

Multiplying in Columns, the Standard Way

The standard algorithm of multiplication is based on a principle you already know: multiplying in parts (partial products). We simply multiply ones, tens, and hundreds of the number separately, and then add.

However, in the standard algorithm, the additions are done *at the same time* as the multiplications – not afterwards. That way, the calculation looks more compact and takes less space.

| The standard way to multiply | “The easy way” |
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| <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $\begin{array}{r} \overset{1}{6} 3 \\ \times 4 \\ \hline \end{array}$ </div> <div style="text-align: center;"> $\begin{array}{r} \overset{1}{6} 3 \\ \times 4 \\ \hline 252 \end{array}$ </div> </div> <p>Multiply the ones: $4 \times 3 = 12$. Place 2 in the ones place, but write the tens digit (1) above the tens column as a little memory note. You are <i>regrouping</i> (carrying).</p> <p>Then multiply the tens, <i>adding</i> the 1 ten that was regrouped: $4 \times 6 + 1 = 25$ Write 25 in front of the 2. <u>Note:</u> This 25 means 25 tens or 250!</p> | $\begin{array}{r} 63 \\ \times 4 \\ \hline 12 \\ + 240 \\ \hline 252 \end{array}$ <p>In the “easy way,” we multiply in parts, and the adding is done separately.</p> |
| The standard way to multiply | “The easy way” |
| <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> $\begin{array}{r} \overset{3}{7} 5 \\ \times 7 \\ \hline \end{array}$ </div> <div style="text-align: center;"> $\begin{array}{r} \overset{3}{7} 5 \\ \times 7 \\ \hline 525 \end{array}$ </div> </div> <p>Multiply the ones: $7 \times 5 = 35$ Regroup the 3 tens.</p> <p>Multiply & add the tens: $7 \times 7 + 3 = 52$</p> | $\begin{array}{r} 75 \\ \times 7 \\ \hline 35 \\ + 490 \\ \hline 525 \end{array}$ |

1. Multiply using both methods: the standard way and the easy way.

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