

# Long Multiplication Algorithm

[ian.mcloughlin@gmit.ie](mailto:ian.mcloughlin@gmit.ie)

## Long multiplication

					1	0
					2	4
×					1	2
					8	
					8	1
					9	2
					2	0
					4	8
					0	0
+					1	0
					2	4
					0	0
					0	0
					1	3
					1	0
					7	2

## Algorithm

right align

**for** each bottom digit:

new line, append zeros

**for** each top digit:

multiply

**if** carried digit:

add

**if** greater than 9:

carry tens digit

**print** units digit

add

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			1	0	2	4
				1	2	8
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			8	1	9	2
			2	0	4	8
			0	0	0	0
+	1	0	2	4	0	0
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3				1	0	2	4
×					1	2	8
<hr/>							
				8	1	9	2
		2	0	4	8	0	
+	1	0	2	4	0	0	
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	1	3	1	0	7	2	

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1				1	0	2	4
×				1	2	8	
				8	1	9	2
		2	0	4	8	0	
+	1	0	2	4	0	0	
	1	3	1	0	7	2	

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