

Week	Key knowledge	Previous experience (NCETM Guidance) Support gaps in learning	National Curriculum statement (end of year 6)	Links to PD Materials from NCETM to support subject knowledge and small steps
Weeks 1 & 2	<p><b>Number and arithmetic</b></p> <p>Understand numbers up to 7/8 digits - place value</p> <p>Read, write and say numbers up to 7 digits</p> <p>To know the value of each digit on 7/8 - digit numbers</p> <p>Comparing and ordering numbers including negative numbers</p> <p>Rounding to the nearest 10, 100 and 1000.</p> <p>Expose rounding on a number line/ rule of 5 and above.</p> <p>Identifying the correct digit when rounding to the nearest 10, 100 or 1000 and degrees of accuracy</p> <p>To be able to read, write and say numbers to 10, 000,000 using the comma separator</p> <p>Expose rounding on a number line/ rule of 5 and above.</p> <p>Identifying the correct digit when rounding to the nearest 10, 100 or 1000</p> <p>Mental and written addition and subtraction of large numbers</p> <p>Mental calculations strategies – making good choices about what to do in my head, jottings and when a written method is needed. Use negative numbers in context, and calculate intervals across zero.</p> <p>See patterns and explain them.</p> <p>Realise that 0 counts as a number and has a place on the number line.</p> <p>Understand the concept of negative</p>	<p>Understand the relationship between powers of 10 from 1 hundredth to 1,000 in terms of grouping and exchange (for example, 1 is equal to 10 tenths) and in terms of scaling (for example, 1 is ten times the size of 1 tenth).</p> <p>Recognise the place value of each digit in numbers with units from thousands to hundredths and compose and decompose these numbers using standard and non-standard partitioning.</p> <p>Reason about the location of numbers between 0.01 and 9,999 in the linear number system.</p> <p>Round whole numbers to the nearest multiple of 1,000, 100 or 10, as appropriate.</p> <p>Round decimal fractions to the nearest whole number or nearest multiple of 0.01</p>	<p>To read, write, order and compare numbers at least to 10,000,000 and determine the value of each digit.</p> <p>To round any whole number to a required degree of accuracy.</p> <p>To solve number problems and practical problems that involve all of the above.</p> <p>To perform mental calculations, including with mixed operations and large numbers.</p> <p>Use negative numbers in context, and calculate intervals across zero. Solve number and practical problems that involve negative numbers.</p>	<p><b>MNP/ powermaths can be used to support planning</b></p> <p><b>1.30 Composition and calculation: numbers up to 10,000,000</b></p> <p><b>Y5 (quick review &amp; progress)</b></p> <p><b>1.27</b> Negative numbers: counting, comparing and calculating.</p>

	<p>numbers. Use a number line to add and subtract</p> <p>Recognising the arithmetic in the question so they can choose an effective method. Eg 2999 – 1242 being seen as 3000 as 1243.</p>			
Weeks 3-5	<p><b>Written methods: <u>Revise addition and subtraction, multiplication and division methods</u></b></p> <p>Using effective processors so arithmetic is secure and applying bond knowledge. Efficiency and accuracy, and procedural competence Using rounding to check the reasonableness of the answer Understanding the columns Understanding the process of where to start and how to track through the written method No crossing of boundaries Crossing of boundaries ( generating an exchanging digit) Written methods for multiplication and division: <math>HTU \times \div TU</math> and <math>HTU \times \div U</math> Using expanded and compact multiplication to secure success and allow for seeing what is happening Short methods with remainders Long division – from statement teach to transfer this into the notation. Then use a partial table to record times tables facts of the divisor. Following the processes including bringing the digit down.</p>	<p>Knows efficient mental methods for addition, subtraction, multiplication, and division. Knows the terms factor, multiple and prime, square and cube numbers. Knows efficient methods for multiplication and division Knows compact notation for long multiplication. Knows the compact algorithm for short division including remainders Be fluent in all key stage 2 additive and multiplicative number facts (see Appendix: number facts fluency overview ) and calculation. Manipulate additive equations, including applying understanding of the inverse relationship between addition and subtraction, and the commutative property of addition. Manipulate multiplicative equations, including applying understanding of the inverse relationship between multiplication and division, and the</p>	<p>To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication.</p> <ul style="list-style-type: none"> <li>• To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.</li> <li>• To solve problems involving addition, subtraction, multiplication and division.</li> <li>• To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> </ul>	<p>MNP/Powermaths to support planning</p> <p><b>Y5</b> <b>2.22</b> Combining multiplication with addition and subtraction</p> <p><b>Y6</b> <b>2.23</b> Multiplication strategies for longer numbers and long multiplication <b>2.24</b> Division dividing by two-digit divisors <b>2.25</b> Using compensation to calculate</p> <p><b>1.31</b> Problems with two unknown</p>

