## Progression of Knowledge and End Points <br> Mathematics

|  | End of term 1 | End of term 2 | End of term 3 |
| :---: | :---: | :---: | :---: |
| EYFS Mastering Number | Number | Number | Number |
|  | Subitising | Subitising | Subitising |
|  | Perceptually subitise within 3 Identify sub-groups | Increase confidence in subitising by continuing to explore patterns within 5 , inc structured/random | Continue to practise increasingly familiar subitising arrangements, including those which |
|  | Create patterns for numbers within 4 | arrangements | expose ' 1 more' or 'doubles' patterns |
|  | Practise using their fingers to represent quantities which they can subitise Experience subitising in a range of contexts, including temporal patterns made by sounds. | Explore a range of patterns made by numbers greater than 5 , inc structured patterns in which 5 is a clear part | Use subitising skills to enable them to identify when patterns show the same number but in a different arrangement, or when patterns are |
|  | Subitise within 5 , perceptually and conceptually, depending on the arrangements Cardinality, ordinality and counting | Experience patterns which show a small group and ' 1 more' | similar but have a different number Subitise structured and unstructured patterns, |
|  | Relate counting sequence to cardinality, seeing that the last number spoken gives the number in the entire set | Continue to match arrangements to finger patterns. | inc those which show numbers within 10 , in relation to 5 and 10 |
|  | Range of opportunities to develop their knowledge of the counting sequence, including through rhyme and song | Explore symmetrical patterns, in which each side is a familiar pattern, linking this to 'doubles'. | Be encouraged to identify when it is appropriate to count and when groups can be |
|  | Range of opportunities to develop 1:1 correspondence, including by coordinating movement and counting | Cardinality, ordinality and counting | subitised. |
|  | Develop an understanding that anything can be counted, including actions and sounds Explore a range of strategies which support accurate counting. | Continue to develop verbal counting to 20 and beyond | Cardinality, ordinality and counting Continue to develop verbal counting to 20 and |
|  | Explore the cardinality of 5 , linking this to dice patterns and 5 fingers on 1 hand Begin to count beyond 5 | Continue to develop object counting skills, using a range of strategies to develop accuracy | beyond, including counting from different starting numbers |
|  | Begin to recognise numerals, relating these to quantities they can subitise and count Numerical Patterns | Continue to link counting to cardinality, including using their fingers to represent quantities between 5 and 10 | Continue to develop confidence and accuracy in both verbal and object counting. |
|  | Composition | Order numbers, linking cardinal and ordinal | Numerical Patterns |
|  | See that all numbers can be made of 1s | representations of number. | Composition |
|  | Compose their own collections within 4. <br> Explore the concept of 'wholes' and 'parts' by looking at a range of objects that ar | Continue to consolidate their understanding of cardinality, working with larger numbers within | Explore the composition of 10. |
|  | composed of parts, some of which can be taken apart and some of which cannot |  | Comparison |
|  | Explore the composition of numbers within 5. | Become more familiar with the counting pattern beyond 20. | Order sets of objects, linking this to their understanding of the ordinal number system. |
|  | Comparison <br> Understand that sets can be compared according to a range of attributes, including by | Numerical Patterns |  |
|  | their numerosity | Composition | In Summer 2, the children will consolidate their |
|  | Use the language of comparison, including 'more than' and 'fewer than' compare sets 'just by looking' | Continue to explore the composition of 5 and practise recalling 'missing' or 'hidden' parts for 5 | understanding of concepts previously taught |

