Greenside Primary School
Maths Progression Framework

Curriculum Intent

Community	Resilience	Creativity	Aspiration	Diversity
In maths, we work within our school community to share ideas, support learning and respectfully challenge the mathematical thinking of others.	No matter how challenging we find maths, we never give up. We use resources, peers and ask adults to support our learning until we get to the answer.	We are always creative in our methods and try different ways of getting to the answer. We use outdoor learning, active maths and varied resources to creatively support our learning in different ways.	At Greenside, we always aspire to achieve to the best of our ability. We are aware of mathematics in the wider world and aspire to develop skills we can use effectively in life outside of and beyond Greenside.	We support and encourage everyone, no matter where they are on their own mathematical journey as everyone can succeed in maths, no matter what.

At Greenside, pupils should be successful and proficient mathematicians, who are able to fluently recall, solve problems and reason mathematically. We have developed a 'mastery' approach to mathematics to provide our pupils with the best opportunity to achieve a secure and deep understanding of each mathematical concept, building on previously acquired knowledge, skills and vocabulary. We use a combination of concrete, pictorial and abstract examples to present the learning in a variety of ways and ensure that our pupils are fluent with the concept being taught. Lessons regularly include reasoning, so that pupils know they need to be able to explain why their answer is correct and how they worked it out, and problem solving, which requires the children to develop resilience in tackling problems and applying their learning in different scenarios. We are committed to ensuring that pupils can recognise the importance of mathematics in the wider world and that they are able to use their mathematical knowledge and skills confidently in a range of different contexts.

To support our pupils in achieving their full potential, we aim to ensure all our pupils develop the following characteristics of a mathematician:

- A broad range of skills in using and applying mathematics.
- Fluent knowledge and recall of number facts and the number system.
- The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual.
- The ability to think independently and to persevere when faced with challenges, showing a confidence of success.
- The ability to embrace the value of learning from mistakes and false starts.
- The ability to reason, generalise and make sense of solutions.
- Fluency in performing written and mental calculations and mathematical techniques.
- A wide range of mathematical vocabulary.
- A commitment to and passion for the subject.

Implementation

The Mathematics curriculum at Greenside Primary School has been carefully considered to ensure coverage of all the national curriculum objectives through daily lessons which are planned following the small steps set out in the White Rose Maths Scheme of Learning. The White Rose Maths Hub schemes for each year group are designed to support a mastery approach to maths teaching and learning and use a combination of concrete, pictorial and abstract examples to present the learning in a variety of ways and ensure that our pupils are fluent with the concept being taught. Lessons frequently include reasoning, so that pupils know they need to be able to explain why their answer is correct and how they worked it out, and problem solving, which requires the children to apply their learning in different scenarios to show mastery.

We provide pupils with regular opportunities to revisit their learning through our 'Mini Maths' sessions, which ensure children develop confidence with mental strategies, are fluent with recalling their Key Instant Recall Facts (KIRFs) and embed previously taught calculation methods. Alongside this, daily 'Flashback 4' activities enable pupils to re-visit and recap learning completed in previous lessons, units and year groups improve retention and further embed understanding in their long-term memory.

The Maths Curriculum and Provision for Pupils with SEND

At Greenside Primary School, we believe all pupils should have the opportunity to learn to the best of their capabilities through a broad and balanced, inclusive curriculum. For our pupils with a Special Educational Need, we scaffold their learning to provide them with the strongest opportunities for success in our school. We believe firmly in the SEND Code of Practice's statement that 'every teacher is a teacher of SEN' and that our pupils with SEN should be provided with the same opportunities as their peers in our school. This means that, with their learning being personalised to meet their areas of need, they feel included in the classroom and make progress year on year. Reasonable adjustments are made in all lessons to enable this.

The Maths curriculum can be adapted to meet the needs of children with SEND in the following ways:

Universal Support across school for all subjects
Word Banks for pre-learning and to support during topics and themes
Cutting and Sticking Key Words on to work as prompts
Print out portions of work and learning objectives to minimise writing
Coloured Paper or recycled paper to minimise visual stress & background colours of the whiteboard is considered for pupils with dyslexia.
Breaking down lessons into short, manageable chunks
Mixed ability groups – using peers as support and role models
Adult assistance nearby/ Using another student as a reader/support
Now/Next or Visual Timetables – class and individual/ My Turn/Your Turn
Knowledge map/Mind Maps
Printing work larger and in smaller chunks
Cloze passages/activities to check learning
Draw answers or explanations / Actions – telling the story of a lesson
Fidget toys available/ Cushions for seats – wobble and wedge cushions - access to standing desks
Pupils with hearing impairments/visual impairments are positioned close to the whiteboard to be able to access.
Word lists of key vocabulary for pre-learning and as prompts
A safe/quiet space in or Cloud Room
Keeping instructions short and one at a time

