

# Investigating the Factors of a Number

You will need: counters or coins, pen and paper



A factor is a whole number that divides into another number without leaving a remainder. We can explore factors using coins or counters by arranging them in arrays.

## What to do:

1. Take 12 counters.
2. Arrange 12 counters in a line. This line represents one row of 12 counters, or  $1 \times 12 = 12$ . Therefore, both 1 and 12 are factors of 12.
3. Draw a rectangle around the counters and label the sides.
4. How many more different arrays can you make with the 12 counters? The arrays must all be even. Draw a rectangle around each array and label the sides.
5. Complete the table below.
6. Repeat the activity with 15, 24 and 30.
7. Try the activity with 17 counters. What do you notice? What type of number is 17?

Images were created using free virtual manipulatives available at [Toytheatre.com](http://Toytheatre.com)

Number of Counters	Arrays	Factor Pairs
9		1, 9 3, 3
12		
15		

24		
30		
17		

## Investigating Factors of a Number: Answers

Number of Counters	Arrays	Factor Pairs
12		1, 12 2, 6 3, 4
15		1, 15 3, 5
24		1, 24 2, 12 3, 8 4, 6
30		1, 30 2, 15 3, 10 5, 6
17		1, 17