

Mathematics



Our Subject Intent



What does Maths look like at Downlands?

Volume of content:

1. Each same-age class will complete up to **10 year group related topics** per year through a number of units.
2. Each unit will be at least **6** lessons.

Subject delivery:

- Using the mastery approach which includes:
 - All pupils working on the same focus with reasonable adjustments provided to enable each child to access the mathematics learning
 - Pupils behaving as mathematicians, including:
 - Making decisions both independently and collaboratively
 - Working flexibly to answer questions, using a range of strategies and representations
 - Having a go, being willing to share even when unsure
 - Being comfortable with not getting everything 'right', embracing purposeful struggle
 - Talking mathematics and using subject-specific vocabulary
 - Exploring the mathematics guided by the teacher
 - Working and learning collaboratively

Maths – progression of skills (disciplinary knowledge)



SKILL	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Place Value	<ul style="list-style-type: none"> 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 2s, 5s and 10s given a number, identify 1 more and 1 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 	<ul style="list-style-type: none"> 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 0 solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ 	<ul style="list-style-type: none"> 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 3-digit number (100s, 10s, 1s) compare and order numbers up to 1,000 identify, represent and estimate numbers using different representations read and write numbers up to 1,000 in numerals and in words solve number problems and practical problems involving these ideas 	<ul style="list-style-type: none"> count in multiples of 6, 7, 9, 25 and 1,000 find 1,000 more or less than a given number count backwards through 0 to include negative numbers recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) order and compare numbers beyond 1,000 identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1,000 solve number and practical problems that involve all of 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 0 and place value 	<ul style="list-style-type: none"> 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 0 round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 solve number problems and practical problems that involve all of the above read Roman numerals to 1,000 (M) and recognise years written in Roman numerals 	<ul style="list-style-type: none"> 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 0 solve number and practical problems that involve all of the above

Maths – progression of skills (disciplinary knowledge)



Addition and Subtraction

SKILL	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
	<ul style="list-style-type: none"> • 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 0 • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ 	<ul style="list-style-type: none"> • solve problems with addition and subtraction: <ul style="list-style-type: none"> ○ 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: <ul style="list-style-type: none"> ○ a two-digit number and 1s ○ a two-digit number and 10s ○ 2 two-digit numbers ○ adding 3 one-digit numbers • show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 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 	<ul style="list-style-type: none"> • add and subtract numbers mentally, including: <ul style="list-style-type: none"> ○ a three-digit number and 1s ○ a three-digit number and 10s ○ a three-digit number and 100s • add and subtract numbers with up to 3 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations • 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

Maths – progression of skills (disciplinary knowledge)



Multiplication and Division

SKILL	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 (\times), division (\div) and equals ($=$) signs show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 3 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 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects 	<ul style="list-style-type: none"> identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers know and use the vocabulary of prime numbers, prime factors and composite 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 multiply and divide numbers mentally divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders multiply and divide by 10, 100 and 1,000 recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) solve problems including using their knowledge of factors and multiples, squares and cubes solve problems involving multiplication and division and a combination of these solve problems including scaling by simple fractions and problems involving simple rates 	<ul style="list-style-type: none"> 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 perform mental calculations, including with mixed operations and large numbers identify common factors, common multiples and prime numbers use their knowledge of the order of operations to carry out calculations solve problems involving multiplication and division use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Maths – progression of skills (disciplinary knowledge)



Fractions

SKILL	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
	<ul style="list-style-type: none"> recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity 	<ul style="list-style-type: none"> recognise, find, name and write fractions $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ of a length, shape, set of objects or quantity write simple fractions, for example $\frac{2}{6} = \frac{1}{3}$ and recognise the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$ 	<ul style="list-style-type: none"> 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 [for example, $\frac{1}{2} + \frac{1}{2} = 1$] compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above 	<ul style="list-style-type: none"> 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 100 and dividing tenths by 10 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 hundreds recognise and write decimal equivalents to $\frac{1}{10}$, $\frac{1}{100}$ 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 1 decimal place to the nearest whole number compare numbers with the same number of decimal places up to 2 decimal places solve simple measure and money problems involving fractions and decimals to 2 decimal places 	<ul style="list-style-type: none"> 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 [$\frac{5}{2} = 2 \frac{1}{2}$] 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 [$0.71 = \frac{71}{100}$] recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents round decimals with 2 decimal places to the nearest whole number and to 1 decimal place read, write, order and compare numbers with up to 3 decimal places solve problems involving number up to 3 decimal places recognise the percent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction solve problems which require knowing percentage and decimal equivalents of $\frac{1}{10}$, $\frac{1}{100}$, $\frac{1}{1000}$, and those fractions with a denominator of a multiple of 10 or 25 	<ul style="list-style-type: none"> 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 [for example, $\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$] divide proper fractions by whole numbers [$\frac{3}{4} \div 2 = \frac{3}{8}$] associate a fraction with division and calculate decimal fraction equivalents [0.375] for a simple fraction identify the value of each digit in numbers given to 3 decimal places and multiply and divide 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 recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Maths – progression of skills (disciplinary knowledge)



SKILL	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Ratio and Proportion						<ul style="list-style-type: none"> • solve problems involving the relative sizes of 2 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						<ul style="list-style-type: none"> • use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • find pairs of numbers that satisfy an equation with 2 unknowns • enumerate possibilities of combinations of 2 variables

Maths – progression of skills (disciplinary knowledge)



