

Grade 4 · Multi-Digit Multiplication · Worksheet Answer Key

Common Core 4.NBT.B.5 · mathovore.fr

Every solution below lists the partial products, adds them, and gives the final answer in bold. Compare your own work with the key, and use the estimate or the area model to find where a missing partial product caused a different answer.

Grade 4 Common Core: 4.NBT.B.5

Problem 1: Multiply with no regrouping

Partial products: $3 \times 1,000 = 3,000$, $3 \times 200 = 600$, $3 \times 10 = 30$, $3 \times 2 = 6$.

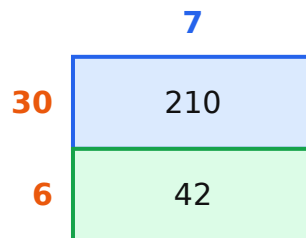
Add: $3,000 + 600 + 30 + 6 = 3,636$.

Answer: **3,636**

Problem 2: Two-digit by one-digit

Partial products: $7 \times 30 = 210$, $7 \times 6 = 42$.

Add: $210 + 42 = 252$.



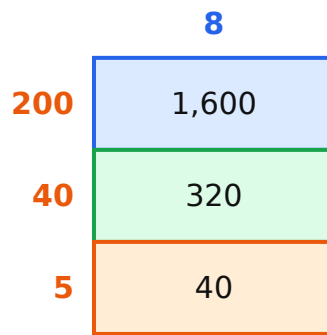
The two partial areas are 210 and 42.

Answer: **252**

Problem 3: Three-digit by one-digit

Partial products: $8 \times 200 = 1,600$, $8 \times 40 = 320$, $8 \times 5 = 40$.

Add: $1,600 + 320 + 40 = 1,960$.



Partial areas 1,600, 320, and 40.

Answer: **1,960**

Problem 4: Four-digit by one-digit

Partial products: $6 \times 3,000 = 18,000$, $6 \times 400 = 2,400$, $6 \times 10 = 60$, $6 \times 7 = 42$.

Add: $18,000 + 2,400 + 60 + 42 = 20,502$.

Answer: **20,502**

Problem 5: Multiply with a zero in the hundreds

Partial products: $9 \times 6,000 = 54,000$, $9 \times 500 = 4,500$, $9 \times 8 = 72$.

Add: $54,000 + 4,500 + 72 = 58,572$.

Answer: **58,572**

Problem 6: Multiply with a zero in the tens

Partial products: $5 \times 7,000 = 35,000$, $5 \times 90 = 450$.

Add: $35,000 + 450 = 35,450$.

Answer: **35,450**

Problem 7: Use the properties

$4 \times 25 = 100$, so $4 \times 7 \times 25 = 7 \times (4 \times 25) = 7 \times 100 = 700$.

Answer: **700**

Problem 8: Break apart a factor

$$8 \times 47 = 8 \times 40 + 8 \times 7 = 320 + 56 = 376.$$

Answer: **376**

Problem 9: Two-digit by two-digit, small

Partial products: $20 \times 10 = 200$, $20 \times 4 = 80$, $3 \times 10 = 30$, $3 \times 4 = 12$.

Add: $200 + 80 + 30 + 12 = 322$.

	20	3
10	200	30
4	80	12

Partial areas 200, 80, 30, and 12.

Answer: **322**

Problem 10: Area model, 36 times 27

Partial products: $30 \times 20 = 600$, $30 \times 7 = 210$, $6 \times 20 = 120$, $6 \times 7 = 42$.

Add: $600 + 210 + 120 + 42 = 972$.

Answer: **972**

Problem 11: Partial products, 48 times 65

Partial products: $40 \times 60 = 2,400$, $40 \times 5 = 200$, $8 \times 60 = 480$, $8 \times 5 = 40$.

Add: $2,400 + 200 + 480 + 40 = 3,120$.

Answer: **3,120**

Problem 12: Multiply 72 by 58

Partial products: $70 \times 50 = 3,500$, $70 \times 8 = 560$, $2 \times 50 = 100$, $2 \times 8 = 16$.

