# Number: Number and Place Value Whole School Progression Map

| Essential knowledge for a mathematician: | Essential skills for a mathematician: |
|---|---|
| • Knowledge of place value<br>• Knowledge of calculation using all four operations<br>• Knowledge of fractions and percentages<br>• Knowledge of geometry (shape, space and measure)<br>• Knowledge of statistics<br>• Knowledge of ratio and proportion<br>• Knowledge of algebra | • To problem solve<br>• To reason about mathematical ideas and concepts<br>• To make links and transfer skills across the mathematical curriculum, other areas of the curriculum and in real life<br>• To be excited and inquisitive about maths |

| COUNTING | | | | | | | |
|---|---|---|---|---|---|---|---|
| **F1** | **F2** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| To sing a range of number songs.<br>To rote count up to 10.<br>To rote count up to 10 forwards/ backwards.<br>To rote count up to 15 forwards and backwards | To count up to 10 objects with 1:1 correspondence<br><br>To count, order and recognise numerals to 15, in and out of sequence.<br><br>To count, order and recognise numerals to 20, in and out of sequence. | count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number | | | count backwards through zero to include negative numbers | interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero | use negative numbers in context, and calculate intervals across zero |
| To show an understanding of 1:1 counting to 5.<br><br>To count out a group of up to 5 objects<br><br>To count out a group of up to 10 objects and match to numeral | To match quantities to numerals to 10 | count, read and write numbers to 100 in<br><br>numerals; count in<br><br>multiples of twos, fives and tens | count in steps of 2, 3, and 5 from 0, and in tens from<br><br>any number, forward or<br><br>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<br><br>backwards in steps of<br><br>powers of 10 for any given<br><br>number up to 1000 000 | |
| To count out a group of up to 10 objects and match to numeral<br><br>To know that the last number you count represents the total number of objects<br><br>To know that each object should only be counted once | To match quantities to numerals to 10 | 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 | | | | |
|---|---|---|---|---|---|---|---|
| F1 | F2 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| To use the language of more to compare amounts.

To use the language of more, less and equal to compare amounts.

To say more/less using a number line to 5 then 10 | To say one more/less than a given number to 5

To say one more/less than a given number to 10

To say one more/less than a given number to 15 | 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

*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 1 000 000 and determine the value of

each digit
(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) |
| | | | IDENTIFYING, REPRESENTING AND ESTIMATING NUMBERS | | | | |
| To problem solve practically with numbers up to 5.

To develop fast recognition of up to 3 objects (subitise) and then 6 objects. | To have a deep understanding of number to 3 – composition and subitising

To have a deep understanding of number to 5 – composition and subitising

To have a deep understanding of number to 6,7,8 – composition and subitising

To have a deep understanding of number to 9 – composition and subitising

To have a deep understanding of number to 10 – composition and subitising | 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) | | | | |
| F1 | F2 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | To write numbers to 5, forming them correctly.

To write numbers to 10, forming them correctly.

To write numbers to 15, forming them correctly. | 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, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
(appears also in Comparing Numbers) | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value) |
| | | | | *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)* | read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. | read Roman numerals to 1000 (M) and recognise years written in Roman numerals. | |
| | | | **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) | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
(appears also in Reading and Writing Numbers) | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) |
| | | | | | *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)* | *recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents*
*(copied from Fractions)* | *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** | | | | |
| | | | | | round any number to the nearest 10, 100 or 1 000 | round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000 | round any whole number to a required degree of accuracy |
| | | | | | *round decimals with one decimal place to the nearest whole number*
*(copied from Fractions)* | *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 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 and practical problems that involve all of the above |