Year Five Autumn Medium Term Plan- 2023/24

Year 5 | Autumn term | Block 1 – Place value	
Week 1	Roman numerals to 1,000 Children explore further the similarities and differences between the Roman number system and our number system, learning that the Roman system does not have a zero and does not use placeholders. Numbers to 10,000 A variety of pictorial and concrete representations are used, including base 10, place value counters, place value charts and part-whole models. In particular, the ability to use place value charts needs to be secure, as this is the main representation used in the coming steps where children learn about 5- and 6-digit numbers Numbers to 100,000 Introduce pupils to the ten-thousands column in a place value chart and begin to understand the multiples of 10,000. This can be reinforced using a number line to 100,000 Numbers to 1,000,000 Children learn that the pattern for thousands in a place value chart follows the same pattern as that of the ones: ones, tens, hundreds, (one) thousands, ten thousands, hundred thousands. Children recognise large numbers presented in a variety of ways using familiar models. Reading numbers is touched on in this step and then developed in the next step, which also looks at writing numbers in words
Notes	

Week 2	Read and write numbers to 1,000,000 The focus of the step is the structure of the written words, for example we read and write 4,100 as “four thousand one hundred” but 4,010 as “four thousand and ten”. Powers of 10 As well as adjacent columns, they look at columns that are further apart, for example considering the number of tens needed to make 1,000 and then multiples of 1,000. Children use both place value charts and Gattegno charts to support their understanding. 10/100/1,000/10,000/100,000 more or less In this small step, children use place value to find numbers 10/100/1,000/10,000/100,000 more or less than a given number. Partition numbers to 1,000,000 Children partition numbers in the standard way (for example, into thousands, hundreds, tens and ones) as well as in more flexible ways (for example, 15,875 = 14,875 + 1,000 and 15,875 = 13,475 + 2,400). Number line to 1,000,000 This step begins with a recap of number lines to 10,000, before moving on to explore number lines up to 100,000 and 1,000,000
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Week 3	Compare and order numbers to 100,000 Children build on their learning of comparing and ordering numbers in earlier years to compare and order numbers up to 100,000 Compare and order numbers to 1,000,000 Children build on the previous step to compare and order numbers up to 1,000,000 Round to the nearest 10, 100 or 1,000 In this small step, children build on their knowledge of rounding to the nearest 10, 100 and 1,000 from Year 4, now also rounding numbers beyond 10,000 to these degrees of accuracy. Round within 100,000 Children build on their learning in the previous step to round any number within 100,000 to the nearest 10, 100, 1,000 or 10,000. Rounding to the nearest 10,000 is the new learning Round within 1,000,000 Children now round any number up to 1,000,000 to any power of 10 up to 100,000. This is the first time that children round to the nearest 100,000

Year 5 | Autumn term | Block 2 – Addition and subtraction	
Week 4	Mental strategies mentally calculate sums and differences using partitioning. Add whole numbers with more than four digits revisit the use of the column method for addition and learn to apply this method to numbers with more than four digits. Subtract whole numbers with more than four digits revisit the use of the column method for subtraction and learn to apply this method to numbers with more than four digits Round to check answers practise rounding in order to estimate the answers to both additions and subtractions. Review mental strategies for estimating answers.
Notes	
Week 5	Inverse operations (addition and subtraction) use bar models or part-whole models to establish families of facts that can be found from one calculation and then use inverse operations to check the accuracy of calculations. Multi-step addition and subtraction problems apply the strategies learned so far to solve addition and subtraction problems with more than one step. Children choose the operations needed at each step and then perform the calculations using an appropriate mental or written method. Problems should be presented in both word form and with models. The use of bar models can help children to illustrate problems of this kind Compare calculations The focus is not on completing calculations, but instead exploring their structure in order to make a comparison. Find missing numbers solve missing number problems by comparing calculations.
Notes	

Year 5 | Autumn term | Block 3 – Multiplication and division A

Week 6	Multiples find sets of multiples of given numbers and make generalisations about them. Common multiples find common multiples of any pair of numbers Factors further explore the relationship between multiplication and division and consolidate their understanding of the words “factor” and “multiple”. Pupils should know, for example, that as 5 is a factor of 20, 20 is a multiple of 5 and vice versa. They need to be aware of the special cases such as 1 being a factor of all numbers, and every number being both a multiple and a factor of itself. Common factors work systematically to find lists of factors before comparing lists to find common factors.
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Week 7	Prime numbers Building on their knowledge of factors, in this small step, pupils learn that numbers with exactly two factors are called prime numbers. They also learn that numbers with more than two factors are called composite numbers. Square numbers use concrete manipulatives such as counters and cubes to build square numbers, and also to decide whether or not a given number is square. Cube numbers learn that a cube number is the result of multiplying a whole number by itself and then by itself again, for example 6 × 6 × 6
Notes	

