LESSON MAKER PRO

Split and Add Area

Use parts of a rectangle to find total area.

GRADE 3 · 3.MD.C.7c

CCSS.Math.Content.3.MD.C.7c "Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c. Use area models to represent the distributive property in mathematical reasoning."

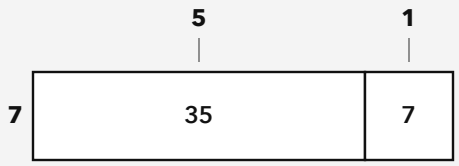
NAME _____ DATE _____

SPLIT ONE SIDE

You can split one side of a rectangle into two parts. Multiply the other side by each part, then add the two smaller areas.

WORKED EXAMPLE

The area model is 7 units tall and split into widths of 5 units and 1 unit. Find the whole rectangle area by adding its two parts.



1. Find the first part: 7 x 5 = 35.
2. Find the second part: 7 x 1 = 7.
3. Add the parts: 35 + 7 = 42.

Answer: 42 square units

PRACTICE 4 problems

1 A rectangle is 4 units tall. Its width is 2 units + 6 units. Write two products and find the area.

ANSWER _____

2 Find the area: 8 x (3 + 4). Show the two products.

ANSWER _____

3 A 6-by-9 rectangle is split into widths of 3 and 6. Write two products and find the area.

ANSWER _____

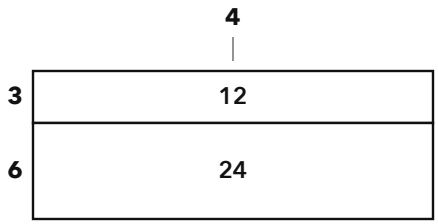
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4 Is this true? 9 x (2 + 4) = 9 x 2 + 9 x 4. Write true or false.

ANSWER _____

APPLY IT Show your work

1 The floor space for a video game booth is shown in the area model. Each labeled unit is 1 foot. Find the total area.



ANSWER _____

2 A sports card poster is 9 inches tall. It has a 2-inch-wide player section beside a 4-inch-wide team section. What is the poster's area?

WORK SPACE

ANSWER _____

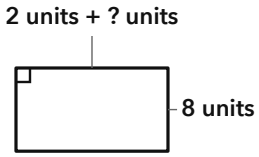
3 Tile and split: an adult gives you a blank 5 cm by 3 cm paper rectangle and fifteen 1 cm square tiles. Place tiles edge to edge to cover the rectangle with no gaps or overlaps. Count all the tiles. Separate the width into 2 cm and 3 cm parts by drawing a divider along tile edges. Count the tiles in each part and record both counts. Compare their sum with 3×5, and explain why $3 \times (2 + 3) = 3 \times 2 + 3 \times 3$. Show your actual tiled rectangle and divider to the adult.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A rectangle is 8 units tall and has area 64 square units. Its total width is 2 units plus an unknown remaining width. Find the remaining width and explain with two products. The outline shows the whole rectangle; draw a divider to show the two parts.



WORK SPACE AND ANSWER

ANSWER KEY

Split and Add Area

GRADE 3 · 3.MD.C.7c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A rectangle is 4 units tall. Its width is 2 units + 6 units. Write two products and find the area.	**4 x 2 + 4 x 6 = 8 + 24 = 32 square units**
2	Find the area: 8 x (3 + 4). Show the two products.	**8 x 3 + 8 x 4 = 24 + 32 = 56 square units**
3	A 6-by-9 rectangle is split into widths of 3 and 6. Write two products and find the area.	**6 x 3 + 6 x 6 = 18 + 36 = 54 square units**
4	Is this true? 9 x (2 + 4) = 9 x 2 + 9 x 4. Write true or false.	**True**

PART 2 · APPLY IT

1. **36 square feet** Multiply 4 by each part, then add: 4 x 3 + 4 x 6 = 12 + 24 = 36.
2. **54 square inches** Add the two section areas: 9 x 2 + 9 x 4 = 18 + 36 = 54.
3. **6 + 9 = 15 square centimeters; 3 × (2 + 3) = 3 × 2 + 3 × 3 = 15.** Observe three rows of five 1 cm squares covering the whole rectangle. A divider after two columns gives 3 × 2 = 6 and 3 × 3 = 9 tiles. Check actual covering, separate counts and equality to the whole product, not only the total.

CHALLENGE

6 units; 8 x 2 + 8 x 6 = 16 + 48 = 64 square units.

Accept equivalent addition order and multiplication order. Require square units for area answers. For Apply 3, supply the stated rectangle and fifteen equal square tiles, and observe actual learner tiling and the divider before accepting the recorded explanation.

Split and Add Area

Apply 3: the actual tiling has three rows; split the five columns into two and three. Areas 6 and 9 sum to 15 square centimeters.

