

## What's in a word?

Along with learning mental and written strategies for solving multiplication calculations, your child will also develop their understanding of the language associated with multiplication. Their knowledge of these terms will build year on year and will include by Year 6 words such as:

X lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product once, twice, three times... ten times...

times as (big, long, wide... and so on)

repeated addition, double, Array

Pamphlet produced by Mr M Goodwin  
Assistant Principal

Ocker Hill Academy



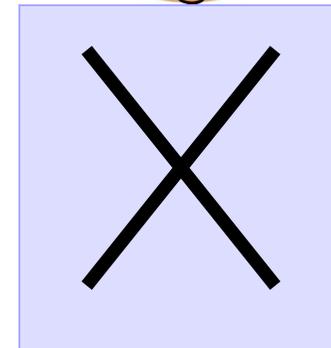
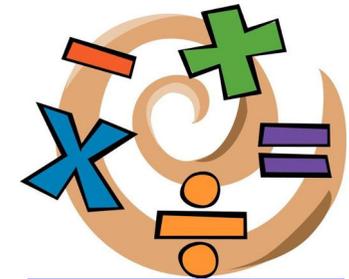
Aim High ● Aim Higher

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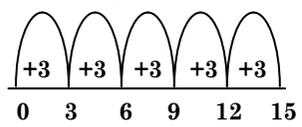
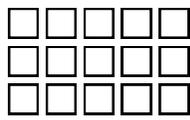
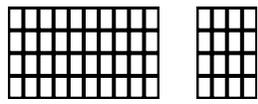


*Multiplication  
and your child-  
A guide to  
learning in the  
academy*

# Multiplication at Ocker Hill Academy

As your child progresses through the Junior phase, our skilled teachers and support staff will provide them with exciting opportunities to develop their existing mental and written strategies that they bring from their prior learning. Your child will develop their strategies to become skilled mathematicians who have the confidence to apply their knowledge to real life problems.

The academy has an agreed method for multiplication that your child will work with. This will help them to calculate small amounts initially, before progressing on to increasingly complex numbers and, towards the end of the key stage, decimal values in the context of money and measures.