SKILL	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Measurement	<ul style="list-style-type: none"> compare, describe and solve practical problems for: <ul style="list-style-type: none"> lengths and heights [long/short, longer/shorter, tall/short, double/half] mass/weight [heavy/light, heavier than, lighter than] capacity and volume [full/empty, more than, less than, half, half full, quarter] time [quicker, slower, earlier, later] measure and begin to record the following: <ul style="list-style-type: none"> 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 [before and after, next, first, today, yesterday, tomorrow, morning, afternoon etc] 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 	<ul style="list-style-type: none"> 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 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 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 	<ul style="list-style-type: none"> 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, am/pm, 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] 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes estimate volume [for example, using 1 cm³ 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 	<ul style="list-style-type: none"> solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 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 up to 3 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]

Maths – progression of skills (disciplinary knowledge)



SKILL	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Properties of Shape	<ul style="list-style-type: none"> recognise and name common 2D and 3D shapes, including: <ul style="list-style-type: none"> 2-D shapes [for example, rectangles (including squares), circles and triangles] 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] 	<ul style="list-style-type: none"> identify and describe the properties of 2D shapes, including the number of sides, and line symmetry in a vertical line identify and describe the properties of 3D shapes, including the number of edges, vertices and faces identify 2-D shapes on the surface of 3D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] compare and sort common 2D and 3D shapes and everyday objects 	<ul style="list-style-type: none"> 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 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 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 	<ul style="list-style-type: none"> 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 2 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 	<ul style="list-style-type: none"> identify 3D 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: <ul style="list-style-type: none"> angles at a point and 1 whole turn (total 360°) angles at a point on a straight line and half a turn (total 180°) other multiples of 90° 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 	<ul style="list-style-type: none"> 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
Position and Direction	<ul style="list-style-type: none"> describe position, direction and movement, including whole, half, quarter and three-quarter turns 	<ul style="list-style-type: none"> 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 anti-clockwise) 		<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> describe positions on the full coordinate grid (all 4 quadrants) draw and translate simple shapes on the coordinate plane, and reflect them in the axes

Maths – progression of skills (disciplinary knowledge)



SKILL	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Statistics		<ul style="list-style-type: none"> interpret and construct simple pictograms, tally charts, block diagrams and 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables 	<ul style="list-style-type: none"> interpret and construct pie charts and line graphs and use these to solve problems calculate and interpret the mean as an average

Maths – curriculum map – Year 1



Autumn			
Unit	Place Value	Addition and Subtraction	Properties of Shape
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 2s, 5s and 10s given a number, identify 1 more and 1 less identify and represent numbers using objects and pictorial representations including the number line read and write numbers from 1 to 20 in numerals and words 	<ul style="list-style-type: none"> 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 0 solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ 	<ul style="list-style-type: none"> recognise and name common 2D and 3D shapes, including: <ul style="list-style-type: none"> 2-D shapes [for example, rectangles (including squares), circles and triangles] 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]
Learning Objectives	<ul style="list-style-type: none"> Sort Objects Count Objects Count Objects from a larger group Represent Objects Recognise numbers as words Count on from any number 1 more Count backwards within 10 1 less Compare groups by matching Fewer, more, same Fewer, more, same Compare numbers Order objects and numbers The number line 	<ul style="list-style-type: none"> Introduce parts and wholes Part-whole model Write number sentences Fact families - addition facts Number bonds within 10 Systematic number bonds within 10 Number bonds to 10 Addition - add together Addition - add more Addition problems Find a part Subtraction - find a part Fact families - the eight facts Subtraction - take away/cross out (How many left?) Subtraction - take away (How many left?) Subtraction on a number line Add or subtract 1 or 2 	<ul style="list-style-type: none"> Recognise and name 3D shapes Sort 3D shapes Recognise and name 2-D shapes Sort 2-D shapes Patterns with 2-D and 3-D shapes
Vocabulary	equal to, more than, less than, fewer, most, least, same, forwards, backwards, count, order, compare, greater than, less than, pair, ones, tens, ten more/less	addition, add, more than, subtraction, subtract, take away, less than, equals, same but different, solve, problem, number bonds, inverse, near doubles, difference between	2-D, 3-D, circle, square, triangle, cuboid, cube, pyramid, sphere, group, point, pointed, edge

Maths – curriculum map – Year 1



Spring					
Unit	Place Value	Addition and Subtraction	Place Value	Length and Height	Mass and Volume
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 2s, 5s and 10s given a number, identify 1 more and 1 less identify and represent numbers using objects and pictorial representations including the number line read and write numbers from 1 to 20 in numerals and words 	<ul style="list-style-type: none"> 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 0 solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ 	<ul style="list-style-type: none"> 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 2s, 5s and 10s given a number, identify 1 more and 1 less identify and represent numbers using objects and pictorial representations including the number line read and write numbers from 1 to 20 in numerals and words 	<ul style="list-style-type: none"> compare, describe and solve practical problems for: <ul style="list-style-type: none"> lengths and heights measure and begin to record the following: lengths and heights 	<ul style="list-style-type: none"> compare, describe and solve practical problems for: <ul style="list-style-type: none"> mass/weight capacity and volume measure and begin to record the following: mass/weight capacity and volume
Learning Objectives	<ul style="list-style-type: none"> Count within 20 Understand 10 Understand 11, 12 and 13 Understand 14, 15 and 16 Understand 17, 18 and 19 Understand 20 1 more and 1 less The number line to 20 Use a number line to 20 Estimate on a number line to 20 Compare numbers to 20 Order numbers to 20 	<ul style="list-style-type: none"> Add by counting on within 20 Add ons using number bonds Find and make number bonds to 20 Doubles Near doubles Subtract ones using number bonds Subtraction - counting back Subtraction - finding the difference Related facts Missing number problems 	<ul style="list-style-type: none"> Count from 20 to 50 20, 30, 40 and 50 Count by making groups of tens Groups of tens and ones Partition into tens and ones The number line to 50 Estimate on a number line to 50 1 more, 1 less 	<ul style="list-style-type: none"> Compare lengths and heights Measure length using objects Measure length in centimetres 	<ul style="list-style-type: none"> Heavier and lighter Measure mass Compare mass Full and empty Compare volume Measure capacity Compare capacity
Vocabulary	equal to, more than, less than, fewer, most, least, same, forwards, backwards, count, order, compare, greater than, less than, pair, ones, tens, ten more/less	addition, add, more than, subtraction, subtract, take away, less than, equals, same but different, solve, problem, number bonds, inverse, near doubles, difference between interpret,	equal to, more than, less than, fewer, most, least, same, forwards, backwards, count, order, compare, greater than, less than, pair, ones, tens, ten more/less, groups, partition, tens, ones	long/short, longer/shorter, tall/short, double /half	heavy/light, heavier than, lighter than full/empty, more than, less than, half, half full, quarter

