MATHS CURRICULUM MAP

Our Sheen Mount curriculum maps have been developed and updated throughout 2019-2020. However, in this coming academic year, 2020-2021, there are some areas of the curriculum that will be modified, because of Covid-19, in line with the government guidance issued most recently.
1) Teach an ambitious and broad curriculum in all subjects from the start of the autumn term, but make use of existing flexibilities to create time to cover the most important missed content.
2) Aim to return to the school's normal curriculum in all subjects by summer term 2021. Substantial modification to the curriculum may be needed at the start of the year, so teaching time should be prioritised to address significant gaps in pupils' knowledge with the aim of returning to the school's normal curriculum content by no later than summer term 2021.

Mathematics is an interconnected subject. At Sheen Mount, all children, whatever their starting points, are given opportunities to make rich connections across mathematical ideas to develop fluency, reasoning and competence in solving increasingly sophisticated problems.

A deeper understanding of key mathematical principles and concepts is instilled in our children in order to underpin the reasoning and application of those concepts. This understanding is encouraged through the use of collaborative learning to build confidence and inspire alternative methods of problem solving.

This area of the curriculum provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. All children at Sheen Mount are inspired to be excited about maths and seek out opportunities to use their skills in everyday life.

Purpose of study

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims

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.

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Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. 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.

Primary National Curriculum, Key Stages 1 and 2 Framework Document

September 2013

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EYFS – Mathematics (Specific Area of Learning)	
Expected	**Numbers (ELG 11):** Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.
Exceeding	*Children estimate a number of objects and check quantities by counting up to 20. They solve practical problems combining groups of 2, 5 or 10, or sharing into equal groups.*
Expected	**Shape, Space and Measures (ELG 12):** Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.
Exceeding	*Children estimate, measure, weigh and compare objects and talk about properties, position and time.*

