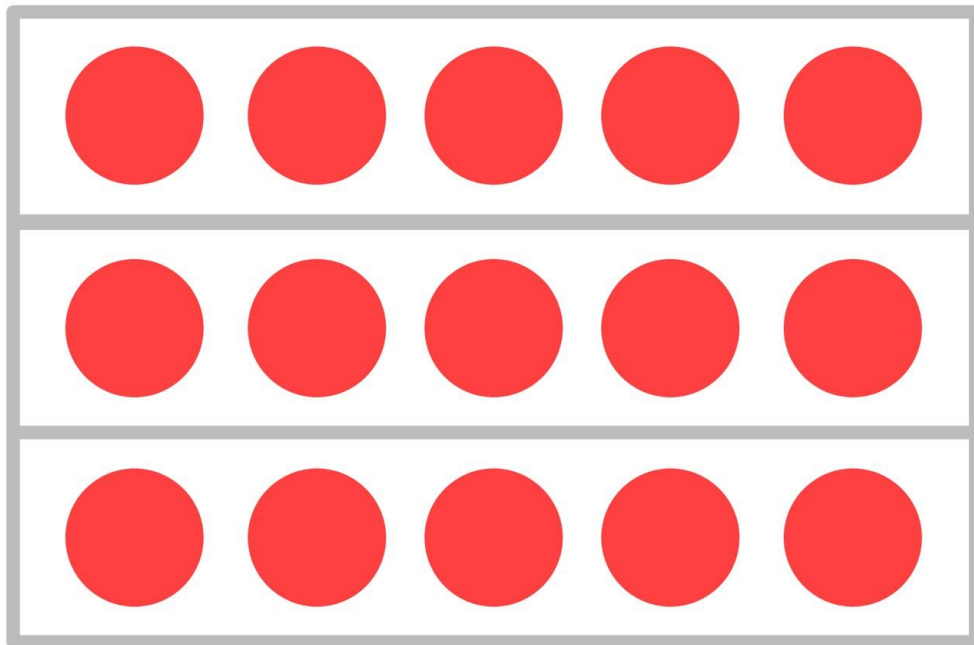


## Multiplication Strategies

# Array

Rows and columns  
with an equal amount in each.

