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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...)
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| 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.
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| Representationsto 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 inany order (commutative).- Use a variety of language to describe multiplication anddivision.-Apply doubling of numbers up to ten to doubling largernumbers. |
| 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.

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| Representationsto 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 andassociativity.-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.

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| Representationsto 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.

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| Representationsto 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).
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| Representationsto 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).

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| Representationsto support calculations | Golden Nugget representations:  A picture containing text, number, font, screenshot  Description automatically generatedOther representations: A picture containing screenshot, colorfulness, circle  Description automatically generated |