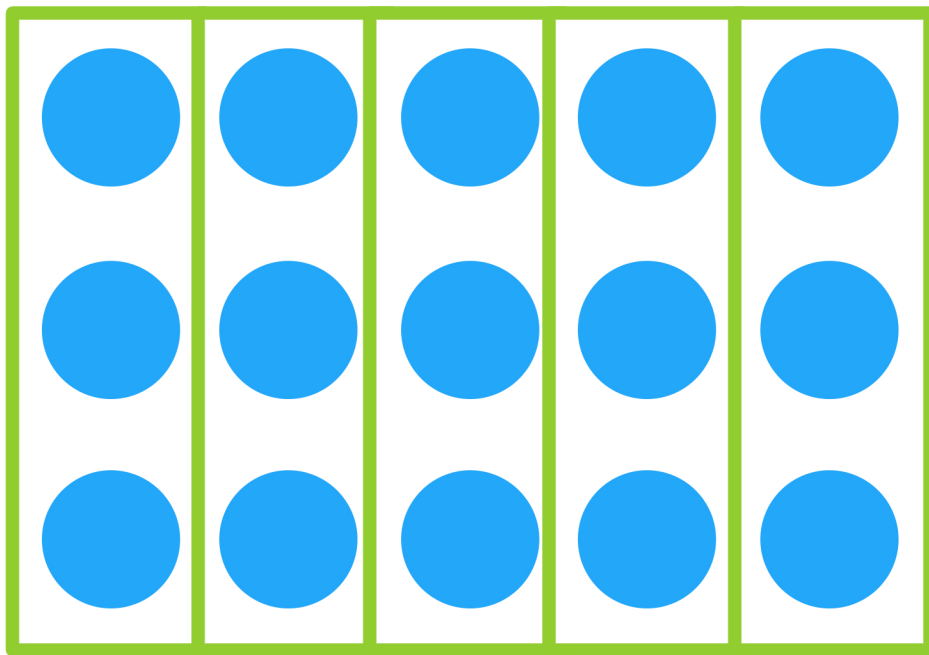


Multiplication Strategies

Array

Rows and columns
with an equal amount in each.