Universal Support specific to subject
Use of concrete/manipulative resources to support in lessons e.g. Base 10, number lines, counters, Numicon.
Relate mathematical concepts to everyday applications and other areas of the curriculum so pupils see how mathematics is relevant and how it can be applied – e.g. prepare questions where pupils can use their knowledge of the school or local area
Using maths games- providing opportunities to talk about maths and reinforce learning in a fun way; this can also provide opportunities to develop problem solving skills
Using songs and action rhymes to support pupils with number
Independent exploration of resources linked to numeracy and maths – developing a questioning approach towards a situation and developing problem solving skills
Practical everyday situations -such as knowing where to put their coat and understanding positional language e.g. put the toys in the box when tidying up
Developing an understanding of routines and the passage of time through the use of timetables
Use of pictorial representations.
Steps to success available to support with calculations or problem solving
Modelled examples of math methods.

When planning for Maths, class teachers should adapt their lessons where necessary using ideas taken from this list, however, it is important to remember this list is not exhaustive and other adaptations may be needed for children with specific needs.

We also have 'Continuum of Provision Maps' for each area of SEND need (e.g. Autism, Cognitive, SEMH, Visual impairment etc).

Breadth of Study

Key Disciplinary Concepts	EYFS	KS1	KS2
Place Value: This concept involves understanding the number system and how they are used in a wide variety of mathematical ways.	❖ Explore numbers and place value up to at least 20. ❖ Explore amounts in practical contexts.	❖ Count and calculate in a range of practical contexts. ❖ Explore numbers and place value up to at least 100.	❖ Count and calculate in increasingly complex contexts, including those that cannot be experienced first-hand. ❖ Explore numbers and place value to read and understand the value of all numbers.
Addition & Subtraction: This concept involves understanding both the concepts and processes of addition and subtraction.	❖ Calculate using numbers within 10.	❖ Add and subtract using mental and formal written methods in practical contexts.	❖ Add and subtract using efficient mental and formal written methods.
Multiplication & Division: This concept involves understanding both the concepts and processes of multiplication and division.		❖ Multiply and divide using mental and formal written methods in practical contexts.	❖ Multiply and divide using efficient mental and formal written methods.
Fractions, Decimals & Percentages: This concept involves understanding the concept of part and whole and ways of calculating using it.		❖ Recognise parts of shapes or objects which are split in half, quarters or thirds.	❖ Calculate using fractions and the four operations. ❖ Identify equivalences between fractions, decimals and percentages.
Ratio & Proportion: This concept involves making comparisons between quantities.			❖ Describe how one value is related to another.
Algebra: This concept involves recognising mathematical properties and relationships using symbolic representations.			❖ Understand the practical value of using algebra.
Measurement: This concept involves becoming familiar with a range of measures, devices used for measuring and calculations.	❖ Compare every-day objects for a range of measures.	❖ Use and apply in practical contexts a range of measures, including time.	❖ Use and apply measures to increasingly complex contexts.
Geometry: This concept involves recognising the names and properties of geometric shapes and angles.	❖ Talk about the properties of shape using mathematical and informal language. ❖ Develop positional and directional language. ❖ Create, continue and copy repeating patterns.	❖ Explore the properties of shapes. ❖ Use language to describe position, direction and movement.	❖ Use the properties of shapes and angles in increasingly complex and practical contexts, including in construction and engineering contexts. ❖ Describe position, direction and movement in increasingly precise ways.
Statistics: This concept involves interpreting, manipulating and presenting data in various ways.		❖ Handle data in practical contexts.	❖ Gather, organise and interrogate data.

