# Maths curriculum overview year 1-6

Pupils in KS1 will be learning about maths in a practical hands-on way, using everyday objects to solve problems and do simple calculations. They will be working individually, as a whole class and in groups, and will be learning to think about the methods they use for solving problems.

During KS2 children become much more confident with maths: they are adding, subtracting, multiplying and dividing, as well as doing mental calculations and solving problems using time, measure or money. By the end of Year 6 the children should have a secure grasp of their times tables up to 12.

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| EYFS | Sorting and matching<br>Counting reliably 1:1<br>Ordering sets of 1, 2, 3 and comparing<br>Recognising numbers<br>1-3<br>Play games using a 5<br>frame<br>Counting sets up to 3<br>Begin to subsidise to 3<br>Compare size, mass and | Counting reliably 1:1<br>Using numbers/ putting numbers 1-5 in order<br>Recognising numbers<br>1-5<br>Counting sets up to 5<br>Begin to subitise to 5<br>Compare numbers to<br>5<br>Look at bonds of 4 and 5.<br>Explore mass- heavy and light, activities linked to balance | Comparing<br>Estimating<br>Counting reliably 1:1<br>Explore length and height<br>Sequencing events/time<br>Counting reliably 1:1<br>Begin to use numbers<br>to work out simple number problems linked to 6, 7, 8<br>1-10 and beyond<br>Making pairs, composition of 6, 7, 8<br>Combining 2 groups | Comparing numbers<br>to 10<br>Describing a set<br>more, fewer, same<br>Play games and look<br>at patterns using a ten frame<br>Number bonds to 10<br>Counting reliably 1:1<br>3D shapes<br>Exploring patterns<br>Using numbers to work out simple problems | Consolidation of key skills: subitising, comparing,<br>counting,<br>sorting and the composition of numbers<br>Counting reliably<br>1-20<br>and beyond<br>-looking<br>at number patterns.<br>Encourage patterns of<br>larger numbers and explore numbers to 100<br>Explore the | Applying number knowledge to work out addition and subtraction<br>number problems.<br>Counting in steps of 2<br>and 10<br>Doubling<br>Halving/Sharing<br>Positional language<br>Time familiar times in the day |

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| | Make and recognise simple patterns | scales<br>Explore capacity and containers | 3-D and 2-D shapes | | composition of 100.<br><br>Spatial reasoning- match, rotate and<br><br>manipulate.<br>Jigsaws, tangrams, building shapes | |
| Year 2 | Block 1 – Place Value<br>Block 2 – Addition and Subtraction<br>Block 3 - Shape | | Block 1 – Money<br>Block 2 – Multiplication and Division<br>Block 3 – Length and Height<br>Block 4 – Mass, Capacity and Temperature | | Block 1 – Fractions Block 2 – Time<br>Block 3 - Statistics<br>Block 4 – Position and Direction | |
| Year 3 | Block 1 – Place Value<br>Block 2 – Addition and Subtraction<br>Block 3 – Multiplication and Division (A) | | Block 1 – Multiplication and Division (B)<br>Block 2 – Length and Perimeter<br>Block 3 – Fractions<br>Block 4 – Mass and Capacity | | Block 1 – Fractions<br>Block 2 – Money<br>Block 3 – Time<br>Block 4 – Shape<br>Block 5 - Statistics | |
| Year 4 | Block 1 – Fractions<br>Block 2 – Money<br>Block 3 – Time<br>Block 4 – Shape<br>Block 5 - Statistics | | Block 1 – Multiplication and Division<br>Block 2 – Length and Perimeter<br>Block 3 – Fractions<br>Block 4 - Decimals | | Block 1 – Decimals<br>Block 2 – Money<br>Block 3 – Time<br>Block 4 – Shape<br>Block 5 – Statistics<br>Block 6 – Position and Direction | |
| Year 5 | Block 1 – Place Value<br><br>Block 2 – Addition and Subtraction<br>Block 3 – Multiplication and Division (A)<br>Block 4 – Fractions (A) | | Block 1 – Multiplication and Division (B<br>Block 2 – Fractions (B)<br>Block 3 – Decimals and Percentages<br>Block 4 – Perimeter and Area<br>Block 5 - Statistics | | Block 1 – Shape<br>Block 2 – Position and Direction<br>Block 3 – Decimals<br>Block 4 – Negative Numbers<br>Block 5 – Converting Units<br>Block 6 – Volume | |