Maths – curriculum map – Year 1



Summer						
Unit	Multiplication and division	Fractions	Position and direction	Place Value	Money	Time
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity 	describe position, direction and movement, including whole, half, quarter and three-quarter turns	<ul style="list-style-type: none"> count to and across 100, forwards and backwards count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s given a number, identify 1 more and 1 less identify and represent numbers using objects and pictorial representations including the number line 	<ul style="list-style-type: none"> recognise and know the value of different denominations of coins and notes 	<ul style="list-style-type: none"> compare, describe and solve practical problems for time measure and begin to record time sequence events in chronological order 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
Learning Objectives	<ul style="list-style-type: none"> Count in 2s Count in 10s Count in 5s Recognise equal groups Add equal groups Make arrays Make doubles Make equal groups - grouping Make equal groups - sharing 	<ul style="list-style-type: none"> Recognise a half of an object or a shape Find a half of an object or a shape Recognise a half of a quantity Find a half of a quantity Recognise a quarter of an object or a shape Find a quarter of an object or a shape Recognise a quarter of a quantity Find a quarter of a quantity 	<ul style="list-style-type: none"> Describe turns Describe position - left and right Describe position - forwards and backwards Describe position - above and below Ordinal numbers 	<ul style="list-style-type: none"> Count from 50 to 100 Tens to 100 Partition into tens and ones The number line to 100 1 more, 1 less Compare numbers with the same number of tens Compare any two numbers 	<ul style="list-style-type: none"> Unitising Recognise coins Recognise notes Count in coins 	<ul style="list-style-type: none"> Before and after Days of the week Months of the year Hours, minutes and seconds Tell the time to the hour Tell the time to the half hour
Vocabulary	once, twice, three times, five times., count in tens forwards from/ backwards from, lots of, groups of, multiple of, times, multiply, multiply by, repeated addition, array, row, column, group in, divided, share, equal	equal parts, four equal parts, two halves, a quarter, two quarters	position, around, opposite, apart, between, edge, centre, corner, direction, left, right, across, near, along, to, from, movement, whole turn, half turn	equal to, more than, less than, fewer, most, least, same, forwards, backwards, count, order, compare, greater than, less than, pair, ones, tens, ten more/less	pence, pound, notes, coins, how much, total	hours, minutes, seconds before and after, next, first, today, yesterday, tomorrow, morning, afternoon, o'clock, half past

Maths – curriculum map – Year 2



Autumn			
Unit	Place Value	Addition and Subtraction	Properties of Shape
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 0 solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ 	<ul style="list-style-type: none"> solve problems with addition and subtraction: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> a two-digit number and 1s a two-digit number and 10s 2 two-digit numbers adding 3 one-digit numbers show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 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 	<ul style="list-style-type: none"> identify and describe the properties of 2D shapes, including the number of sides, and line symmetry in a vertical line identify and describe the properties of 3D shapes, including the number of edges, vertices and faces identify 2-D shapes on the surface of 3D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] compare and sort common 2D and 3D shapes and everyday objects
Learning Objectives	<ul style="list-style-type: none"> Numbers to 20 Count objects to 100 by making 10s Recognise tens and ones Use a place value chart Partition numbers to 100 Write numbers to 100 in words Flexibly partition numbers to 100 Write numbers to 100 in expanded form 10s on the number line to 100 10s and 1s on the number line to 100 Estimate numbers on a number line Compare objects Compare numbers Order objects and numbers Count in 2s, 5s and 10s Count in 3s 	<ul style="list-style-type: none"> Bonds to 10 Fact families - addition and subtraction bonds within 20 Related facts Bonds to 100 (tens) Add and subtract 1s Add by making 10 Add three 1-digit numbers Add to the next 10 Add across a 10 Subtract across 10 Subtract from a 10 Subtract a 1-digit number from a 2-digit number (across a 10) 10 more, 10 less Add and subtract 10s Add two 2-digit numbers (not across a 10) Add two 2-digit numbers (across a 10) Subtract two 2-digit numbers (not across a 10) Subtract two 2-digit numbers (across a 10) Mixed addition and subtraction Compare number sentences Missing number problems 	<ul style="list-style-type: none"> Recognise 2D and 3D shapes Count sides on 2D shapes Count vertices on 2D shapes Draw 2-D shapes Lines of symmetry on shapes Use lines of symmetry to complete shapes Sort 2-D shapes Count faces on 3D shapes Count edges on 3D shapes Count vertices on 3D shapes Sort 3D shapes Make patterns with 2D and 3D shapes
Vocabulary	numbers to one hundred, hundreds, partition, recombine, hundred more, hundred less		size, bigger, smaller, larger, symmetry, symmetrical, lines, folds, mirror, reflection

