**Maths LTP – Autumn Term**

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| **EYFS** | Maths is separated into two areas: ‘Number’ and ‘Numerical Patterns’. Children are taught to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising  counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, our maths curriculum includes rich opportunities for children to develop  their spatial reasoning skills across all areas of mathematics including shape, space and measures.  We aim to enable the children to develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, ‘have a go’, talk to adults and peers about what they notice and not be afraid to make mistakes! | | | | | | | |
| **Year 1** | **Place Value within 10**  Sort objects  Count objects  Count objects from a larger group  Represent objects  Recognise numbers as words  Count on from any number  1 more  Count backwards within 10  1 less  Compare groups by matching  Fewer, more, same  Less than, greater than, equal to  Compare numbers  Order objects and numbers  The number line | | **Addition and Subtraction – Developing ideas of parts and whole, emphasis on structure and understanding so symbols introduced later in the year, Problem solving with addition,**  Addition and Subtraction within 10  Introduce parts and wholes  Part-whole model  Write number sentences  Fact families - addition facts  Number bonds within 10  Systematic number bonds within 10  Number bonds to 10  Addition - add together  Addition - add more  Addition problems  Find a part  Subtraction - find a part  Fact families - the eight facts  Subtraction - take away/crossing out (How many left?)  Subtraction - take away (How many left?) Subtraction on a number line  Add or subtract 1 or 2 | | | | | **Shape**  Recognise and name 3-D shapes  Sort 3-D shapes  Recognise and name 2-D shapes  Sort 2-D shapes  Patterns with 2-D and 3-D shapes |
| **Year 2** | **Place Value- consolidation of year 1 explicit, There is increased emphasis on partitioning and flexibility in representing numbers in different forms. This will support coming material on addition and subtraction, More use is made of the number line as a key representation, including to support comparing numbers.**  Numbers to 20  Count objects to 100 by making 10s  Recognise tens and ones  Use a place value chart  Partition numbers to 100  Write numbers to 100 in words  Flexibly partition numbers to 100  Write numbers to 100 in expanded form  10s on the number line to 100  10s and 1s on the number line to 100  Estimate numbers on a number line  Compare objects  Compare numbers  Order objects and numbers  Count in 2s, 5s and 10s  Count in 3s | | **Addition and Subtraction – Steps relating to each of addition and subtraction are grouped together more to support development of understanding of each concept.**  Bonds to 10  Fact families – addition and subtraction bonds within 20  Related facts  Bonds to 100 (tens)  Add and subtract 1s  Add by making 10  Add three 1-digit numbers  Add to the next 10  Add across a 10  Subtract across 10  Subtract from a 10  Subtract a 1-digit number from a 2-digit number (across a 10)  10 more, 10 less  Add and subtract 10s  Add two 2-digit numbers (not across a 10)  Add two 2-digit numbers (across a 10)  Subtract two 2-digit numbers (not across a 10)  Subtract two 2-digit numbers (across a 10)  Mixed addition and subtraction  Compare number sentences  Missing number problems | | | | | **Shape - More time is invested in line symmetry as this has been split into two steps to explore the different skills of identifying a line of symmetry and completing a shape given one “half” and the line of symmetry in more detail. The steps on making patterns with 2-D and 3-D shapes have been combined as they cover the same skill. Both repeating(ABABAB) and symmetric (ABCBA and ABCCBA) patterns are explored.**  Recognise 2-D and 3-D shapes  Count sides on 2-D shapes  Count vertices on 2-D shapes  Draw 2-D shapes  Lines of symmetry on shapes  Use lines of symmetry to complete shapes  Sort 2-D shapes  Count faces on 3-D shapes  Count edges on 3-D shapes  Count vertices on 3-D shapes  Sort 3-D shapes  Make patterns with 2-D and 3-D shapes |
