LESSON MAKER PRO

Multiply in Pieces

Use place value and area models to find products.

GRADE 4 · 4.NBT.B.11

4.NBT.B.11 "Find the product of two factors (up to four digits by a one-digit number and two two-digit numbers), using strategies based on place value and the properties of operations. a..."

NAME _____ DATE _____

THE BIG IDEA

Break each factor into place-value parts. Multiply the parts, then add the partial products to find the total.

WORKED EXAMPLE

Use the area model to find the product.

	10	4
20	200	80
3	30	12

1. 20 x 10 = 200, and 20 x 4 = 80.
2. 3 x 10 = 30, and 3 x 4 = 12.
3. 200 + 80 + 30 + 12 = 322.

Answer: 23 x 14 = 322

PRACTICE 6 problems

1 Use the area model. Write an addition equation with all four partial products, then find the total.

	20	5
30		
6		

ANSWER _____

_____

2 Use the area model. Write an addition equation with all four partial products, then find the total.

	10	7
40		
2		

ANSWER _____

_____

3 Find 1,248 x 3. Show an addition equation with the partial products.

ANSWER _____

_____

4 Find 2,306 x 4.

ANSWER _____

5 Find 47 x 32.

ANSWER _____

6 Find 3,125 x 6.

ANSWER _____

APPLY IT Show your work

1 A game club puts 18 cards in each of 24 packs. How many cards does the club put in the packs altogether? Show how you split a factor to find the answer.

WORK SPACE

ANSWER _____

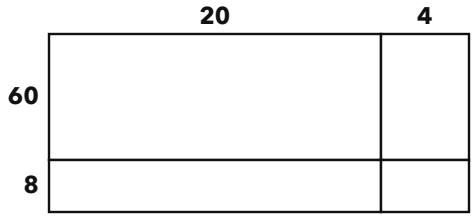
2 Each of 4 school concerts has 1,125 seats. If every seat is filled, how many people attend the concerts altogether? Show a place-value equation.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student uses the area model and writes 1,200 + 240 + 16 + 32 = 1,488. Which partial product is wrong? Write the correct partial product and total.



WORK SPACE AND ANSWER

ANSWER KEY

Multiply in Pieces

GRADE 4 · 4.NBT.B.11

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use the area model. Write an addition equation with all four partial products, then find the total.	**600 + 150 + 120 + 30 = 900**
2	Use the area model. Write an addition equation with all four partial products, then find the total.	**400 + 280 + 20 + 14 = 714**
3	Find 1,248 x 3. Show an addition equation with the partial products.	**3,000 + 600 + 120 + 24 = 3,744**
4	Find 2,306 x 4.	**9,224**
5	Find 47 x 32.	**1,504**
6	Find 3,125 x 6.	**18,750**

PART 2 · APPLY IT

1. **432 cards** Split 24 into 20 + 4. Then 18 x 20 + 18 x 4 = 360 + 72 = 432.
2. **4,500 people** 4 x (1,000 + 100 + 20 + 5) = 4,000 + 400 + 80 + 20 = 4,500.

CHALLENGE

16 is wrong. 8 x 20 = 160, so the correct total is 1,200 + 240 + 160 + 32 = 1,632.

Accept partial products in any order. For problems that ask for an equation, accept any correct place-value split that shows how the student found the product.