Maths – curriculum map – Year 2



	Spring			
Unit	Money	Multiplication and Division	Length and Height	Mass, Capacity and Temperature
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 (\times), division (\div) and equals (=) signs show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 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 	<ul style="list-style-type: none"> choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) compare and order lengths and record the results using $>$, $<$ and $=$ 	<ul style="list-style-type: none"> compare and order mass, volume/capacity and record the results using $>$, $<$ and $=$
Learning Objectives	<ul style="list-style-type: none"> Count money – pence Count money - pounds (notes and coins) Count money - pounds and pence Choose notes and coins Make the same amount Compare amounts of money Calculate with money Make a pound Find change Two-step problems 	<ul style="list-style-type: none"> Recognise equal groups Make equal groups Add equal groups Introduce the multiplication symbol Multiplication sentences Use arrays Make equal groups – grouping Make equal groups – sharing The 2 times-table Divide by 2 Doubling and halving Odd and even numbers The 10 times-table Divide by 10 The 5 times-table Divide by 5 The 5 and 10 times-tables 	<ul style="list-style-type: none"> Measure in centimetres Measure in metres Compare lengths and heights Order lengths and heights Four operations with lengths and heights 	<ul style="list-style-type: none"> Compare mass Measure in grams Measure in kilograms Four operations with mass Compare volume and capacity Measure in millilitres Measure in litres Four operations with volume and capacity Temperature
Vocabulary			metre (m), kilometre (km)	gram (g), kilogram (kg), millilitre (ml), litre (l)

Maths – curriculum map – Year 2



Summer				
Unit	Fractions	Time	Statistics	Position and Direction
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> recognise, find, name and write fractions $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{2}{3}$ of a length, shape, set of objects or quantity write simple fractions, for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$ 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> interpret and construct simple pictograms, tally charts, block diagrams and 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 	<ul style="list-style-type: none"> 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 anti-clockwise)
Learning Objectives	<ul style="list-style-type: none"> Introduction to parts and whole Equal and unequal parts Recognise a half Find a half Recognise a quarter Find a quarter Recognise a third Find a third Find the whole Unit fractions Non-unit fractions Recognise the equivalence of a half and two quarters Recognise three-quarters Find three-quarters Count in fractions up to a whole 	<ul style="list-style-type: none"> O'clock and half past Quarter past and quarter to Tell time past the hour Tell time to the hour Tell the time to 5 minutes Minutes in an hour Hours in a day 	<ul style="list-style-type: none"> Make tally charts Tables Block diagrams Draw pictograms Interpret pictograms Draw pictograms Interpret pictograms 	<ul style="list-style-type: none"> Language of position Describe movement Describe turns Describe movement and turns Shape patterns with turns
Vocabulary	three quarters, a third, two thirds, equivalent, equivalence	quarter past, quarter to	count, tally, sort, vote, graph, block graph, pictogram, represent, group, set, list, table, label, title, most popular, least popular, common, least common	rotation, clockwise, anti-clockwise, straight line, 90 degrees, turn, right angle

Maths – curriculum map – Year 3



Autumn			
Unit	Place Value	Addition and Subtraction	Multiplication and Division
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 3-digit number (100s, 10s, 1s) compare and order numbers up to 1,000 identify, represent and estimate numbers using different representations read and write numbers up to 1,000 in numerals and in words solve number problems and practical problems involving these ideas 	<ul style="list-style-type: none"> add and subtract numbers mentally, including: <ul style="list-style-type: none"> a three-digit number and 1s a three-digit number and 10s a three-digit number and 100s add and subtract numbers with up to 3 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 	<ul style="list-style-type: none"> recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
Learning Objectives	<ul style="list-style-type: none"> Represent numbers to 100 Partition numbers to 100 Number line to 100 Hundreds Represent numbers to 1,000 Partition numbers to 1,000 Flexible partitioning of numbers to 1,000 Hundreds, tens and ones Find 1, 10 or 100 more or less Number line to 1,000 Estimate on a number line to 1,000 Compare numbers to 1,000 Order numbers to 1,000 Count in 50s 	<ul style="list-style-type: none"> Apply number bonds within 10 Add and subtract 1s Add and subtract 10s Add and subtract 100s Spot the pattern Add 1s across a 10 Add 10s across a 100 Subtract 1s across a 10 Subtract 10s across a 100 Make connections Add two numbers (no exchange) Subtract two numbers (no exchange) Add two numbers (across a 10) Add two numbers (across a 100) Subtract two numbers (across a 10) Subtract two numbers (across a 100) Add 2-digit and 3-digit numbers Subtract a 2-digit number from a 3-digit number Complements to 100 Estimate answers Inverse operations Make decisions 	<ul style="list-style-type: none"> Multiplication - equal groups Use arrays Multiples of 2 Multiples of 5 and 10 Sharing and grouping Multiply by 3 Divide by 3 The 3 times-table Multiply by 4 Divide by 4 The 4 times-table Multiply by 8 Divide by 8 The 8 times-table The 2, 4 and 8 times-tables
Vocabulary	numbers to one thousand	column addition, column subtraction	product, multiples of 4, 8, 50 & 100

