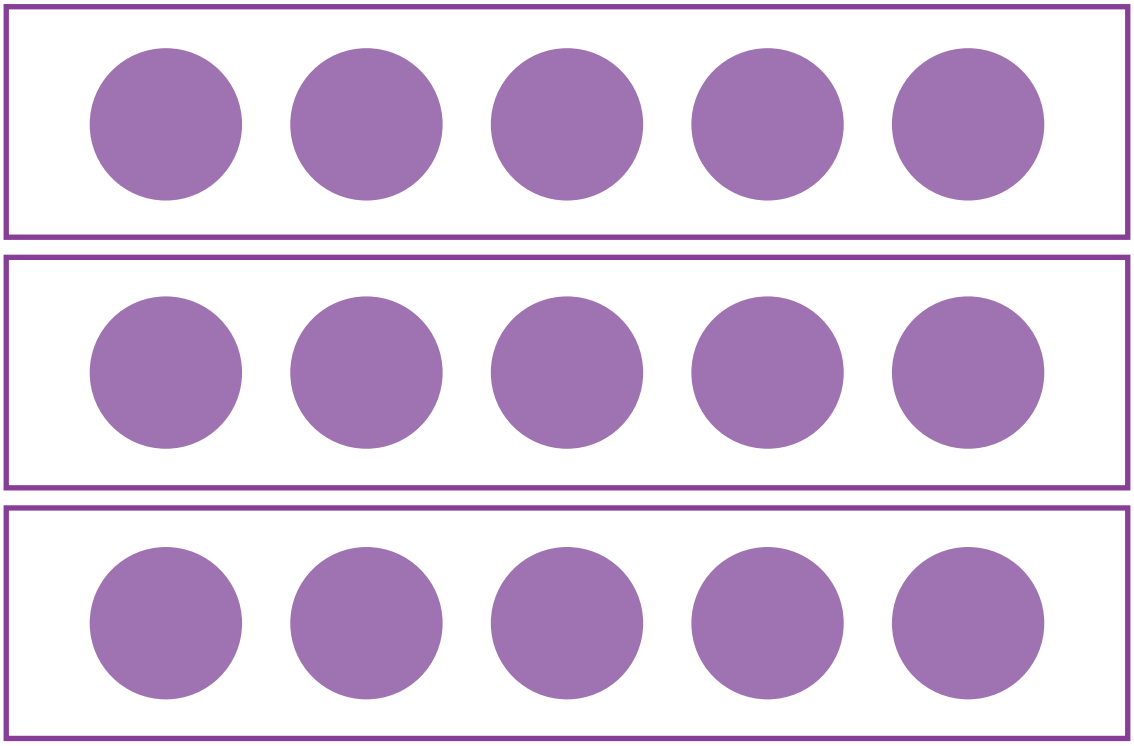
Multiplication Strategies

Array

Rows and columns with an equal amount in each.