Year 1	Autumn Term		Spring Term		Summer Term	
	Place Value and Number: Counting, writing and ordering numbers to 10. Developing an understanding of how numbers combine in different ways using 'part part whole'. Identifying, counting and representing numbers using objects and pictorial representations to 10. Beginning to count in 2s. Identifying 1 more and 1 less than a number within 20. **Addition and subtraction:** Representing and using number facts within and for 10 using bar models and 'part part whole' Beginning to use number facts to find missing numbers for numbers within 10. (e.g. 2 + ? = 5) Interpreting and using mathematical symbols + = Solving addition sentences involving 1 digit numbers and some 2 digit to 1 digit numbers using a range of practical and mental methods. **Geometry Shape:** Recognising and naming common 2D and 3D shapes discretely and as everyday objects. Beginning to describe properties of 2D shapes. Describing position, direction and movement, including whole, half, quarter and three quarter turns.	**Place Value and Number:** Counting, writing and ordering numbers to 20. Identifying, counting and representing numbers using objects and pictorial representations to 20. Writing numbers to 10 in words. Counting in 2s, 5s and 10s **Addition and subtraction:** Continuing to develop an understanding of how to make numbers up to 20 in different ways using 'part, part, whole'. Continuing to use number facts to find missing numbers for numbers within 20. (e.g. 10 - ? = 5) Interpreting and using mathematical symbols - = Solving subtraction sentences involving 1 digit numbers and some 2 digit to 1 digit numbers using a range of practical and mental methods. **Measures Length and Height:** Beginning to use standard units of measurement to measure length and height. Comparing, describing and solving practical problems involving length and height, using related language for length. E.g. long/short, longer/shorter.	**Place Value and Number:** Counting to 50 forwards and backwards from any given number. Reading, writing and ordering numbers to 50. Identifying and representing numbers using objects and pictorial representations. Consolidating 1 more and 1 less than a number, moving on to 2 more, 2 less etc using practical resources and a 100 square. Counting in 2s, 5s and 10s. Partitioning 2 digit numbers to 50 into Tens and Ones using dienes and ones cubes. **Addition and subtraction:** Consolidating number facts within 20. Securing addition and subtraction using a range of practical and mental methods. Adding and subtracting 2 digit and 1 digit numbers (e.g. 12 + 4 25 – 3). Starting to add 10s to a number using Tens and Ones knowledge and a 100 square. **Measures Time:** Recognising and using language relating to dates, including days of the week, months and years. Sequencing events in chronological order using language. (e.g. first, next, before, after etc)	**Measure Time:** Reading the given time to the hour and half past the hour, interpreting hands on a clock face. Telling the time to the hour and half past the hour, drawing hands on a clock face to show these times. Recognising and using language relating to dates, including days of the week, months and years. Sequencing events in chronological order using language. (e.g. first, next, before, after etc) **Multiplication and division:** Counting in multiples of 2, 5 and 10. Using counting strategies to solve problems. Grouping objects into groups of 2s, 5s and 10s, beginning to understand multiplication as adding groups of numbers. Using arrays to solve multiplication sentences. Using the x symbol and understanding that it means 'lots of/groups of'. Sharing numbers into 2s, 5s and 10s, beginning to understand division as sharing objects equally. Using sharing circles to solve division sentences. Understanding and interpreting the division symbol. Solving one step problems involving multiplication and division. **Fractions:** Relating division work to fractions. Recognising, finding and naming a half as one of two equal parts of an object, shape or quantity. Recognising, finding and naming a quarter as one of four equal parts of an object, shape or quantity.	**Geometry Shape:** Consolidating knowledge of common 2D and 3D shapes. Beginning to describe common 3D shapes. Continuing and creating simple shape patterns. Continuing to develop knowledge of position, direction and movement, including whole, half, quarter and three quarter turns. **Place Value and Number:** Counting to 100 forwards and backwards from any given number. Reading, writing and ordering numbers to 100. Finding 10 more 10 less using practical resources and a 100 square. Counting in 2s, 5s and 10s. Learning about odd and even numbers. Revising partitioning 2 digit numbers to 100 into Tens and Ones using dienes and ones cubes. **Addition and subtraction:** Representing and using number facts within 20, involving addition and subtraction sentences. Beginning to understand commutativity, inverse and related number sentences. Using this knowledge to find missing numbers and solving more complex number sentences (e.g 7 = ? – 9, 2 + 3 = ? + 4). Consolidating on addition and subtraction strategies. Solving one step problems involving addition and subtraction, identifying key vocabulary. **Measure Time:**	**Measure Time:** Reading the given time to the hour and half past the hour, interpreting hands on a clock face. Telling the time to the hour and half past the hour, drawing hands on a clock face to show these times. **Number and Number facts:** Consolidating number bonds within 20 and for 10 and 20. Finding doubles and halves of numbers. Writing numbers to 20 in words. **Multiplication and division:** Revising grouping and sharing strategies. Solving multiplication and division problems using arrays and pictorial representations. Beginning to understand that multiplication is commutative. **Fractions:** Recognising, finding and naming a half as one of two equal parts of an object, shape or quantity. Recognising, finding and naming a quarter as one of four equal parts of an object, shape or quantity. **Measures Money, Weight, Volume/Capacity** Recognising and knowing the value of different coin denominations. Adding similar and different coins. Using coins to make the same/different amounts. Beginning to use standard units of measurement to measure weight and volume/capacity. Comparing, describing and solving practical problems involving weight and volume/capacity, using related language. E.g. heavier/lighter, full/empty/half full/quarter

