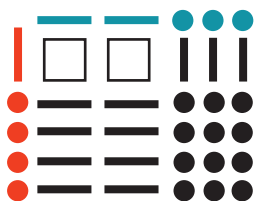


THREE WAYS TO MULTIPLY

Here are three strategies you can use to multiply multi-digit factors.
For each strategy, look at the example problem on the left.
Then, try it on the right!

	23 x 14	45 x 13																																								
BASE TEN ARRAY	● = 1 = 10 □ = 100	45 x 13																																								
	23 x 14  200 + 110 + 12 = 322 23 x 14 = 322	 400 + 170 + 15 = 585 45 x 13 = 585																																								
AREA MODEL	23 x 14 (20 + 3) x (10 + 4) 20 + 3 <table><tr><td>10</td><td>10 x 20 200</td><td>10 x 3 30</td><td>200</td></tr><tr><td>+</td><td></td><td></td><td>30</td></tr><tr><td>4</td><td>4 x 20 80</td><td>4 x 3 12</td><td>80</td></tr><tr><td></td><td></td><td></td><td>+12</td></tr><tr><td></td><td></td><td></td><td>322</td></tr></table> 23 x 14 = 322	10	10 x 20 200	10 x 3 30	200	+			30	4	4 x 20 80	4 x 3 12	80				+12				322	45 x 13 (40 + 5) x (10 + 3) 40 + 5 <table><tr><td>10</td><td>10 x 40 400</td><td>10 x 5 50</td><td>400</td></tr><tr><td>+</td><td></td><td></td><td>120</td></tr><tr><td>3</td><td>3 x 40 120</td><td>3 x 5 15</td><td>50</td></tr><tr><td></td><td></td><td></td><td>+15</td></tr><tr><td></td><td></td><td></td><td>585</td></tr></table> 45 x 13 = 585	10	10 x 40 400	10 x 5 50	400	+			120	3	3 x 40 120	3 x 5 15	50				+15				585
10	10 x 20 200	10 x 3 30	200																																							
+			30																																							
4	4 x 20 80	4 x 3 12	80																																							
			+12																																							
			322																																							
10	10 x 40 400	10 x 5 50	400																																							
+			120																																							
3	3 x 40 120	3 x 5 15	50																																							
			+15																																							
			585																																							
PARTIAL PRODUCTS	23 x 14 12 (4 x 3) 80 (4 x 20) 30 (10 x 3) + 200 (10 x 20) 322	45 x 13 15 (3 x 5) 120 (3 x 40) 50 (10 x 5) + 400 (10 x 40) 585																																								