

Le-3Factors and MultiplesSummary

Factors :- A Factor is a number that divides the given number exactly without any remainder.

For Example :- The factors of 16 are 1, 2, 4, 8 and 16, because these numbers divide 16 exactly, without any remainder.

$$\begin{array}{r} 16 \\ 1 \overline{) 16} \\ \underline{-16} \\ 00 \end{array}$$

$$\begin{array}{r} 8 \\ 2 \overline{) 16} \\ \underline{-16} \\ 00 \end{array}$$

$$\begin{array}{r} 4 \\ 4 \overline{) 16} \\ \underline{-16} \\ 00 \end{array}$$

$$\begin{array}{r} 2 \\ 8 \overline{) 16} \\ \underline{-16} \\ 00 \end{array}$$

$$\begin{array}{r} 1 \\ 16 \overline{) 16} \\ \underline{-16} \\ 00 \end{array}$$

Properties of Factors

1. The number 1 is a factor of every number.
2. Every non-zero number is a factor of itself.
3. The smallest factor of a number is less than or equal to the number 1, and the ~~last~~ largest

Highest common Factor (HCF)

The largest number which exactly divides two or more numbers is called their HCF.

* Prime Number

→ Any non-zero number that has only two factors. (1 and the number itself) is called a prime number.

Composite number

A number which has more than two factors is called a composite number.

Example :- The numbers 4, 6, 8, 9, 10 and 12 are composite numbers.

c. 30

$$1 \times 30 = 30$$

$$2 \times 15 = 30$$

$$3 \times 10 = 30$$

$$5 \times 6 = 30$$

~~Factors = 1, 2, 3, 5, 6, 10, 15, 30~~

d. 44

$$1 \times 44 = 44$$

$$2 \times 22 = 44$$

$$11 \times 4 = 44$$

~~Factors :- 1, 2, 11, 4, 22, 44~~

Hw

a. 54

$$1 \times 54 = 54$$

$$2 \times 27 = 54$$

$$3 \times 18 = 54$$

$$6 \times 9 = 54$$

Factors :- 1, 2, 3, 6, 9, 18, 27, 54

c. The largest factor of a number is the number itself.

d. A number has a limited number of ~~for~~ factors.

II Use the multiplication method to find the factors of the following.

a. 15

$$1 \times 15 = 15$$

$$3 \times 5 = 15$$

→ Factors :- 1, 3, 5, 15

b. 24

$$1 \times 24 = 24$$

$$2 \times 12 = 24$$

$$3 \times 8 = 24$$

$$4 \times 6 = 24$$

→ Factors = 1, 2, 3, 4, 6, 8, 12, 24

Activity

1. Write factors of 18

→ ~~1 2~~ 3 6 9

2. Write the factors of 36

→ ~~1 2~~ 3 4 6 9 12 16 ~~36~~ 18 36

3. Write any 5 multiples of 8 and 9

$$8 \times 1 = 8$$

$$8 \times 7 = 56$$

$$8 \times 8 = 64$$

$$8 \times 5 = 40$$

$$8 \times 9 = 72$$

$$9 \times 1 = 9$$

$$9 \times 5 = 45$$

$$9 \times 8 = 72$$

$$9 \times 6 = 54$$

$$9 \times 3 = 27$$

I Fill in the blanks

a. Every non-zero number is factor of itself.

b. The number 1 has only 1 factor.

4. Every factor of a non-zero number is less than or equal to the number.

5. A number has a limited number of factors.

Multiples:- A multiple of a number, is a number that is the product of a given number and some other natural number is multiplied by the same or any other number.

Properties of multiples

1. Every number is a multiple of itself.

2. Every number is a multiple of 1.

3. Every multiple of a number is either equal to or greater than the number.

4. The first multiple of a number is the number itself.

5. There are infinite multiples of a number.