MULTIPLICATION

What is multiplication?

Multiplication is a mathematical operation is which numbers, called **factors**, are multiplied together to get a result, called a **product**.

Multiplication can be used with numbers or decimals of any size.

How to use multiplication:

- When multiplying two numbers, it is best to **stack the numbers vertically with the number that has more digits on top**. The
  [number,]

- [place]
  [the top]
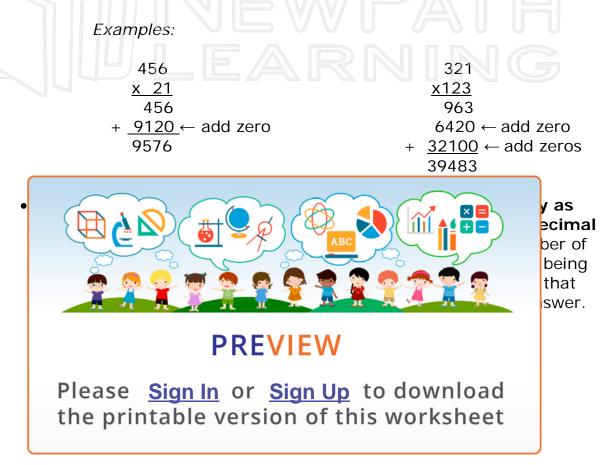 [e in]
  [arried]
  [d.]
  [of the]
  top number. Again, bring down the ones place of your answer and carry the tens place value. Keep doing this until all the multiplication is done and then bring down the tens value of the number also.
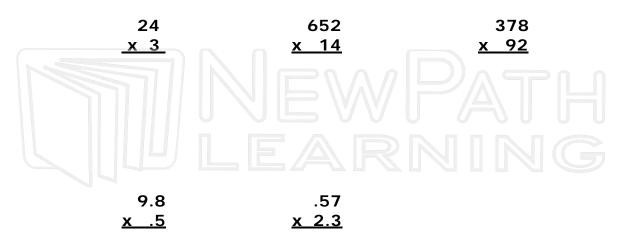
Examples:

$$\begin{array}{r} {}^{2}\ 34 \\ \times\ \ 7 \\ \hline 8 \end{array} \qquad \begin{array}{r} 34 \\ \times\ \ 7 \\ \hline 238 \end{array}$$

- If the numbers to be multiplied have more than one digit, the same rule applies. The only difference is that under the answer for the ones digit, a zero should be placed then the tens digit can be multiplied. If there is a hundreds digit, two zeros should be added under the answer for the tens digit, then multiply. Once the multiplication is done, add the numbers.

Examples:

```
      456                    321
    x  21                   x123
      456                    963
  +  9120 ← add zero        6420 ← add zero
    9576                 + 32100 ← add zeros
                          39483
```

Try this!

```
     24                652                378
   x  3              x   14             x   92
```

```
     9.8                .57
   x   .5             x  2.3
```