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| Year 6 | Block 1 – Place Value<br>Block 2 – Four Operations<br>Block 3 – Fractions A<br>Block 4 – Fractions B<br>Block 5 – Converting Units | Block 1 – Ratio<br>Block 2 – Algebra<br>Block 3 – Decimals<br>Block 4 – Fractions, Decimals and Percentages<br>Block 5 – Area, Perimeter and Volume<br>Block 6 – Statistics | Block 1 – Shape<br>Block 2 – Position and Direction<br>Block 3 – Themed projects, consolidation and<br>problem solving |

| Key Vocabulary - Year 1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Number and place value | Addition and subtraction | Multiplication and division | Measure | Geometry (position and direction) | Geometry (properties of shape) | Fractions | General/problem solving |
| Number Zero, one, two, three to twenty, and beyond None Count (on/up/to/from/ down) Before, after More, less, many, few, fewer, least, fewest, smallest, greater, lesser Equal to, the same as Odd, even<br><br>Pair Units, ones, tens Ten more/less Digit | Number bonds, number line Add, more, plus, make, sum, total, altogether Inverse Double, near double Half, halve Equals, is the same as (including equals sign) Difference between How many more to make..?, how many more is…than..?, how much more is..? Subtract, take | Odd, even Count in twos, threes, fives Count in tens (forwards from/backwards from) How many times? Lots of, groups of Once, twice, three times, five times Multiple of, times, multiply, multiply by Repeated addition Array, row, column Double, halve Share, share equally Group in | Full, half full, empty Holds Container Weigh, balances Heavy, heavier, heaviest, light, lighter, lightest Scales Time Days of the week: Monday, Tuesday, etc. Seasons: Spring, Summer, Autumn, winter Day, week, month, year, weekend Birthday, holiday Morning, afternoon, evening, night, midnight Bedtime, dinnertime, playtime Today, yesterday, tomorrow Before, after Next, last Now, soon, early, late Quick, quicker, quickest, quickly , fast, faster, fastest, slow, slower, slowest, slowly | Position Over, under, underneath, above, below, top, bottom, side on, in, outside, inside around, in front, behind Front, back Before, after Beside, next to, Opposite Apart Between, middle, edge, centre Corner Direction Journey Left, right, up, down, forwards, | Group, sort Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square Shape Flat, curved, straight, round Hollow, solid Corner (point, pointed) Face, side, edge Make, build, draw | Whole Equal parts, four equal parts One half, two halves A quarter, two quarters | Listen, join in Say, think, imagine, remember Start from, start with, start at Look at, point to Put, place, fit Arrange, rearrange Change, change over Split, separate Carry on, continue, repeat, what comes next? Find, choose, collect, use, make, build Tell me, describe, pick out, talk about, explain, show me |

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| Numeral Figure(s) Compare (In) order/a different order Size Value Between, halfway between Above, below | away, minus How many fewer is…than..?, how much less is..? | pairs, threes, etc. Equal groups of Divide, divided by, left, left over | Old, older, oldest, new, newer, newest Takes longer, takes less time Hour, o'clock, half past Clock, watch, hands Always, never, often, sometimes, usually Once, twice First, second, third, etc. Estimate, enough Length, width, height, depth Long, longer, longest, short, shorter shortest, tall, taller, tallest, high, higher, highest Low, wide, narrow, deep, shallow, thick, thin Far, near, close Metre, ruler, metre stick Money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, change, dear(er), costs more, costs less, cheaper, costs the same as Total | backwards, sideways Across Close, far, near Along, through To, from, towards, away from Movement Slide, roll, turn, whole turn, half turn Stretch, bend | | | Read, write, record, trace, copy, complete, finish, end Fill in, shade, colour, tick, cross, draw, draw a line between, join (up), ring, arrow Cost Count, work out, answer, check same number(s)/different number(s)/missing number(s) Number facts, number line, number track, number square, number cards Abacus, counters, cubes, blocks, rods, die, dice, dominoes, pegs, peg board Same way, different way, best way, another way In order, in a different order Not all, every, each |

