LESSON MAKER PRO

# Break It Down

*Multiply with tens, ones, and partial products*

**GRADE 4 · 4.NOS.B.5.b**

**4.NOS.B.5.b** "Use strategies based on place value (e.g., partial products) to multiply."

NAME _____ DATE _____

### MULTIPLY IN PARTS

Break each factor into tens and ones. Multiply each part of one factor by each part of the other, then add the partial products.

### WORKED EXAMPLE

Use partial products to find 34 x 12.

1. Break apart the factors: 34 = 30 + 4 and 12 = 10 + 2.
2. Multiply the tens: 30 x 10 = 300 and 30 x 2 = 60.
3. Multiply the ones: 4 x 10 = 40 and 4 x 2 = 8.
4. Add: 300 + 60 + 40 + 8 = 408.

**Answer: 408**

## PRACTICE 6 problems

**1** Use partial products to find 21 x 13.

**ANSWER** _____

**2** Use partial products to find 42 x 15.

**ANSWER** _____

**3** Use partial products to find 26 x 18.

**ANSWER** _____

**4** Use partial products to find 37 x 24.

**ANSWER** _____

**5** For 48 x 32, write the four partial products and find the total.

**ANSWER** _____

**6** Mina starts 56 x 43 by adding 50 x 40, 50 x 3, and 6 x 40. What partial product is missing? What is the correct total?

**ANSWER** _____

## APPLY IT Show your work

**1** A game shop has 27 packs of trading cards. Each pack has 16 cards. How many cards does the shop have? Use partial products.

WORK SPACE

**ANSWER** _____

**2** At a school movie night, there are 35 rows with 24 seats in each row. How many seats are there? Use partial products.

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

A club orders 46 boxes with 28 pencils in each box. Show partial products to find the total number of pencils. Then find the total if each box has 29 pencils instead. Explain why the second total is 46 more.

WORK SPACE AND ANSWER

# Break It Down



## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Use partial products to find 21 x 13. | **273** |
| 2 | Use partial products to find 42 x 15. | **630** |
| 3 | Use partial products to find 26 x 18. | **468** |
| 4 | Use partial products to find 37 x 24. | **888** |
| 5 | For 48 x 32, write the four partial products and find the total. | **1,200, 80, 240, and 16; total: 1,536** |
| 6 | Mina starts 56 x 43 by adding 50 x 40, 50 x 3, and 6 x 40. What partial product is missing? What is the correct total? | **Missing: 6 x 3 = 18; total: 2,408** |

## PART 2 · APPLY IT

1. **432 cards** Add 20 x 10, 20 x 6, 7 x 10, and 7 x 6: 200 + 120 + 70 + 42 = 432.
2. **840 seats** Add 30 x 20, 30 x 4, 5 x 20, and 5 x 4: 600 + 120 + 100 + 20 = 840.

## CHALLENGE

**46 x 28 = 800 + 320 + 120 + 48 = 1,288 pencils. One more pencil in each of 46 boxes makes 1,334 pencils, which is 46 more.**

Accept partial products grouped in a different order if they add to the correct total. For the challenge, accept any clear explanation that connects the extra 46 pencils to one extra pencil in each box.