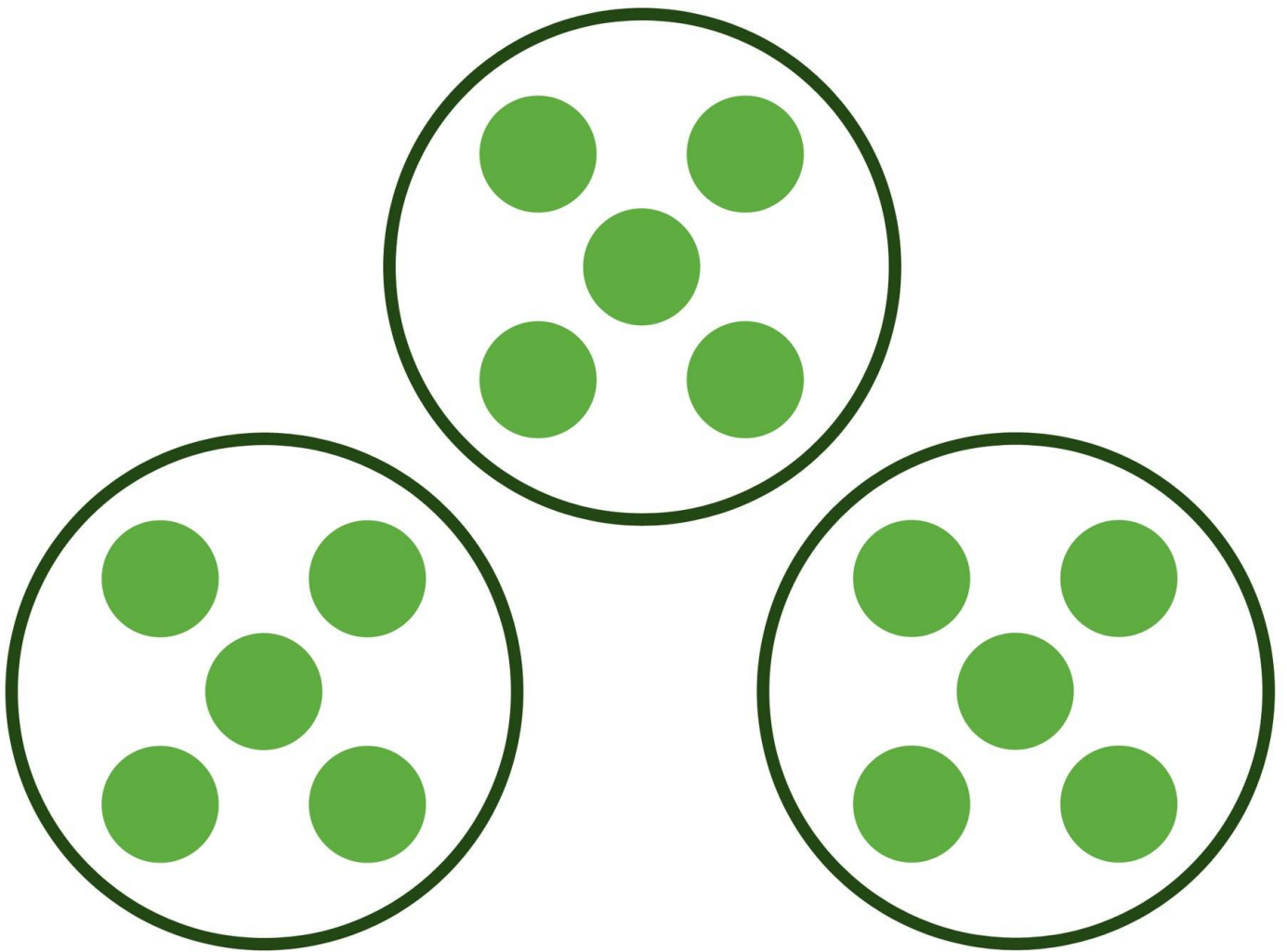


$$5 \times 3 = 15$$

## Multiplication Strategies

# Equal Groups

Use the same number of units in each group.



$$5 \times 3 = 15$$

## Multiplication Strategies

# Repeated Addition

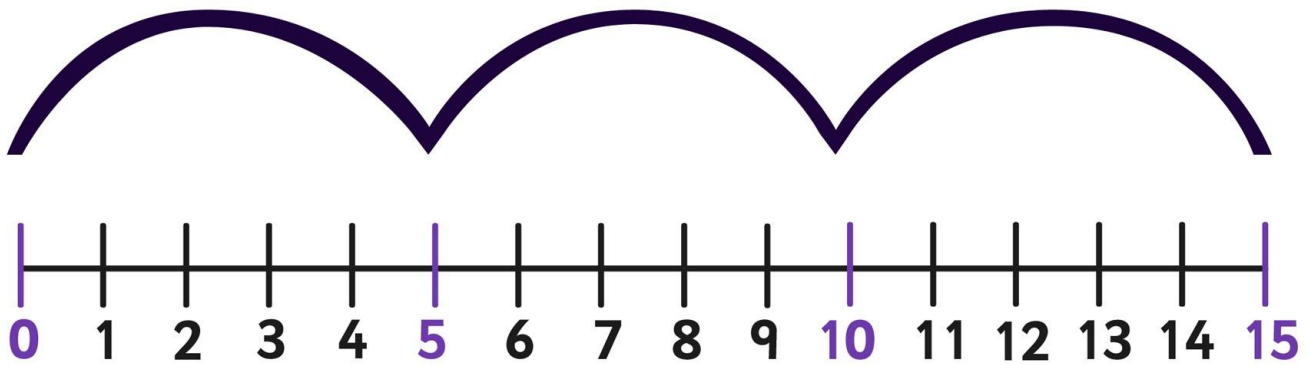
$$5 + 5 + 5 = 15$$

$$5 \times 3 = 15$$

## Multiplication Strategies

# Number Line

Hop 5 at a time,  
where do you land?



$$1 \text{ hop of } 5 = 5$$

$$2 \text{ hops of } 5 = 10$$

$$3 \text{ hops of } 5 = 15$$

$$5 \times 3 = 15$$

## 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 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  $52 \times 8$

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

Multiply  $52 \times 30$

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

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  $368 \times 4$

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

Multiply  $368 \times 20$

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

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.

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

Multiply  $5368 \times 4$

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

Multiply  $5368 \times 20$

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

Add the products.

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

## Multiplication Strategies

# Column Method

5-digit x 2-digit carrying not shown

$$\begin{array}{r} 25368 \\ \times 24 \\ \hline \end{array}$$

Write the numbers above each other in columns.

$$\begin{array}{r} 25368 \\ \times 24 \\ \hline 101472 \\ \hline \end{array}$$

Multiply 25 368 x 4

$$\begin{array}{r} 25368 \\ \times 24 \\ \hline 101472 \\ 507360 \\ \hline \end{array}$$

Multiply 25 368 x 20

$$\begin{array}{r} 101472 \\ + 507360 \\ \hline 608832 \\ \hline \end{array}$$

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.

$$\begin{array}{r} 125368 \\ \times 24 \\ \hline 501472 \end{array}$$

Multiply 125 368 x 4

$$\begin{array}{r} 25368 \\ \times 24 \\ \hline 501472 \end{array}$$

Multiply 125 368 x 20

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

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

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

Use zeros as place holders.

$$674 \times 10 = 6740$$

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

Use zeros as place holders.

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

## 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	

$$6.74 \times 10 = 67.4$$

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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.

$$6.74 \times 100 = 674$$