

## Progression in Calculations. Y3

### Multiplication.

Year 3																																																																							
<p style="text-align: center;"><b>Multiplying 2-digits by 1-digit (1)</b></p> <p>Children use their understanding of repeated addition to represent a two-digit number multiplied by a one-digit number with concrete manipulatives. They use the formal method of column multiplication alongside the concrete representation. They also apply their understanding of partitioning to represent and solve calculations. In this step, children explore multiplication with no exchange.</p>	<p>Annie uses place value counters to work out <math>34 \times 2</math></p> <div style="display: flex; align-items: center; justify-content: space-around;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #008000; color: white;"> <th colspan="2"></th> <th style="background-color: #008000; color: white;">Tens</th> <th style="background-color: #008000; color: white;">Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>10</td> <td>10</td> </tr> <tr> <td></td> <td></td> <td>10</td> <td>10</td> </tr> <tr> <td></td> <td></td> <td>10</td> <td>10</td> </tr> <tr> <td></td> <td></td> <td>1</td> <td>1</td> </tr> <tr> <td></td> <td></td> <td>1</td> <td>1</td> </tr> <tr> <td></td> <td></td> <td>1</td> <td>1</td> </tr> <tr> <td></td> <td></td> <td>1</td> <td>1</td> </tr> </tbody> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td>3</td> <td>4</td> </tr> <tr> <td>x</td> <td></td> <td>2</td> </tr> <tr style="border-top: 1px solid black;"> <td></td> <td>6</td> <td>8</td> </tr> </tbody> </table> <div style="border: 1px solid #008000; border-radius: 15px; padding: 10px; width: fit-content;"> <p style="text-align: center;">Use Annie's method to solve:</p> <math display="block">23 \times 3</math> <math display="block">32 \times 3</math> <math display="block">42 \times 2</math> </div> </div>			Tens	Ones			10	10			10	10			10	10			1	1			1	1			1	1			1	1		T	O		3	4	x		2		6	8																										
		Tens	Ones																																																																				
		10	10																																																																				
		10	10																																																																				
		10	10																																																																				
		1	1																																																																				
		1	1																																																																				
		1	1																																																																				
		1	1																																																																				
	T	O																																																																					
	3	4																																																																					
x		2																																																																					
	6	8																																																																					
<p style="text-align: center;"><b>Multiplying 2-digits by 1-digit (1)</b></p> <p>Children continue to use their understanding of repeated addition to represent a two-digit number multiplied by a one-digit number with concrete manipulatives. They move on to explore multiplication with exchange. Each question in this step builds in difficulty.</p>	<p>Jack uses Base 10 to calculate <math>24 \times 4</math></p> <div style="display: flex; align-items: center; justify-content: space-around;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #4b0082; color: white;"> <th colspan="2"></th> <th style="background-color: #4b0082; color: white;">Tens</th> <th style="background-color: #4b0082; color: white;">Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>20</td> <td>4</td> </tr> <tr> <td></td> <td></td> <td>20</td> <td>4</td> </tr> <tr> <td></td> <td></td> <td>20</td> <td>4</td> </tr> <tr> <td></td> <td></td> <td>20</td> <td>4</td> </tr> </tbody> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td>2</td> <td>4</td> </tr> <tr> <td>x</td> <td></td> <td>4</td> </tr> <tr style="border-top: 1px solid black;"> <td></td> <td>9</td> <td>6</td> </tr> <tr> <td></td> <td>1</td> <td></td> </tr> </tbody> </table> <div style="border: 1px solid #008000; border-radius: 15px; padding: 10px; width: fit-content;"> <p style="text-align: center;">Use Jack's method to solve:</p> <math display="block">13 \times 4</math> <math display="block">23 \times 4</math> <math display="block">26 \times 3</math> </div> </div> <p>Amir uses place value counters to calculate <math>16 \times 4</math></p> <div style="display: flex; align-items: center; justify-content: space-around;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #e67e22; color: white;"> <th colspan="2"></th> <th style="background-color: #e67e22; color: white;">Tens</th> <th style="background-color: #e67e22; color: white;">Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>10</td> <td>6</td> </tr> <tr> <td></td> <td></td> <td>10</td> <td>6</td> </tr> <tr> <td></td> <td></td> <td>10</td> <td>6</td> </tr> <tr> <td></td> <td></td> <td>10</td> <td>6</td> </tr> </tbody> </table> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td>1</td> <td>6</td> </tr> <tr> <td>x</td> <td></td> <td>4</td> </tr> <tr style="border-top: 1px solid black;"> <td></td> <td>6</td> <td>4</td> </tr> <tr> <td></td> <td>2</td> <td></td> </tr> </tbody> </table> <div style="border: 1px solid #008000; border-radius: 15px; padding: 10px; width: fit-content;"> <p style="text-align: center;">Use Amir's method to solve:</p> <math display="block">16 \times 6</math> <math display="block">17 \times 5</math> <math display="block">28 \times 3</math> </div> </div>			Tens	Ones			20	4			20	4			20	4			20	4		T	O		2	4	x		4		9	6		1				Tens	Ones			10	6			10	6			10	6			10	6		T	O		1	6	x		4		6	4		2	
		Tens	Ones																																																																				
		20	4																																																																				
		20	4																																																																				
		20	4																																																																				
		20	4																																																																				
	T	O																																																																					
	2	4																																																																					
x		4																																																																					
	9	6																																																																					
	1																																																																						
		Tens	Ones																																																																				
		10	6																																																																				
		10	6																																																																				
		10	6																																																																				
		10	6																																																																				
	T	O																																																																					
	1	6																																																																					
x		4																																																																					
	6	4																																																																					
	2																																																																						