Key Vocabulary – Year 2

| Number and place value | Measure | Geometry (position and direction) | Geometry (properties of shape) | Fractions | Data/statistics | General/problem solving |
|---|---|---|---|---|---|---|
| Numbers to one hundred Hundreds Partition, recombine Hundred more/less | Quarter past/to m/km, g/kg, ml/l Temperature (degrees) | Rotation Clockwise, anticlockwise Straight line Ninety degree turn, right angle | Size Bigger, larger, smaller Symmetrical, line of symmetry Fold Match Mirror line, reflection Pattern, repeating pattern | Three quarters, one third, a third Equivalence, equivalent | Count, tally, sort Vote Graph, block graph, pictogram, Represent Group, set, list, table Label, title Most popular, most common, least popular, least common | Predict Describe the pattern, describe the rule Find, find all, find different Investigate |

| Key Vocabulary – Year 3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Number and place value | Addition and subtraction | Multiplication and division | Measure | Geometry (position and direction) | Geometry (properties of shape) | Fractions | Data/statistics |
| Numbers to one thousand | Column addition and subtraction | Product Multiples of four, eight, fifty and one hundred Scale up | Leap year Twelve hour/twenty-four hour clock Roman numerals I to XIII | Greater/less than ninety degrees Orientation (same orientation, different orientation) | Horizontal, vertical, perpendicular and parallel lines | Numerator, denominator Unit fraction, non-unit fraction Compare and order Tenths | Chart, bar chart, frequency table, Carroll diagram, Venn diagram Axis, axes Diagram |

| Key Vocabulary – Year 4 |
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| Number and place value | Multiplication and division | Measure | Geometry (position and direction) | Geometry (properties of shape) | Fractions and decimals | Data/statistics |
|---|---|---|---|---|---|---|
| Tenths, hundredths Decimal (places) Round (to nearest) Thousand more/less than Negative integers Count through zero Roman numerals (I to C) | Multiplication facts (up to 12x12) Division facts Inverse Derive | Convert | Coordinates Translation Quadrant x-axis, y-axis Perimeter and area | Quadrilaterals Triangles Right angle, acute and obtuse angles | Equivalent decimals and fractions | Continuous data Line graph |

| Key Vocabulary – Year 5 | | | | | | |
|---|---|---|---|---|---|---|
| Number and place value | Addition and subtraction | Multiplication and division | Measure | Geometry (position and direction) | Geometry (properties of shape) | Fractions, decimals and percentages |
| Powers of 10 | Efficient written method | Factor pairs Composite numbers, prime number, prime factors, square number, cubed number Formal written method | Volume Imperial units, metric units | Reflex angle Dimensions | Regular and irregular Polygons | Proper fractions, improper fractions, mixed numbers Percentage Half, quarter, fifth, two fifths, four fifths Ratio, proportion |

| Key Vocabulary – Year 6 |
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| Number and place value | Addition and subtraction | Multiplication and division | Geometry (position and direction) | Geometry (properties of shape) | Fractions, decimals and percentages | Algebra | Data/statistics |
|---|---|---|---|---|---|---|---|
| Numbers to ten million | Order of operations | Order of operations<br>Common factors, common multiples | Four quadrants (for coordinates) | Vertically opposite (angles)<br>Circumference, radius, diameter | Degree of accuracy<br>Simplify | Linear number sequence<br>Substitute<br>Variables Symbol<br>Known values | Mean Pie chart<br>Construct |

