



## Common Multiple

Let's see the multiples of 4 and 6 -

Multiples of 4 are : 4, 8, 12, 16, 20, 24, 28, .....

Multiples of 6 are : 6, 12, 18, 24, 30, 36, 42, .....

We see that 12 and 24 are the multiples of both the numbers.

Look at these too -

Multiples of 3 are : 3, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, .....

Multiples of 4 are : 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, .....

Multiples of 6 are : 6, 12, 18, 24, 30, 36, 42, 48, 54, .....

We see that 12, 24, 36 .....are the multiples of all the given three numbers.

Hence we can say that-

Those multiples which are common in the multiples of all the given numbers are called common multiples of the given numbers.

Common multiple = common + multiple

Which is the least common multiple in all the common multiples of 3, 4 and 6?

12 is the least in all the common multiples. It is called the least common multiple.

Similarly we can say -

The least common multiple of two or more numbers is the number, which is exactly divisible by those numbers.

or

The least common multiple of two or more numbers is the least multiple of their common multiples.

**Let's see -**

Multiples of 3 are: 3, 6, 9, 12, 15, 18, . . . .

Multiples of 6 are: 6, 12, 18, 24, 30, 36, . . . .

Common multiples of 3 and 6 are 6, 12, 18, . . . . .

We see that in all the common multiples of 3 and 6, the smallest common multiple is 6 which is the least common multiple of both the numbers.

**Let's see it again -**

Multiples of 3 are : 3, 6, 9, 12, 15, 18, 21, 24, 27, . . . .

Multiples of 6 are : 6, 12, 18, 24, 30, 36, . . . .

Multiples of 12 are : 12, 24, 36, 48, 60, 72, . . . .

The common multiples of 3, 6 and 12 are - 12, 24, . . . . .

12 is the smallest multiple in common multiples of all the three numbers.

Therefore, 12 is the least common multiple of the given numbers.

We see that if the number which is greatest in all the given numbers is the multiple of all the numbers, that greatest number will be the least common multiple of all the given numbers. In short it is called L.C.M.



L.C.M. of two or more numbers cannot be less than any of the given numbers but it can be equal to the greatest number.



**Do it yourself -**

**Find the L.C.M. -**

- 4, 6
- 5, 10
- 2, 4, 8



## L.C.M. of Co-prime Numbers

Find the L.C.M. of 4 and 5 -

Multiples of 4 = 4, 8, 12, 16, 20, 24, . . . .

Multiples of 5 = 5, 10, 15, 20, 25, 30, . . . .

Hence, L.C.M. of 4 and 5 = 20

**Look at it in this way too-**

4 and 5 are co-prime numbers -

Therefore, L.C.M. =  $4 \times 5 = 20$

L.C.M of co-prime numbers is the product of those numbers.

### We have learnt

- To find the least common multiple of the given two or three numbers.

### Exercise

- Find the L.C.M of the following numbers -  
(a) 24 and 36      (b) 12, 36 and 54      (c) 1, 7 and 9
- Find the smallest number which is exactly divisible by 2, 3 and 4.
- Find the L.C.M. of 2, 3 and 5 and write its 3 multiples.
- Find the L.C.M. of the following co-prime numbers -  
(a) 7, 5      (b) 9, 13      (c) 15, 19