

Rectangle Roadmap

Use rows, tiles, and side lengths to find area and perimeter.

GRADE 4 • 4.MG.3.a

4.MG.3.a "Use concrete materials and pictorial models to develop a formula for the area and perimeter of a rectangle (including a square)."

NAME _____

DATE _____

BUILD THE RULES

Picture a rectangle made of unit-square tiles. Area tells how many tiles cover the inside, so multiply length times width. Perimeter tells the distance around the outside, so add all four side lengths. For a square, all four sides are equal.

WORKED EXAMPLE

A rectangle is 7 units long and 4 units wide. Find its area and perimeter.

1. Picture 4 rows with 7 unit squares in each row.
2. Area = $7 * 4 = 28$ square units.
3. Perimeter = $7 + 4 + 7 + 4 = 22$ units.

**Answer: Area: 28 square units;
Perimeter: 22 units**

PRACTICE 6 problems

- 1** A tile rectangle has 5 tiles in each row and 3 rows. What is its area?

ANSWER _____

- 2** A rectangle is 6 units long and 2 units wide. What is its perimeter?

ANSWER _____

- 3** A square has a side length of 8 units. Find its area and perimeter.

ANSWER _____

- 4** A rectangle has 3 rows of 9 unit squares. What are its length, width, and area?

ANSWER _____

- 5** A rectangular notebook cover is 10 cm by 5 cm. Find its area and perimeter.

ANSWER _____

- 6** A rectangle is 13 units long and 2 units wide. Find its area and perimeter.

ANSWER _____

APPLY IT Show your work

- 1** Your gaming club is making a rectangular game board that is 9 inches long and 6 inches wide. How many square inches of cardboard are needed to cover the board?

WORK SPACE

ANSWER _____

- 2** You are putting a border around a rectangular poster that is 12 inches long and 5 inches wide. How many inches of border do you need?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A rectangle has a perimeter of 26 cm and a width of 5 cm. What is its length and area? Explain how you used the perimeter to find the missing side.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A tile rectangle has 5 tiles in each row and 3 rows. What is its area?	15 square units
2	A rectangle is 6 units long and 2 units wide. What is its perimeter?	16 units
3	A square has a side length of 8 units. Find its area and perimeter.	Area: 64 square units; Perimeter: 32 units
4	A rectangle has 3 rows of 9 unit squares. What are its length, width, and area?	Length: 9 units; Width: 3 units; Area: 27 square units
5	A rectangular notebook cover is 10 cm by 5 cm. Find its area and perimeter.	Area: 50 square cm; Perimeter: 30 cm
6	A rectangle is 13 units long and 2 units wide. Find its area and perimeter.	Area: 26 square units; Perimeter: 30 units

PART 2 • APPLY IT

1. **54 square inches** Multiply the length by the width: $9 \times 6 = 54$. The board needs 54 square inches of cardboard.
2. **34 inches** Add all four sides: $12 + 5 + 12 + 5 = 34$. The border must be 34 inches long.

CHALLENGE

Length: 8 cm; Area: 40 square cm. The two widths total 10 cm, so the two lengths total 16 cm. Each length is 8 cm.

Accept equivalent multiplication order for area and any correct addition of all four sides for perimeter. Require square units for area and linear units for perimeter.