



Math Worksheet for 5th Grade

Multi-digit multiplication

Name: _____

Due Date: _____

Teacher: _____

Parent Sign: _____

Questions

1. Use an area model (partition tens and ones) to compute 23×47 .
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2. Use an area model to compute 134×6 (partition hundreds, tens, ones).
3. For $6,742 \times 23$, write an area model by partitioning $6,742$ into $6,000 + 700 + 40 + 2$ and 23 into $20 + 3$. List the partial products.
4. Explain briefly how the area?model partial products for $6,742 \times 23$ relate to the standard algorithm (one sentence).
5. Use an area model to compute 48×36 .
6. Compute $5,203 \times 4$ using place?value partitioning.
7. Partition 312×45 into rectangles (area model) and find the product.
8. For 87×64 , list the four area?model partial products and the total.
9. A student uses an area model for 87×64 and gets the sum $5,568$. Is that product correct? Explain (yes/no).
10. When using an area model for $5,412 \times 36$, which partial product shows "thousands \times tens"? (Give the number.)

Intro to standard way of multiplying multi?digit numbers

11. Use the standard algorithm to compute 43×27 .
12. Multiply $1,205 \times 34$ using the standard algorithm.
13. Multiply 754×89 with the standard algorithm.
14. Multiply $6,742 \times 23$ using the standard (column) algorithm.
15. Compute 999×12 using the standard algorithm.
16. Multiply $4,806 \times 7$ using the standard algorithm.
17. Use the standard algorithm for $2,345 \times 16$.
18. Use the standard algorithm for $3,204 \times 15$.
19. Multiply 68×75 using the standard algorithm.
20. Multiply $5,678 \times 11$ using the standard algorithm.
21. In the standard algorithm, why do you "shift one place" (write a zero or move one column right) when multiplying by the tens digit? (brief explanation)
22. Multiply $2,500 \times 14$ using the standard algorithm.
23. Multiply $4,321 \times 22$ using the standard algorithm.
24. Multiply $8,907 \times 13$ using the standard algorithm.
25. Multiply 37×58 using the standard algorithm.

Understanding the standard algorithm for multiplication

26. A student calculates 432×25 as $432 \times 5 = 2,160$ and $432 \times 2 = 864$, then adds $2,160 + 864 = 3,024$. Is this correct? If not, correct the mistake.



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27. Explain why any partial product is 0 when one factor has a 0 in a place value (one sentence).
 28. Compute $1,234 \times 9$ and show the product (standard algorithm).
 29. A student writes 276×43 : $276 \times 3 = 828$ and $276 \times 4 = 1,104$, then adds $828 + 1,104 = 1,932$ and stops. What is wrong and what is the correct product?
 30. True or False: When multiplying a number by 10, you place a zero at the end of the number because you are multiplying each digit by ten (one sentence justification).
 31. Show (in words or numbers) why the standard algorithm gives the same result as repeated addition for 32×14 .
 32. Multiply $7,305 \times 12$ using the standard algorithm.
 33. Compute 789×56 and identify the carry values that appear when multiplying by the ones digit.
 34. What does the "carry" represent when using the multiplication algorithm? (one sentence)
 35. A student claims $65 \times 47 = 305$. Explain the likely mistake and give the correct product.
 36. Multiply 546×37 using a standard method and list partial products.
 37. Does $23 \times 6,742$ equal $6,742 \times 23$? Name the property that explains your answer and give the product.
 38. Estimate $4,892 \times 39$ by rounding to the nearest hundred and multiplying the rounded numbers.
 39. Fill in the blank: $(6,742 \times 20) + (6,742 \times 3) = \underline{\hspace{2cm}}$.
 40. Using the standard algorithm, list the partial products and final sum for 843×29 .
- Multiplying multi-digit numbers: focus on $6,742 \times 23$
41. Compute $6,742 \times 23$ (straight multiplication).
 42. Using an area model, list all the rectangular partial products (every rectangle) when you partition $6,742$ as $6,000 + 700 + 40 + 2$ and 23 as $20 + 3$.
 43. Word problem: A stadium section holds $6,742$ seats. If there are 23 identical sections, how many seats are in the stadium?
 44. Word problem: A factory makes $6,742$ widgets per day. How many widgets will it make in 23 days?
 45. Word problem: $6,742$ people each buy a \$23 ticket. How much money is collected?
 46. If someone calculates $6,742 \times 23$ and gets $154,000$, what kind of mistake probably happened? (short explanation)
 47. Compute $6,742 \times 32$ (variation practice).
 48. Fill in the blanks for $6,742 \times 23$: $6,742 \times 3 = \underline{\hspace{1cm}}$; $6,742 \times 20 = \underline{\hspace{1cm}}$; Total = $\underline{\hspace{1cm}}$.
 49. A teacher asks students to show $6,742 \times 23$ two ways: (a) area model and (b) standard algorithm. List the steps a student would write for each method (brief bullet points).
 50. Check your work: Divide the product of $6,742 \times 23$ by 23 . What quotient do you get?