

Weeks	Key knowledge	Previous experience (NCETM Guidance) Support gaps in learning	Curriculum statement	NCETM links to PD materials
Weeks 1-3	<p>Number, place value and rounding Read, write and say numbers up to 4 digits To know the value of each digit on three/four-digit numbers Comparing and ordering numbers including negative numbers Rounding to the nearest 10, 100 and 1000. Expose rounding on a number line/ rule of 5 and above. Identifying the correct digit when rounding to the nearest 10, 100 or 1000 Rearranging the number eg $142 = 100 + 30 + 12$ (getting ready for exchange) To read Roman Numerals (Cross-curriculum learning)</p>	<p>Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10. Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning. Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 10 and 100.</p>	<p>To read, write and find numbers up to and beyond 1 000 To recognise negative numbers To understand place value in 3 and 4 digit numbers To compare numbers up to and beyond 1 000 To identify, represent and estimate numbers using different representations To round numbers nearest 10, 100 and 1000. To read Roman Numerals from 1 to 12 (clock face) To read Roman numerals to 100 (I to C) and I understand how numbers developed to include 0. (spend one day on this).</p>	<p>MNP / powermaths can be used to supplement planning 1:22 Composition and calculation: 1,000 and 4-digit numbers https://www.ncetm.org.uk/resources/52479 TP 1 Ten 100s make 1,000, which can also be decomposed into 100 tens and 1,000 ones. TP 2 When multiples of 100 are added or subtracted, the sum or difference is always a multiple of 100. TP 3 Numbers over 1,000 have a structure that relates to their size. This means they can be ordered, composed and decomposed. TP 4 Numbers can be rounded to simplify calculations or to indicate approximate sizes TP 6 1,000 can also be composed multiplicatively from 500s, 250s or 200s, units that are commonly used in graphing or measures.</p>

<p>Weeks 4-7</p>	<p>Calculation and arithmetic of addition and subtraction</p> <p>Compliments to 100 (eg $20 + 80 = 100$, $67 + 33 = 100$) and all 2-digits numbers within 100</p> <p>Application of appropriate mental strategies when the numbers are easy to manipulate $58 + 22 = 60 + 20$</p> <p>Using rounding to check the reasonableness of the answer</p> <p>Understanding the columns</p> <p>Understanding the process of where to start and how to track through the written method</p> <p>No crossing of boundaries</p> <p>Crossing of boundaries (generating an exchanging digit)</p>	<p>Secure fluency in addition and subtraction facts that bridge 10, through continued practice.</p> <p>Calculate small differences, for example: $74 - 72 = 2$</p> <p>Calculate complements to 100.</p> <p>Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example:</p> <p>$80 + 40 = 120$</p> <p>$120 - 40 = 80$</p> <p>Add and subtract up to three-digit numbers using columnar methods.</p> <p>Manipulate the additive relationship:</p> <p>Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure.</p> <p>Understand and use the commutative property of addition, and understand the related property for subtraction.</p>	<p>To add and subtract numbers mentally.</p> <p>To estimate the answer to a calculation and use inverse operations to check answers</p> <p>To add and subtract numbers using columnar methods</p> <p>To estimate the answer to a calculation and use inverse operations to check answers</p> <p>To solve addition and subtraction problems</p>	<p>1:22 Composition and calculation: 1,000 and 4-digit numbers</p> <p>https://www.ncetm.org.uk/resources/52479</p> <p>TP 5 Calculation approaches learnt for 3-digit numbers can be applied to 4-digit numbers.</p>
<p>Autumn themes integrated into number: staircase project or fire and ice project (to be confirmed)</p> <p>Contextualised learning: look for opportunities within topic curriculum</p>				