Long Term Plans

Maths follows the same LTP for Cycle A & Cycle B across school using White Rose Maths scheme and resources.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	**EYFS** Getting to Know You Match, Sort & Compare Talk About Measure & Patterns	**EYFS** It's me 1,2,3! Circles & Triangles 1, 2, 3, 4, 5 Shapes with 4 Sides	**EYFS** Alive in 5! Mass & Capacity Growing 6,7,8	**EYFS** Length, Height & Time Building 9 & 10 Explore 3D Shapes	**EYFS** To 20 and Beyond How Many Now? Manipulate, Compose & Decompose	**EYFS** Sharing & Grouping Visualise, Build & Map
Year 1	**Year 1** Place Value within 10 Addition & Subtraction within 10	**Year 1** Addition & Subtraction within 10 Shape	**Year 1** Place value within 20 Addition & Subtraction within 20	**Year 1** Place value within 50 Length and height Weight & volume	**Year 1** Multiplication & division Fractions Position & direction	**Year 1** Place value within 100 Money Time
Year 2	**Year 2** Place Value Addition & Subtraction	**Year 2** Addition & Subtraction Shape	**Year 2** Money Multiplication & Division	**Year 2** Length & Height Mass, capacity and temperature	**Year 2** Fractions Time	**Year 2** Statistics Position & direction
Year 3	**Year 3** Place Value Addition & Subtraction	**Year 3** Addition & Subtraction Multiplication & Division A	**Year 3** Multiplication & Division B Length & Perimeter	**Year 3** Fractions A Mass & Capacity	**Year 3** Fractions B Money Time	**Year 3** Shape Statistics
Year 4	**Year 4** Place Value Addition & Subtraction	**Year 4** Area Multiplication & Division A	**Year 4** Multiplication & Division B Length & Perimeter	**Year 4** Fractions Decimals A	**Year 4** Decimals B Money Time	**Year 4** Shape Statistics Position & Direction
Year 5	**Year 5** Place Value Addition & Subtraction	**Year 5** Multiplication & Division Fractions A	**Year 5** Multiplication & Division Fractions B	**Year 5** Decimals & Percentages Perimeter & Area Statistics	**Year 5** Shape Position & Direction Decimals	**Year 5** Negative Numbers Converting Units Volume
Year 6	**Year 6** Place Value Four Operations	**Year 6** Fractions A Fractions B Converting Units	**Year 6** Ratio Algebra Decimals	**Year 6** Fractions, Decimals & Percentages Area, Perimeter & Volume Statistics	**Year 6** Shape Position & Direction	**Year 6** Consolidation Projects

Progression Framework

	EYFS (Milestone 1)	Year 1 (Milestone 2)	Year 2 (Milestone 3)	Year 3 (Milestone 4)	Year 4 (Milestone 5)	Year 5 (Milestone 6)	Year 6 (Milestone 7)
Place Value	• count objects, actions and sounds. • count up to and beyond ten. • recognise that an amount of objects is a number in any order (subsitise). • link the number symbol (numeral) with its cardinal number value. • recognise quantities up to 5 without counting. • compare numbers and 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 numbers to 10, including the composition of each number.	• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens • given a number, identify one more and one less • identify and represent numbers using 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.	• count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • 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 • compare and order numbers from 0 up to 100; use and = signs • read and write numbers to at least 100 in numerals and in words • use place value and number facts to solve problems.	• count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. • recognise the place value of each digit in a three-digit number (hundreds, tens, ones). • compare and order numbers up to 1000. • identify, represent and estimate numbers using different representations. • read and write numbers up to 1000 in numerals and in words. • solve number problems and practical problems involving these ideas.	• count in multiples of 6, 7, 9, 25 and 1000. • find 1000 more or less than a given number. • count backwards through zero to include negative numbers. • recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). • order and compare numbers beyond 1000. • identify, represent and estimate numbers using different representations. • round any number to the nearest 10, 100 or 1000. • solve number and practical problems that involve all the above and with increasingly large positive numbers. • 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.	• 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. • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. • solve number problems and practical problems that involve all the above. • read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	• 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. • solve number and practical problems that involve all the above.
Addition & Subtraction	• automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts). • automatically recall number bonds for numbers 0-10. • automatically recall double facts to 10. • explore and represent patterns within numbers up to 10, including evens and odds. • explore how quantities can be distributed evenly.	• read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. • represent and use number bonds and related subtraction facts within 20 • add and subtract one-digit and two-digit numbers to 20, including zero • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems	• 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 • recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 • add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - a two-digit number and ones - a two-digit number and tens - two two-digit numbers - adding three one-digit numbers • show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	• add and subtract numbers mentally, including: - 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. • estimate the answer to a calculation and use inverse operations to check answers • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	• add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. • 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.	• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). • add and subtract numbers mentally with increasingly large numbers. • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	• perform mental calculations, including with mixed operations and large numbers. • use their knowledge of the order of operations to carry out calculations involving the four operations. • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • solve problems involving addition and subtraction. • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Multiplication & Division	• understand that doubling means twice as many. • double real-life objects. • show doubles on a tens frame. • recognise when objects are not shared equally. • share concrete objects into 2 or 3 equal groups.	• 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	• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. • 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, 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.	• 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. • recognise and use factor pairs and commutativity in mental calculations. • multiply two-digit and three-digit numbers by a one-digit number using formal written layout. • 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.	• 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. • 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. • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. • recognise and use square numbers and cube numbers, and the notation for squared and cubed. • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. • 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.	• 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 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. • 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. • solve problems involving multiplication and division. • perform mental calculations, including with mixed operations and large numbers. • use their knowledge of the order of operations to carry out calculations involving the four operations.