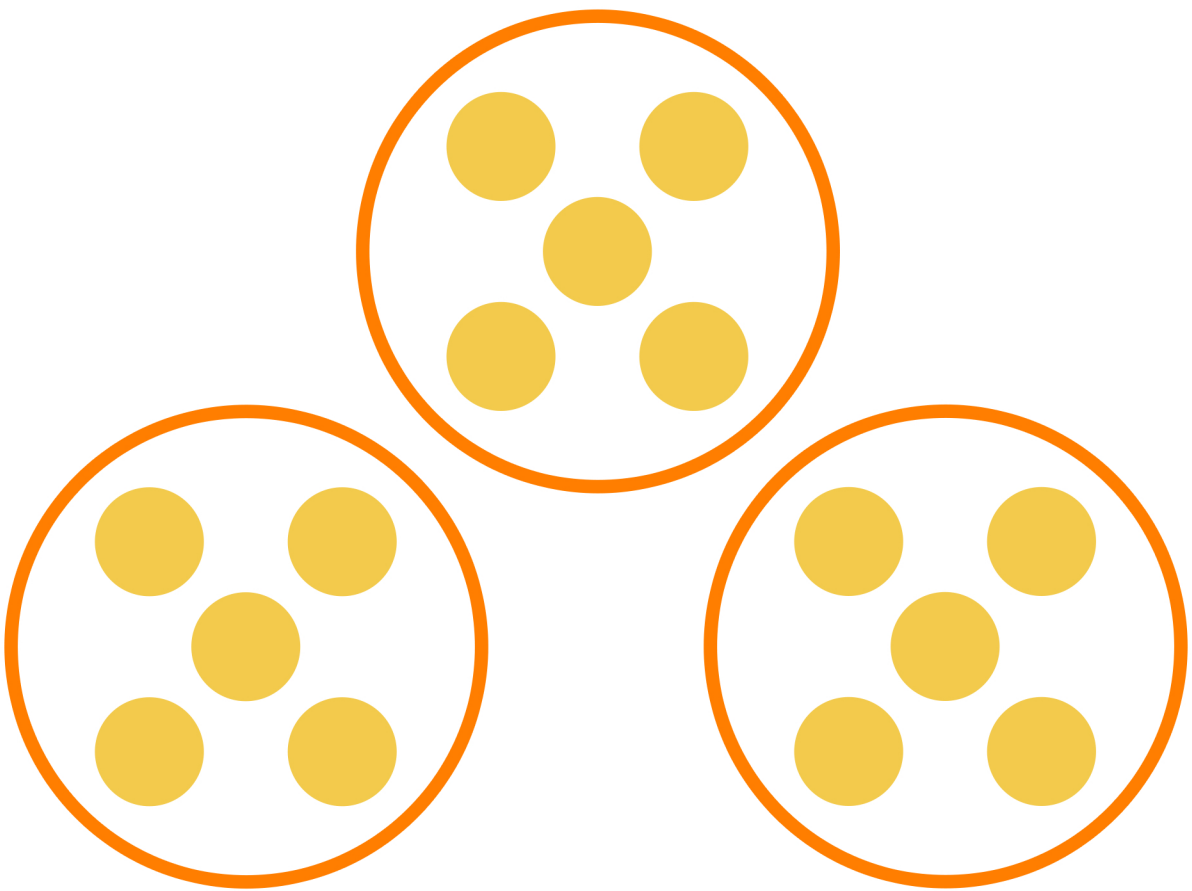


$$5 \times 3 = 15$$

Multiplication Strategies

Equal Groups

Use the same number of ones in each group.



$$3 \times 5 = 15$$

Multiplication Strategies

Repeated Addition

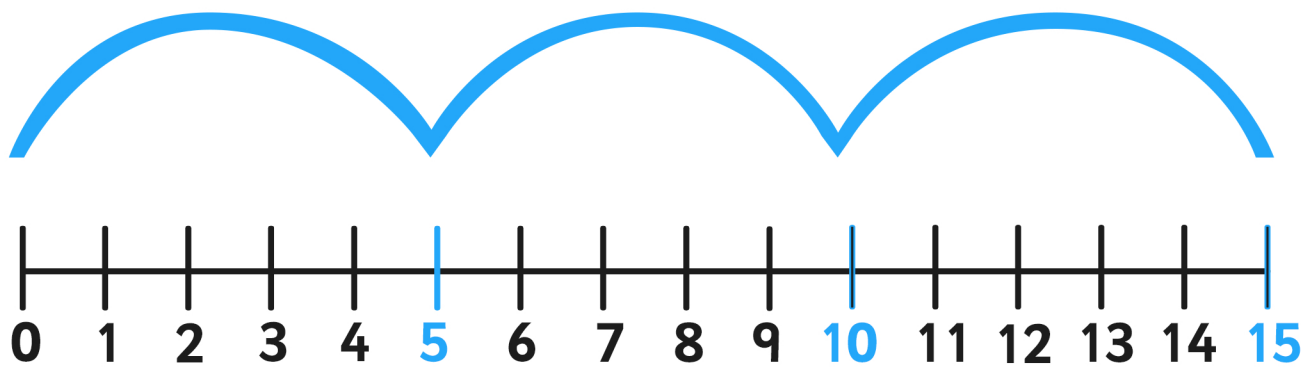
$$5 + 5 + 5 = 15$$

$$3 \times 5 = 15$$

Multiplication Strategies

Number Line

Starting from zero, hop 5 at a time.
Where do you land?



