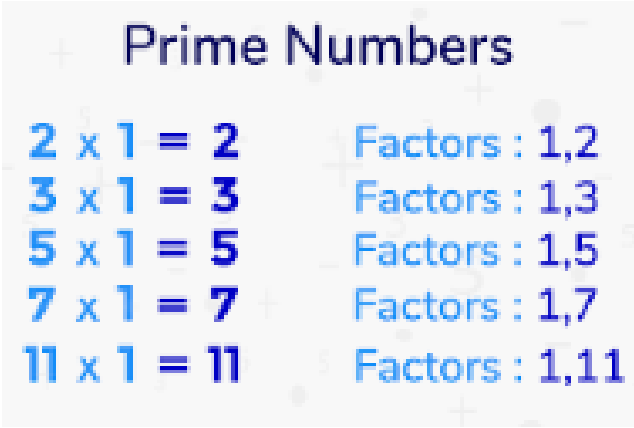
Number 1 – Numbers and the Number System – Knowledge Organiser

Objective
Know and use the language related to primes, factors and multiples
Solve problems using primes, factors and multiples
Use and apply knowledge related to powers and roots



Key Facts:

HCF (Highest Common Factor) – The largest number that can divide two (or more) numbers without a remainder.

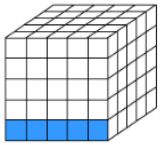
LCM (Lowest Common Multiple) – The smallest number that can be made using multiples of two (or more) numbers.

Prime Factorisation – This involves writing any number as a product of it's prime factors. Example:
120 = 2 x 2 x 2 x 3 x 5
In index notation this is
$120 = 2^3 \times 3 \times 5$

Square Root – The number multiplied by itself to produce a square number.

$\sqrt{25} = 5$ 5^2 or 5 x 5 = 25

Cube Root – The number cubed that produces a cube number.



5 x 5 x 5 = 125
so $\sqrt[3]{125} = 5$

Venn Diagram

Key Concept Check:

Why is 1 not a prime number?
What is index notation?
How do you use a Venn Diagram to find the HCF and LCM?
How do you determine the power of 10 when writing a number in standard form?

Key words used in this unit:

Product – The result when two numbers are multiplied. Example: 12 is the product of 3 and 4.
Factor – A whole number that divides exactly into another number.
Multiple – are the products of a number. Example: 6, 12, 18, 24 are multiples of 6.
Prime Number – Any number which has exactly two factors. (That is 1 and the number itself)
Prime Factor – A number which is a factor of a number and also a prime number
Power – A power is the number of times you want to multiply a base number.
Example: $5^4 = 5 \times 5 \times 5 \times 5 = 625$
5 = base number, 4 = power (or index)
Square Root – a number when multiplied by itself gives the original number. (Symbol is √)
Cube Root – the number which produces a given number when cubed.