Fractions, Decimals & Percentages	• recognise real-life objects can be split into parts (e.g. chocolate bar, pizza etc.) • Identify pictorial objects which are parts and which are whole.	• 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 1/3, 1 /4, 2/4 and 3/4 of a length, shape, set of objects or quantity • write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.	• count (up and down) in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. • recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators • recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. • recognise and show, using diagrams, equivalent fractions with small denominators. • add and subtract fractions with the same denominator within one whole. • compare and order unit fractions, and fractions with the same denominators. • solve problems that involve all the above.	• recognise and show, using diagrams, families of common equivalent fractions. • count (up and down) in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. • 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. • recognise and write decimal equivalents to 1/4, 1/2 and 3/4. • 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. • round decimals with one decimal place to the nearest whole number. • compare numbers with the same number of decimal places up to two decimal places. • solve simple measure and money problems involving fractions and decimals to two decimal places.	• compare and order fractions whose denominators are all multiples of the same number. • 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. • 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 and write decimal numbers as fractions [for example, 0.71 = 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. • read, write, order and compare numbers with up to three decimal places. • solve problems involving number up to three decimal places. • 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.	• 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 simple pairs of proper fractions, writing the answer in its simplest form. • divide proper fractions by whole numbers. • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]. • 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. • multiply one-digit numbers with up to two decimal places by whole numbers. • use written division methods in cases where the answer has up to two decimal places. • solve problems which require answers to be rounded to specified degrees of accuracy. • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Ratio & Proportion							• 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 the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison, • 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.
Algebra							• use simple formulae. • generate and describe linear number sequences. • express missing number problems algebraically. • find pairs of numbers that satisfy an equation with two unknowns. • enumerate possibilities of combinations of two variables.

Measurement	• compare length, weight and capacity of everyday objects. • describe a sequence of events, real or fictional, using words, such as 'first', 'then…'.	• compare, describe and solve practical problems for: - 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] • measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds) • recognise and know the value of different denominations of coins and notes • 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 • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	• 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 =. • recognise and use symbols for pounds (£) and pence (p); combine amounts to make a value. • 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. • compare and sequence intervals of time 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.	• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). • measure the perimeter of simple 2-D shapes. • add and subtract amounts of money to give change, using both £ and p in practical contexts. • 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, a.m./p.m., morning, afternoon, noon and midnight. • know the number of seconds in a minute and the number of days in each month, year and leap year. • compare durations of events [for example to calculate the time taken by particular events or tasks].	• 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. • read, write and convert time between analogue and digital 12- and 24-hour clocks. • solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. • 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. • estimate volume [for example, using 1m3 blocks to build cuboids (including cubes)] and capacity [for example, using water]. • solve problems involving converting between units of time. • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	• solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. • 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. • convert between miles and kilometres. • recognise that shapes with the same areas can have different perimeters and vice versa. • recognise when it is possible to use formulae for area and volume of shapes. • 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].
Geometry	• talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'. • select, rotate and manipulate shapes to develop spatial reasoning skills. • compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can. • understand position through language. • draw information from a simple map and describe familiar routes. • 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]. • describe position, direction and movement, including whole, half, quarter and three-quarter turns.	• 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. • identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]. • compare and sort common 2-D and 3-D shapes and everyday objects. • order and arrange combinations of mathematical objects in patterns and sequences • 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).	• 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.	• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. • identify acute and obtuse angles and compare and order angles up to two right angles by size. • identify lines of symmetry in 2-D shapes presented in different orientations. • complete a simple symmetric figure with respect to a specific line of symmetry. • describe positions on a 2-D grid as coordinates in the first quadrant. • describe movements between positions as translations of a given unit to the left/right and up/down. • plot specified points and draw sides to complete a given polygon.	• identify 3-D shapes, including cubes and other cuboids, 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: - angles at a point and one whole turn. - angles at a point on a straight line and 1/2 a turn. - other multiples of 90 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. • 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.	• draw 2-D shapes using given dimensions and angles. • recognise, describe and build simple 3-D shapes, including making nets. • compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • 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.
Statistics			• 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. • ask and answer questions about totalling and comparing categorical data.	• 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.	• solve comparison, sum and difference problems using information presented in a line graph. • complete, read and interpret information in tables, including timetables.	• interpret and construct pie charts and line graphs and use these to solve problems. • calculate and interpret the mean as an average.