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|  | Compare sets using a variety of strategies, including 'just by looking', by subitising and by matching <br> Compare sets by matching, seeing that when every object in a set can be matched to one in the other set, they contain the same number and are equal amounts. | Explore the composition of 6, linking this to familiar patterns, including symmetrical patterns Begin to see that numbers within 10 can be composed of ' 5 and a bit'. <br> Explore the composition of odd and even numbers, looking at the 'shape' of these numbers <br> Begin to link even numbers to doubles Begin to explore the composition of numbers within 10. <br> Comparison <br> Continue to compare sets using the language of comparison, and play games which involve comparing sets <br> Continue to compare sets by matching, identifying when sets are equal Explore ways of making unequal sets equal. Explore the composition of 10. | through working in a variety of contexts and with different numbers. |
| :---: | :---: | :---: | :---: |
| EYFS- <br> Mathematical <br> Learning <br> through <br> Provision | Number <br> Use 1:1 counting up to 5 <br> Matching numeral to quantity up to 5 <br> Show 5 using concrete objects <br> Subitse up to 3 <br> Understand more or less <br> Solve problems with numbers to 5 <br> Composition and understanding of numbers to 5 <br> Shape and Measures <br> Use the correct names for 2D shapes - circle, triangle, square, rectangle <br> Name properties of 2D shapes <br> Use the correct names for 3D shapes <br> Numerical Patterns <br> Rote counting to 5, 10, 20 and beyond <br> Continue and create simple AB patterns | Number <br> Combine two numbers <br> Develop knowledge of numbers 5-10 <br> Count, order, recognise and use numbers to 10 <br> and beyond <br> Shape and Measures <br> Name properties of 3D shapes <br> Develop spatial awareness <br> Numerical Patterns <br> Compare quantities using non-standard mathematical vocabulary <br> Find one more and one less <br> Spot errors in patterns | Number <br> Recall and use number bonds to 5 and 10 <br> Double facts <br> Related number bond subtraction facts <br> Shape and Measures <br> Compare lengths, weights and capacities <br> Develop understanding of time - days of the week, months of the year, hours <br> Positional language <br> Numerical Patterns <br> Find one more and one less (with and without concrete resources) <br> Name patterns e.g. AB pattern <br> Identify odd and evens <br> Share equally |

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## Progression of Knowledge and End Points <br> Mathematics

| Y1 - White Rose Maths | Number and Place Value (within 10) <br> count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number <br> 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 <br> read and write numbers from 1 to 20 in numerals and words. <br> Compare numbers using <> and = signs <br> Addition and Subtraction (within 10) <br> identify and represent numbers using objects and pictorial representations <br> read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs <br> add and subtract one-digit and two-digit numbers to 20 , including zero <br> represent and use number bonds and related subtraction facts within 20 <br> Shape <br> recognise and name common 2-D and 3-D shapes, including: <br> 2-D shapes [for example, rectangles (including squares), circles and triangles] <br> 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. | Place Value (within 20) <br> Addition and Subtraction (within 20) <br> Place Value (within 50) <br> Length and Height <br> Mass and Volume | Multiplication and Division <br> Fractions <br> Position and Direction <br> Place Value (within 100) <br> Money <br> Time |
| :---: | :---: | :---: | :---: |
| Y1 - <br> Mastering <br> Number | Pupils will have an opportunity to consolidate the Early Learning Goals and continue to explore the composition of numbers within 10 , and the position of these numbers in the linear number system. <br> Pupils will: <br> - subitise within 5 , including when using a rekenrek, and re-cap the composition of | Pupils will continue to explore the composition of numbers within 10 and explore addition and subtraction structures and the related language (without the use of symbols). <br> Pupils will: | Pupils will explore the composition of numbers within 20 and their position in the linear number system. They will connect addition and subtraction expressions and equations to 'number stories'). |

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## Progression of Knowledge and End Points Mathematics

|  | 5 <br> - develop their understanding of the numbers 6 to 9 using the ' 5 and a bit' structure <br> - compare numbers within 10 and use precise mathematical language when doing so <br> - re-cap the order of numbers within 10 and connect this to ' 1 more' and ' 1 less' than a given number explore the structure of even numbers (including that even numbers can be composed by doubling any number, and can be composed of 2 s ) <br> - explore the structure of the odd numbers as being composed of 2 s and 1 more <br> - explore the composition of each of the numbers 6, 8, and 10 <br> - explore number tracks and number lines and identify the differences between them |
| :---: | :---: |
| Y2 - White Rose Maths | Number and Place Value <br> read and write numbers from 1 to 20 in numerals and words (Y1 Recap) <br> identify, represent and estimate numbers using different representations, including the number line <br> count in steps of 2, 3, and 5 from 0 , and in tens from any number, forward and backward |