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					Reading the given time to the hour and half past the hour, interpreting hands on a clock face. Telling the time to the hour and half past the hour, drawing hands on a clock face to show these times.	**Data handling:** Collecting data and representing it using pictograms and bar charts.
Year 2	**Place Value and Number:** Reading, writing and ordering numbers up to 100. Counting in steps of 2, 5 and 10 from any number forward and backward. Recognising odd and even numbers. Comparing and ordering numbers from 0 to 100 using > < = symbols. Estimating numbers to 100 on a number line. Consolidating understanding of how numbers combine in different ways using 'part part whole'. Recognising the place value of each digit in a 2 digit number. Partitioning into Tens and Ones. **Addition and subtraction:** Recalling and using addition and subtraction facts to 20. Understanding commutativity in that addition can be done in any order but that subtraction cannot. Adding and subtracting numbers using concrete objects, pictorial representations, and mentally, including 3 one digit numbers, a two digit number and ones, a two digit number and tens and two two digit numbers where regrouping is not required. **Geometry Shape:** Naming common 2D and 3D shapes and describing some of their properties (sides, corners, edges, faces, vertices) Ordering and arranging combinations of mathematical objects in patterns and sequences.	**Geometry Shape:** Continuing with work from previous term, **Number and number facts:** Recalling doubles of numbers up to 20. Counting in steps of 2, 5 and 10 from any number forward and backward. Working out, recalling and using number bonds within and for 10 using both addition and subtraction. Recognising the relationship between addition and subtraction and use this knowledge to check calculations and find missing numbers. Understanding commutativity in addition. Finding inverse and related number sentences using 'part, part, whole' models (e.g. bar model). Finding missing numbers and solving more complex number sentences. **Measures Money:** Recognising and using symbols for pound and pence and combining amounts to make a particular value. Knowing the value of different coins. Using different coins to make the same amount. **Measures Length, Height, Mass/Weight:** Choosing and using appropriate standard units to estimate and measure length/height in any direction (m/cm) and mass/weight (kg/g) to the nearest unit, using rulers and scales. Comparing and ordering measures and recording results using < > =.	**Place Value and Number:** Counting in 2s, 3s, 5s and 10s from any given number. Writing numbers from 0-20 in words. Identifying, representing and estimating numbers using different representations, including the number line. Recognising the place value of each digit in a 2 digit number. Partitioning into Tens and Ones. Recalling the multiples of 10 below and above any given 2 digit number e.g 67 the multiples are 60 and 70. Partition any 2 digit number into different combinations of tens and ones. (e.g: 23 is the same as 2 tens and 3 ones which is the same as 1 ten and 13 ones) **Addition and subtraction:** Adding and subtracting numbers using concrete objects, pictorial representations, and mentally, including 3 one digit numbers, a two digit number and ones, a two digit number and tens and two two digit numbers where regrouping is required. Solving problems with addition and subtraction including those involving numbers, quantities and measures. Using place value and number facts to solve problems. Applying increasing knowledge of mental and written methods. **Measures Time:** Developing knowledge of time and remembering the number of minutes in an hour and the number of hours in a day. Comparing and sequencing internals of time. Reading and drawing/writing the time on a clock to the nearest 15 minutes.	**Multiplication and division:** Understanding multiplication as adding groups of numbers and using arrays and mental methods to work out sentences. Recognising the relationships between repeated addition and multiplication and repeated subtraction and division. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Understanding division are sharing and using concrete materials and mental methods to show working out. Understanding the symbols for each calculation. Recalling and using multiplication and division facts for 2, 5 and 10 and use them to solve simple problems. Solving unfamiliar word problems that involve more than one step. Solving problems involving multiplication and division, using arrays, repeated addition and multiplication and division facts, including problems in contexts. **Fractions:** Identifying 1/4, 1/3, 1/2, 2/4, 3/4, of a number or shape, and know that all parts must be equal parts of the whole. Writing simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2. Comparing fractions. Recalling halves of numbers to 20.	**Place Value and Number:** Writing numbers within 100 in words. Identifying, representing and estimating numbers using different representations, including the number line. Recalling the multiples of 10 below and above any given 2 digit number e.g 67 the multiples are 60 and 70. Partition any 2 digit number into different combinations of tens and ones. (e.g: 23 is the same as 2 tens and 3 ones which is the same as 1 ten and 13 ones) **Addition and subtraction:** Consolidating and revision of number facts within 20, recapping inverse and related number sentences. Deriving and using related facts to 100. Consolidating and revising addition and subtraction strategies, relating subtraction to finding the difference. Using numbers and relationships to solve more complex problems and explaining thinking. Including missing number, balancing equations and word problems involving numbers, quantities and measures. Using estimation to check answers to calculations are reasonable. **SATs assessments:** Revision of previous work **Geometry Shape:** Recapping on previous shape work looking specifically at symmetry. Comparing, sorting and describing similarities and differences of 2-D and 3-D shapes, using their properties.	**Place Value and Number:** Revising and consolidating previous areas. Developing reasoning and problem solving skills. **Measures:** Choosing and using 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. Reading scales in divisions of ones, twos, fives and tens and reading scales where not all numbers on the scale are given and estimating points in between. Comparing and ordering lengths, mass, volume/capacity and record the results using >, < and =. **Measures Time:** Reading and drawing/writing the time on a clock to the nearest 15 minutes. Reading the time on a clock to the nearest 5 minutes **Data Handling and Graphs:** Sort data into Venn and Carroll diagrams. Interpreting and constructing simple pictograms, tally charts, block diagrams and simple tables. Asking and answering simple questions by counting the number of objects in each category and sorting the categories by quantity. Answering and asking questions about totalling and comparing categorical data. **Measure Money:** Consolidating previous work on money and coins. Solving simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. = **Fractions:** Consolidating previous work.

