Maths Progression Map- Number and Place Value

|  | Branches | EYFS | $\begin{gathered} \text { Years } 1 \& 2 \\ \text { (Milestone 1) } \\ \hline \end{gathered}$ |  | Years 3\& 4 (Milestone 2) |  | $\begin{gathered} \text { Years } 5 \text { \& } 6 \\ \text { (Milestone 3) } \\ \hline \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| (1) | Counting | Verbally count beyond 20 , recognising the pattern of the counting system | count to and across 100 <br> forwards and backwards, <br> beginning with 0 or 1 , or from any given number <br> anybventumber |  |  | count backwards through ero to include negative numbers | interpret negative numbers in backwards with oositive and negative whole numbers. including throug zero | use negative numbers in context, and calculate intervals across zero |
|  |  |  | count, read and write numbers to 100 in numerals; count in multiples of twos, fives and 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, <br> 25 and 1000 | count forwards or backwards in steps of powers of 10 for any given number up to 1000000 |  |
|  |  |  | 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 | Compare quantities up to 10 in different contexts, quantity is greater than, ss than or the same as the other quantity | use the language of: equal to more than, less than (fewer), most, least | compare and order numbers <br> from 0 up to 100; use <, > and = signs | compare and order numbers up to 1000 | order and compare numbers beyond 1000 <br> ompare numbers with the same number of decimal places <br> copied from Fractions) |  |  |
|  | Identifying, Representing and Estimating numbers | Subitise (recognise quantities without counting) up to 5 | identify and represent numbers using objects and pictorial representations including the number line | identify, represent and estimate numbers using different presentations, including the number line | identify, represent and estimate numbers using different representations ferent representation | identify, represent and estimate numbers using different representations |  |  |
| e | Reading and Writing Numbers |  | read and write numbers from 1 <br> to 20 in numerals and words. | read and write numbers to at <br> east 100 in numerals and in words | read and write numbers up to 1000 in words <br> tell and write the time from an analogue clock, including using Roman numerals from to XII, and 12-hour and $24-$ hour clocks (copied from Measurement) | read Roman numerals to 100 (I to C) and know that over changed to include the concept of zero and place value. |  | read, write, order and compare numbers up to <br> 10000000 and determine the <br> value of each digit <br> (appears also in Understanding <br> Place Value) |
|  | Understanding Place Value | Have a deep understanding of number to 10 , including number |  | 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) |  | read, write, order and compare numberst determine the value of each digit (appears also in Re Writing Numbers) <br> recognise and use thousandths and relate them to tenth equivalents (copied from Fractions) |  |
|  | Rounding |  |  |  |  | round any number to the nearest 10,100 or 1000 | round any number up to 1000 <br> 000 to the nearest $10,100,1000$, <br> 10000 and 100000 | round any whole number to a required degree of accuracy |
|  |  |  |  |  |  | round decimals with one <br> decimol ol loece to the enerest <br> whol <br> Copied trom frations | round decimals with two decimal places to the nearest whole number and to one decimal place (copied from Fractions) | 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 problems and practical problems that involve all of the above | solve number and practical <br> problems that involve all of the <br> above |

Maths Progression Map- Addition and Subtraction

|  | Branches | EYFS | Years 1 \& 2 <br> (Milestone 1) |  | $\begin{gathered} \text { Years } 3 \text { \& } 4 \\ \text { (Milestone 2) } \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { Years 5\&6 } \\ \text { (Milestone 3) } \\ \hline \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|  | Number Bonds | Automatically recall (without <br> reference to rhymes, <br> number bonds up to 5 <br> (including subtraction facts) <br> and some number bonds 10 including double facts. | epresent and use numbe bonds and related subtraction facts within 20 | recall and use addition and subtraction facts to 20 fluently, and derive and use related fact up to 100 |  |  |  |  |
|  | Mental Calculations | Explore and represent patterns within numbers upto 10 , including evens and odds, double facts and how quantities can be distributed equally. | add and subtract one-digit and two-digit numbers to 20 including zero |  | add and subtract numbers <br> mentally, including: <br> a three-digit number and ones a three-digit number and tens a three-digit number and hundreds |  | add and subtract numbers mentally with increasingly large numbers | perform mental calculations, including with mixed operations and large numbers |
| $8$ |  |  | read, write and interpret mathematical statements subtraction (-) and equals (=) signs <br> (appears also in Written <br> Methods) |  |  |  |  | use their knowledge of the order of operations to carry out calculations involving the four operations |
| $\dot{v}$ | Written Methods |  | read, write and interpret mathematical statements involving addition (+), ubtraction (-) and equals (=) signs <br> (appears also in Mental Calculation) |  |  |  | add and subtract whole digits, including using forma written methods (columnar dation and subtraction) |  |
|  | Inverse operations, estimating and checking answers |  |  |  | stimate the answer to a calculation and use invers operations to check answers | estimate and use inverse operations to check answers to a calculation | use rounding to check answers to calculations and determine, levels of accuracy | use estimation to check answers to calculations and determine, in the context of problem, levels of accuracy. |
|  | Problem Solving |  | solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing $7=\square-9$ |  | solve problems, including using number facts, place value, and more complex addition and subtractio | solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why | multi-step problems in operations and methods to use and why |  |