- explore the composition of each of the numbers 7 and 9
- explore the composition of odd and even numbers, seeing that even numbers can be made of two odd or two even parts, and that odd numbers can be composed of one odd part and one even part
- identify the number that is two more or two less than a given odd or even number, identifying that two more/ less than an odd number is the next/ previous odd number, and two more/ less than an even number is the next/ previous even number
- explore the aggregation and partitioning structures of addition and subtraction through systematically partitioning and re-combining numbers within 10 and connecting this to the part-part-whole diagram, including using the language of parts and wholes
- explore the augmentation and reduction structures of addition and reduction using number stories, including introducing the 'first, then, now' language structure


## Money

Multiplication and Division

Length and Height

Mass, Capacity and Temperature

## Pupils will:

- explore the composition of the numbers 11 to 19 as ' 10 and a bit' and compare numbers within 20
- connect the composition of the numbers

11 to 19 to their position in the linear number system, including identifying the midpoints of 5, 10 and 15

- compare numbers within 20
- understand how addition and subtraction equations can represent previously explored structures of addition and subtraction (aggregation/ partitioning/ augmentation/ reduction)
- practise retrieving previously taught facts and reason about these


## Fractions

Time

Statistics
Position and Direction

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## Progression of Knowledge and End Points <br> Mathematics

|  | compare and order numbers from 0 up to 100; use and = signs <br> recognise the place value of each digit in a two-digit number (tens, ones) <br> Addition and Subtraction <br> represent and use number bonds and related subtraction facts within 20 (Y1 Recap) recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 <br> add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers and adding three one-digit numbers <br> compare and order numbers from 0 up to 100 ; use and = signs <br> Shape <br> identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line <br> compare and sort common 2-D and 3-D shapes and everyday objects. <br> identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces <br> identify 2-D shapes on the surface of 3-D shapes, |  |  |
| :---: | :---: | :---: | :---: |
| Y2 - <br> Mastering Number | Pupils will have an opportunity to consolidate their understanding and recall of number bonds within 10; they will re-cap the composition of the numbers 11 to 20 and reason about their position within the linear number system. <br> Pupils will: <br> - review the composition of the numbers 6 <br> to 9 as ' 5 and a bit' <br> - compare numbers using the language of comparison and use the symbols <> = <br> - review the structure of even numbers <br> (including exploring how even numbers | Pupils will have an opportunity to use their knowledge of the composition of numbers within 10 to calculate within 20 ; they will explore the links between the numbers in the linear number system within 10 to numbers within 100, focusing on multiples of 10 and the midpoint of 50. <br> Pupils will: <br> - explore how the numbers 6 to 9 can be doubled using the ' 5 and a bit' and ' 10 | Pupils will have further opportunities to use their knowledge of the composition of numbers within 10 to calculate within 20 and to reason about equations and inequalities. Pupils will: <br> - continue to explore a range of strategies to subtract across the 10-boundary <br> - review bonds of 20 in which the given addend is greater than 10, and reason about bonds of 20 , in which the given |