Maths – curriculum map – Year 3



Spring				
Unit	Multiplication and Division	Length and Perimeter	Fractions	Mass and Capacity
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) measure the perimeter of simple 2-D shapes 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
Learning Objectives	<ul style="list-style-type: none"> Multiples of 10 Related calculations Reasoning about multiplication Multiply a 2-digit number by a 1-digit number - no exchange Multiply a 2-digit number by a 1-digit number - with exchange Link multiplication and division Divide a 2-digit number by a 1-digit number - no exchange Divide a 2-digit number by a 1-digit number - flexible partitioning Divide a 2-digit number by a 1-digit number - with remainders Scaling How many ways? 	<ul style="list-style-type: none"> Measure in metres and centimetres Measure in millimetres Measure in centimetres and millimetres Metres, centimetres and millimetres Equivalent lengths (metres and centimetres) Equivalent lengths (centimetres and millimetres) Compare lengths Add lengths Subtract lengths What is perimeter? Measure perimeter Calculate perimeter 	<ul style="list-style-type: none"> Understand the denominators of unit fractions Compare and order unit fractions Understand the numerators of non-unit fractions Understand the whole Compare and order non-unit fractions Fractions and scales Fractions on a number line Count in fractions on a number line Equivalent fractions on a number line Equivalent fractions as bar models 	<ul style="list-style-type: none"> Use scales Measure mass in grams Measure mass in kilograms and grams Equivalent masses (kilograms and grams) Compare mass Add and subtract mass Measure capacity and volume in millilitres Measure capacity and volume in litres and millilitres Equivalent capacities and volumes (litres and millilitres) Compare capacity and volume Add and subtract capacity and volume
Vocabulary	product, multiples of 4, 8, 50 & 100	perimeter	numerator, denominator, unit fraction, non-unit fraction, compare, order, tenths	

Maths – curriculum map – Year 3



Summer					
Unit	Fractions	Money	Time	Shape	Statistics
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> recognise and show, using diagrams, equivalent fractions with small denominators add and subtract fractions with the same denominator within one whole [for example, $+ =$] compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above 	<ul style="list-style-type: none"> add and subtract amounts of money to give change, using both £ and p in practical contexts 	<ul style="list-style-type: none"> tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight 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] 	<ul style="list-style-type: none"> 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 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 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 	<ul style="list-style-type: none"> 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
Learning Objectives	<ul style="list-style-type: none"> Add fractions Subtract fractions Partition the whole Unit fractions of a set of objects Non-unit fractions of a set of objects Reasoning with fractions of an amount 	<ul style="list-style-type: none"> Pounds and pence Convert pounds and pence Add money Subtract money Find change 	<ul style="list-style-type: none"> Roman numerals to 12 Tell the time to 5 minutes Tell the time to the minute Read time on a digital clock Use a.m. and p.m. Years, months and days Days and hours Hours and minutes - use start and end times Hours and minutes - use durations Minutes and seconds Units of time Solve problems with time 	<ul style="list-style-type: none"> Turns and angles Right angles Compare angles Measure and draw accurately Horizontal and vertical Parallel and perpendicular Recognise and describe 2-D shapes Draw polygons Recognise and describe 3D shapes Make 3D shapes 	<ul style="list-style-type: none"> Interpret pictograms Draw pictograms Interpret bar charts Draw bar charts Collect and represent data Two-way tables
Vocabulary	numerator, denominator, unit fraction, non-unit fraction, compare, order, tenths		leap year, twelve hour clock, twenty-four hour clock, am, om, Roman numerals	horizontal, vertical, perpendicular, parallel	chart, bar chart, frequency table, Carroll diagram, Venn diagram, axis, axes, diagram

Maths – curriculum map – Year 4



Autumn				
Unit	Place Value	Addition and Subtractions	Area	Multiplication and Division
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> count in multiples of 6, 7, 9, 25 and 1,000 find 1,000 more or less than a given number count backwards through 0 to include negative numbers recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) order and compare numbers beyond 1,000 identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1,000 solve number and practical problems that involve all of 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 0 and place value 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> find the area of rectilinear shapes by counting squares 	<ul style="list-style-type: none"> 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 3 numbers
Learning Objectives	<ul style="list-style-type: none"> Represent numbers to 1,000 Partition numbers to 1,000 Number line to 1,000 Thousands Represent numbers to 10,000 Partition numbers to 10,000 Flexible partitioning of numbers to 10,000 Find 1, 10, 100, 1,000 more or less Number line to 10,000 Estimate on a number line to 10,000 Compare numbers to 10,000 Order numbers to 10,000 Roman numerals Round to the nearest 10 Round to the nearest 100 Round to the nearest 1,000 Round to the nearest 10, 100 or 1,000 	<ul style="list-style-type: none"> Add and subtract 1s, 10s, 100s and 1,000s Add up to two 4-digit numbers - no exchange Add two 4-digit numbers - one exchange Add two 4-digit numbers - more than one exchange Subtract two 4-digit numbers - no exchange Subtract two 4-digit numbers - one exchange Subtract two 4-digit numbers - more than one exchange Subtract two 4-digit numbers - more than one exchange Efficient subtraction Estimate answers Checking strategies 	<ul style="list-style-type: none"> What is area? Count squares Make shapes Compare areas 	<ul style="list-style-type: none"> Multiples of 3 Multiply and divide by 6 6 times-table and division facts Multiply and divide by 9 9 times-table and division facts The 3, 6 and 9 times-tables Multiply and divide by 7 7 times-table and division facts 11 times-table and division facts 12 times-table and division facts Multiply by 1 and 0 Divide a number by 1 and itself Multiply three numbers
Vocabulary	Tenths, hundredths, decimals, round (to the nearest), thousands more/less, negative integers, count through zero	exchange	area	multiplication facts (12×12), division facts, inverse, derive

