Maths Curriculum Overview 2019 - 2020

Maths	Autumn	Spring	Summer
Year 1	**Autumn 1** Count to ten, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 10 in numerals and words. Given a number, identify one more or 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. Represent and use number bonds and related subtraction facts within 10 Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. Add and subtract one digit numbers to 10, including zero. **Autumn 2** Recognise and name common 2-D shapes, including: (for example, rectangles (including squares), circles and triangles) Recognise and name common 3-D shapes, including: (for example, cuboids (including cubes), pyramids and spheres.) Count to twenty, forwards and backwards, beginning with 0 or 1, from any given number. Count, read and write numbers to 20 in numerals and words. Given a number, identify one more or 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.	**Spring 1** Represent and use number bonds and related subtraction facts within 20 Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. Add and subtract one-digit and twodigit numbers to 20, including zero. Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7= ☐–9 Measurement: Length and Height Measure and begin to record lengths and heights. Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half) **Spring 2** Measurement: Weight and Volume Measure and begin to record mass/weight, capacity and volume. Compare, describe and solve practical problems for 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] Measurement: Weight and Volume Measure and begin to record mass/weight, capacity and volume. Compare, describe and solve practical problems for 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]	**Summer 1** Count in multiples of twos, fives and tens. 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. 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. Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter, tall/short, double/half) Compare, describe and solve practical problems for: 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] **Summer 2** Describe position, direction and movement, including whole, half, quarter and three quarter turns. 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. 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, most, least 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. Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] Measure and begin to record time (hours, minutes, seconds)

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Year 2	Autumn 1	Spring 1	Summer 1
	Autumn 1 Read and write numbers to at least 100 in numerals and in words. Recognise the place value of each digit in a two digit number (tens, ones) Identify, represent and estimate numbers using different representations including the number line. Compare and order numbers from 0 up to 100; use <, > and = signs. Use place value and number facts to solve problems. Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward. 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 the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. **Autumn 2** 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. Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. Find different combinations of coins that equal the same amounts of money. Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) sign.	**Spring 1** Recall and use multiplication and division facts for the 2, 5 and 10 times 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. 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. 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 Compare and sort common 2-D and 3-D shapes and everyday objects. **Spring 2** Recognise, find, name and write fractions a half, a third, a quarter and three quarters of a length, shape, set of objects or quantity. Write simple fractions of numbers and quantities. 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 =	**Summer 1** Use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). Order and arrange combinations of mathematical objects in patterns and sequences Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. Know the number of minutes in an hour and the number of hours in a day. Compare and sequence intervals of time **Summer 2** Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels Compare and order lengths, mass, volume/capacity and record the results using >, <and =

	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another can		
Year 3	**Autumn 1** 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. **Autumn 2** 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.	**Spring 1** 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 using information presented in scaled bar charts and pictograms and tables. **Spring 2** 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	**Summer 1** 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 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. **Summer 2** 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 3D shapes using modelling materials. Recognise 3-D shapes in different orientations and describe them.

	Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems	denominators.	Measurement – mass and capacity Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).
Year 4	**Autumn 1** 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. Number- 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 **Autumn 2** 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 Number – 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.	**Spring 1** Number – 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. Measurement- Area Find the area of rectilinear shapes by counting squares. **Spring 2** Fractions 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. Decimals 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	**Summer 1** 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 a quarter , a half and three quarters. 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. **Summer 2** Time Convert between different units of measure Read, write and convert time between analogue and digital 12- and 24-hour clocks. Statistics 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. 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

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			Describe positions on a 2-D grid as coordinates in the first quadrant. Plot specified points and draw sides to complete a given polygon.
Year 5	**Autumn 1** Number – Place Value Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. Count forwards or backwards in steps of powers of 10 for any given number up to 1000000. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 Solve number problems and practical problems that involve all of the above. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. Number- 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 **Autumn 2** Statistics Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables. Number – multiplication and division Multiply and divide numbers mentally drawing upon known facts. Multiply and divide whole numbers by 10, 100 and 1000. Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Recognise and use square numbers and cube numbers and the notation for squared (2) and cubed (3) Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	**Spring 1** Number – 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, including long multiplication for 2 digit numbers. Divide numbers up to 4 digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context. Number: Fractions Compare and order fractions whose denominators are 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. **Spring 2** Number: Decimals and Percentages Read, write, order and compare numbers with up to three decimal places. 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. 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.	**Summer 1** Number: Decimals Solve problems involving number up to three decimal places. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Use all four operations to solve problems involving measure Geometry- Properties of Shapes and Angles Identify 3D shapes, including cubes and other cuboids, from 2D representations. 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. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. **Summer 2** Geometry- position and direction 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. Measurement- converting units Convert between different units of metric measure Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Measures Volume Estimate volume and capacity

	Perimeter and Area Measure and calculate the perimeter of composite rectilinear shapes in cm and m. Calculate and compare the area of rectangles (including squares), and including using standard units, cm2, m2 estimate the area of irregular shapes.		
Year 6	**Autumn 1** Number: 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. Number- addition subtraction, multiplication + division Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why. Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication. Divide numbers up to 4 digits by a 2-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 2-digit number using the formal written method of short division, interpreting remainders according to the context. Perform mental calculations, including with mixed operations and large numbers. Identify common factors, common multiples and prime numbers. **Autumn 2** Fractions Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions > 1 Generate and describe linear number sequences (with fractions) Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions. Multiply simple pairs of proper fractions, writing the answer in	**Spring 1** Number: Decimals Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. Multiply one-digit numbers with up to 2 decimal places by whole numbers. Use written division methods in cases where the answer has up to 2 decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy Number: Percentages Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison. Recall and use equivalences between simple fractions, decimals and percentages including in different contexts. Number: 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 **Spring 2** Measurement Converting Units 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 3dp. Measurement: Perimeter, Area and Volume Recognise that shapes with the same areas can have different perimeters and vice versa.	**Summer 1** Geometry: Properties of Shapes Draw 2-D shapes using given dimensions and angles. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons. Statistics Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Interpret and construct pie charts and line graphs and use these to solve problems. Calculate the mean as an average. **Summer 2** Investigation Maths

	its simplest form Divide proper fractions by whole numbers Geometry- Position and Direction 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.	Recognise when it is possible to use formulae for area and volume of shapes. Calculate the area of parallelograms and triangles. Number: Ratio Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. Solve problems involving similar shapes where the scale factor is known or can be found.	