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| **Jericho Primary School -Calculation Policy – Multiplication – Year 1** | |
| Mental Calculations | **Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.**   * Count in multiples of twos, fives and tens with equipment, songs, rhythms and including by rote. * Counting 2s e.g. counting socks,shoes, animal legs... * Counting in 5 s e.g. counting fingers, fingers in gloves, toes … * Counting in 10s e.g. counting fingers, toes... * Doubles up to 10. * Recognising odd and even numbers * Write as a number pattern(e.g. 5, 10, 15...; 2, 4, 6...; 10, 20, 30...) |
| Written calculation | **Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.**   * There is no statutory requirement for written multiplication in Year 1 but it would be beneficial for children to record it as repeated addition eg 2+2+2+2 = 8 etc.      * It would be beneficial if children could see the relationships between arrays, number patterns and counting in 2’s, 5’s and 10’s. |
| Representations  to support calculations | Golden Nugget representations:    Other representations: |
| **Jericho Primary School -Calculation Policy – Multiplication – Year 2** | |
| Mental Calculations | **Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, connecting the 2, 5 and 10 multiplication tables to each**  **other.**  -Connect the 10 multiplication table to place value.  - Recognise odd and even numbers.  - Show that multiplication of two numbers can be done in  any order (commutative).  - Use a variety of language to describe multiplication and  division.  -Apply doubling of numbers up to ten to doubling larger  numbers. |
| Written calculation | **Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals(=)signs.**   * Begin to use other multiplication tables and recall facts to perform written calculations.      * Use a range of materials and contexts … including arrays and repeated addition. |
| Representations  to support calculations | Golden Nugget representations:    Other representations: |

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| **Jericho Primary School -Calculation Policy – Multiplication – Year 3** | |
| Mental Calculations | **Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables (and 2, 5 and 10 multiplication tables from Y2).**  -Use doubling to connect 2, 4 and 8 multiplication tables.  -Develop efficient mental methods using commutativity and  associativity.  -Derive related multiplication and division facts.  -Calculate mathematical statements for multiplication using the multiplication tables that they know, including for twodigit numbers times one-digit numbers, using mental methods.  -Partitioning: multiply the tens first and then multiply the units, e.g. 57 x 6 = (50 x 6) + (7 x 6) = 300 + 42 = 342  -Children can apply these skills to solve spoken word problems too, include missing number statements e.g. 8 x \_\_\_= 56 |
| Written calculation | **Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, progressing to formal written methods.**   * Estimate before calculating. * Ensure written methods build on/relate to mental methods. * Solve missing number problems,including positive integer scaling problems. |
| Representations  to support calculations | Golden Nugget representations:      Other representations:    Bar models support finding a missing number. |

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| **Jericho Primary School -Calculation Policy – Multiplication – Year 4** | |
| Mental Calculations | **Recall multiplication and division facts for multiplication tables up to 12 x 12.**   * Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. * Recognise and use factor pairs and commutativity in mental calculations. * Practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6). |
| Written calculation | **Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.**   * Estimate before calculating. * Ensure written methods build on/relate to mental methods. * Introduce alongside grid and expanded column methods. * Exchanged digits sit below the answer line like column addition. * Solve problems, including scaling and harder correspondence problems. |
| Representations  to support calculations | Golden Nugget representations:      Other representations: |

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| **Jericho Primary School -Calculation Policy – Multiplication – Year 5** | |
| Mental Calculations | **Multiply and divide numbers mentally drawing upon known facts**   * Multiply and divide whole numbers and those involving decimals by 10, 100 & 1000.   - Recognise and use square & cube numbers (& notation).  - Use factors and multiples as connected ideas: 48 is a multiple of 6 and 6 is a  factor of 48.   * Find all factor pairs of a number and common factors of two numbers. * Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. * Establish whether a number up to 100 is prime and recall prime numbers up to 19. * Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. |
| Written calculation | **Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.**     * Exchanged digits sit below/on the answer line. See example above. * Children must be secure in the understanding and vocabulary of multiplying by 10,100,1000 using 0 as a place holder (No eggs!) * Continue to develop children’s understanding of the multiplication of a decimal number (alongside its whole number equivalent). |
| Representations  to support calculations | Golden Nugget representations:      Other representations: |

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| **Jericho Primary School -Calculation Policy – Multiplication – Year 6** | |
| Mental Calculations | **Perform mental calculations, including with mixed operations and large numbers.**   * identify common factors, common multiples and prime numbers * use their knowledge of the order of operations to carry out calculations involving the four operations |
| Written calculation | **Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.**   * Understand that standard written multiplication method involves a number of partial products e.g. 36 × 24 is made up of four partial products 30 × 20, 30 × 4, 6 × 20, 6 × 4. Use manipulatives to support structure of the algorithm especially place value   A picture containing text, screenshot, number  Description automatically generated   * Exchanged digits sit below/on the answer line. See example above. * Children must be secure in the understanding and vocabulary of multiplying by 10,100,1000 using 0 as a place holder (No eggs!)   **Multiply one-digit numbers with up to two decimal places by whole numbers**   * Continue to develop children’s understanding of the multiplication of a decimal number (alongside its whole number equivalent). |
| Representations  to support calculations | Golden Nugget representations:    A picture containing text, number, font, screenshot  Description automatically generated  Other representations:  A picture containing screenshot, colorfulness, circle  Description automatically generated |