

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

Common Core 5.NBT.B.5 · maths-pdf.fr/en/

This answer key shows the partial products for each of the 20 multiplication problems. Check the placeholder zero in every second row, then add the partial products. If your answer differs, compare it with the estimate to find where the mistake happened.

Grade 5 · Common Core State Standards: **5.NBT.B.5**

Exercise 1 - Two digits by one digit

$7 \times 6 = 42$: write 2, carry 4. $4 \times 6 = 24$, plus 4 is 28.

Answer: **282**

Exercise 2 - Three digits by one digit

$8 \times 7 = 56$: write 6, carry 5. $5 \times 7 = 35$, plus 5 is 40: write 0, carry 4. $3 \times 7 = 21$, plus 4 is 25.

Answer: **2,506**

Exercise 3 - Multiply by a multiple of ten

$63 \times 4 = 252$. Then multiply by 10: 2,520.

Answer: **2,520**

Exercise 4 - Area model 34 times 26

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

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

Answer: **884**

		30	4
20		600	80
6		180	24

The four partial products.

Exercise 5 - Two digits by two digits

$$78 \times 5 = 390. \quad 78 \times 40 = 3,120.$$

$$\text{Add: } 390 + 3120 = 3510.$$

Answer: **3,510**

Exercise 6 - Estimate first

$$\text{Estimate: } 58 \text{ rounds to } 60 \text{ and } 31 \text{ rounds to } 30. \quad 60 \times 30 = 1,800.$$

$$\text{Exact: } 58 \times 1 = 58 \text{ and } 58 \times 30 = 1,740. \quad 58 + 1740 = 1798.$$

Answer: estimate **1,800**, exact **1,798**

Exercise 7 - Three digits by two digits

$$246 \times 5 = 1,230. \quad 246 \times 30 = 7,380.$$

$$\text{Add: } 1230 + 7380 = 8610.$$

Answer: **8,610**

$$\begin{array}{r}
 246 \\
 \times 35 \\
 \hline
 1230 \\
 7380 \\
 \hline
 8610
 \end{array}$$

$$246 \times 35 = 8,610.$$

Exercise 8 - Zero in the middle

$$507 \times 8 = 4,056. \quad 507 \times 20 = 10,140.$$

$$\text{Add: } 4056 + 10140 = 14196.$$

Answer: **14,196**

Exercise 9 - Larger factors

$$689 \times 7 = 4,823. \quad 689 \times 40 = 27,560.$$

$$\text{Add: } 4823 + 27560 = 32383.$$

Answer: **32,383**

Exercise 10 - Zeros in a factor

$$25 \times 36 = 900 \quad (25 \times 6 = 150 \text{ and } 25 \times 30 = 750). \text{ Then multiply by 10 because 250 is 25 tens.}$$

$$900 \times 10 = 9,000.$$

Answer: **9,000**

Exercise 11 - Three digits by three digits

$$314 \times 5 = 1,570. \quad 314 \times 10 = 3,140. \quad 314 \times 200 = 62,800.$$

$$\text{Add: } 1570 + 3140 + 62800 = 67510.$$

Answer: **67,510**

Exercise 12 - Four digits by two digits

$$1,486 \times 2 = 2,972. \quad 1,486 \times 30 = 44,580.$$

$$\text{Add: } 2972 + 44580 = 47552.$$

Answer: **47,552**

Exercise 13 - Draw an area model

$$50 \times 30 = 1,500, \quad 2 \times 30 = 60, \quad 50 \times 7 = 350, \quad 2 \times 7 = 14.$$

$$\text{Add: } 1500 + 60 + 350 + 14 = 1924.$$

Answer: **1,924**

	50	2
30	1,500	60
7	350	14

Total 1,924.

Exercise 14 - Jamal's mistake

The 2 in 23 means 2 tens. Jamal forgot the placeholder zero, so he multiplied by 2 instead of 20.

$$\text{Correct: } 45 \times 20 = 900. \quad 135 + 900 = 1035.$$

Answer: **1,035**

Exercise 15 - Orange crates

$$36 \times 48: \quad 36 \times 8 = 288 \quad \text{and} \quad 36 \times 40 = 1,440. \quad 288 + 1440 = 1728.$$

There are **1,728 oranges**.

Exercise 16 - Road trip miles

$62 \times 4 = 248$ and $62 \times 10 = 620$. $248 + 620 = 868$.

The bus drives **868 miles**.

Exercise 17 - Auditorium seats

$35 \times 8 = 280$ and $35 \times 20 = 700$. $280 + 700 = 980$.

There are **980 seats**.

Exercise 18 - Bake sale money

Cookies: $15 \times 24 = 360$ ($15 \times 4 = 60$, $15 \times 20 = 300$).

Money: $360 \times 2 = 720$.

Answer: **360 cookies and \$720**

Exercise 19 - Water bottles

Players: $12 \times 14 = 168$.

Bottles: $168 \times 3 = 504$.

Answer: **504 water bottles**

Exercise 20 - Marker boxes

First kind: $125 \times 24 = 3,000$. Second kind: $36 \times 15 = 540$.

Total: $3000 + 540 = 3540$.

Answer: **3,540 markers**