

## Factors

In arithmetic, a **factor** is a **whole number** that divides **exactly** into another whole number.

For example, what are the factors of 12? Have a go at using multiplication facts to get an answer of 12 in different ways.

Your answer should look like this:

$$\begin{aligned}6 \times 2 &= 12 \\12 \times 1 &= 12 \\4 \times 3 &= 12\end{aligned}$$

You can write your numbers in any order you like for a multiplication, so:

$$\begin{aligned}2 \times 6 &\text{ is the same as } 6 \times 2 \\1 \times 12 &\text{ is the same as } 12 \times 1 \\3 \times 4 &\text{ is the same as } 4 \times 3\end{aligned}$$

The full list of factors of 12 is: 1, 2, 3, 4, 6, and 12.

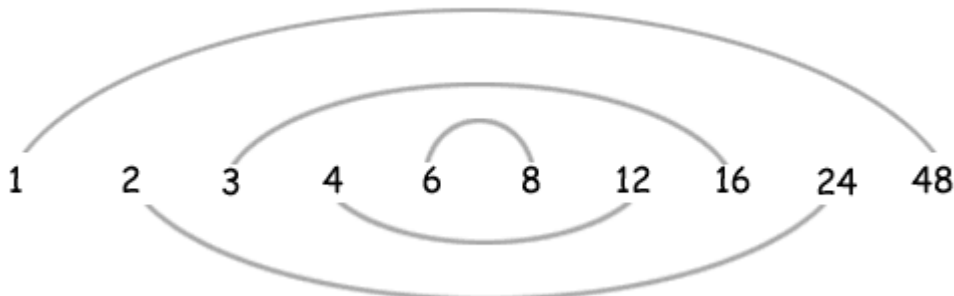
Some numbers have many factors, so it's a good idea to work in an organised way or you may miss some. **Don't forget to include 1 and the number itself in your list.**

Here's one way to find the factors of 48. Start with 1 and pair off your numbers:

$$1 \times 48, 2 \times 24, 3 \times 16, 4 \times 12 \text{ and } 6 \times 8 \text{ all make } 48$$

Write the list in order: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48

Here's another way to find the factors of 48: write your first pair of factors with a reasonable space between them, then move on to the next pair until you have them all. (You don't need to put in the lines.)



When you get to the 6/8 pair, you can stop because 7 is not a factor and you already have 8 in your list.