Maths Progression Map- Multiplication and Division

|  | Branches | EYFS | $\begin{gathered} \text { Years } 1 \& 2 \\ \text { (Milestone 1) } \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { Years } 3 \text { \& } 4 \\ \text { (Milestone 2) } \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { Years } 5 \& 6 \\ \text { (Milestone 3) } \\ \hline \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|  | Multiplication and division facts |  | count in multiples of twos, fives and tens (copied from Number and Place Value | count in steps of 2,3, , and 5 number, forward or backward (copied from Number and Place value) | count from 0 in multiples of 4,8 , <br> 50 and 100 (copied from Number <br> and Place Value) | count in multiples of 6, 7, 9, 25 and 1000 (copied from Number and Place Value) | count forwards or backward in steps of powers of 10 for any given number up to 1000000 <br> (copied from Number and <br> Place Value) |  |
|  |  |  |  |  | recall and use multiplication and division facts for the 3,4 and 8 multiplication tables | recall multiplication and division facts for multiplication tables up to $12 \times 12$ |  |  |
|  | Mental Calculations |  |  |  | Write and calculate mathematical statements for multiplication and division using the multipilication tables that they know, including for two-digit numbers times one- digit numbers, using menta and progressing to formal written methods (appears also in Written Methods) | 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 | multiply and divide numbers mentally drawing upon known facts | perform mental calculations, including with mixed operations and large numbers |
|  |  |  |  |  |  | recognise and use factor pairs and commutativity in mental Properties of Numbers) | multiply and divide whole numbers and those involving decimals by 10, 100 and 100 | associate a fraction with division and calculate decima fraction equivalents (e.g 0.375) for a simple fraction (e.g. 3/8) <br> (copied from Fractions) |
|  | Written Methods |  |  | alculate mathematical atements for multiplication and division within the multiplication tables and write $(\times)$, division $(\div)$ and equals (=) signs | write and calculate mathematical division using the multiplication tables that they know, including for two-digit numbers times onedigit numbers, using mental and methods (appears also in Mental Methods) | multiply two-digit and three-digit numbers by a one-digit number using formal written layout | multiply numbers up to 4 digits by a one- or two-digit - number using a formal written method, including long multiplication for two-digit numbers | multiply multi-idigit numbers up to 4 digits $b$ y atwodigit whole number using the formal written method of long muttipication |
|  |  |  |  |  |  |  | divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret the context | divide numbers up to 4-digits by a two-digit whole number using the formal written where appropriate for the context 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 rounding, as appropriate for the context |
|  |  |  |  |  |  |  |  |  |
|  | Properties of numbers: Multiples, Factors, Prime, Square, cube numbers |  |  |  |  | recognise and use factor pairs and commutativity in mental calculations (repeated) | identify multiples and factors including finding all factor pairs of a number, and numbers. | identify common factors, numbers <br> use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions) |
|  |  |  |  |  |  |  | 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, ( ${ }^{2}$ ) and cubed ( ${ }^{3}$ ) | calculate, estimate and <br> compare volume of cubes and cuboids using standard units, <br> $\left(\mathrm{cm}^{3}\right)$ and cubic metres $\left(\mathrm{m}^{3}\right)$, and extending to other units such as $\mathrm{mm}^{3}$ and $\mathrm{km}^{3}$ (copied from Measures) |
|  | Order of Operations |  |  |  |  |  |  | use their knowledge of the order of operations to carry four operations |
|  | Inverse operations, estimating and checking answers |  |  |  |  | $\begin{aligned} & \text { estimate and use inverse } \\ & \text { operations to check answers to a } \\ & \text { calculation } \\ & \text { (copied from Addition and } \\ & \text { Subtraction) } \end{aligned}$ |  |  |
|  | Problem Solving |  | 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 | solve problems involving multiplication and division repeated addition mental methods, and multiplication and division facts, including problems in contexts | 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 mobjects | solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scalin correspondence problems such as n objects are connected to m objects | solve problems involving multiplication and division including using their knowledge of factors an multiples, squares and cube | solve problems involving addition, subtraction, multiplication and division |
|  |  |  |  |  |  |  | solve problems involving addition, subtraction, multiplication and division and lination of these, meaning of the equals sign |  |
|  |  |  |  |  |  |  | solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates | solve problems involving simiar shapes where the scale factor found ${ }^{\text {in nown or can be }}$ (conied from Ratio and Proportion) |



