

Japanese Method

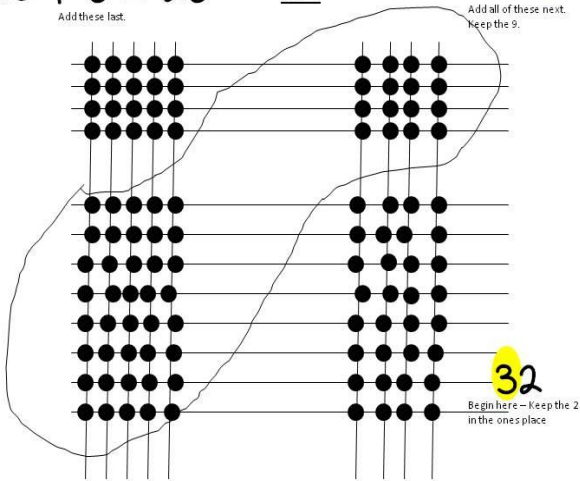
$$20 + 5 = 25$$

Add these last.

$$\begin{array}{r} 48 \\ \times 54 \\ \hline \end{array}$$

$$56 + 3 = 59$$

Add all of these next.
Keep the 9.



32

Begin here - Keep the 2
in the ones place.

The answer is 2,592.

Students do not have to multiply for this method
as it is all adding.

Google these terms or look
on youtube for videos to
learn more about these.

Today's math offers many strategies to find the answer. With mathematics, there are many different ways to arrive at the same answer, as can be seen with these 6 different methods with the same problem. Many students who have trouble with the standard algorithm can solve multiplication problems successfully and find the product in a different way. Try these methods yourself. It can actually be quite fun. As always, please feel free to contact us if you have any questions or concerns.

Ms. Dilworth
Mrs. Miller
Mrs. Sanford
Mrs. Snider
Mrs. Vautrot
Mrs. Weaver

Information for Parents

Multiplication Strategies in 4th Grade

The Common Core Curriculum Standards for 4th grade states that students will:

Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using **strategies** based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Your child has been taught
a variety of strategies
which can be found in this
pamphlet.

Today's students are taught many different strategies to help them have more than one way to solve a problem. Using different strategies makes math accessible to all students. Each strategy will solve the same problem using a different method.

$$\begin{array}{r} 48 \\ \times 54 \\ \hline \end{array}$$

Area Model

$$\begin{array}{l} 48 \rightarrow 40 + 8 \\ \times 54 \rightarrow 50 + 4 \end{array}$$

8	400	32	432
+			+
40	2,000	160	2,160
	50	+ 4	<u>2,592</u>

Make the area in proportion of the number. The numbers could also be decomposed further such as
 $48 = 20 + 20 + 8$
 $54 = 30 + 20 + 4$
 to show even more areas.

Window Method

$$\begin{array}{l} 48 \rightarrow 40 + 8 \\ \times 54 \rightarrow 50 + 4 \end{array}$$

	40	8	
	2,000	400	50
	160	32	4

$$\begin{array}{r} 2,000 \\ 400 \\ 160 \\ + 32 \\ \hline 2,592 \end{array}$$

Break Apart

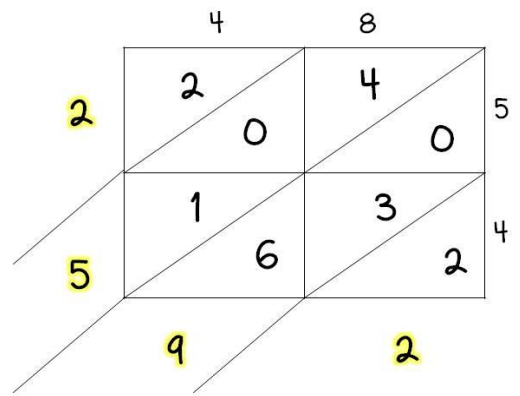
$$\begin{array}{r} 48 \\ \times 54 \end{array}$$

40	8	40	8
$\times 50$	$\times 50$	$\times 4$	$\times 4$
2,000	400	160	32

$$\begin{array}{r} 2,000 \\ 400 \\ 160 \\ + 32 \\ \hline 2,592 \end{array}$$

Lattice Strategy

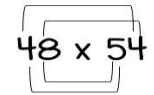
$$\begin{array}{r} 48 \\ \times 54 \end{array}$$



Think of the top half of the square as the tens place and the bottom portion of the square as the ones place. $4 \times 5 = 20$ so the 2 goes in the top (tens place) and the 0 goes on the bottom (ones place). Add diagonally to get the answer.

Foil Method

$$\begin{array}{r} 48 \\ \times 54 \end{array}$$



First
Outer
Inner
Last

$$\begin{array}{l} F = 40 \times 50 = 2,000 \\ O = 40 \times 4 = 160 \\ I = 8 \times 50 = 400 \\ L = 8 \times 4 = 32 \end{array}$$

$$\begin{array}{r} 2,000 \\ 160 \\ 400 \\ + 32 \\ \hline 2,592 \end{array}$$