| **Progression Map – Number and Place Value** | | | | | |
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| Counting | | | | | |
| Year 1 | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| count to and across 100,<br>forwards and backwards,<br>beginning with 0 or 1, or from any given number | | | count backwards through zero<br>to include negative numbers | interpret negative numbers in<br>context, count forwards and backwards with positive and negative whole numbers,<br>including through zero | use negative numbers in<br>context, and calculate intervals<br>across zero |
| count, read and write numbers to 100 in numerals; count in multiples of twos, fives and<br>tens | count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward | count from 0 in multiples of 4,8, 50 and 100; | count in multiples of 6, 7, 9, 25 and 1000 | count forwards or backwards<br>in steps of powers of 10 for any given number<br>up to 1000000 | |

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| given a number, identify one more and one less | | find 10 or 100 more or less than a given number | find 1000 more or less than a given number | | |
| Comparing Numbers | | | | | |
| use the language of: equal to, more than, less than (fewer), most, least | compare and order numbers from 0 up to 100; use <, > and = signs | compare and order numbers up to 1000 | order and compare numbers beyond 1000<br><br>* compare numbers with the same number of decimal places up to two decimal places (copied from Fractions) | read, write, order and compare numbers to at least 1000000 and determine the value of each digit<br><br>(appears also in Reading and Writing Numbers) | read, write, order and compare numbers up to 10 000000 and determine the value of each digit (appears also in Reading and Writing Numbers) |

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| IDENTIFYING, REPRESENTING AND ESTIMATING NUMBERS | | | | | |
| identify and represent numbers using objects and pictorial representations including the number line | identify, represent and estimate numbers using different representations, including the number line | identify, represent and estimate numbers using different representations | identify, represent and estimate numbers using different representations | | |
| READING AND WRITING NUMBERS (including Roman Numerals) | | | | | |
| read and write numbers from 1 to 20 in numerals and words. | read and write numbers to at least 100 in numerals and in words | read and write numbers up to 1000 in numerals and in words | read Roman numerals to 100 (I to C) and know that over time, the | read, write, order and compare numbers to at least 1000000 and determine the value of each digit (appears | read, write, order and compare numbers up to |

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| | | * tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks (copied from Measurement) | numeral system changed to include the concept of zero and place value. | also in Comparing Numbers)<br><br>* read Roman numerals to 1000 (M) and recognise years written in Roman numerals. | 10 000000 and determine the value of each digit (appears also in Understanding Place Value) |
| | recognise the place value of each digit in a two-digit number (tens, ones) | recognise the place value of each digit in a three-digit number (hundreds, tens, ones) | recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)<br><br>* 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 units, tenths and hundredths (copied from Fractions) | read, write, order and compare numbers to at least 1000000 and determine the value of each digit (appears also in Reading and Writing Numbers)<br><br>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (copied from Fractions) | read, write, order and compare numbers up to 10 000000 and determine the value of each digit (appears also in Reading and Writing Numbers)<br><br>* identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places (copied from Fractions) |

| Rounding |
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| | | | identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places (copied from Fractions)<br><br>* round decimals with one decimal place to the nearest whole number (copied from Fractions) | round any number up to 1000000 to the nearest 10,100, 1000, 10 000 and 100000<br><br>* round decimals with two decimal places to the nearest whole number and to one decimal place (copied from Fractions) | round any whole number to a required degree of accuracy<br><br>* solve problems which require answers to be rounded to specified degrees of accuracy (copied from Fractions) |
| Problem Solving | | | | | |
| | use place value and number facts to solve problems | solve number problems and practical problems involving these ideas. | solve number and practical problems that involve all of the above and with increasingly large positive numbers | solve number problems and practical problems that involve all of the above | solve number problems and practical problems that involve all of the above |

| **Progression Map – Addition and Subtraction** | | | | | |
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| Year 1 | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Number Bonds | | | | | |

