**Positive Numbers and the Number Line**

***Base***: The number that gets multiplied when using an exponent. in 82, 8 is the base, and the result is 8 × 8 = 64

**Common Factor**: Factors are the numbers you multiply together to get another number  
  
Example: 12 and 16  
• The factors of 12 are: 1, 2, 3, 4, 6 and 12  
• The factors of 16 are: 1, 2, 4, 8 and 16

**Common Multiple**: When you find the factors of two or more numbers, and then find some factors are the same ("common"), then they are the "common factors".

Example: 12 and 16  
• The factors of 12 are: 1, 2, 3, 4, 6 and 12  
• The factors of 16 are: 1, 2, 4, 8 and 16  
**So the common factors of 12 and 16 are: 1, 2 and 4**

**Composite Number**: A whole number that can be divided exactly by numbers other than 1 or itself.

Example: 9 can be divided exactly by 3 (as well as 1 and 9), so 9 is a composite number.

**Exponent**: The exponent of a number says how many times to use that number in a multiplication.  
  
It is written as a small number to the right and above the base number.  
  
In this example: 82 = 8 × 8 = 64  
(The exponent "2" says to use the 8 two times in a multiplication.)

**Factor**: Factors are what we can multiply to get the number.

**Greatest Common Factor**: *The highest number that divides exactly into two or more numbers.   
It is the "greatest" thing for simplifying fractions!*

Common Factors of 12 and 30 are 1, 2, 3 and 6, and so the **Greatest Common Factor is 6**.

**Inequality**: An inequality says that two values are not equal.   
  
a ≠ b says that a is not equal to b

**Least Common Multiple**: the **smallest** of the common multiples.

In our previous example, the smallest of the common multiples is **20** .... so the **Least** Common Multiple of 4 and 5 is **20**.

**Multiple**: Multiples are what we get **after** multiplying the number by an [integer](https://www.mathsisfun.com/whole-numbers.html) (not a fraction).

**Number Line**: a line on which numbers are marked at intervals, used to illustrate simple numerical operations. Writing numbers down on a Number Line makes it easy to tell which numbers are greater or lesser.

Perfect Square: A number made by squaring a whole number.   
16 is a perfect square because 42 = 16

**Positive Number**: A **positive number** is a **number** that is bigger than zero. A **positive number** can be written with a "+" symbol in front of it, or just as a **number**.

**Prime Factor**: A factor that is a prime number. In other words: any of the prime numbers that can be multiplied to give the original number. Example: The prime factors of 15 are 3 and **Square** 5 (because 3×5=15, and 3 and 5 are prime numbers).

### Prime Number: a whole number that cannot be made by multiplying other whole numbers. Example: 5 is a prime number.

### We cannot multiply other whole numbers like 2, 3 or 4 together to make 5. Example: 6 can be made by 2×3 so is NOT a prime number, it is a composite number

**Root**: A square root of a number is ...a value that can be**multiplied by itself** to give the original number.

A square root goes the other way: 3 squared is 9, so a square root of 9 is 3

**Square**: To square a number: multiply it by itself.

**Whole Number**: a number without fractions; an integer.