|  | Branches | EYFS | Years 1 \& 2 <br> (Milestone 1) |  | $\begin{gathered} \text { Years } 3 \text { \& } 4 \\ \text { (Milestone 2) } \\ \hline \end{gathered}$ |  | $\begin{gathered} \text { Years } 5 \text { \& } 6 \\ \text { (Milestone 3) } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|  | Connected to fractions and multiplication and division |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 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 fraction and multiples |

Maths Progression Map- Statistics

|  | Branches | EYFS | Years 1 \& 2 <br> (Milestone 1) |  | Years 3 \& 4 (Milestone 2) |  | Years 5 \& 6 (Milestone 3) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| $3$ | Interpreting, constructing and presenting data |  |  | interpret and construct simple pictograms, tally charts, block diagrams and simple tables | interpret and present data using bar charts, pictograms and tables | interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs | complete, read and interpret information in tables, including timetables | interpret and construct pie charts and line graphs and use these to solve problems |
|  |  |  |  | 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 |  |  |  |  |
|  | Solving Problems |  |  |  | solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. | solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | solve comparison, sum and difference problems using information presented in a line graph | calculate and interpret the mean as an average |

Maths Progression Map- Algebra

|  | Branches | EYFS | Years 1 \& 2 (Milestone 1) |  | Years 3 \& 4 (Milestone 2) |  | Years 5 \& 6 (Milestone 3) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|  | Equations |  | solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7=\square-9$ (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. (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> 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 |
|  |  |  |  | recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 <br> (copied from Addition and Subtraction) |  |  |  | find pairs of numbers that satisfy number sentences involving two unknowns |
|  |  |  | represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction) |  |  |  |  | enumerate all possibilities of combinations of two variables |
|  | Formulae |  |  |  |  | Perimeter can be expressed algebraically as 2(a+b) where a and $b$ are the dimensions in the same unit. <br> (Copied from NSG measurement) |  | use simple formulae 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 <br> (copied from Measurement) <br> order and arrange combinations of mathematical objects in patterns (copied from Geometry: position and direction) |  |  |  | generate and describe linear number sequences |




|  | Branches | EYFS | $\begin{gathered} \text { Years } \mathbf{1 \& 2} \\ \text { (Milestone 1) } \end{gathered}$ |  | $\begin{gathered} \text { Years } \mathbf{3} \text { \& } 4 \\ \text { (Milestone 2) } \end{gathered}$ |  | $\begin{gathered} \text { Years } 5 \text { \& } 6 \\ \text { (Milestone 3) } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|  | Position, direct and movement |  | describe position, direction and movement, including half, |  |  | describe positions on a <br> 2-D grid as coordinates in the <br> first quadrant | identify, describe and represent the position of a shape following a reflection or | describe positions on the full coordinate grid (all four quadrants) |
|  |  |  | quarter and three-quarter turns | as a turn and in terms of righ three-quarter turns (clockwise and anti-clockwise) |  | describe movements between positions as translations of a given unit to the left/right and up/down | appropriate language, and know that the shape has not changed | draw and translate simple shapes on the coordinate plane and reflect them in the axes. |
|  |  |  |  |  |  | plot specified points and draw sides to complete a given polygon |  |  |
|  | Pattern |  |  | order and arrange mathematical objects in patterns and sequences |  |  |  |  |