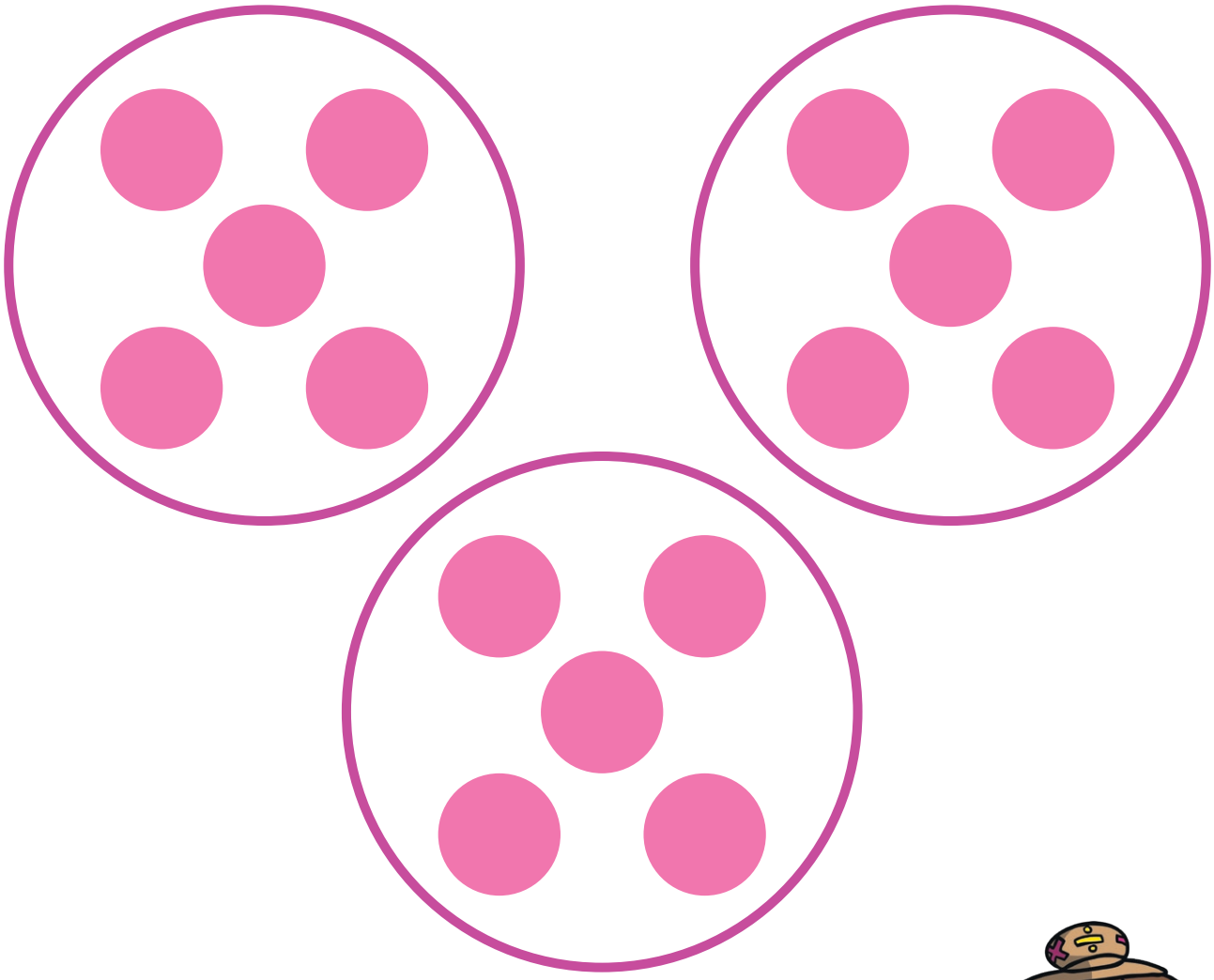


$3 \times 5 = 15$

Multiplication Strategies

Equal Groups

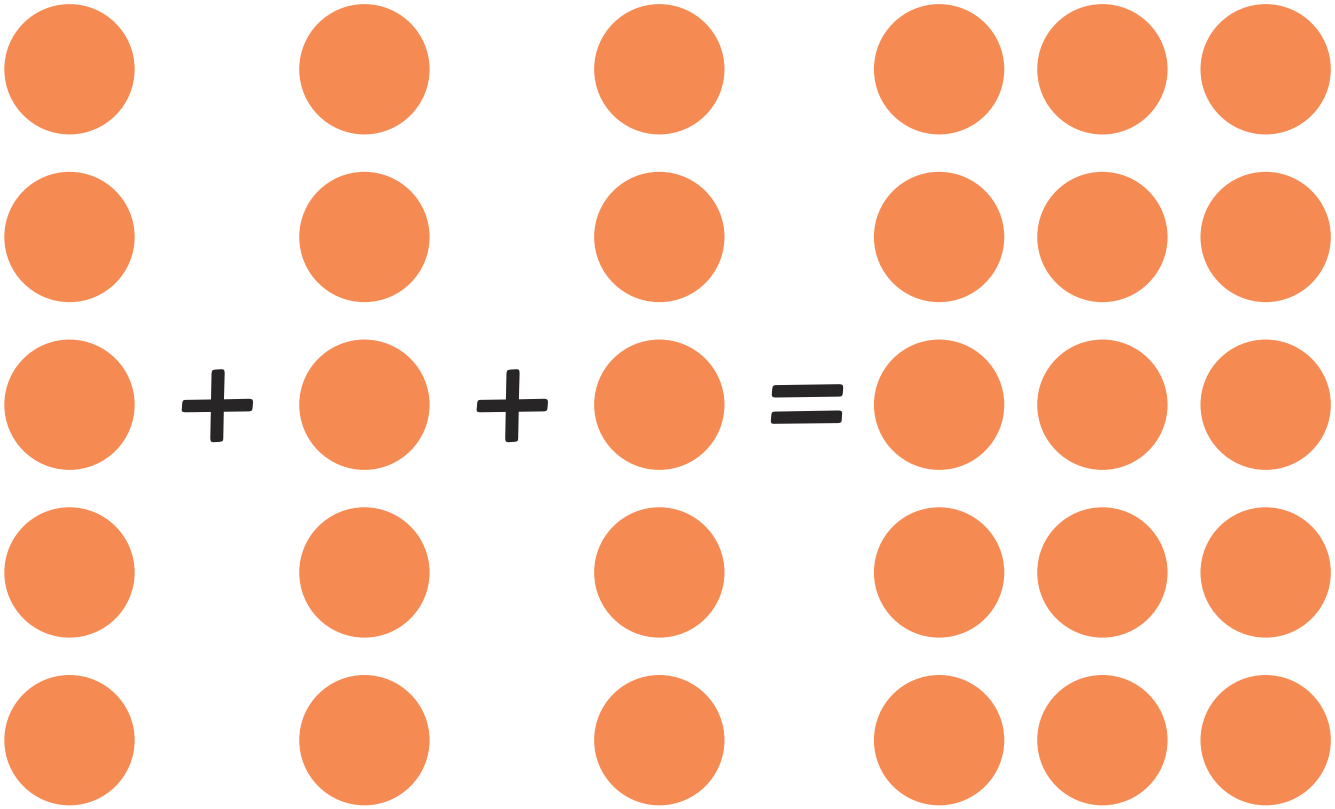
Use the same number of ones in each group.



