LESSON MAKER PRO

Split the Rectangle

Use parts of an area model to multiply.

GRADE 4 · 4.NOS.B.5.d

4.NOS.B.5.d "Represent and explain the computation by connecting rectangular arrays, area models, and/or equations to the meaning of multiplication."

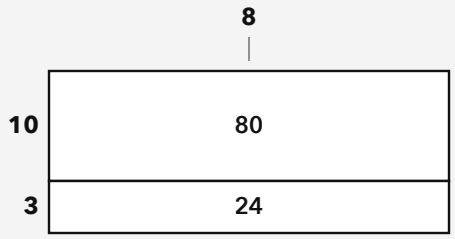
NAME _____ DATE _____

THE BIG IDEA

An area model splits a rectangle into smaller rectangles. Multiply to find each part, then add the parts to find the whole.

WORKED EXAMPLE

Use the model to find the area. Write a multiplication equation.



1. The full side is 10 + 3 = 13.
2. 10 x 8 = 80.
3. 3 x 8 = 24.
4. 80 + 24 = 104.

Answer: 13 x 8 = 104 square units

PRACTICE 4 problems

1 Find 12 x 7. Show the two partial products.

ANSWER _____

2 Fill in: 15 x 9 = (___ x 9) + (5 x 9) = ___.

ANSWER _____

3 Which split finds 21 x 5: (20 x 5) + (1 x 5) or (20 x 1) + (5 x 1)? Find the product.

ANSWER _____

4 Mina says 32 x 2 = 60 + 2. Is she right? Fix her sum.

ANSWER _____

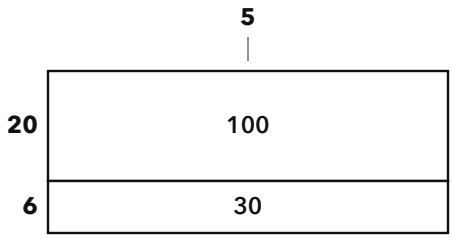
APPLY IT Show your work

1 At a school fair, each dot in the array stands for one game ticket. How many tickets are shown? Write an equation.



ANSWER _____

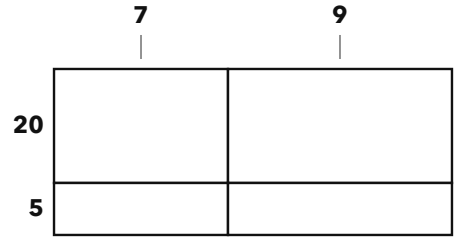
2 A club puts the same number of stickers on each page. The model shows its pages. How many stickers are there? Write an equation.



ANSWER _____

CHALLENGE One step up

Use the model to find the total area. Explain how its parts add to the whole.



WORK SPACE AND ANSWER

ANSWER KEY

Split the Rectangle

GRADE 4 · 4.NOS.B.5.d

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find 12 x 7. Show the two partial products.	**70 + 14 = 84**
2	Fill in: 15 x 9 = (___ x 9) + (5 x 9) = ___.	**10; 135**
3	Which split finds 21 x 5: (20 x 5) + (1 x 5) or (20 x 1) + (5 x 1)? Find the product.	**(20 x 5) + (1 x 5); 105**
4	Mina says 32 x 2 = 60 + 2. Is she right? Fix her sum.	**No. 60 + 4 = 64.**

PART 2 · APPLY IT

1. **5 x 9 = 45 tickets** The array shows 5 rows of 9 tickets. Multiply to get 45.
2. **5 x 26 = 130 stickers** Each of the 5 pages has 20 + 6 stickers. Add 100 and 30 to get 130.

CHALLENGE

25 x 16 = 400 square units. The four parts are 140, 180, 35, and 45 square units; 140 + 180 + 35 + 45 = 400.

Accept factors in either order. For the challenge, accept any correct grouping of the four partial products.