

Grade 5 · Multiplying Multi-Digit Whole Numbers · Worksheet Answer Key

Common Core 5.NBT.B.5 · mathovore.fr

Every solution shows the partial products and the final answer in bold. Compare your work step by step. If your product is different, check the placeholder zero in each row first, then recheck the carrying in each multiplication.

Grade 5 Common Core: 5.NBT.B.5

Problem 1: Area model warm-up

Split 347 into $300 + 40 + 7$.

$300 \times 6 = 1,800$, $40 \times 6 = 240$, $7 \times 6 = 42$.

Add: $1,800 + 240 + 42 = 2,082$.

2,082

	300	40	7
6	1,800	240	42
Total: 2,082			

All three partial products and the total.

Problem 2: Two digits by two digits

1. Multiply by the 4 ones: $52 \times 4 = 208$.
2. Multiply by the 3 tens (30): $52 \times 30 = 1,560$.
3. Add the partial products: $1,560 + 208 = 1,768$.

1,768

Problem 3: A zero in the middle

1. Multiply by the 7 ones: $408 \times 7 = 2,856$.

2,856

Problem 4: Three digits by two digits

1. Multiply by the 6 ones: $215 \times 6 = 1,290$.
2. Multiply by the 3 tens (30): $215 \times 30 = 6,450$.
3. Add the partial products: $6,450 + 1,290 = 7,740$.

7,740

Problem 5: Factors that end in zero

1. Multiply by the 5 ones: $640 \times 5 = 3,200$.
2. Multiply by the 2 tens (20): $640 \times 20 = 12,800$.
3. Add the partial products: $12,800 + 3,200 = 16,000$.

16,000

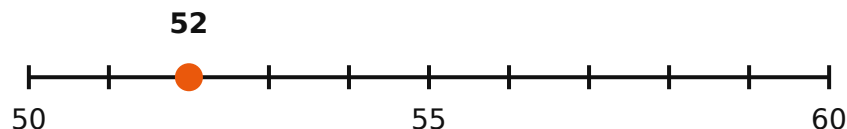
Problem 6: Estimate then multiply

38 rounds to 40 and 52 rounds to 50. Estimate: $40 \times 50 = 2,000$.

1. Multiply by the 2 ones: $38 \times 2 = 76$.
2. Multiply by the 5 tens (50): $38 \times 50 = 1,900$.
3. Add the partial products: $1,900 + 76 = 1,976$.

The exact product 1,976 is close to the estimate 2,000, so it is reasonable.

Estimate 2,000; exact 1,976.



52 is closer to 50, so it rounds down.

Problem 7: Find the missing digit

The known digits give $300 \times 6 = 1,800$ and $4 \times 6 = 24$. The tens digit must make up the rest: $2,064 - 1,800 - 24 = 240$. Since $40 \times 6 = 240$, the missing digit is 4.

Check: $344 \times 6 = 2,064$.

4

Problem 8: Four digits by one digit

1. Multiply by the 8 ones: $1,246 \times 8 = 9,968$.

9,968

Problem 9: Standard algorithm

1. Multiply by the 3 ones: $756 \times 3 = 2,268$.
2. Multiply by the 4 tens (40): $756 \times 40 = 30,240$.
3. Add the partial products: $30,240 + 2,268 = 32,508$.

32,508

$$\begin{array}{r} 756 \\ \times43 \\ \hline 2268 \\ 30240 \\ \hline 32508 \end{array}$$

The work in vertical form.

Problem 10: Zero in the thousands

1. Multiply by the 7 ones: $2,305 \times 7 = 16,135$.
2. Multiply by the 2 tens (20): $2,305 \times 20 = 46,100$.
3. Add the partial products: $46,100 + 16,135 = 62,235$.

62,235

Problem 11: Four digits by two digits

1. Multiply by the 6 ones: $4,872 \times 6 = 29,232$.
2. Multiply by the 3 tens (30): $4,872 \times 30 = 146,160$.
3. Add the partial products: $146,160 + 29,232 = 175,392$.