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## Progression of Knowledge and End Points Mathematics

|  | can be composed of two odd parts or two <br> even parts) and the composition of each <br> of 6,8 and 10 <br> $\bullet$ review the structure of odd numbers <br> (including exploring how odd numbers <br> can be composed of one odd part and <br> one even part) and the composition of <br> each of 7 and 9 <br> $\bullet$ consolidate their understanding of the <br> numbers 10 and 20 as '10 and a bit' <br> • consolidate their understanding of the <br> linear number system to 20 and reason <br> about midpoints |
| :--- | :--- |
| Y3 | Place Value <br> identify, represent and estimate numbers using different representations |
| recognise the place value of each digit in a three-digit number (hundreds, tens, ones) |  |
| read and write numbers up to 1000 in numerals and in words |  |
| count from 0 in multiples of 4, 8,50 and 100; find 10 or 100 more or less than a given |  |
| number |  |
| Addition and Subtraction |  |
| add and subtract numbers mentally, including: |  |
| $\bullet$ a three-digit number and ones |  |
| $\bullet$ a three-digit number and tens |  |
| $\bullet$ a three-digit number and hundreds |  |
| add and subtract numbers with up to three digits, using formal written methods of |  |
| columnar addition and subtraction |  |

and a bit' structure

- use doubles to calculate near doubles
- use bonds of 10 to reason about bonds
of 20 , in which the given addend is greater than 10
- use known number bonds within 10 to calculate within 20 , working within the
10-boundary
- use their knowledge of bonds of 10 to find three addends that sum to 10
- use their knowledge of the composition of numbers within 20 to add and subtract across the 10-boundary - use their understanding of the linear number system to 10 to position multiples of 10 on a $0-100$ number line and reason about midpoints

| Multiplication and Division | Fractions |
| :--- | :--- |
| Length and Perimeter | Money |
| Fractions | $\underline{\text { Time }}$ |
| Mass and Capacity | Shape |

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## Progression of Knowledge and End Points <br> Mathematics

|  | solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. <br> estimate the answer to a calculation and use inverse operations to check answers <br> Multiplication and Division <br> 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. <br> show that multiplication can be done in any order (commutative) and division on one number by another cannot. (Y2) <br> count in steps 2,3,5 from 0 and in 10 s from any number, forwards or backwards (Y2) <br> recall and use multiplication and division facts for the 2,5 and 10 multiplication tables, including recognising odd and even numbers (Y2) <br> recall and use multiplication and division facts for the 3,4 and 8 multiplication tables |  |  |
| :---: | :---: | :---: | :---: |
| Y4 | Place Value <br> read and write numbers up to 1000 in numerals and in words (Y3) <br> identify, represent and estimate numbers using different representations <br> recognise the place value of each digit in a three-digit number (hundreds, tens, ones) (Y3) <br> count in multiples of $6,7,9,25$ and 1000 <br> recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) <br> find 1000 more or less than a given number | Multiplication and Division <br> Length and Perimeter <br> Fractions <br> Decimals | Decimals <br> Money <br> Time <br> Shape <br> Statistics <br> Position and Direction |

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## Progression of Knowledge and End Points <br> Mathematics

|  | read Roman numerals to $100(I$ to C) and know that over time, the numeral system <br> changed to include the concept of zero and place value. <br> Addition and Subtraction <br> add and subtract numbers with up to 4 digits using the formal written methods of <br> columnar addition and subtraction where appropriate <br> solve addition and subtraction two-step problems in contexts, deciding which operations <br> and methods to use and why. <br> estimate and use inverse operations to check answers to a calculation <br> Multiplication and Division <br> recall multiplication and division facts for multiplication tables up to $12 \times 12$ <br> recognise and use factor pairs and commutativity in mental calculations <br> count in multiples of 6, 7, 9, 25 and 1000 <br> use place value, known and derived facts to multiply and divide mentally, including: <br> multiplying by 0 and $1 ;$ dividing by $1 ;$ multiplying together three numbers |
| :--- | :--- |
| Area |  |
| find the area of rectilinear shapes by counting squares |  |

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## Progression of Knowledge and End Points

