

Rectangle Detectives

Find the space inside and the distance around.

GRADE 3 • MA.3.GR.2.3

MA.3.GR.2.3 "Solve mathematical and real-world problems involving the perimeter and area of rectangles with whole-number side lengths using a visual model and a formula."

NAME _____

DATE _____

AREA AND PERIMETER

Area tells how many square units cover the inside of a rectangle. Use $A = \text{length} \times \text{width}$. Perimeter is the distance around the outside, so use $P = 2 \times \text{length} + 2 \times \text{width}$.

WORKED EXAMPLE

Find the area and perimeter of this rectangle model. It has 3 rows of 7 unit squares. ■■■■■■■■■■■■
■■■■■■■■■

1. Area = 7 times 3.
2. Area = 21 square units.
3. Perimeter = $7 + 3 + 7 + 3$.
4. Perimeter = 20 units.

**Answer: Area = 21 square units;
perimeter = 20 units.**

PRACTICE 6 problems

- 1** A rectangle is 8 units long and 4 units wide. Find its area and perimeter.

ANSWER _____

- 2** A rectangle is 5 centimeters long and 6 centimeters wide. Find its perimeter.

ANSWER _____

- 3** A rectangle is 9 meters long and 2 meters wide. Find its area.

ANSWER _____

- 4** A rectangle is 10 inches long and 4 inches wide. Find its area and perimeter.

ANSWER _____

- 5** A square has side lengths of 8 units. Find its area and perimeter.

ANSWER _____

- 6** Find the area and perimeter of this rectangle model. It has 2 rows of 12 unit squares. ■■■■■■■■■■■■■■■■■■■■
■■■■■■■

ANSWER _____

APPLY IT Show your work

- 1** Maya makes a rectangular trading-card display that is 11 inches long and 5 inches wide. She puts ribbon around the outside edge. How many inches of ribbon does she need?

WORK SPACE

ANSWER _____

- 2** A rectangular game mat is 14 feet long and 4 feet wide. What is the area of the mat?

WORK SPACE

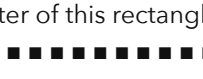
ANSWER _____

CHALLENGE One step up

CHALLENGE

A rectangle has an area of 48 square units. One side is 6 units long. Find the other side length and the perimeter.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A rectangle is 8 units long and 4 units wide. Find its area and perimeter.	Area = 32 square units; perimeter = 24 units.
2	A rectangle is 5 centimeters long and 6 centimeters wide. Find its perimeter.	22 centimeters
3	A rectangle is 9 meters long and 2 meters wide. Find its area.	18 square meters
4	A rectangle is 10 inches long and 4 inches wide. Find its area and perimeter.	Area = 40 square inches; perimeter = 28 inches.
5	A square has side lengths of 8 units. Find its area and perimeter.	Area = 64 square units; perimeter = 32 units.
6	Find the area and perimeter of this rectangle model. It has 2 rows of 12 unit squares. 	Area = 24 square units; perimeter = 28 units.

PART 2 • APPLY IT

1. **32 inches** Find the perimeter: $11 + 5 + 11 + 5 = 32$. Maya needs 32 inches of ribbon.
2. **56 square feet** Multiply the side lengths: 14 times 4 = 56. The mat covers 56 square feet.

CHALLENGE

Other side length = 8 units; perimeter = 28 units.

Accept correct area units written as square units, square inches, square feet, or square meters. Accept perimeter found by adding all four sides or by using 2 times length + 2 times width.