<p>Weeks 8-10</p>	<p>Multiplication and division: (These must be practiced daily throughout the year) Learn how to multiply and divide by 4's and 8's. Then 3's 6, and 9, 11 and 12. Then the 7's. Begin to understand mathematical vocabulary such as 'quotient' in relation to division. Calculate multiplication equations using the multiplication facts that they know. Apply tables knowledge in the context of place value eg $6 \times 7 = 42$ and 60×7 etc Understanding the relationships between the multiplication and division statements eg $6 \times 7 = 42$, $7 \times 6 = 42$ and $42 \div 7 = 6$ Facts and mental to written methods Understand the difference between sharing and grouping Understand the commutative law in multiplication. Solve problems involving multiplication and division.</p>	<p>Recall multiplication and division facts in the 5 and 10, and 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. Use known division facts to solve division problems. $42 \div 7 = 6$ Know the commutative and associative laws for multiplication.</p>	<p>Recall multiplication and division facts for multiplication tables up to 12×12. Use place value, known and derived facts to multiply and divide mentally. Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods. Solve problems, including missing number problems, involving multiplication and division.</p>	<p>Year 3 2:7 Times tables: 2,4 and 8, and the relationship between them. https://www.ncetm.org.uk/resources/53130 Year 3 2:8 Times tables: 3,6 and 9, and the relationship between them. https://www.ncetm.org.uk/resources/53131 Year 3 2:9 Times tables: 7 and patterns within/across times tables https://www.ncetm.org.uk/resources/53132 Year 4 2:10 Connecting multiplication and division, and the distributive law https://www.ncetm.org.uk/resources/53249 Year 4 2:11 Times tables: 11 and 12 https://www.ncetm.org.uk/resources/53250</p>
<p>Weeks 11-12</p>	<p>Calculation and arithmetic : Multiplication and division Apply tables knowledge in the context of place value eg $6 \times 7 = 42$ and 60×7 etc Understanding the relationships</p>	<p>Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example: $30 \times 4 = 120$, $120 \div 4 = 30$ Multiply two-digit numbers</p>	<p>To recall and use multiplication and division facts To write and calculate mathematical statements for multiplication and division, using facts and place value To recognise and use commutativity in</p>	<p>Year 4 2:12 Division with remainders https://www.ncetm.org.uk/resources/53251 TP 1: Objects can be divided into equal groups, sometimes with a</p>

<p>between the multiplication and division statements eg $6 \times 7 = 42$, $7 \times 6 = 42$ and $42 \div 7 = 6$ Facts and mental to written methods</p> <p>Mental strategies for partitioning for multiplication (96×6 could be 90×6 and 6×6)</p> <p>Mental strategies for rearranging for division ($96 \div 6$ could be partitioned into $60 \div 6$ and $36 \div 6$) distributive law</p> <p>Understanding multiplication as commutative</p> <p>Grid to short standard method</p> <p>Short division method backed up by models and images (refer to calculation on policy)</p>	<p>by 10, and divide three-digit multiples of 10 by 10.</p> <p>Understand the inverse relationship between multiplication and division.</p> <p>Write and use multiplication table facts with the factors presented in either order.</p>	<p>mental calculations</p> <p>To use a formal written method for multiplication and division.</p> <p>To recognise and use commutativity in mental calculations</p> <p>To understand the effect of dividing a one- or two- digit number by 10 and 100</p> <p>To solve problems, including missing number problems, involving multiplication and division</p>	<p>remainder; objects can be shared equally, sometimes with a remainder; a remainder can be represented as part of a division equation.</p> <p>TP 2: If the dividend IS a multiple of the divisor, there is no remainder; if the dividend IS NOT a multiple of the divisor, then there is a remainder. The remainder is always less than the divisor.</p> <p>TP 3: When solving contextual problems involving remainders, the answer to a division calculation must be interpreted carefully to determine how to make sense of the remainder.</p> <p>2:13 Calculation: multiplying or dividing by 10 or 100 https://www.ncetm.org.uk/resources/53537</p> <p>2:14 Multiplication: partitioning leading to short multiplication https://www.ncetm.org.uk/resources/53538</p> <p>2:15 Division: partitioning leading to short division https://www.ncetm.org.uk/resources/53539</p>
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