Hillcrest Mathematics Knowledge Organiser

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 × the number itself, then try 2 ×, then 3 × 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.

Increasing by 1 each time

1 × 24
2 × 12
3 × 8
4 × 6
~~5 × —~~
6 × 4

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.

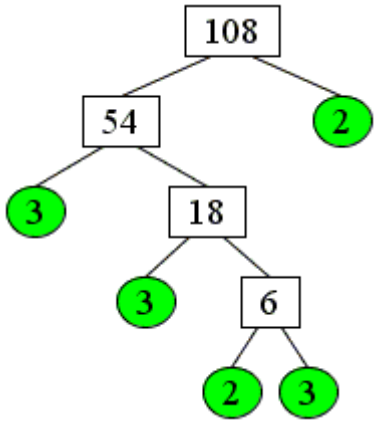
e.g. – Factors ← 20 → Multiples

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