Maths – curriculum map – Year 4



Spring				
Unit	Multiplication and Division	Length and Perimeter	Fractions	Decimals
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 100 and dividing tenths by 10 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 solve simple measure and money problems involving fractions and decimals to 2 decimal places 	<ul style="list-style-type: none"> recognise and write decimal equivalents of any number of tenths or hundreds recognise and write decimal equivalents to , , find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths round decimals with 1 decimal place to the nearest whole number compare numbers with the same number of decimal places up to 2 decimal places solve simple measure and money problems involving fractions and decimals to 2 decimal places
Learning Objectives	<ul style="list-style-type: none"> Factor pairs Use factor pairs Use factor pairs Multiply by 100 Divide by 10 Divide by 100 Related facts – multiplication and division Informal written methods for multiplication Multiply a 2-digit number by a 1-digit number Multiply a 3-digit number by a 1-digit number Divide a 2-digit number by a 1-digit number Divide a 3-digit number by a 1-digit number Correspondence problems Efficient multiplication 	<ul style="list-style-type: none"> Measure in kilometres and metres Equivalent lengths (kilometres and metres) Perimeter on a grid Perimeter of a rectangle Perimeter of rectilinear shapes Find missing lengths in rectilinear shapes Calculate the perimeter of rectilinear shapes Perimeter of regular polygons Perimeter of polygons 	<ul style="list-style-type: none"> Understand the whole Count beyond 1 Partition a mixed number Number lines with mixed numbers Compare and order mixed numbers Understand improper fractions Convert mixed numbers to improper fractions Convert improper fractions to mixed numbers Equivalent fractions on a number line Equivalent fraction families Add two or more fractions Add fractions and mixed numbers Subtract two fractions Subtract from whole amounts Subtract from mixed numbers 	<ul style="list-style-type: none"> Tenths as fractions Tenths as decimals Tenths on a place value chart Tenths on a number line Divide a 1-digit number by 10 Divide a 2-digit number by 10 Hundredths as fractions Hundredths as decimals Hundredths on a place value chart Divide a 1- or 2-digit number by 100
Vocabulary	multiplication facts (12x12), division facts, inverse, derive		equivalent fractions, equivalent decimals	equivalent fractions, equivalent decimals

Maths – curriculum map – Year 4



Summer						
Unit	Decimals	Money	Time	Shape	Statistics	Position and Direction
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> recognise and write decimal equivalents of any number of tenths or hundreds round decimals with 1 decimal place to the nearest whole number compare numbers with the same number of decimal places up to 2 decimal places solve simple measure and money problems involving fractions and decimals to 2 decimal places 	<ul style="list-style-type: none"> estimate, compare and calculate different measures, including money in pounds and pence 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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
Learning Objectives	<ul style="list-style-type: none"> Make a whole with tenths Make a whole with hundredths Partition decimals Flexibly partition decimals Compare decimals Order decimals Round to the nearest whole number Halves and quarters as decimals 	<ul style="list-style-type: none"> Write money using decimals Convert between pounds and pence Compare amounts of money Estimate with money Calculate with money Solve problems with money 	<ul style="list-style-type: none"> Years, months, weeks and days Hours, minutes and seconds Convert between analogue and digital times Convert to the 24 hour clock Convert from the 24 hour clock 	<ul style="list-style-type: none"> Understand angles as turns Identify angles Compare and order angles Triangles Quadrilaterals Polygons Lines of symmetry Complete a symmetric figure 	<ul style="list-style-type: none"> Interpret charts Comparison, sum and difference Interpret line graphs Draw line graphs 	<ul style="list-style-type: none"> Describe position using coordinates Plot coordinates Draw 2-D shapes on a grid Translate on a grid Describe translation on a grid
Vocabulary	equivalent fractions, equivalent decimals	convert		quadrilaterals, triangles, right angle, obtuse, acute	continuous data, line graphs	coordinates, translate, translation, quadrant, x-axis, y-axis, perimeter, area

Maths – curriculum map – Year 5



Autumn				
Unit	Place Value	Addition and Subtraction	Multiplication Division	Fractions
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 solve number problems and practical problems that involve all of the above read Roman numerals to 1,000 (M) and recognise years written in Roman numerals 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers know and use the vocabulary of 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 by 10, 100 and 1,000 recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) solve problems including using their knowledge of factors and multiples, squares and cubes solve problems involving multiplication and division and a combination of these 	<ul style="list-style-type: none"> 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 [$+ = = 1$] solve problems which require knowing percentage and decimal equivalents of $, , ,$ and those fractions with a denominator of a multiple of 10 or 25
Learning Objectives	<ul style="list-style-type: none"> Roman numerals to 1,000 Numbers to 10,000 Numbers to 100,000 Numbers to 1,000,000 Read and write numbers to 1,000,000 Powers of 10 10/100/1,000/10,000/100,000 more or less Partition numbers to 1,000,000 Number line to 1,000,000 Compare and order numbers to 100,000 Compare and order numbers to 1,000,000 Round to the nearest 10, 100 or 1,000 Round within 100,000 Round within 1,000,000 	<ul style="list-style-type: none"> Mental strategies Add whole numbers with more than four digits Subtract whole numbers with more than four digits Round to check answers Inverse operations (addition and subtraction) Multi-step addition and subtraction problems Compare calculations Find missing numbers 	<ul style="list-style-type: none"> Multiples Common multiples Factors Common factors Prime numbers Square numbers Cube numbers Multiply by 10, 100 and 1,000 Divide by 10, 100 and 1,000 Multiples of 10, 100 and 1,000 	<ul style="list-style-type: none"> Find fractions equivalent to a unit fraction Find fractions equivalent to a non-unit fraction Recognise equivalent fractions Convert improper fractions to mixed numbers Convert mixed numbers to improper fractions Compare fractions less than 1 Order fractions less than 1 Compare and order fractions greater than 1 Add and subtract fractions with the same denominator Add fractions within 1 Add fractions with total greater than 1 Add to a mixed number Add two mixed numbers Subtract fractions Subtract from a mixed number Subtract from a mixed number - breaking the whole Subtract two mixed numbers
Vocabulary	powers of 10	efficient written method	factor pairs, composite numbers, prime numbers, prime factors, cubed numbers, square numbers, formal written method	proper fractions, improper fractions, mixed number