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| represent and use number<br>bonds and related subtraction facts within 20 | recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 | | | | |
| Mental Calculation | | | | | |
| add and subtract one-digit<br>and two-digit numbers to<br>20, including zero | add and subtract numbers<br>using concrete objects, pictorial representations,<br>and mentally, including:<br>* a two-digit number and ones<br>* a two-digit number and tens<br>* two two-digit numbers<br>* adding three one-digit numbers | add and subtract numbers mentally, including:<br>* a three-digit number and ones<br>* a three-digit number and tens<br>* a three-digit number and hundreds | | add and subtract numbers<br>mentally with increasingly<br>large numbers | perform mental calculations,<br>including with mixed operations and large numbers |

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| WRITTEN METHODS | | | | | |
| read, write and interpret mathematical statements<br>involving addition (+), subtraction (-) and equals<br>(=) signs | | add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction | add and subtract numbers<br>with up to 4 digits using the formal written methods of columnar addition and subtraction<br>where appropriate | add and subtract whole<br>numbers with more than 4<br>digits, including using formal written methods (columnar addition and subtraction) | |

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| (appears also in Mental Calculation) | | | | | |
| INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS | | | | | |
| | recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | estimate the answer to a calculation and use inverse operations to check answers | estimate and use inverse operations to check answers to a calculation | use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| PROBLEM SOLVING | | | | | |
| solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ■ - 9 | solve problems with addition and subtraction:<br>* using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>* applying their increasing knowledge of mental and written methods<br><br>* solve simple problems in a practical context | solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction | solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why | solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why | solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why<br><br>* Solve problems involving addition, subtraction, multiplication and division |

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| | involving addition and subtraction of money of the same unit, including giving change (copied from Measurement) | | | | |

| **Progression map – Multiplication and Division** | | | | | |
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| Year 1 | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Recall, represent and use | | | | | |
| | Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables including recognising odd and even numbers and use them to solve simple problems, demonstrating an understanding of commutativity as necessary Show that multiplication of two numbers can be done in any order (commutative) and | Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables | Recall and use multiplication and division facts for multiplication tables up to 12 x 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 | Identify multiples and factors, including factor pairs of a number and common factors of to numbers Know and use the vocabulary of prime numbers, prime factors and composite (non prime) numbers Establish whether a number up to 100 is prime and recall prime numbers up to 19 Recognise and use square numbers and cube numbers, and the notion of squared and cubed | Identify common factors, common multiples and prime factors Use estimation and check answers to calculation and determine, in the context of a problem, an appropriate degree of accuracy |

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| | division of one number by another cannot | | | | |
| Calculations | | | | | |
| | Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division and equals sings | 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 | Multiply two-digit and three-digit numbers by a one digit number using formal written layout | To multiply numbers up to four digits by a one or two-digit number using a formal written method, including long multiplication for two digit numbers fluently. Multiply and divide mentally drawing upon known facts To divide numbers up to four digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context fluently. To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. | To multiply multi-digit numbers up to four digits by a two-digit whole number using the formal written method of long multiplication. To divide numbers up to four digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. To divide numbers up to four digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Perform mental calculations, including with mixed operation and large numbers |

| Problem solving | | | | | |
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| To solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. | To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts | To solve simple problems in different contexts, deciding which of the four operations to use and why. These include missing number problems, involving multiplication and division, including measuring and positive integer scaling problems and correspondence problems in which n objects are connected to m objects. | To solve two-step problems in different contexts involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems, such as n objects are connected to m objects | To solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. | To solve problems involving addition, subtraction, multiplication and division. |
| Combined Operations | | | | | |
| | | | | To solve problems, including in missing number problems, involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals | To use their knowledge of the order of operation to carry out calculations involving the four operations (BIDMAS) |

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| | | | | sign (to indicate equivalence). | |

| **Progression map –Fractions, Decimals and Percentages** | | | | | |
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| Year 1 | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Counting in fraction steps | | | | | |
| | Pupils should count in fractions<br>up to 10, starting from any<br>number and using the1/2 and<br>2/4 equivalence on the number<br>line (Non Statutory Guidance) | count up and down in tenths | count up and down in hundredths | | |
| Recognising fractions | | | | | |
| recognise, find and name a half as one of two equal parts of an object,shape or quantity<br><br>recognise, find and name a quarter as one of four equal parts of an | recognise, find, name and<br>write fractions 1/3,1/4,2/4 and 3/4 of a length, shape, set of objects or quantity | recognise, find and write<br>fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators | recognise that hundredths<br>arise when dividing an object by one hundred and dividing tenths by ten | recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence) | |