Vocabulary Map

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	**EYFS** **Getting to Know You** First Next Then Morning Afternoon Lunchtime **Match, Sort & Compare** Match Same Different Sort Set Rule More Fewer Pair **Talk About Measure & Patterns** Big, bigger, biggest Tall, taller, tallest Long, longer, longest Little Small, smaller, smallest Short, shorter, shortest Size Length Order Compare Heavy, heavier, heaviest Light, lighter, lightest Weight Balance More, less Capacity Container Thin, thinner, thinnest Pattern Next	**EYFS** **It's me 1,2,3!** One, two, three Altogether Count, counted, counting Subitise How many 1 more than 1 less than Make Part, whole **Circles & Triangles** Circle, Triangle Shape Sides Straight, corners, round Same, different 2D shape Small, large Almost Position In, on, under, over, beside, between, in front of, around, through, behind **1, 2, 3, 4, 5** One, two, three, four, five Altogether Count Different ways Subitise One more, one less Before, after Part, whole Smaller, larger **Shapes with 4 Sides** Shape, 2D shape Rectangle, square Equal Sides, straight, corners Same, different Length Make, build, fold Flat Day, night First, then, after, before Morning, afternoon Today, tomorrow Now, next, later	**EYFS** **Alive in 5!** One, two, three, four, five Zero Amount Numeral Match Different ways Count Subitise Altogether How many 1 more, 1 less Order Part, whole Subitise **Mass & Capacity** Heavy, heavier Light, lighter Balance Float/sink Weight, mass Scales More, fewer Capacity Measure Fill Less Tall, thin, narrow, wide, shallow Container Greatest, smallest Most, least **Growing 6,7,8** Six, seven, eight Altogether 1 more, 1 less Part, whole Many Pair Odd, even Match Double How many Subitise	**EYFS** **Length, Height & Time** *Vocab to be mapped once new scheme unit is released. **Building 9 & 10** *Vocab to be mapped once new scheme unit is released. **Explore 3D Shapes** *Vocab to be mapped once new scheme unit is released.	**EYFS** **To 20 and Beyond** *Vocab to be mapped once new scheme unit is released. **How Many Now?** *Vocab to be mapped once new scheme unit is released. **Manipulate, Compose & Decompose** *Vocab to be mapped once new scheme unit is released.	**EYFS** **Sharing & Grouping** *Vocab to be mapped once new scheme unit is released. **Visualise, Build & Map** *Vocab to be mapped once new scheme unit is released.
Year 1	**Year 1** **Place Value within 10** Zero, one, two, three to ten None Count on/up/to/down/from Before/less Many, fewer, least, smallest, greatest, Equal to, same as Odd, even Units, ones, tens Compare Value **Addition & Subtraction within 10** Number bonds, number line Add, more, plus, make, sum, total, altogether Inverse Equals Difference between, How many more make…? How much more is…? Subtract, take away, minus How many fewer is…? How much less is…?	**Year 1** **Shape** Group, sort Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square Shape Flat, curved, straight, round Hollow, solid Corner Face, side, edge	**Year 1** **Place value within 20** Zero, one, two, three to twenty None Count on/up/to/down/from Before/less Many, fewer, least, smallest, greatest, Equal to, same as Odd, even Units, ones, tens Compare Value **Addition & Subtraction within 20** Number bonds, number line Add, more, plus, make, sum, total, altogether Inverse Equals Difference between, How many more make…? How much more is…? Subtract, take away, minus How many fewer is…? How much less is…?	**Year 1** **Place value within 50** Zero, one, two, three to fifty, None Count on/up/to/down/from Before/less Many, fewer, least, smallest, greatest, Equal to, same as Odd, even Units, ones, tens Compare Value **Length and height** Length Height Longer Taller Shorter Centimetres **Weight & volume** Full, half, empty Holds Container Weigh, balances Heavy, heavier, heaviest Light, lighter, lightest	**Year 1** **Multiplication & division** Odd, even How many times Lots of, groups of Multiply, multiple of, repeated addition, Array, row Double, halve Share, share equally, Equal groups of Divide, divided by, left over **Fractions** Whole, Equal, Parts Four equal parts One half, two halves A quarter, Two quarters **Position & direction** Over, under, underneath, above, below, top, bottom On, in, outside, inside Around, in front, behind Front, back, before, after Beside, next to, opposite, apart Left, right, up, down, forwards, backwards Along, through Slide, roll, turn, whole turn, half turn	**Year 1** **Place value within 100** Zero, one, two, three to a hundred None Count on/up/to/down/from Before/less Many, fewer, least, smallest, greatest, Equal to, same as Odd, even Units, ones, tens Compare Value **Money** Coin Value of each coin Pound note Highest/lowest value Compare Total Greater than, equal to, less than **Time** Days of the week, Seasons Day, week ,month, year, weekend Morning, afternoon, evening Hour, o'clock, half past