Add: $3,500 + 560 + 100 + 16 = 4,176$.

	70	2
50	3,500	100
8	560	16

Partial areas 3,500, 560, 100, and 16.

Answer: **4,176**

Problem 13: Multiply 99 by 43

Partial products: $90 \times 40 = 3,600$, $90 \times 3 = 270$, $9 \times 40 = 360$, $9 \times 3 = 27$.

Add: $3,600 + 270 + 360 + 27 = 4,257$.

Answer: **4,257**

Problem 14: Multiply by a multiple of ten

First $4 \times 53 = 212$. Then multiply by 10: $212 \times 10 = 2,120$.

Check: $40 \times 50 = 2,000$ and $40 \times 3 = 120$, total 2,120. Answer: **2,120**

Problem 15: Fill in the partial products

$20 \times 30 = 600$, $20 \times 5 = 100$, $4 \times 30 = 120$, $4 \times 5 = 20$.

	20	4
30	600	120
5	100	20

Partial products 600, 100, 120, 20.

Total: $600 + 100 + 120 + 20 = 840$. Answer: **840**

Problem 16: Write the equation from the model

The sides are $40 + 5 = 45$ and $30 + 2 = 32$, so the equation is 45×32 .

Partial products: $40 \times 30 = 1,200$, $40 \times 2 = 80$, $5 \times 30 = 150$, $5 \times 2 = 10$.

Add: $1,200 + 80 + 150 + 10 = 1,440$.

Answer: **$45 \times 32 = 1,440$**

Problem 17: Estimate and then multiply

Estimate: $40 \times 50 = 2,000$.

Partial products: $30 \times 50 = 1,500$, $30 \times 2 = 60$, $8 \times 50 = 400$, $8 \times 2 = 16$.

Add: $1,500 + 60 + 400 + 16 = 1,976$.

The exact product 1,976 is close to the estimate. Answer: **estimate 2,000; exact 1,976**

Problem 18: Find the mistake in multiplying

Mei used only two of the four partial products. She left out the products of the tens with the ones: 30×6 and 4×20 .

Partial products: $30 \times 20 = 600$, $30 \times 6 = 180$, $4 \times 20 = 80$, $4 \times 6 = 24$.

Add: $600 + 180 + 80 + 24 = 884$.

	30	4
20	600	80
6	180	24

All four partial areas are needed.

Answer: **884**

Problem 19: Crates of apples

Partial products: $6 \times 200 = 1,200$, $6 \times 40 = 240$, $6 \times 8 = 48$.

Add: $1,200 + 240 + 48 = 1,488$.

Answer: **1,488 apples**

Problem 20: Stadium sections

Partial products: $9 \times 1,000 = 9,000$, $9 \times 300 = 2,700$, $9 \times 20 = 180$, $9 \times 5 = 45$.

Add: $9,000 + 2,700 + 180 + 45 = 11,925$.

Answer: **11,925 seats**

Problem 21: Rows of seats

Partial products: $20 \times 30 = 600$, $20 \times 6 = 120$, $8 \times 30 = 240$, $8 \times 6 = 48$.

Add: $600 + 120 + 240 + 48 = 1,008$.

	20	8
30	600	240
6	120	48

Partial areas 600, 240, 120, and 48.

Answer: **1,008 seats**

Problem 22: Road trip

Partial products: $7 \times 400 = 2,800$, $7 \times 70 = 490$, $7 \times 5 = 35$.

Add: $2,800 + 490 + 35 = 3,325$.

Answer: **3,325 miles**

Problem 23: League fees

(a) $24 \times 15 = 360$: partial products 200, 100, 40, 20 give 360.

(b) $360 \times 8 = 2,880$ since $300 \times 8 = 2,400$ and $60 \times 8 = 480$.

Answer: **(a) 360 players; (b) \$2,880**

Problem 24: Bake sale boxes

Aisha: $48 \times 12 = 400 + 80 + 80 + 16 = 576$, so \$576.

Noah: $35 \times 15 = 300 + 150 + 50 + 25 = 525$, so \$525.

Difference: $576 - 525 = 51$. Answer: **Aisha raised \$51 more**