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Year 3	Autumn Term		Spring Term		Summer Term	
	Number – Place Value Identify, represent and estimate numbers using different representations. 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 Read and write numbers up to 1000 in numerals and in words. Solve number problems and practical problems involving these ideas. **Count from 0 in multiples of** 4, 8, **50 and 100** **Number – Addition and Subtraction** Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds. 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.	**Number – Multiplication and Division** **Count from 0 in multiples of 4, 8,** 50 and 100 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 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* objectives.	**Number – multiplication and division** 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 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* objectives. **Measurement – money** Add and subtract amounts of money to give change, using both £ and p in practical contexts. **Statistics** 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.	**Measurement – length and perimeter** **Measure, compare, add and subtract: lengths (m/cm/mm);** mass (kg/g); volume/capacity (l/ml). Measure the perimeter of simple 2D shapes. **Number – fractions** 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 and use fractions as numbers: unit fractions and non-unit fractions with small denominators. Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Solve problems that involve all of the above.	**Number – fractions** Recognise and show, using diagrams, equivalent fractions with small denominators. Compare and order unit fractions, and fractions with the same denominators. Add and subtract fractions with the same denominator within one whole [for example, 57 + 17 = 67] Solve problems that involve all of the above. **Measurement – time** 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].	**Geometry – properties of shape** 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. Draw 2-D shapes and make 3-D shapes using modelling materials. Recognise 3-D shapes in different orientations. **Measurement – mass and capacity** **Measure, compare, add and subtract:** lengths (m/cm/mm); **mass (kg/g); volume/capacity (l/ml).**

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	Autumn Term		Spring Term		Summer Term	
Year 4	**Number - Place Value** **Count in multiples of** 6, 7, 9. **25 and 1000.** Find 1000 more or less than a given number. 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 of the above and with increasingly large positive numbers. Count backwards through zero to include negative 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. **Addition and Subtraction** Add and subtract numbers with up to 4 digits using the formal written methods of column 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.	**Multiplication and division** Recall and use multiplication and division facts for multiplication tables up to 12 × 12. Count in multiples of 6, 7, 9. 25 and 1000. Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. Solve problems involving 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.	**Multiplication and division** Recall and use 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.	**Fractions, Decimals** 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. Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths. Solve simple measure and money problems involving fractions and decimals to two decimal places. Convert between different units of measure [for example, kilometre to metre].	**Decimals** Compare numbers with the same number of decimal places up to two decimal places. Round decimals with one decimal place to the nearest whole number. Recognise and write decimal equivalents to 14, 12 and 34 Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths **Measurement - Money** Estimate, compare and calculate different measures, including money in pounds and pence. Solve simple measure and money problems involving fractions and decimals to two decimal places. **Measurement - Time** Read, write and convert between different units of measure [for example, kilometre to metre; hour to minute]. 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. **Statistics** Interpret and present discrete and continuous data using different types of graphs. 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	**Measurement: Length and Perimeter** Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres Convert between different units of measure [for example, kilometre to metre] **Geometry – properties of shape** Geometry: Properties of shape Identify acute and obtuse angles and compare and order angles up to two right angles by size. Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. Identify lines of symmetry in 2-D shapes presented in different orientations. Complete a simple symmetric figure with respect to a specific line of symmetry. **Geometry – position and direction** Describe positions on a 2-D grid as coordinates in the first quadrant. Plot specified points and draw sides to complete a given polygon. Describe movements between positions as translations of a given unit to the left/ right and up/ down.

