**Maths LTP – Autumn Term**

|  |  |
| --- | --- |
| **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 organisingcounting - 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 developtheir 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 10Introduce 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 1,000Introduce 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 factorsIntroduction 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 |