Maths – curriculum map – Year 5



Spring					
Unit	Multiplication and Division	Fractions	Decimals and Percentages	Perimeter and Area	Statistics
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> multiply numbers up to 4 digits by a one- or two-digit number using a formal written method multiply and divide numbers mentally divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders solve problems including using their knowledge of factors and multiples, squares and cubes solve problems involving multiplication and division and a combination of these solve problems including scaling by simple fractions and problems involving simple rates solve problems including scaling by simple fractions and problems involving simple rates 	<ul style="list-style-type: none"> 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 [0.71 = $\frac{71}{100}$] recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents 	<ul style="list-style-type: none"> round decimals with 2 decimal places to the nearest whole number and to 1 decimal place read, write, order and compare numbers with up to 3 decimal places solve problems involving number up to 3 decimal places recognise the percent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction 	<ul style="list-style-type: none"> measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling 	<ul style="list-style-type: none"> solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables
Learning Objectives	<ul style="list-style-type: none"> Multiply up to a 4-digit number by a 1-digit number Multiply a 2-digit number by a 2-digit number (area model) Multiply a 2-digit number by a 2-digit number Multiply a 3-digit number by a 2-digit number Multiply a 4-digit number by a 2-digit number Solve problems with multiplication Short division Divide a 4-digit number by a 1-digit number Divide with remainders Efficient division Solve problems with multiplication and division 	<ul style="list-style-type: none"> Multiply a unit fraction by an integer Multiply a non-unit fraction by an integer Multiply a mixed number by an integer Calculate a fraction of a quantity Fraction of an amount Find the whole Use fractions as operators 	<ul style="list-style-type: none"> Decimals up to 2 decimal places equivalent fractions and decimals (tenths) Equivalent fractions and decimals (hundredths) Equivalent fractions and decimals Thousandths as fractions Thousandths as decimals Thousandths on a place value chart Order and compare decimals (same number of decimal places) Order and compare any decimals with up to 3 decimal places Round to the nearest whole number Round to 1 decimal place Understand percentages Percentages as fractions Percentages as decimals Equivalent fractions, decimals and percentages 	<ul style="list-style-type: none"> Perimeter of rectangles Perimeter of rectilinear shapes Perimeter of polygons Area of rectangles Area of compound shapes Estimate area 	<ul style="list-style-type: none"> Draw line graphs Read and interpret line graphs Read and interpret tables Two-way tables Read and interpret timetables
Vocabulary	factor pairs, composite numbers, prime numbers, prime factors, cubed numbers, square numbers, formal written method	proper fractions, improper fractions, mixed number	percentage, ratio, proportion		

Maths – curriculum map – Year 5



Summer						
Unit	Shape	Position and Direction	Decimals	Negative Numbers	Converting Units	Volume
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> identify 3D 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: <ul style="list-style-type: none"> angles at a point and 1 whole turn (total 360°) angles at a point on a straight line and half a turn (total 180°) other multiples of 90° 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> round decimals with 2 decimal places to the nearest whole number and to 1 decimal place read, write, order and compare numbers with up to 3 decimal places solve problems involving number up to 3 decimal places 	<ul style="list-style-type: none"> interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0 	<ul style="list-style-type: none"> convert between different units of metric measure [for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre] use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling solve problems involving converting between units of time 	<ul style="list-style-type: none"> understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
Learning Objectives	<ul style="list-style-type: none"> Understand and use degrees Classify angles Estimate angles Measure angles up to 180 Draw lines and angles accurately Calculate angles around a point Calculate angles on a straight line Lengths and angles in shapes Regular and irregular polygons 3-D shapes 	<ul style="list-style-type: none"> Read and plot coordinates Problem solving with coordinates Translation Translation with coordinates Lines of symmetry Reflection in horizontal and vertical lines 	<ul style="list-style-type: none"> Use known facts to add and subtract decimals within 1 Complements to 1 Add and subtract decimals across 1 Add decimals with the same number of decimal places Subtract decimals with the same number of decimal places Add decimals with different numbers of decimal places Subtract decimals with different numbers of decimal places Efficient strategies for adding and subtracting decimals Decimal sequences Multiply by 10, 100 and 1,000 Divide by 10, 100 and 1,000 Multiply and divide decimals - missing values 	<ul style="list-style-type: none"> Understand negative numbers Count through zero in 1s Count through zero in multiples Compare and order negative numbers Find the difference 	<ul style="list-style-type: none"> Kilograms and kilometres Millimetres and millilitres Convert units of length Convert between metric and imperial units Convert units of time Calculate with timetables 	<ul style="list-style-type: none"> Cubic centimetres Compare volume Estimate volume Estimate capacity
Vocabulary	regular polygons, irregular polygons	reflex angle, dimensions	percentage, ratio, proportion	negative		Volume, imperial units, metric units