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| object, shape or quantity | | recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.<br><br>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators | | | |

| Comparing fractions | | | | | |
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| | | compare and order unit fractions, and fractions with the same denominators | | compare and order fractions whose denominators are all multiples of the same number | compare and order fractions, including fractions >1 |

| **Progression map – Algebra**<br>**Algebraic thinking starts in Y1/2/3 in the form of missing numbers problems but the language associated with algebra is not introduced until Y6** | | | | | |
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| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |

| Equations | | | | | |
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| solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ - 9 (copied from Addition and Subtraction)<br><br>represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction) | recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.<br><br>(copied from Addition and Subtraction)<br><br>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100<br><br>(copied from Addition and Subtraction) | solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. (copied from Addition and Subtraction)<br><br>solve problems, including missing number problems, involving multiplication and division, including integer scaling (copied from Multiplication and Division) | | use the properties of rectangles to deduce related facts and find missing lengths and angles (copied from Geometry: Properties of Shapes) | express missing number problems algebraically<br><br>find pairs of numbers that satisfy number sentences involving two unknowns<br><br>enumerate all possibilities of combinations of two variables |

| Formulae | | | | | |
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| | | | Perimeter can be expressed algebraically as 2(a + b) where a and | | use simple formulae (A= L x W) |

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| | | | b are the dimensions in the same unit.<br>(Copied from NSG measurement) | | recognise when it is possible to use formulae for area and volume of shapes (copied from Measurement) |
| Sequences | | | | | |
| sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening (copied from Measurement) | compare and sequence intervals of time (copied from Measurement)<br><br>order and arrange combinations of mathematical objects in patterns (copied from Geometry: position and direction) | | | | generate and describe linear number sequences |

| **Progression map – Measurement** | | | | | |
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| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Using measures | | | | | |

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| To compare, describe and solve practical problems for: - lengths and heights, - mass/weight, - capacity and volume, - time. To measure and begin to record the following: - lengths and heights - mass/weight, - capacity and volume - time. | To choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. To compare and order lengths, mass, volume/capacity and record the results using >, < and =. Read scales in divisions of ones, twos, fives and tens | To measure, compare, add and subtract using mixed units: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). | To estimate, compare and calculate different measures To convert between different units of measure (for instance metres to kilometres and minutes to hours) | To convert between different units of metric measure. To understand and use approximate equivalences between metric units and common imperial units. To use all four operations to solve problems involving measure using decimal notation, including scaling and conversions. | . To solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate To use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. To convert between miles and kilometres. |
| Money | | | | | |
| To recognise and know the value of different denominations of coins and notes. | To recognise and use symbols for pounds (£) and pence (p) accurately, recording pounds and pence separately; combine amounts to make a particular value. To find and use different combinations of coins | To add and subtract amounts of money, including mixed units, to give change, using both £ and p in practical contexts. | To estimate, compare and calculate different measures, including money in pounds and pence | To use all four operations to solve problems involving measure (for examples, money) | |

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| | that equal the same amounts of money. To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. | | | | |

| Time | | | | | |
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| To sequence events in chronological order using language. To recognise and use language relating to dates, including days of the week, weeks, months and years. To tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | To read, tell and write the time to five minutes, including quarter past/to the hour/half hour and draw the hands on a clock face to show these times. To know the number of minutes in an hour and the number of hours in a day. To compare and sequence intervals of time. | To tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours. To know the number of seconds in a minute and the number of days in each month, year and leap year. To compare durations of events. | To read, write and convert time between analogue and digital 12- and 24-hour clocks. To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. | To solve problems involving converting between units of time. | To use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa |
| Perimeter, Area and Volume | | | | | |

