

Multiplication as doubling


| Year 3 |  |  |
| :---: | :---: | :---: |
| Concrete | Pictorial | Abstract |
| Know 2, 3, 4, 5, 6, 8 and 10 times tables. |  |  |
| Use doubling to connect 2, 4 and 8 times tables. |  |  |
| Write and calculate multiplication statements using mental and efficient written methods |  |  |
| Multiplication using repeated addition | Multiplication using repeated addition $3 \times 8=24$ | Multiplication using repeated addition $8+8+8=$ $3 \times 8=24$ |
| Multiplication using arrays $4 \times 6=$ | Multiplication using arrays <br> $4 \times 6=$ $4 \times 6=24$ | Multiplication using arrays $4 \times \square=24$ |



| Year 4 |  |  |
| :---: | :---: | :---: |
| Concrete | Pictorial | Abstract |
| Know all multiplication tables to $12 \times 12$. |  |  |
| Use doubling to connect 3 and 6, 4 and 8, 6 and 12 times tables. |  |  |
| Multiply numbers by 0 and 1 |  |  |
| Multiplying together three 1-digit numbers, knowing that multiplication can be done in any order. |  |  |
| Use knowledge that multiplication is commutative to find the most efficient order in which to multiply three single digit numbers. | Use knowledge that multiplication is commutative to find the most efficient order in which to multiply three single digit numbers. <br> $15 \times 6=$ <br> We can use our knowledge of factors to help us solve $15 \times 6$ | Use knowledge that multiplication is commutative to find the most efficient order in which to multiply three single digit numbers. $\begin{aligned} & 2 \times 7 \times 5=\underline{2 \times 5 \times 7} \\ & 2 \times 5=10 \\ & 10 \times 7=70 \end{aligned}$ $15 \times 6=$ |



|  | Short multiplication |  |  |  | Using missing numbers |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 4 | 3 |  |  | 39 | 9 |
|  | X |  |  | 3 |  |  |  |  |
|  |  |  |  |  |  |  |  | 6 |


| Year 5 |  |  |
| :---: | :---: | :---: |
| Concrete | Pictorial | Abstract |
| Multiply numbers using known facts. |  |  |
| Concrete <br> (Refer back to previous years for concrete examples) | Pictorial <br> Number line <br> $102 \times 8=816$ <br> $123 \times 5=615$ | Abstract $\begin{aligned} & 102 \times 8= \\ & 102 \times \square=816 \end{aligned}$ $123 \times \square=615$ |



| Multiply numbers up to $\mathbf{4}$ digits by 1 or $\mathbf{2}$ digits using a formal written method, including long multiplication. |  |  |
| :---: | :---: | :---: |
| (Refer back to previous years for concrete examples) | $\begin{aligned} & 342 \times 7= \\ & \times \begin{array}{\|r\|r\|r\|} 300 & 40 & 2 \\ 72100 & 280 & 14 \\ \hline \end{array} \begin{array}{r} 2100 \\ +\begin{array}{r} 280 \\ \hline 2394 \end{array} \\ \hline \end{array} \end{aligned}$ | Short multiplication - Multiply 3-digit by 1-digit $342 \times 7$ becomes |
| (Refer back to previous years for concrete examples) | $2741 \times 6=$$\times$2000 700 40 1 <br> 12000 4200 240 612000 <br> + <br> + <br> + <br> + 240 | Short multiplication - Multiply 4-digit by 1-digit $2741 \times 6$ becomes |
| (Refer back to previous years for concrete examples) | $$ | Long multiplication - Multiply a 2-digit by a 2-diigt $24 \times 16$ becomes |



| Year 6 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Concrete | Pictorial |  |  |  |  | Abstract |
| Multiply using all multiplication facts |  |  |  |  |  |  |
| Multiply whole numbers and those involving decimals by 10,100 and 1000 |  |  |  |  |  |  |
| Multiply numbers up to 4 digits by 2 -digit using long multiplication |  |  |  |  |  |  |
| (Refer back to previous years for concrete examples) |  |  |  |  |  | g. $5249 \times 61=$ |

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