Multiplication of Decimal Numbers

We multiply decimals in a similar way as we multiply whole numbers.

- We multiply the numbers ignoring the decimal point.
- The decimal is put in the product from the right after as many digits as the total number of decimal places in the multiplicand.

Let us understand with an example: 39.8 × 12

Example: Find the product of

Solution:-

$$\begin{array}{r} 39.8 \\ \times \quad 12 \\ \hline 796 \\ +\ 398 \\ \hline 477.6 \end{array}$$

- Multiply the numbers as whole numbers ignoring the decimal point.
- Put the decimal point in the product from the right, after as many digits as the total number of decimal places in the multiplicand. In this case it is after 2 digits.

Multiplication of a Decimal by 10, 100 and 1,000

By 10

On multiplying a decimal number by 10, the decimal point moves one place to the right of the decimal number.

Example: a. 5.49 × 10 = 54. 9 b. 8.9 × 10 = 89.0 c. 0.05 × 10 = 0.5

By 100

On multiplying a decimal number by 100, the decimal point moves two places to the right
of the decimal number.

Example: a. 5.81 × 100 = 581 b. 7.6 × 100 = 760 c. 0.09 × 100 = 9

Multiplication of Decimal Numbers

By 1,000

On multiplying a decimal number by 1, 000 the decimal point moves three places to the right of the decimal number.

Example: a. 6.59 × 1000 = 6,590 b. 4.3 × 1000 = 4,300 c. 5.168 × 1000 = 5, 168

Multiplication of a Decimal by another Decimal Example:

Example: Multiply 6.25 by 2.5.

Solution:

- Multiply as you multiply whole numbers, ignoring the decimal point.
- Count the number of decimal places in the multiplicand and the multiplier and add the number of decimal places.
- Put the decimal point in the product from the right, after as many digits as the total number of decimal places. In this case it is after 3 digits.

$$\begin{array}{r} 6.25 \\ \times\ 2.5 \\ \hline 3125 \\ 12500 \\ \hline 15.625 \\ \hline \end{array}$$