Year 2	**Year 2** **Place Value** Numbers to 100 Hundreds Partition Recombine Hundred more, less Equal to, same as Odd, even Units, ones, tens Compare Value **Addition & Subtraction** Number bonds, number line Add, more, plus, make, sum, total, altogether Inverse Equals Difference between, How many more make…? How much more is…? Subtract, take away, minus How many fewer is…? How much less is…?	**Year 2** **Shape** 2D shape, 3D shape Circle, triangle, pentagon, hexagon, octagon Cuboid, pyramid, sphere, cube, cone Vertex, vertices Bigger, smaller, larger Symmetrical, line of symmetry, vertical line of symmetry Mirror line, reflection, Face, Curved surface Edge Pattern, repeating pattern	**Year 2** **Money** Coin Money Value Worth Greater than, less than, most, least Total Difference Cost **Multiplication & Division** Odd, even How many times Lots of, groups of Multiply, multiple of Repeated addition, Array, row Double, halve Share, share equally Equal groups of Divide, divided by, left over	**Year 2** **Length & Height** Cm, Km, M Metre stick Taller, longer, shorter **Mass, capacity and temperature** Kg, g Ml, l Temperature degrees Holds Container Weigh, balances Heavy, heavier, heaviest	**Year 2** **Fractions** Three quarters One third, a third Equivalence Equivalent to **Time** Quarter past Quarter to Minute hand, hour hand Quarter, half, three-quarters	**Year 2** **Statistics** Tally chart Tallies Data Table Block diagram Pictogram Symbol Category Key **Position & direction** Rotation Clockwise Anti clockwise Straight line Ninety-degree turn Right angle
Year 3	**Year 3** **Place Value** Numbers to 1000 Hundreds, Tens, Ones Partition Recombine Number-line, intervals Estimate Hundred/Ten/One more, less Equal to, same as Odd, even Compare Greater than, less than Ascending, descending Value Roman numerals I to XIII **Addition & Subtraction** Number bonds Column addition, Column subtraction, Value Inverse Equals Partition Exchange Difference between, How many more make…? How much more is…? Subtract, take away, minus How many fewer is…? How much less is…? 2-digit, 3-digit Altogether, total	**Year 3** **Multiplication & Division A** Product Multiples of… Scale up Multiply, multiple of Repeated addition, Array, row Share, share equally Equal groups of Divide, divided by, left over	**Year 3** **Multiplication & Division B** Multiples of… Multiplication Division Commutative Relationship Array Compare Partition Product Exchange Remainder Combinations **Length & Perimeter** Metres Centimetres Millimetres Length Compare Unit of measure Equivalent Conversion Perimeter 2D shape	**Year 3** **Fractions A** Numerator Denominator Unit fraction, non-unit fraction Compare and order Tenths Equal parts Whole Part Number line Intervals Equivalent fractions **Mass & Capacity** Scales Equal parts Number line Grams (up to 1000g) Kilograms (half a kg, quarter of a kg) Mass Heaver and lighter Units of measure Capacity Volume Millilitres Litres Addition Subtraction	**Year 3** **Fractions B** Numerator Denominator Unit fractions Non-unit fractions Reduction (taking away) Partitioning Finding the difference Equal parts Whole **Money** Pounds Pence Coins, notes, money Total Altogether Amount Change **Time** Roman Numerals (I-XII) Clock face o'clock 5 past, 10 past, 20 past, 25 past, 25 to, 20 to, 10 to, 5 to 5-minute intervals Twelve-hour clock am, pm seconds, minutes, hours, Months of the Year Leap year, non-leap year Calendar Duration Seconds, minutes, hours Clockwise, anti-clockwise	**Year 3** **Shape** Horizontal, Vertical Perpendicular lines Parallel lines Quarter, half, three-quarter and whole turns Angle North, east, south, west Right angle Acute Obtuse Centimetres, millimetres Symmetry Vertex, vertices Edges Faces Surface Quadrilateral 3D shapes: square-based pyramid, cuboid, cube, cylinder, prism **Statistics** Chart Bar chart Pictogram Tally chart Collect, represent, present Two-way table Data
Year 4	**Year 4** **Place Value** Thousands/hundreds/tens/ones Partition Number-line/intervals/mid-point Numbers to 10,000 Digit Exchange More than Less than/greater than Difference Estimate Ascending/descending Greatest/smallest Roman numerals (1-12, L=50 & C=100) Multiple of 10/100/1000 Round/rounded **Addition & Subtraction** Add/subtract	**Year 4** **Area** Area Greatest/smallest 2D space/surface Rectangle/square Rectilinear **Multiplication & Division A** Multiplication/division Multiples of 3/6/9/7/11/12 Equal groups Commutative Arrays Partition Zero	**Year 4** **Multiplication & Division B** Factor Factor pairs Arrays Placeholder Multiplication/division Exchange Partition Remainder **Length & Perimeter** Metres/centimetres/kilometres Measure Unit of measure Equivalent Conversion Perimeter Length Rectilinear shape	**Year 4** **Fractions** Whole number/fraction Equal parts Denominator Numerator Mixed number fraction Improper fraction Number line/interval Remainder Equivalent fractions Partition Part-whole model **Decimals A** Fraction Decimal Decimal point Tens/Ones/Tenths/Hundredths Equivalent	**Year 4** **Decimals B** Decimal Whole Tenths Hundredths Number bond Partition Column Greater/smaller Rounding Half/quarter/three-quarters Fraction Equivalent **Money** Pounds Pence Hundredths Decimal	**Year 4** **Shape** Full turn/half turn/quarter turn Clockwise/anticlockwise Angle Right angle/obtuse/acute North/east/south/west Equilateral/scalene/isosceles triangle Equal length Polygon (regular/irregular) Quadrilateral (quad) Parallel Properties Trapezium/rhombus/parallelogram Symmetry/symmetrical/lines of symmetry Vertex/vertices **Statistics** Data Bar chart