| **Year 3** | **Place Value - The first three steps review children’s learning of numbers to 100 from key stage 1 to ensure they are ready to move onto numbers to 1,000. Greater emphasis is placed on the different ways of partitioning numbers to 1,000 and the place value of each of the digits in the numbers. There is more emphasis on the use of the number line to deepen understanding of the relative position of numbers in the linear number system.**  Represent numbers to 100  Partition numbers to 100  Number line to 100  Hundreds  Represent numbers to 1,000  Partition numbers to 1,000  Flexible partitioning of numbers to 1000  Hundreds, tens and ones  Find 1, 10 or 100 more or less  Number line to 1,000  Estimating on a number line to 1,000  Compare numbers to 1,000  Order numbers to 1,000  Count in 50s | | **Addition and Subtraction - Children now learn to use the formal column methods of addition and subtraction for the first time. To support them to do this fluently, several steps are included to ensure they have the mental skills to perform the calculations and to prevent cognitive overload when working on these. The formal methods are introduced slowly and carefully looking at calculations without exchanges before bringing in exchange, linking to the mental methods covered earlier in the block. Complements to 100 are explicitly explored in a new step. The final step of the block encourages children to consider both the choice of operation when solving a problem, and what method would be most efficient so that they do not apply the formal method even when it is inappropriate to do so.**  Apply number bonds within 10  Add and subtract 1s  Add and subtract 10s  Add and subtract 100s  Spot the pattern  Add 1s across a 10  Add 10s across a 100  Subtract 1s across a 10  Subtract 10s across a 100  Make connections  Add two numbers (no exchange)  Subtract two numbers (no exchange)  Add two numbers (across a 10)  Add two numbers (across a 100)  Subtract two numbers (across a 10)  Subtract two numbers (across a 100)  Add 2-digit and 3-digit numbers  Subtract a 2-digit number from a 3-digit number  Complements to 100  Estimate answers Inverse operations Make decisions | | | | | **Multiplying and Division – Before moving on the new times tables for Year 3, more time is spent on revisiting and reinforcing the structure of multiplication and division, using arrays and developing children’s understanding of sharing and grouping. The word ‘multiple’ is emphasised.**  Multiplication - equal groups  Use arrays  Multiples of 2  Multiples of 5 and 10  Sharing and grouping  Multiply by 3  Divide by 3  The 3 times-table  Multiply by 4  Divide by 4  The 4 times-table  Multiply by 8  Divide by 8  The 8 times-table  The 2, 4 and 8 times-tables |
| **Year 4** | **Place Value - The steps on rounding have been put together at the end of the block rather than interspersed as present. This, together with the final extra step which explores rounding to different degrees of accuracy, will allow a more focused look at the concept of rounding. The block starts with revision of the numbers to 1,000 studied in Year 3 to make sure these are secure before moving to 4-digit numbers.**  Represent numbers to 1,000  Partition numbers to 1,000  Number line to 1,000  Thousands  Represent numbers to 10,000  Partition numbers to 10,000  Flexible partitioning of numbers to 10,000  Find 1, 10, 100, 1,000 more or less  Number line to 10,000  Estimate on a number line to 10,000  Compare numbers to 10,000  Order numbers to 10,000  Roman numerals  Round to the nearest 10  Round to the nearest 100  Round to the nearest 1,000  Round to the nearest 10, 100 or 1,000  Introduce negative numbers as starters to lessons. | | **Addition and Subtraction - There is a more gradual introduction to the addition and subtraction of numbers with four digits, with consideration of numbers with fewer digits revisited first in the steps. There is more explicit consideration of cases were there are no tens and no hundreds when subtracting to support the difficulties sometimes encountered by children when exchanging in calculations like these.**  Add and subtract 1s, 10s, 100s and 1,000s  Add up to two 4-digit numbers - no exchange  Add two 4-digit numbers - one exchange  Add two 4-digit numbers– more than one exchange  Subtract two 4-digit numbers - no exchange  Subtract two 4-digit numbers - one exchange Subtract two 4-digit numbers – more than one exchange  Efficient subtraction  Estimate answers  Checking strategies | | | **Area**  What is area?  Counting squares  Make shapes  Compare area | | **Multiplication and Division - Multiples of 3 are revisited before exploring the related 6 and 9 timestables, and a step is included to look at the connections between these.**Multiples of 3  Multiply and divide by 6  6 times-table and division facts  Multiply and divide by 9  9 times-table and division facts  The 3, 6 and 9 times-tables  Multiply and divide by 7  7 times-table and division facts  11 times-table and division facts  12 times-table and division facts  Multiply by 1 and 0  Divide by 1 and itself  Multiply three numbers |
