

* Vocab = product
Multi = repeated addition

Multiplication

X X X X X X X

Area Model

Core lesson: $368 \times$

$$(3 \times 100) + (6 \times 10) + (8)$$

Hundreds (3) + Tens (6) + Ones (8)

7	$300 \times 7 =$ 21,000	$60 \times 7 =$ 420	$8 \times 7 =$ 56
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Add them up:

$$\begin{array}{r} 21,000 \\ + 420 \\ + 56 \\ \hline 21,476 \end{array}$$

$$272 \times 4$$

H [200]	T [70]	O [2]
4 $200 \times 4 =$ 800	$70 \times 4 =$ 280	$2 \times 4 =$ 8

Add them up:

$$\begin{array}{r} 800 \\ + 280 \\ + 8 \\ \hline 1,088 \end{array}$$

$$4,308 \times 7$$

Th	[4,000]	H	[300]	T	[60]	O	[8]
7	$4,000 \times 7 =$	$300 \times 7 =$	$60 \times 7 =$	$8 \times 7 =$			
	28,000	2,100	420	56			

Add
28,000
2,100
420
+ 56
30,576

*3 digit by 2 digit
★ Hint-decompose both #'s

$$364 \times 24$$

	H 300	+ T 60	+ O 4	
T	$300 \times 20 =$	$60 \times 20 =$	$4 \times 20 =$	
20	6000	1200	80	
0	$300 \times 4 =$	$60 \times 4 =$	$4 \times 4 =$	
4	1200	240	16	

Add U

$$\begin{array}{r}
 6,000 \\
 + 1,200 \\
 + 80 \\
 + 1,200 \\
 + 240 \\
 + 0 \\
 \hline
 8,736
 \end{array}$$

Multiplication Cont

Distributive Method

$$13 \times 27$$

* expand the first term

$$13 = 10 + 3$$

* rewrite using distributive property

- distribute second term to expanded first term

$$\begin{array}{r} \cdot(10 \times 27) + (3 \times 27) \\ 270 + 80 = 351 \end{array}$$

Partial Product

$$\begin{array}{r} 13 \\ \times 27 \\ \hline \end{array}$$

$$3 \times 7 = 21$$

$$10 \times 7 = 70$$

$$3 \times 20 = 60$$

$$10 \times 20 = 200 +$$

$$351$$

Algorithm

× Powers of 10 = watch the zeros

• Place value is important!

Core lesson: 512×46

1. line them up

2. 512×6

3. 512×40

- 40 NOT 4

bc it's in the
tens place

4. Add the products

$$\begin{array}{r} 512 \\ \times 46 \\ \hline 3072 \\ + 20480 \\ \hline 23552 \end{array}$$

When multiplying by
40, put in a place
holder so the products
end up in the
right place value