	Ones/tens/hundreds/thousands Increase/decrease Exchange Column Total/altogether Efficient method Mentally/mental/written Difference Part/whole Inverse		Vertical/horizontal Polygon/regular polygon/irregular polygon Symmetrical Hexagon Equilateral triangle	Whole Divide by 10/multiply by 10	Ascending/descending All amounts using to 2d.p. Units Estimate Approximately Partition Exchange Total Difference **Time** Days/weeks/months/years Names of days/months Leap year Second/minute/hour Equal to AM/PM Analogue/digital All units of time (12hr & 24hr) Noon/midnight	Pictogram Table Symbol Sum/difference Altogether Line graph Continuous data Discrete data Axes Plot Graph **Position & Direction** Coordinates/pair of coordinates Horizontal/vertical x-axis/y-axis Values Position Plot 2D shapes (rectangle, square, triangles, quadrilaterals) Polygon Vertex Translate Up/down Left/right
Year 5	**Year 5** **Place Value** Roman numerals (including D = 500 & M = 1000) Numbers to 1,000,000 Million Power of 10 More/less Ten, hundred, thousand, ten thousand, hundred thousand Partition Ascending/descending Compare/order Round (to the nearest 10,100 and 1000, 10000 and 100000) **Addition & Subtraction** Mental strategies Calculations Powers of 10 Column addition Column subtraction Formal written methods Exchange Placeholder Approximate Rounding Multiples Inverse operations Difference Commutative Operation Bar model Comparison	**Year 5** **Multiplication & Division** Multiple Integer Divisible/divisibility Common multiples Systematically Factor Factor pairs Common factors Prime Composite Square numbers Cube numbers Mutlipes of 10/100/100 10/100/100 times the size of One tenth the size of One hundredth the size of One thousandth the size of **Fractions A** Equivalent fractions Numerator Denominator Unit fraction Non-unit fraction Common factors Improper fraction Mixed numbers Whole/part Compare Order Conversion Greatest/smallest Represent Partition Recombine Difference	**Year 5** **Multiplication & Division** Formal written method Short multiplication Exchange Rounding Estimate Column Place holder 2-digit, 3-digit, 4-digit Mental strategies Efficient method Short division Remainder Operation **Fractions B** Unit fraction Integer Numerator Denominator Non-unit fraction Simplest form Partition Mixed number Improper fraction Quantity Whole/part Operator	**Year 5** **Decimals & Percentages** Tenth/hundredth/thousandth Decimal Decimal point 2-decimal places 3-decimal places Partition Equivalent Unit/non-unit fraction Exchange Place holder Compare Greatest/least value Order Working systematically Rounding Nearest whole number Integer Percentage 100 equal parts **Perimeter & Area** Perimeter Measure Length Width Dimensions Rectilinear shape Compound shape Polygons 2-dimensional Regular Irregular Square centimetre Estimate **Statistics** Line graph Horizontal axis Vertical axis Conversion graphs Interpret Variable Data Comparing Two-way tables Timetable	**Year 5** **Shape** Angle Acute Obtuse Right-angle Clockwise Anticlockwise Degrees Reflex Straight line Estimate Protractor Centimetres Millimetres Angles around a point Angles on a straight line Perimeter Compound shape Regular polygon Irregular polygon Hexagon, Pentagon, Octagon Faces Edges Vertices/vertex Properties Triangular-based pyramid Hexagonal prism Sphere, Cylinder, Cone Cube, Cuboid **Position & Direction** Coordinate grid, Quadrant Coordinate Horizontal line, Vertical line Translations Vertex Left/right Line of symmetry Reflection, Mirror line Parallel **Decimals** Decimal Ones/tenths/hundredths Whole 3-decimal places Number bonds Exchange Integer Numerical value Term Rule Inverse relationship	**Year 5** **Negative Numbers** Negative number Temperature Degrees Celsius Zero **Converting Units** Grams/kilograms Metres/kilometres Millimetres Millilitres Conversion Units of measure Imperial Metric Inches/pounds/pints Approximately equal to Timetables 12-hour/24-hour clock **Volume** Volume Cubic centimetres Cubic metres Capacity Estimate Approximately