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| | | To measure the perimeter of simple 2D shapes. | To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. To find the area of rectilinear shapes by counting squares. | To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres To calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres ($cm^2$) and square metres ($m^2$) and estimate the area of irregular shapes.. To estimate volume. | To recognise that shapes with the same areas can have different perimeters and vice versa. To recognise when it is possible to use formulae for area and volume of shapes. To calculate the area of parallelograms and triangles. To calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres ($cm^3$) and cubic metres ($m^3$), and extending to other units (for example, $mm^3$ and $km^3$). |

| **Progression map – Geometry and Properties of shape** | | | | | |
|---|---|---|---|---|---|
| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| 2D Shapes | | | | | |
| To recognise, handle and name common 2D shapes (for example rectangles (including squares), circles and triangles) | To identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line To identify | | To compare and classify geometric shapes, including different quadrilaterals and triangles, based on their properties and | To distinguish between regular and irregular polygons based on reasoning about equal sides and angles. To use the properties of | To illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter |

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| | 2D shapes on the surface of 3D shapes. To compare and sort common 2D and 3D shapes and everyday objects | | sizes. To identify lines of symmetry in 2-D shapes presented in different orientations | rectangles to deduce related facts and find missing lengths and angles | is twice the radius. To compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons To draw 2D shapes using given dimensions and angles |
| 3D Shapes | | | | | |
| To recognise, handle and name common 3D (for example, cuboids (including cubes), pyramids and spheres | To compare and sort common 2D and 3D shapes and everyday objects To, identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. | To draw 2D shapes and make 3D shapes using modelling materials. | | To identify 3D shapes, including cubes and other cuboids, from 2D representations. | To recognise, describe and build simple 3D shapes, including making nets. |

| Geometry : Angles and Lines | | | | | |
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| | | To recognise angles as a property of shape or a description of a turn. To identify right angles, recognise that two right angles make a half-turn, three make | To identify acute and obtuse angles and compare and order angles up to two right angles by size in preparation for using a protractor. To complete | To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles. To draw given angles, and | To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. |

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| | | three quarters of a turn and four a complete turn To identify whether angles are greater than or less than a right angle. | a simple symmetric figure with respect to a specific line of symmetry. To identify lines of symmetry in 2D shapes presented in different orientations. | measure them in degrees.<br><br>To identify:<br><br>- angles at a point and one whole turn (total 360˚)<br><br>- angles at a point on a straight line and a turn (total 180˚)<br><br>- Other multiples of 90˚. | |
| Geometry: Position and direction | | | | | |
| To describe position, direction and movement, including whole, half, quarter and three-quarter turns | To use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). To order and arrange combinations of mathematical objects and shapes, including those in different | | To describe positions on a 2D grid as coordinates in the first quadrant. To plot specified points and draw sides to complete a given polygon. To describe movements between positions as translations of a given unit to the left/right and up/down. | To identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. | To draw and translate simple shapes on the coordinate plane, and reflect them in the axes. To describe positions on the full coordinate grid (all four quadrants) |

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| | orientations, in patterns and sequences. | | | | |

| Progression map – Statistics | | | | | |
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| **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Record, present and interpret data | | | | | |
| | To interpret and construct simple pictograms, tally charts, block diagrams and simple tables (e.g. many-to-one correspondence in pictograms with simple ratios 2, 5, 10 scales). | To interpret and present data using bar charts, pictograms and tables and use simple scales with increasing accuracy. | To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. | To complete, read and interpret information in tables, including timetables. | To interpret and construct pie charts and line graphs (relating to two variables) and use these to solve problems. |
| Solve Problems | | | | | |
| | To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. To ask and answer questions about totalling and comparing categorical data. | To solve one-step and two-step questions using information presented in scaled bar charts, pictograms and tables. | To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | To solve comparison, sum and difference problems using information presented in a line graph. | To calculate and interpret the mean as an average. |