1 hop of 5 = 5

2 hops of 5 = 10

3 hops of 5 = 15

$$3 \times 5 = 15$$

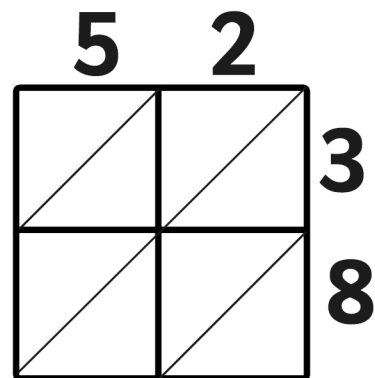
Multiplication Strategies

Lattice / Italian

Draw a grid to match the numbers.

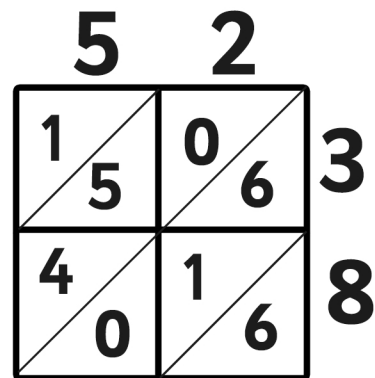
Write the partitioned numbers on top and to the right.

Draw diagonals.



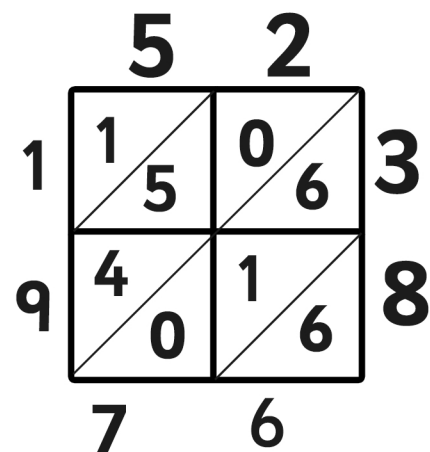
Multiply the numerals.

Write the answers in the relevant box, writing the digits either side of the diagonal.



Add the diagonals in turn.

Carry any "tens" as required.



$$52 \times 38 = 1976$$

Multiplication Strategies

Partitioning

$$52 \times 38$$

Multiply each partition together
and add the products.

$$50 \times 30 = 1500$$

$$2 \times 30 = 60$$

$$50 \times 8 = 400$$

$$2 \times 8 = 16$$

$$1976$$

$$52 \times 38 = 1976$$

Multiplication Strategies

Grid Method

x	50	2
30		
8		

Draw a grid.

Write the partitioned numbers at the top and left of the grid.

x	50	2
30	1500	60
8	400	16

Multiply the partitioned numbers.

$$\begin{array}{r} 1500 \\ + 400 \\ + 60 \\ + 16 \\ \hline 1976 \end{array}$$

Add the products.

$$52 \times 38 = 1976$$

Multiplication Strategies

Column Method

$$\begin{array}{r} 52 \\ \times 38 \\ \hline \end{array}$$

Write the numbers above each other in columns.

$$\begin{array}{r} 52 \\ \times 38 \\ \hline 416 \end{array}$$

Multiply 52×8

$$\begin{array}{r} 52 \\ \times 38 \\ \hline 416 \\ 1560 \\ \hline \end{array}$$

Multiply 52×30

$$\begin{array}{r} 416 \\ + 1560 \\ \hline 1976 \end{array}$$

Add the products.

$$52 \times 38 = 1976$$

Multiplication Strategies

Expanded Column Method

- Line up the ones and the tens.
- Multiply the ones.
- Multiply the tens.
- Add the totals together.

$$\begin{array}{r} 42 \\ \times 6 \\ \hline 12 \quad (2 \times 6) \\ 240 \quad (40 \times 6) \\ \hline 252 \end{array}$$

$$42 \times 6 = 252$$

Multiplication Strategies

Column Method

3-digit x 2-digit carrying not shown

$$\begin{array}{r} 368 \\ \times 24 \\ \hline \end{array}$$

Write the numbers above each other in columns.