Year 6	Year 6 **Place Value** Names of numbers to 10,000,000 Placeholder Partition Represent Integer 10/100/1000 times the size Power of 10 One-tenth/one-hundredth/one-thousandth the size Number line Greater than Less than Ascending Descending Negative numbers Temperature Degrees **Four Operations** Integers Operations Addition/subtraction Formal written methods Mental strategies Exchange Factors Common factors Rules of divisibility Multiples Common multiples Prime numbers Composite numbers Square numbers Cube numbers Commutative Short/long multiplication Short/long division Product Remainder Order of operations Estimation Rounding	Year 6 **Fractions A & B** Equivalent fractions Equivalence Numerator Denominator Common factors Simplest form Improper fraction Mixed number fraction Integer Intervals Common denominator Unit/non-unit fractions Greater than/ less than 1 Multiple Common multiple Wholes/fractional parts Difference Operations Convert Add/subtract/multiply/divide. Method Efficient Amount/whole amount **Converting Units** Metric Length Mass Capacity Volume Imperial Millimetres/centimetres/metres/ kilometres Millilitres/litres Grams/kilograms/tonnes Conversion Inverse Operations Miles Approximately equal Inch Foot Pound Stone Gallon	Year 6 **Ratio** Relationship Inverse Additively Multiplicatively Sequence Times the size Value Equivalent Ratio symbol Simplifying Scale Enlarge Enlargements Scale factor Inverse operations Corresponding sides Corresponding angles **Algebra** Algebra Function machines Operations Inverses Input Output Function Rule Algebraic expressions Unknown number Represent Substituting Formula Value Solution **Decimals** Decimal 3-decimal places Tenths/hundredths/thousandths Integer Add/subtract. Exchange Placeholder Multiplying/dividing Integer	Year 6 **Fractions, Decimals & Percentages** Fraction Decimal Percentage Common Equivalent Common denominator Exchanges Convert Compare Amount **Area, Perimeter & Volume** Area Perimeter Rectilinear Calculate Estimate Formula Triangle Perpendicular height Base Parallelogram Length/width/height Volume Cubic centimetres Cuboid Prism **Statistics** Draw Read Interpret Line graph Data Dual bar chart Pie chart Percentage Average Mean	Year 6 **Shape** Angles Measure Classify Acute Obtuse Right angle Reflex Protractor Scale Straight line Around a point Vertically opposite angles Intersect Interior Inverse operations Equilateral Scalene Isosceles Quadrilateral Rhombus Square Rectangle Parallelogram Kite Properties Polygon Radius Diameter Circumference Net Edges Faces Vertices 2d-shape 3d-shape **Position & Direction** Quadrant Coordinates (x and y) Vertices Negative numbers Plotting Translation Reflection	Year 6 **Consolidation Projects**