conventional markings and labels for lines and angles. To recognise, describe and build simple 3D shapes, including making nets.
ANGLES				To recognise angles as a property of shape or a description of a turn. To identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn To identify whether angles are greater than or less than a right angle.	To identify acute and obtuse angles and compare and order angles up to two right angles by size in preparation for using a protractor.	To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles. To draw given angles, and measure them in degrees. To identify: angles at a point and one whole turn (total 360°), angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) and other multiples of 90°. To use the properties of rectangles to deduce related facts and find missing lengths and angles	To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

POSITION AND DIRECTION

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
POSITION, DIRECTION AND MOVEMENT		To describe position, direction and movement, including whole, half, quarter and three-quarter turns.	To 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 anticlockwise).		To describe positions on a 2D grid as coordinates in the first quadrant. To plot specified points and draw sides to complete a given polygon. To describe movements between positions as translations of a given unit to the left/right and up/down.	To 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.	To describe positions on the full coordinate grid (all four quadrants). To draw and label simple shapes – rectangles (including squares), parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes. To translate simple shapes where coordinates may be expressed algebraically on the coordinate plane and reflect them in the axes.
PATTERNS	Continue, copy and create repeating patterns		To order and arrange combinations of mathematical objects and shapes, , in patterns and sequences.				

STATISTICS

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
RECORD, PRESENT AND INTERPRET DATA			To interpret and construct simple pictograms, tally charts, block diagrams and simple tables To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. To ask and answer questions about totalling and comparing categorical data.	To interpret and present data using bar charts, pictograms and tables	To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	To connect coordinates and scales to the interpretation of time graphs. To complete, read and interpret information in tables, including timetables.	To interpret and construct pie charts and line graphs (relating to two variables) and use these to solve problems.
SOLVE PROBLEMS				To solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables.	To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	To solve comparison, sum and difference problems using information presented in a line graph.	To calculate and interpret the mean as an average.

RATIO AND PROPORTIONS

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
RECORD, PRESENT AND INTERPRET DATA							To solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. To solve problems involving the calculation of percentages and the use of percentages for comparison including linking percentages or 360° to calculating angles of pie chart. To solve problems involving similar shapes where the scale factor is known or can be found. To solve problems involving unequal quantities, sharing and grouping using knowledge of fractions and multiples.