



## 25 - Factors & Multiples

The **MULTIPLES** of a number are just its times table.

**EXAMPLE:** Find the first 8 multiples of 13.  
 You just need to find the first 8 numbers in the 13 times table:  
 13 26 39 52 65 78 91 104

The **FACTORS** of a number are all the numbers that divide into it.

There's a method that guarantees you'll find them all:

- 1) Start off with  $1 \times$  the number itself, then try  $2 \times$ , then  $3 \times$  and so on, listing the pairs in rows.
- 2) Try each one in turn. Cross out the row if it doesn't divide exactly.
- 3) Eventually, when you get a number repeated, stop.
- 4) The numbers in the rows you haven't crossed out make up the list of factors.

**EXAMPLE:** Find all the factors of 24.

$1 \times 24$
$2 \times 12$
$3 \times 8$
$4 \times 6$
<del><math>5 \times</math></del>
$6 \times 4$

Increasing by 1 each time

So the factors of 24 are: 1, 2, 3, 4, 6, 8, 12, 24

A factor of a number will always be smaller than the number itself.

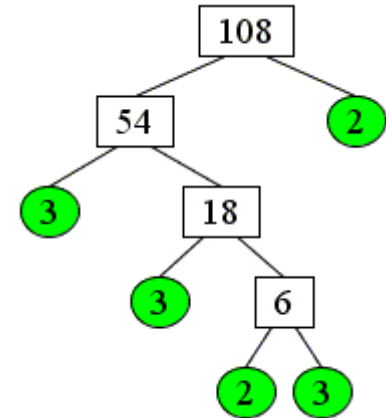
e.g. – Factors  $\leftarrow 20 \rightarrow$  Multiples

A multiple of a number will always be bigger than the number itself.

**Factor:**  
 To find a factor of a number you need to find all of the numbers that divide equally into it.

**Multiple:**  
 A multiple of a number is just a given numbers times table e.g. a multiple of 8 could be 8,16,24,32,40,48,56,64,72,80 and so on...

**Prime Factor Tree:**  
 You could use this information to express a number using its factors that are prime. You could do this in the form of a prime factor tree.  
**Don't forget it's the prime numbers that you need to highlight/circle!**



- Linked Prior Topics**
- Multiplication
  - Division

- Linked Future Topics**
- Factorising
  - Simplifying
  - Prime factor trees.

- Vocabulary**
- Factor/Factorise
  - Multiple
  - Common Factors
  - Common Multiples
  - Highest Common Factor(HCF)
  - Lowest Common Multiple (LCM)
  - Product