Maths – curriculum map – Year 6



Autumn				
Unit	Place Value	Addition, Subtraction, Multiplication and Division	Fractions	Position and Direction
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> 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 0 solve number and practical problems that involve all of the above 	<ul style="list-style-type: none"> perform mental calculations, including with mixed operations and large numbers use their knowledge of the order of operations to carry out calculations solve addition and subtraction multi-step problems in contexts solve problems involving addition and subtraction use estimation to check answers to calculations and determine, in the context of a problem 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 divide numbers up to 4 digits by a two-digit number perform mental calculations, identify common factors, common multiples and prime numbers use their knowledge of the order of operations to carry out calculations solve problems involving multiplication and division use estimation to check answers to calculations 	<ul style="list-style-type: none"> 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 [for example, $\times =$] divide proper fractions by whole numbers [$\div 2 =$] solve problems which require answers to be rounded to specified degrees of accuracy 	<ul style="list-style-type: none"> describe positions on the full coordinate grid (all 4 quadrants) draw and translate simple shapes on the coordinate plane, and reflect them in the axes
Learning Objectives	<ul style="list-style-type: none"> Numbers to 10,000 Numbers to 100,000 Numbers to a million Numbers to 10 million Compare and order any numbers Round numbers to 10, 100 and 1,000 Round any number Negative numbers Negative numbers 	<ul style="list-style-type: none"> Add whole numbers with more than 4 digits Subtract whole numbers with more than 4 digits (column method) Inverse operations (addition and subtraction) Multi-step addition and subtraction problems Add and subtract integers Multiply 4-digits by 1-digit Multiply 2-digits (area model) Multiply 2-digits by 2-digits Multiply 3-digits by 2-digits Multiply up to a 4-digit number by a 2-digit number Divide 4-digits by 1-digit Divide with remainders Short division Division using factors Long division Factors Common factors Common multiples Primes to 100 Squares and cubes Order of operations Mental calculations and estimation Reason from known facts 	<ul style="list-style-type: none"> Equivalent fractions Simplify fractions Improper fractions to mixed numbers Mixed numbers to improper fractions Fractions on a number line Compare and order (denominator) Compare and order (numerator) Add and subtract fractions Add and subtract fractions activity Add and subtract fractions Add mixed numbers Add fractions Subtract mixed numbers Subtract fractions Mixed addition and subtraction Multiply fractions by integers Multiply fractions by fractions Divide fractions by integers Four rules with fractions Fraction of an amount Fraction of an amount - find the whole 	<ul style="list-style-type: none"> The first quadrant Four quadrants Translations Reflections
Vocabulary	numbers to ten million	order of operation	degree of accuracy, simplify	four quadrants

Maths – curriculum map – Year 6



Spring						
Unit	Decimals	Percentages	Algebra	Converting Units	Perimeter, area and volume	Ratio
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> associate a fraction with division and calculate decimal fraction equivalents [0.375] for a simple fraction identify the value of each digit in numbers given to 3 decimal places and multiply and divide 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 	<ul style="list-style-type: none"> recall and use equivalences between simple fractions, decimals and percentages 	<ul style="list-style-type: none"> use simple formulae generate and describe linear number sequences express missing number problems algebraically find pairs of numbers that satisfy an equation with 2 unknowns enumerate possibilities of combinations of 2 variables 	<ul style="list-style-type: none"> solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 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 3 decimal places convert between miles and kilometres 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] 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> solve problems involving the relative sizes of 2 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
Learning Objectives	<ul style="list-style-type: none"> Decimals up to 2 d.p. Understand thousandths Three decimal places Multiply by 10, 100 and 1,000 Divide by 10, 100 and 1,000 Multiply decimals by integers Divide decimals by integers Division to solve problems Decimals as fractions Fractions to decimal 	<ul style="list-style-type: none"> Understand percentages Fractions to percentages Equivalent FDP Order FDP Percentage of an amount Percentages - missing values 	<ul style="list-style-type: none"> Find a rule - one step Find a rule - two step Forming expressions Substitution Formulae Forming equations Solve simple one-step equations Solve two-step equations Find pairs of values 	<ul style="list-style-type: none"> Metric measures Convert metric measures Calculate with metric measures Miles and kilometres Imperial measures 	<ul style="list-style-type: none"> Shapes - same area Area and perimeter Area of a triangle Area of a parallelogram What is volume? Volume - counting cubes Volume of a cuboid 	<ul style="list-style-type: none"> Use ratio language Ratio and fractions Introducing the ratio symbol Calculating ratio Using scale factors Calculating scale factors Ratio and proportion problems
Vocabulary			linear number sequence, substitute, variables, symbol, known values			

Maths – curriculum map – Year 6



Summer			
Unit	Statistics	Properties of Shape	Consolidation
Skills (disciplinary knowledge)	<ul style="list-style-type: none"> interpret and construct pie charts and line graphs and use these to solve problems calculate and interpret the mean as an average 	<ul style="list-style-type: none"> 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 	Post SATS, our Year 6s complete a range of maths units to manage the transition towards for Year 7. This includes: <ul style="list-style-type: none"> White Rose 'Futures' unit – where pupils learn about salary, taxation, bills, mortgages and decorating a house. Preparation for the Downlands Summer Fayre – pupils complete an 'Enterprise' project where they are given a budget and have to design and build a stall for the Summer Fayre.
Learning Objectives	<ul style="list-style-type: none"> Read and interpret line graphs Draw line graphs Use line graphs to solve problems Circles Read and interpret pie charts Pie charts with percentages Draw pie charts The mean 	<ul style="list-style-type: none"> Measure with a protractor Draw lines and angles accurately Introduce angles Angles on a straight line Angles around a point Calculate angles Vertically opposite angles Angles in a triangle Angles in a triangle - special cases Angles in a triangle - missing angles Angles in special quadrilaterals Angles in regular polygons Draw shapes accurately Draw nets of 3D shapes 	
Vocabulary	mean, pie chart, construct	Vertically opposite, circumference, diameter, radius	