		commutative property of multiplication.		
Weeks 6-8	<p><b>Fractions: comparing and ordering and fractions as numbers (refer to fractions policy)</b></p> <p>Understand the denominator as equal parts and the numerator as how many equals parts numerator</p> <p>Understanding the whole and parts</p> <p>Variety of models used to understand the structure of fractions</p> <p>Developing understanding or denominator e.g the bigger the denominator the smaller the fraction</p> <p>Strategies for converting mixed numbers and improper fractions and vice- versa</p> <p>Simplifying fractions</p> <p>Understanding the relationship between timetables</p> <p>Understanding how to multiply a fraction by a whole integer</p> <p>Understanding how to read and interpret the calculation eg <math>6 \times 1 \frac{1}{2}</math> can be read as one and a half six times or six, one and a half times</p> <p>Use image to ensure that the understanding of multiplying fractions by fractions is understood.</p> <p>Teach the convention of the reciprocal eg dividing by 2 becomes multiplying be a half.</p>	<p>Recall multiplication and division facts up to .</p> <p>Find factors and multiples of positive whole numbers, including common factors and common multiples.</p> <p>Find equivalent fractions and understand that they have the same value and the same position in the linear number system</p> <p>Find factors and multiples of positive whole numbers.</p> <p>Find equivalent fractions.</p> <p>Reason about the location of fractions and mixed numbers in the linear number system.</p>	<p>To compare and order fractions, including fractions <math>&gt;1</math>.</p> <ul style="list-style-type: none"> <li>● To use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</li> </ul> <p>To add and subtract fractions with different denominators, using the concept of equivalent fractions.</p> <ul style="list-style-type: none"> <li>● To multiply simple pairs of proper fractions, writing the answer in its simplest form (<math>1/4 \div 1/2 = 1/8</math>).</li> <li>● To divide proper fractions by whole numbers (<math>1/3 \div 2 = 1/6</math>).</li> </ul>	<p><b>Y5</b> (review and progress)</p> <p><b>3.7</b> Finding equivalent fractions and simplifying fractions</p> <p><b>3.8</b> Common denomination: more adding and subtracting</p> <p><b>Y6</b></p> <p><b>3.9</b> Multiplying fractions and dividing fractions by a whole number</p>

Week 9	Opportunities to go richer and deeper Close the gap and revision of concepts. Cross –curriculum learning			
Week 10	<b>Properties of number</b> Understanding vocabulary and having clear definitions and generalisations.	To use and understand the terms: factor, multiples, primes, squares, cubes composite numbers Understanding the notice of squared and cube numbers	<ul style="list-style-type: none"> <li>● To identify common factors, common multiples and prime numbers.</li> </ul> To recognise and use square and cube numbers	<b>Y5 (review and progress)</b> <b>2.21</b> factors, multiples and composite numbers
Week 11	<b>Order of calculations</b> BODMAS conventions If equal weighting in the calculation, the order in which the calculation needs to be tackled. Practicing how to insert brackets and the fact the answer can be different		To perform mental calculations, including with mixed operations and large numbers. <ul style="list-style-type: none"> <li>● To use their knowledge of the order of operations to carry out calculations involving the four operations.</li> <li>● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> <li>● To solve problems involving addition, subtraction, multiplication and division.</li> <li>● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> </ul>	<b>Y5(review and progress)</b> <b>2.22</b> Combining multiplication with addition and subtraction <b>Y6</b> <b>2.28</b> combining operation: $+$ $-$ $\times$ and $\div$
Seasonal theme: bonfire party to include fractions, fire and ice project etc Translate the new position of the tree onto the Christmas wrapping paper				

<p>Week 12</p>	<p><b>Position and movement</b>          Plotting coordinates on the x and y axis in all four quadrants          To be able to read and write the notation of coordinates          To be able to use the language to describe a shape as being translated          Appropriate language and vocabulary</p>		<p>To describe positions on the full co-ordinate grid (all four quadrants).          To draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes.          Predict missing coordinates using properties of shape</p>	<p>MNP/ Powermaths/ WR can be used to support planning</p>
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