

Multiplication Models

We are following a three step procedure when solving multiplication problems.

1. Estimate
2. Solve
3. Check

There are many different models for solving multiplication problems. Below are a few we've practiced at school.

1. Partial Product Box (aka Area Model): $2345 \times 6 = 14,070$

Step 1

X	2000	300	40	5
6	12000	1800	240	30

Step 2

$$\begin{array}{r} 12000 \\ 1800 \\ 240 \\ + \quad 30 \\ \hline 14,070 \end{array}$$

2. Left to Right: $2345 \times 6 = 14,070$

$$\begin{array}{r} 2345 \\ \underline{\times \quad 6} \\ 12000 \text{ (6 X 2000)} \\ 1800 \text{ (6 X 300)} \\ 240 \text{ (6 X 40)} \\ + \quad 30 \text{ (6 X 5)} \\ \hline 14,070 \end{array}$$

3. The Short Cut (Traditional Algorithm): $2345 \times 6 = 14,070$

	Step 1	Step 2	Step 3	Step 4
$\begin{array}{r} 2345 \\ \times 6 \\ \hline ? \end{array}$	$\begin{array}{r} 3 \\ 2345 \\ \times 6 \\ \hline 0 \end{array}$ <p>$(6 \times 5 = 30)$</p>	$\begin{array}{r} 23 \\ 2345 \\ \times 6 \\ \hline 70 \end{array}$ <p>$(6 \times 4 + 3 + 27)$</p>	$\begin{array}{r} 223 \\ 2345 \\ \times 6 \\ \hline 070 \end{array}$ <p>$(6 \times 3 + 2 = 20)$</p>	$\begin{array}{r} 223 \\ 2345 \\ \times 6 \\ \hline 14,070 \end{array}$ <p>$(6 \times 2 + 2 = 14)$</p>