| **Year 5** | **Place Value - Roman numerals is now first to serve as a reminder of place value with smaller numbers, and comparing systems The structure of numbers of all the sizes is covered first, and later comparing and ordering numbers followed is explored before rounding Negative numbers are now covered in a separate short block later in the year.**  Roman numerals to 1,000  Numbers to 10,000  Numbers to 100,000  Numbers to 1,000,000  Read and write numbers to 1,000,000  Powers of 10  10/100/1,000/10,000/100,000 more or less  Partition numbers to 1,000,000  Number line to 1,000,000  Compare and order numbers to 100,000  Compare and order numbers to 1,000,000  Round to the nearest 10, 100 or 1,000  Round within 100,000  Round within 1,000,000 | **Addition and Subtraction - Mental strategies are revised first. This revision of key number relationships will support the use of formal methods in the upcoming steps. Although the steps focus on numbers with more than four digits, the key learning sections begin with numbers with fewer digits as revision and to identify any gaps/need for intervention before moving on these more involved calculations. The step building on the rounding learning from the place value block is now more explicitly focused on estimation to check answers. Two new steps have been added to support the development of mental flexibility through using known facts to deduce, rather than work out, other facts.**  Mental strategies  Add whole numbers with more than four digits  Subtract whole numbers with more than four digits  Round to check answers Inverse operations (addition and subtraction)  Multi-step addition and subtraction problems  Compare calculations  Find missing numbers | | | **Multiplication and Division - An extra step has been added in to focus on common multiples, mirroring the structure of the steps on factors. There is another Year 5 block on multiplication and division, the first block in the Spring term. This second block focuses on the formal methods of multiplication and division and makes use of the times-tables facts and effect of multiplying by powers of 10 in this block.**  Multiples  Common multiples Factors  Common factors  Prime numbers  Square numbers  Cube numbers  Multiply by 10, 100 and 1,000  Divide by 10, 100 and 1,000  Multiples of 10, 100 and 1,000 | | | **Fractions - More introductory work on equivalent fractions has been included. Mental methods are emphasised alongside formal written methods Adding three or more fractions incorporated into other steps rather than treated separately.**  Find fractions equivalent to a unit fraction  Find fractions equivalent to a non-unit fraction  Recognise equivalent fractions  Convert improper fractions to mixed numbersConvert mixed numbers to improper fractions  Compare fractions less than 1  Order fractions less than 1  Compare and order fractions greater than 1  Add and subtract fractions with the same denominator  Add fractions within 1  Add fractions with total greater than 1  Add to a mixed number  Add two mixed numbers  Subtract fractions  Subtract from a mixed number  Subtract from a mixed number - breaking the whole  Subtract two mixed numbers |
| **Year 6** | **Place Value –**  **There us more revision of numbers of the size children met in Year 5. Place value charts are used more extensively to emphasise the structure of numbers in “groups of threes” – 1s, 10s, 100s followed by 1,000s, 10,000s and 100,000s Multiplicative connections between numbers has more emphasis e.g. 100 times the size, one hundredth the size of… Use of the number line has more emphasis, including dividing into 2,4, 5 and 10 sections.**  Numbers to 1,000,000  Numbers to 10,000,000  Read and write numbers to 10,000,000  Powers of 10  Number line to 10,000,000  Compare and order any integers  Round any integers  Negative numbers | **Addition, Subtraction, multiplication and division - An explicit step has been included to check understanding of the rules of divisibility. More emphasis is placed on problem solving, including using the appropriate method for a calculation.**  Add and subtract integers  Common factors  Common multiples  Rules of divisibility  Primes to 100  Square and cube numbers  Multiply up to a 4-digit number by a 2-digit number  Solve problems with multiplication  Short division  Division using factors  Introduction to long division  Long division with remainders  Solve problems with division  Solve multi-step problems  Order of operations  Mental calculations and estimation  Reason from known facts | | **Fractions A - There is more introductory work on equivalent fractions before moving to simplifying. More emphasis is placed on problem solving, including using the appropriate method for a calculation.**  Equivalent fractions and simplifying  Equivalent fractions on a number line  Compare and order (denominator)  Compare and order (numerator)  Add and subtract simple fractions  Add and subtract any two fractions  Add mixed numbers  Subtract mixed numbers  Multi-step problems | | | **Fractions B**  Multiply fractions by integers  Multiply fractions by fractions  Divide a fraction by an integer  Divide any fraction by an integer  Mixed questions with fractions  Fraction of an amount  Fraction of an amount - find the whole | **Converting Units**  Metric measures  Convert metric measures  Calculate with metric measures  Miles and kilometres  Imperial measures |