$3 \times 5 = 15$

Multiplication Strategies

Repeated Addition

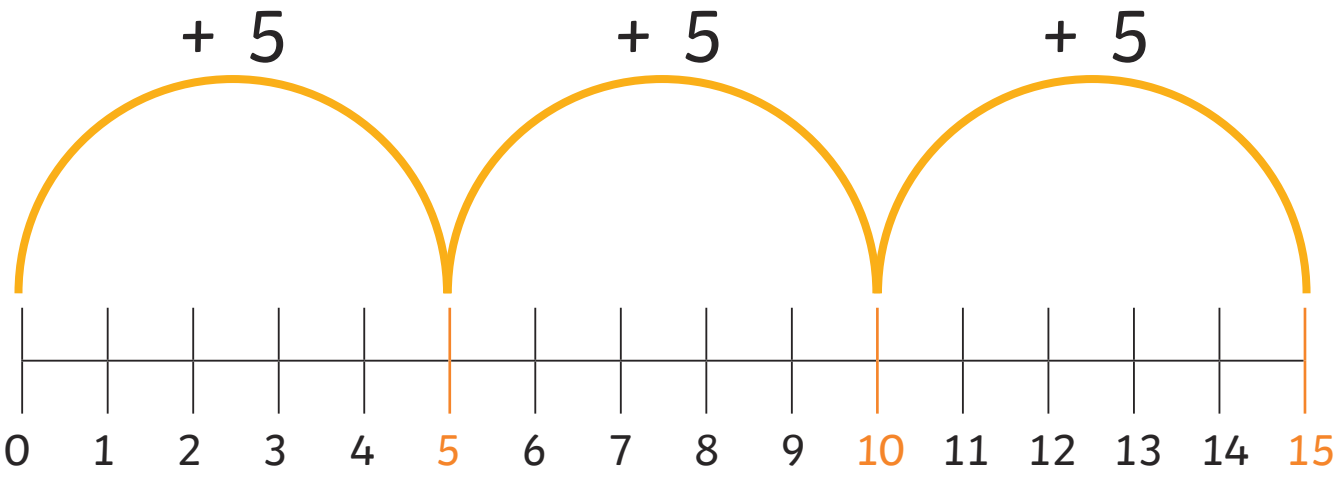


$3 \times 5 = 15$

Multiplication Strategies

Number Line

Starting from 0, hop 5 at a time.
Where do you land?



1 hop of 5 = 5

2 hops of 5 = 10

3 hops of 5 = 15

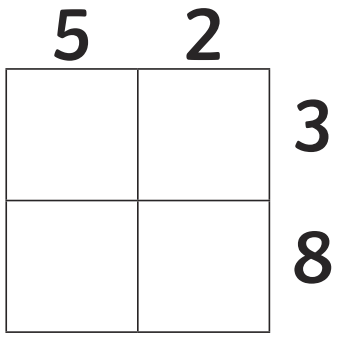
3 × 5 = 15

Multiplication Strategies

Lattice/Italian

Draw a grid to match the numbers.

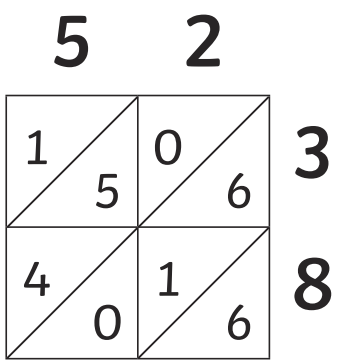
Write the partitioned number on top and to the right.



Draw diagonals.

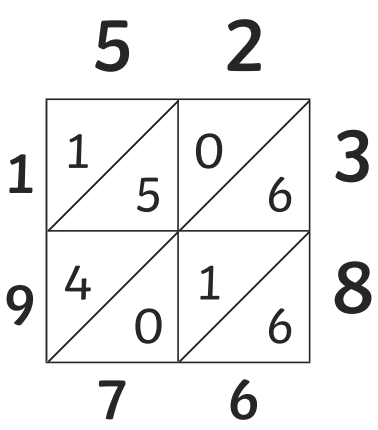
Multiply the numerals.