Mathematics

| Y5 | Place Value <br> read Roman numerals to 1000 (M) and recognise years written in Roman numerals. <br> read, write, order and compare numbers to at least 1000000 and determine the <br> value of each digit <br> count forwards or backwards in steps of powers of 10 for any given number up to <br> 1000 000 <br> solve number problems and practical problems that involve all of the above <br> round any number up to 1 000000 to the nearest 10, 100, 1000, 10 000 and 100 000 <br> Addition and Subtraction <br> add and subtract numbers mentally with increasingly large numbers <br> add and subtract whole numbers with more than 4 digits, including using formal written <br> methods (columnar addition and subtraction) <br> solve addition and subtraction multi-step problems in contexts, deciding which <br> operations and methods to use and why <br> round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000, and 100,000 |
| :--- | :--- |


| Multiplication and Division | Shape |
| :--- | :--- |
| Fractions | $\underline{\text { Position and Direction }}$ |
| $\underline{\text { Decimals and Percentages }}$ | $\underline{\text { Decimals }}$ |
| Perimeter and Area | $\underline{\text { Number - Negative Numbers }}$ |
| $\underline{\text { Statistics }}$ | $\underline{\text { Measurerting Units }}$ |
|  |  |

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## Progression of Knowledge and End Points <br> Mathematics

|  | 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 notation for squared (2) and cubed (3) <br> multiply and divide whole numbers and those involving decimals by 10,100 and 1000 multiply and divide numbers mentally drawing upon known facts <br> Fractions <br> identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths <br> recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements $>1$ as a mixed number <br> compare and order fractions whose denominators are all multiples of the same number <br> add and subtract fractions with the same denominator and denominators that are multiples of the same number |  |  |
| :---: | :---: | :---: | :---: |
| Y6 | Place Value <br> read, write, order and compare numbers up to 10000000 and determine the value of each digit <br> round any whole number to a required degree of accuracy <br> use negative numbers in context, and calculate intervals across zero <br> solve number and practical problems that involve all of the above. <br> Addition and Subtraction <br> solve addition and subtraction multi-step problems in contexts, deciding which | Ratio <br> Algebra <br> Decimals <br> Fractions, Decimals and Percentages <br> Area, Perimeter and Volume <br> Statistics | Shape <br> Position and Direction |

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|  | operations and methods to use and why <br> solve problems involving addition, subtraction, multiplication and division <br> use estimation to check answers to calculations and determine, in the context of a <br> problem, an appropriate degree of accuracy <br> identify common factors, common multiples and prime numbers <br> multiply multi-digit numbers up to 4 digits by a two-digit whole number using the <br> formal written method of long multiplication <br> perform mental calculations, including with mixed operations and large numbers <br> divide numbers up to 4 digits by a two-digit whole number using the formal written <br> method of long division, and interpret remainders as whole number remainders, <br> fractions, or by rounding, as appropriate for the context |
| :--- | :--- |
| use their knowledge of the order of operations to carry out calculations involving the <br> four operations <br> Fractions |  |
| use common factors to simplify fractions; use common multiples to express fractions <br> in the same denomination <br> compare and order fractions, including fractions > 1 <br> add and subtract fractions with different denominators and mixed numbers, using the <br> concept of equivalent fractions <br> multiply proper fractions and mixed numbers by whole numbers, supported by <br> materials and diagrams (Y5) <br> multiply simple pairs of proper fractions, writing the answer in its simplest form |  |

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Progression of Knowledge and End Points Mathematics

|  | divide proper fractions by whole numbers <br> add and subtract fractions with different denominators and mixed numbers, using the <br> concept of equivalent fractions <br> associate a fraction with division and calculate decimal fraction equivalents <br> Converting Units <br> solve problems involving the calculation and conversion of units of measure, using <br> decimal notation up to three decimal places where appropriate <br> use, read, write and convert between standard units, converting measurements of <br> length, mass, volume and time from a smaller unit of measure to a larger unit, and <br> vice versa, using decimal notation to up to three decimal places |  |
| :--- | :--- | :--- |

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