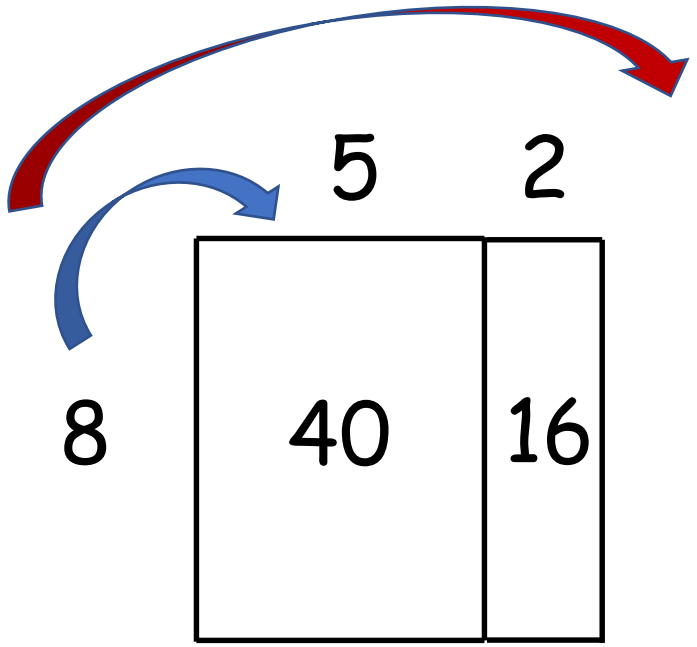
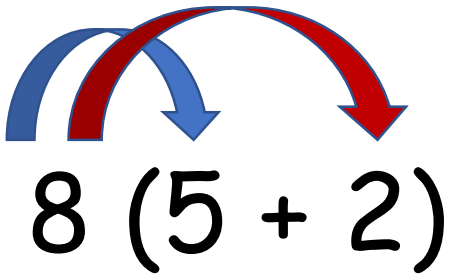
Can Area Models of Multiplication Be Linked to Factoring Polynomials?

One-Digit by One-Digit Multiplication

8×7



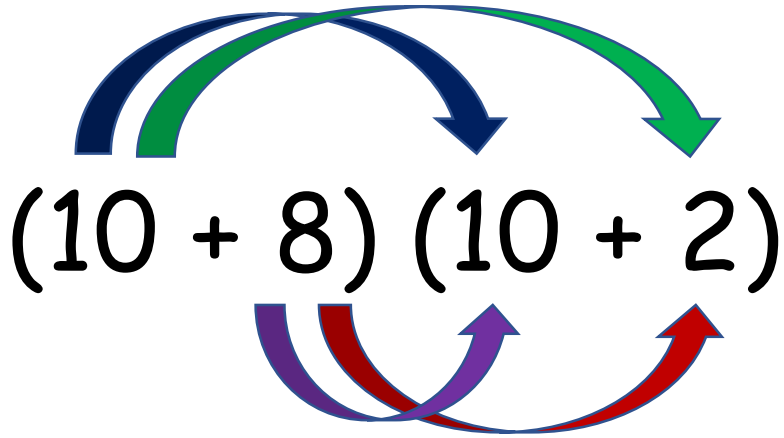


$40 + 16 = 56$

Two-Digit by Two-Digit Multiplication

18×12

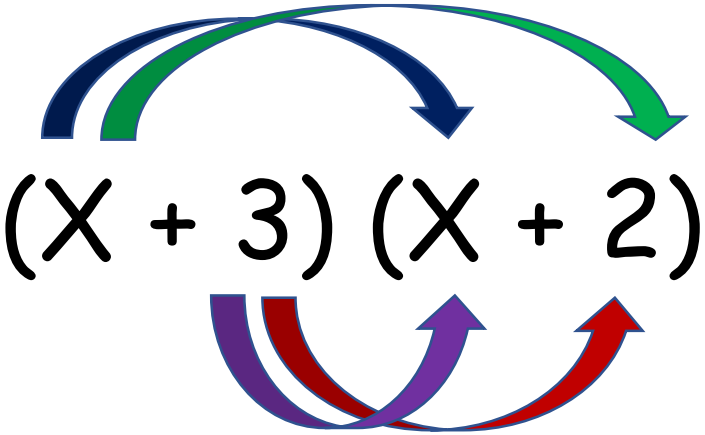
	10	2
10	100	20
8	80	16



$100 + 20 + 80 + 16 = 216$

Multiplication of Algebraic Expressions

$(X+3)(X+2)$



	X	3
X	X^2	3X
2	2X	6

$$X^2 + 2X + 3X + 6 = X^2 + 5X + 6$$

Try using the area model to multiply this problem.

$(3X + 4)(X + 2)$

Factoring Polynomials

$X^2 + 6X + 8$

	X	2
X	X^2	2X
4	4X	8

$(X + 2)(X + 4)$

1×8 $\quad -1 \times -8$

2×4 $\quad -2 \times -4$

$1 + 5$

$2 + 4$

$3 + 3$

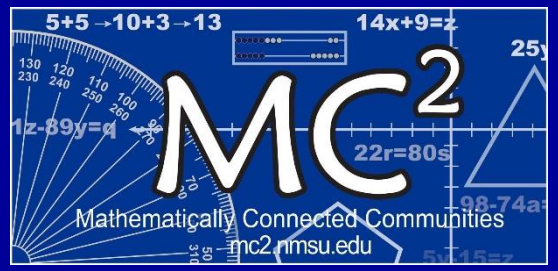
Try using the area model to factor this problem.

$X^2 + 11X + 24$

For other interesting uses of flexibility with numbers view Jo Boaler's video,
What is Number Sense?

https://www.youcubed.org/what-is-number-sense/

For more information, email mc2.numsu.edu



Funded by:
US Department of Education/Math-Science Partnership (MSP)
New Mexico Public Education Department (PED)
Higher Education Department (HED)
Participating School Districts' Cost Share