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



Add the diagonals in turn.

Regroup any “digits” as required.



52 × 38 = 1976

Multiplication Strategies

Partitioning

53 × 38

Multiply each partition together and add the products.

50	×	30	=	1500
3	×	30	=	90
50	×	8	=	400
3	×	8	=	24
				2014

53 × 38 = 2014

Multiplication Strategies

Grid Method

×	60	5
6		

Draw a grid.

Write the partitioned number at the top and write the number you are multiplying by on the left.

×	60	5
6	360	30

Multiply the partitioned number.

$$\begin{array}{r} 360 \\ +\ 30 \\ \hline 390 \end{array}$$

Add the products.

65 × 6 = 390

Multiplication Strategies

Grid Method

×	50	2
30		
8		

Draw a grid.

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

×	50	2
30	1500	60
8	400	16

Multiply the partitioned number.

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

Add the products.

52 × 38 = 1976

Multiplication Strategies

Column Method

52 × 38	Write the numbers above each other in the columns.
52 × 38 416	Multiply 52 × 8
52 × 38 416 1560	Multiply 52 × 30
416 + 1560 1976	Add the products.

52 × 38 = 1976

Multiplication Strategies

Expanded Column Method

Line up the ones and the tens.

Multiply the ones.

Multiply the tens by the ones.

Add the totals together.

	42	
×	6	
	12	(2 × 6)
	240	(40 × 6)
	252	

42 × 6 = 252

Multiplication Strategies

Column Method

3-digit × 2-digit regrouping not shown

```
  368
×  24
```

Write the numbers above each other in the columns.

```
  368
×  24
 1472
```

Multiply 368 × 4

```
  368
×  24
 1472
 7360
```

Multiply 368 × 20

```
  1472
+ 7360
  8832
```

Add the products.

368 × 24 = 8832

Multiplication Strategies

Column Method

4-digit × 2-digit regrouping not shown

```
  5368
×   24
```

Write the numbers above each other in the columns.

```
  5368
×   24
------
  1472
```

Multiply 5368 × 4

```
  5368
×   24
------
 21472
107360
```

Multiply 5368 × 20

```
 21472
+107360
------
128832
```

Add the products.

5368 × 24 = 128 832

Multiplication Strategies

Column Method

5-digit × 2-digit carrying not shown

```
  25368
×    24
```

Write the numbers above each other in the columns.

```
  25368
×    24
 101472
```

Multiply 25 368 × 4

```
  25368
×    24
 101472
 507360
```

Multiply 25 368 × 20

```
  101472
+ 507360
  608832
```

Add the products.

25 368 × 24 = 608 832

Multiplication Strategies

Column Method

6-digit × 2-digit carrying not shown

```
  125368
×     24
```

Write the numbers above each other in the columns.

```
  125368
×     24
--------
  501472
```

Multiply 125 368 × 4

```
  125368
×     24
--------
  501472
 2507360
```

Multiply 125 368 × 20

```
  501472
+ 2507360
--------
 3008832
```

Add the products.

125 368 × 24 = 608 832

Multiplication Strategies

Multiplying by 10

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

674 × 10 = ?

If you multipy 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

Zero will be added after the digits have moved.

674 × 10 = 6740

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

674 × 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 × 100 = 67 400

Multiplication Strategies

Multiplying Decimals by 10

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

6.74 × 10 = ?

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

Hundreds	Tens	Ones	tenths	hundredths
		6 .	7	4

Hundreds	Tens	Ones	tenths	hundredths
	6	7 .	4	

6.74 × 10 = 67.4

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

6.74 × 100 = ?

Hundreds	Tens	Ones	tenths	hundredths
		6 .	7	4

Hundreds	Tens	Ones	tenths	hundredths
6	7	4 .	0	0

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

6.74 × 100 = 674

Multiplication Strategies

Short Column Method

4-digit × 1-digit regrouping shown

1135 × 6	Write the numbers above each other in the columns.
1135 × 6 0 3	Multiply 5 × 6 Write 0 in the ones column and regroup the 3 beneath the tens column.
1135 × 6 10	Multiply 3 × 6 Add the 3 tens that were regrouped. Write 1 in the tens column and regroup 2 into the hundreds column.
1135 × 6 810 2 3	Multiply 1 × 6 Add the 2 hundreds that were regrouped. Write 8 in the hundreds column.
1135 × 6 6810 2 3	Multiply 1 × 6 and write 6 in the thousands column. **1135 × 6 = 6810**