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					charts, pictograms, tables and other graphs.	
Year 5	**Place Value** Read, write, order and compare numbers to at least 1,000,000. Count in steps of powers of 10 for any given number up to 1,000,000. Interpret negative numbers. 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. Read Roman numerals to 1000 and recognise years in Roman numerals. **Addition and subtraction** Add and subtract numbers mentally with increasingly large numbers. Add and subtract whole numbers with more than 4 digits, including using formal written methods. Use rounding to check answers to calculations. Solve addition and subtraction multi-step problems.	**Statistics** Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables. **Multiplication and division** Identify multiples and factors. Solve problems by decomposing larger numbers into their factors, using prime numbers, prime factors and composite numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Recognise and use square numbers and cube numbers. **Geometry** Measure and calculate the perimeter of composite rectilinear shapes. Calculate and compare the area of squares and rectangles and estimate the area of irregular shapes.	**Multiplication and division** Multiply and divide numbers mentally drawing upon known facts. Multiply numbers up to 4 digits by a one or two digit number using a formal written method. Divide numbers up to 4 digits by a one digit number using a formal written method and interpret remainders appropriately. Solve problems involving addition and subtraction, multiplication and division.	**Fractions** Compare and order fractions whose denominators are multiples of the same number. Identify, name and write equivalent fractions of a given fraction. Recognise mixed numbers and improper fractions and convert. Add and subtract fractions with the same denominator and denominators that are multiples of the same number. **Decimals and percentages** Read, write, order and compare numbers with up to three decimal places. Recognise and use thousandths as fractions and decimals. Round decimals with to the nearest whole number and to one decimal place. Solve problems involving number up to three decimal places. Recognise the % symbol and write percentages as fractions and decimals. Solve problems which require knowing percentage and decimal equivalents.	**Decimals** Solve problems involving up to three decimal places. Multiply and divide decimal numbers by 10, 100 and 1000. Use all four operations to solve problems involving measure using decimal notation, including scaling. **Geometry** Identify 3D shapes from nets. Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons using reasoning. 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 within a whole turn including multiples of 90°. Identify, describe and represent the position of a shape following a reflection or translation.	**Measurement** Convert between different units of metric measure. Understand and use approximate equivalences between metric units and common imperial units. Solve problems involving converting between units of time. Estimate volume. Use all four operations to solve problems involving measure.
Year 6	**Number and Place Value** - 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 of the above. **Four Operations**	**Four Operations** - long division - identify common factors, common multiples and prime numbers (including squares and cubes) - order of operations - multistep problems **Fractions, Decimals and Percentages** - use common factors to simplify fractions - compare and order fractions - add and subtract fractions - multiply simple pairs of proper fractions	**Ratio and Proportion** - solve problems involving the relative sizes of two quantities - solve problems involving the calculation of percentages - solve problems involving similar shapes (scale factor) - solve problems involving unequal sharing and grouping **Algebra** - use simple formulae - generate and describe linear number sequences	**Measurement** - solve problems involving the calculation and conversion of units of measure - use, read, write and convert between standard units - 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	**Geometry** - describe positions on the full coordinate grid - draw and translate simple shapes on the coordinate plane, and reflect them in the axes **Statistics** - interpret and construct pie charts and line graphs and use these to solve problems - calculate and interpret the mean as an average	**Using Mathematical Knowledge and Skills in the Real World** Bizworld –entrepreneurial project

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	- addition, subtraction, long multiplication	- divide proper fractions by whole numbers - associate a fraction with division and calculate decimal fraction equivalents - identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 - multiply and divide decimals - equivalence between fractions, decimals and percentages -	- express missing number problems algebraically - find pairs of numbers that satisfy an equation with two unknowns - enumerate possibilities of combinations of two variables.	- calculate the area of parallelograms and triangles - calculate, estimate and compare volume of cubes and cuboids using standard units **Geometry** - draw 2-D shapes using given dimensions and angles - recognise, describe and build simple 3-D shapes - compare and classify geometric shapes based on their properties and sizes and find unknown angles - illustrate and name parts of circles - recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	**Revision** - revision of all KS2 maths skills	