

Factors



Factors

The factors of a number are those that divide into another

e.g. the factors of 12 are 1, 2, 3, 4, 6 and 12

Factors are often written as “pairs”, i.e. two numbers multiplied to make that number

e.g. the pairs of factors of 12 are:

1 and 12
2 and 6
3 and 4

Listing factors in pairs makes it easier to list them all, starting with 1 and the number, then look if divisible by 2, then 3, 4, etc

(Working methodically this way, notice how the pairs of numbers get closer together)

Highest Common Factor (HCF)

The highest common factor (HCF) is the **BIGGEST** number that will **DIVIDE INTO ALL** numbers in the question.

e.g. Factors of 36 are: 1, 2, 3, 4, 6, 9, 12, 18, 36
and Factors of 54 are: 1, 2, 3, 6, 9, 18, 27, 54

therefore the HCF of 36 and 54 is 18.

Read HCF backwards

‘factor’ – list factors of both numbers

‘common’ – factor appears in both lists

‘highest’ – the biggest number

Multiples



Multiples

The multiples of a number are numbers that can be made from multiplying 1 or more of that number (essentially the times tables of that number)

e.g. the multiples of 3 are

3, 6, 9, 12, 30, 33, 36, 60, 99, ... 333
etc!

Lowest Common Multiple (LCM)

The lowest common multiple (LCM) is the **SMALLEST** number that will **DIVIDE BY ALL** the numbers in the question.

e.g. Multiples of 6 are : 6, 12, 18, 24, 30, 36, **42**, 48, 54, 60, 66, ...

and Multiples of 7 are : 7, 14, 21, 28, 35, **42**, 49, 56, 63, 70, 77, ...

therefore the **LCM** of 6 and 7 is 42.

Read **LCM** backwards

‘multiple’ – list a few multiples of both numbers

‘common’ – multiple appears in both lists

‘lowest’ – the smallest number

Primes



Prime Numbers

A prime number is any number that can only be divided by 1 and itself – it has exactly two factors.

e.g. these are the first few prime numbers

2 3 5 7 11 13 17 19 23 29 31 37 41...

Note:

1 is not a prime number (only divisible by itself)

2 is the only even prime number

There are an infinite number of prime numbers

Prime Factors

A prime factor is any factor of a number that is also a prime number.

e.g. the factors of 30 are

1 and 30

2 and 15

3 and 10

5 and 6

The only numbers in this list that are prime are

2, 3 and 5 – these are the prime factors of 30