Year 5 | Autumn term | Block 3 – Multiplication and division A

Week 8	Multiply by 10, 100 and 1,000 Concrete manipulatives such as place value charts and counters and Gattegno charts can be used to support understanding, using children's knowledge of the relationship between digits in given rows/columns. Divide by 10, 100 and 1,000 to be aware that the effect of dividing by 10 twice is the same as dividing by 100 and that dividing by 10 three times is the same as dividing by 1,000. Children should be comfortable with the language of "one-tenth the size of", "one-hundredth the size of" and "one-thousandth the size of". Multiples of 10, 100 and 1,000 Pupils use knowledge of factors to break a calculation down into a series of easier calculations. For example, to multiply by 200, they write 200 as 2 × 100 and then multiply by 2 and by 100. Children use the commutative law to know that they can find the product by multiplying by the factors in either order.
Notes	

Year 5 | Autumn term | Block 4 – Fractions A	
Week 9	Find fractions equivalent to a unit fraction This small step focuses on how unit fractions can be expressed in other forms. Find fractions equivalent to a non-unit fraction children find fractions that are equivalent to a non-unit fraction. Recognise equivalent fractions Various methods are explored, including looking for common factors and multiples to establish whether fractions are equivalent, and also looking at the multiplicative relationship between the numerator and denominator. The use of diagrams and other pictorial representations are used throughout to support children's understanding of the abstract methods. Convert improper fractions to mixed numbers use objects and diagrams to make wholes to support converting improper fractions into mixed numbers
Notes	

Year 5 | Autumn term | Block 4 – Fractions A	
Week 10	Convert mixed numbers to improper fractions Pupils convert from mixed numbers to improper fractions by identifying how many of the equal parts each whole is worth and using this to work out how many equal parts are needed for the integer part of the mixed number. They then add on the number of parts in the fractional part of the mixed number and finally write the answer as an improper fraction. Compare fractions less than 1 compare fractions where the denominators are the same or where one denominator is a multiple of the other. They also compare fractions with the same numerator or by considering their position relative to one half. Order fractions less than 1 Bar models, fraction walls and number lines will still be useful to help children to see the relative sizes of the fractions, especially when conversions are needed. Children should look at the set of fractions as a whole before deciding their approach, as comparing numerators could still be a better strategy for some sets of fractions Compare and order fractions greater than 1 children consolidate their knowledge from all the earlier steps in this block, using their skills in converting between forms to help compare and order fractions greater than 1
Notes	
Week 11	Add and subtract fractions with the same denominator to understand that when the denominators are the same, they only need to add or subtract the numerators. Bar models are a useful way of representing both addition and subtraction of fractions and are easier to work with than circles, as they are easier to draw and easier to split into equal parts Add fractions within 1 add two or three fractions with different denominators. The fractions are such that one denominator is a multiple of another and the total remains within 1. Add fractions with total greater than 1 add fractions where one denominator is a multiple of the other, but progress to additions where the total is greater than 1. Their answers will be improper fractions that they should convert to mixed numbers using the skills they have learnt in earlier steps Add to a mixed number remember that a mixed number such as 3 1/2 can be partitioned into 3 + 1/2 and then they can add to the required part before recombining. The expectation is that, provided the sum of fractional parts does not cross a whole, these additions will generally be done mentally. Pictorial support may still be useful Add two mixed numbers add two mixed numbers by adding the wholes and fractional parts separately. This is usually the most efficient method of adding two mixed numbers, but converting to improper fractions and adding them is included as an alternative

Year 5 | Autumn term | Block 4 – Fractions A	
Week 12	Subtract fractions subtract fractions where one denominator is a multiple of the other, using the same skills they learned for adding fractions of this type. Subtract from a mixed number subtract either a whole number part or a fractional part from a mixed number Subtract from a mixed number – breaking the whole count back from the given fraction, providing the denominators are equal. This could be supported by the use of a number line. As in previous steps, either the denominators are equal, or one denominator is a multiple of the other. Subtract two mixed numbers begin by looking at simple cases where they partition two mixed numbers, then subtract the wholes and subtract the fractional parts. Then progress to more complex problems where they need to find a common denominator and/or break the whole
Notes	