$$\begin{array}{r} 368 \\ \times 24 \\ \hline 1472 \end{array}$$

Multiply 368×4

$$\begin{array}{r} 368 \\ \times 24 \\ \hline 1472 \\ 7360 \\ \hline \end{array}$$

Multiply 368×20

$$\begin{array}{r} 1472 \\ + 7360 \\ \hline 8832 \end{array}$$

Add the products.

$$368 \times 24 = 8832$$

Multiplication Strategies

Column Method

4-digit x 2-digit carrying not shown

$$\begin{array}{r} 5368 \\ \times 24 \\ \hline \end{array}$$

Write the numbers above each other in columns.

$$\begin{array}{r} 5368 \\ \times 24 \\ \hline 21472 \end{array}$$

Multiply 5368×4

$$\begin{array}{r} 5368 \\ \times 24 \\ \hline 21472 \\ 107360 \\ \hline \end{array}$$

Multiply 5368×20

$$\begin{array}{r} 21472 \\ + 107360 \\ \hline 128832 \end{array}$$

Add the products.

$$5368 \times 24 = 128\,832$$

Multiplication Strategies

Column Method

5-digit x 2-digit carrying not shown

25368

x 24

Write the numbers above each other in columns.

25368

x 24

101472

Multiply 25 368 x 4

25368

x 24

101472

507360

Multiply 25 368 x 20

101472

+ 507360

608832

Add the products.

$$25\ 368 \times 24 = 608\ 832$$

Multiplication Strategies

Column Method

6-digit x 2-digit carrying not shown

$$\begin{array}{r} 125368 \\ \times 24 \\ \hline \end{array}$$

Write the numbers above each other in columns.

$$\begin{array}{r} 125368 \\ \times 24 \\ \hline \end{array}$$

Multiply 125 368 x 4

$$\begin{array}{r} 501472 \\ \hline \end{array}$$

$$\begin{array}{r} 125368 \\ \times 24 \\ \hline \end{array}$$

Multiply 125 368 x 20

$$\begin{array}{r} 501472 \\ 2507360 \\ \hline \end{array}$$

$$\begin{array}{r} 501472 \\ + 2507360 \\ \hline 3008832 \\ \hline \end{array}$$

Add the products.

$$125\ 368 \times 24 = 3\ 008\ 832$$

Multiplication Strategies

Multiplying by 10

Use place value to work out how to multiply by 10.

$$674 \times 10 = ?$$

If you multiply a number by 10, the digits move one place value to the left.

Thousands	Hundreds	Tens	Ones
	6	7	4

Thousands	Hundreds	Tens	Ones
6	7	4	0

Zeros will be added after the digits have moved.

$$674 \times 10 = 6740$$

Use place value to work out how to multiply by 100.

$$674 \times 100 = ?$$

Ten Thousands	Thousands	Hundreds	Tens	Ones
		6	7	4

Ten Thousands	Thousands	Hundreds	Tens	Ones
6	7	4	0	0

Zeros will be added after the digits have moved.

$$674 \times 100 = 67\,400$$

Multiplication Strategies

Multiplying Decimals by 10

Use place value to work out how to multiply by 10.

$$6.74 \times 10 = ?$$

If you multiply a number by 10, the digits move one place value to the left.

Hundreds	Tens	Ones	Tenths	Hundredths
		6	7	4

Hundreds	Tens	Ones	Tenths	Hundredths
	6	7	4	

$$6.74 \times 10 = 67.4$$

Use place value to work out how to multiply by 100.

$$6.74 \times 100 = ?$$

Hundreds	Tens	Ones	Tenths	Hundredths
		6	7	4

Hundreds	Tens	Ones	Tenths	Hundredths
6	7	4		

If you multiply a number by 100, the digits move two places to the left.

$$6.74 \times 100 = 674$$