175,392

$$\begin{array}{r}
 4872 \\
 \times 36 \\
 \hline
 29232 \\
 146160 \\
 \hline
 175392
 \end{array}$$

The orange zero is the placeholder.

Problem 12: Find the mistake

Noah multiplied 63 by the 4 tens as if it were 4 ones, so his second row $63 \times 4 = 252$ is not shifted. The 4 is worth 40.

Correct rows: $63 \times 8 = 504$ and $63 \times 40 = 2,520$. Add: $504 + 2,520 = 3,024$.

The second partial product must be 2,520; the correct product is 3,024.

$$\begin{array}{r}
 63 \\
 \times 48 \\
 \hline
 504 \\
 2520 \\
 \hline
 3024
 \end{array}$$

The corrected work.

Problem 13: Three digits by three digits

1. Multiply by the 5 ones: $214 \times 5 = 1,070$.
2. Multiply by the 2 tens (20): $214 \times 20 = 4,280$.
3. Multiply by the 1 hundreds (100): $214 \times 100 = 21,400$.
4. Add the partial products: $21,400 + 4,280 + 1,070 = 26,750$.

26,750

Problem 14: Zeros in both factors

1. Multiply by the 9 ones: $807 \times 9 = 7,263$.
2. Multiply by the 0 tens (0): $807 \times 0 = 0$.
3. Multiply by the 3 hundreds (300): $807 \times 300 = 242,100$.

4. Add the partial products: $242,100 + 0 + 7,263 = 249,363$.

249,363

Problem 15: Fill the area model

$40 \times 70 = 2,800$, $6 \times 70 = 420$, $40 \times 3 = 120$, $6 \times 3 = 18$.

Add: $2,800 + 420 + 120 + 18 = 3,358$.

3,358

	40	6
70	2,800	420
3	120	18
Total: 3,358		

Completed area model.

Problem 16: Which product is greater?

$48 \times 62 = 2,976$ and $51 \times 58 = 2,958$.

Subtract: $2,976 - 2,958 = 18$.

48×62 is greater, by 18.

Problem 17: Bake sale cookies

$36 \times 24 = 864$.

1. Multiply by the 4 ones: $36 \times 4 = 144$.
2. Multiply by the 2 tens (20): $36 \times 20 = 720$.
3. Add the partial products: $720 + 144 = 864$.

864 cookies.

Problem 18: Auditorium seats

$38 \times 45 = 1,710$.

1. Multiply by the 8 ones: $45 \times 8 = 360$.

2. Multiply by the 3 tens (30): $45 \times 30 = 1,350$.
3. Add the partial products: $1,350 + 360 = 1,710$.

1,710 seats.

Problem 19: Little League fees

$$125 \times 85 = 10,625.$$

1. Multiply by the 5 ones: $125 \times 5 = 625$.
2. Multiply by the 8 tens (80): $125 \times 80 = 10,000$.
3. Add the partial products: $10,000 + 625 = 10,625$.

\$10,625.

Problem 20: Apples at the market

$$\text{Step 1: } 144 \times 36 = 5,184.$$

1. Multiply by the 6 ones: $144 \times 6 = 864$.
2. Multiply by the 3 tens (30): $144 \times 30 = 4,320$.
3. Add the partial products: $4,320 + 864 = 5,184$.

$$\text{Step 2: } 5,184 - 275 = 4,909.$$

4,909 apples.

Problem 21: Supply order

$$\text{Pencils: } 15 \times 144 = 2,160.$$

$$\text{Erasers: } 28 \times 36 = 1,008.$$

$$\text{Total: } 2,160 + 1,008 = 3,168.$$

3,168 items.

Problem 22: Ferry passengers

$$\text{Passengers in one day: } 14 \times 235 = 3,290.$$

$$\text{Passengers in 25 days: } 3,290 \times 25 = 82,250.$$

82,250 passengers.