Year 3	Year 4																																				
<p>The children develop their understanding of multiplication as being repeated addition on a number line</p> <p>For example</p>  <p>0 3 6 9 12 15</p> <p>After practicing repeated additions using larger numbers the children will record their work linking addition to multiplication:</p> $3+3+3+3+3+3+3=24$ $8 \text{ lots of } 3 = 24$ $8 \times 3 = 24$ <p>They will display multiplication facts in patterns (arrays)</p>  <p>3 groups of 5 = 15</p> $3 \times 5 = 15$ <p>And 5 groups of 3 = 15</p> $5 \times 3 = 15$ <p>Leading to &amp; Jottings</p> <table style="width: 100%;"> <tr> <td><math>1 \times 3 = 3</math></td> <td>3</td> </tr> <tr> <td><math>2 \times 3 = 6</math></td> <td>6</td> </tr> <tr> <td><math>3 \times 3 = 9</math></td> <td>9</td> </tr> <tr> <td><math>4 \times 3 = 12</math> etc.</td> <td>12 etc.</td> </tr> </table>	$1 \times 3 = 3$	3	$2 \times 3 = 6$	6	$3 \times 3 = 9$	9	$4 \times 3 = 12$ etc.	12 etc.	<p>The children will find larger multiples of a single digit by splitting the larger multiple into known multiplication facts</p> $14 \times 4 =$ <p>Can be split into</p> $10 \times 4 = \quad \& \quad 4 \times 4 =$  <p><math>10 \times 4 = 40</math>      <math>4 \times 4 = 16</math></p> $40 + 16 = 56$ <p>The children will be introduced to the Standard Written Method alongside this (Short multiplication of TU x U)</p> <table style="width: 100%;"> <tr> <td style="text-align: right;">1 4</td> <td style="text-align: right;">1 0</td> <td style="text-align: center;">+</td> <td style="text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">x 4</td> <td style="text-align: right;">x 4</td> <td></td> <td style="text-align: right;">x 4</td> </tr> <tr> <td style="text-align: right;">4 0</td> <td style="text-align: right;">4 0</td> <td style="text-align: center;">+</td> <td style="text-align: right;">1 6</td> </tr> <tr> <td style="text-align: right;">+1 6</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">5 6</td> <td></td> <td></td> <td></td> </tr> </table> <p>The children will then refine this to become:</p> <table style="width: 100%;"> <tr> <td style="text-align: right;">1 4</td> <td></td> </tr> <tr> <td style="text-align: right;">X 4</td> <td></td> </tr> <tr> <td style="text-align: right;">5 6</td> <td></td> </tr> <tr> <td style="text-align: right;">1</td> <td></td> </tr> </table>	1 4	1 0	+	4	x 4	x 4		x 4	4 0	4 0	+	1 6	+1 6				5 6				1 4		X 4		5 6		1	
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Year 5	Year 6																																			
<p>The children will be introduced to the strategy of approximating (multiplying the nearest ten of each number together)</p> $72 \times 38$ <p>is approximately</p> $70 \times 40 = 2800$ <p>The children will extend their use of the Standard Written Method to become (Long multiplication TU x TU)</p> <p>(Split up the bottom number and set it out like this)</p> <table style="width: 100%;"> <tr> <td style="text-align: right;">4 6</td> <td style="text-align: right;">4 6</td> <td style="text-align: right;">4 6</td> </tr> <tr> <td style="text-align: right;">X 2 3</td> <td style="text-align: right;">x 2 0</td> <td style="text-align: right;">x 3</td> </tr> <tr> <td style="text-align: right;">9 2 0</td> <td style="text-align: right;">9 2 0</td> <td style="text-align: right;">1 3 8</td> </tr> <tr> <td style="text-align: right;">+1 3 8</td> <td style="text-align: right;">1</td> <td style="text-align: right;">1 1</td> </tr> <tr> <td style="text-align: right;">1 0 5 8</td> <td></td> <td></td> </tr> </table> <p>The children will then refine this to become:</p> <table style="width: 100%;"> <tr> <td style="text-align: right;">7 2</td> <td></td> </tr> <tr> <td style="text-align: right;">x 3 8</td> <td></td> </tr> <tr> <td style="text-align: right;">2 1 6 0</td> <td></td> </tr> <tr> <td style="text-align: right;">+ 5 7 6</td> <td></td> </tr> <tr> <td style="text-align: right;">2 7 3 6</td> <td></td> </tr> <tr> <td style="text-align: right;">1</td> <td></td> </tr> </table> <p>And multiply simple decimals</p>	4 6	4 6	4 6	X 2 3	x 2 0	x 3	9 2 0	9 2 0	1 3 8	+1 3 8	1	1 1	1 0 5 8			7 2		x 3 8		2 1 6 0		+ 5 7 6		2 7 3 6		1		<p>The children will develop the strategy of approximating with larger numbers (approximating is multiplying the nearest ten of each number together)</p> $217 \times 37$ <p>is approximately</p> $220 \times 40 = 8800$ <p>They will refine this to approximate decimal values (roundest to the nearest whole)</p> $3.24 \times 7$ <p>is approximately</p> $3 \times 7 = 21$ <p>The children will then develop their use of the Standard Written Method (Short multiplication of U.th x U) to be able to multiply decimal values.</p> <table style="width: 100%;"> <tr> <td style="text-align: right;">3 . 2 4</td> <td></td> </tr> <tr> <td style="text-align: right;">X 7</td> <td></td> </tr> <tr> <td style="text-align: right;">2 2 . 6 8</td> <td></td> </tr> <tr> <td style="text-align: right;">1 2</td> <td></td> </tr> </table>	3 . 2 4		X 7		2 2 . 6 8		1 2	
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