

Rectangle Detectives

Find the space inside and the distance around.

GRADE 4 • 4.MG.3.b

4.MG.3.b "Determine the area and perimeter of a rectangle when given the measure of two adjacent sides (in whole number units), with and without models."

NAME _____

DATE _____

AREA AND PERIMETER

Area tells how many square units cover the inside of a rectangle. Multiply length by width to find area. Perimeter is the distance all the way around, so add all four side lengths or multiply 2 by the sum of the length and width.

WORKED EXAMPLE

A rectangle is 7 units long and 5 units wide. Find its area and perimeter.

1. Area = length $\times$ width = 7×5 .
2. Area = 35 square units.
3. Perimeter = $2 \times (\text{length} + \text{width}) = 2 \times (7 + 5)$.
4. Perimeter = 24 units.

**Answer: Area: 35 square units;
Perimeter: 24 units**

PRACTICE 6 problems

- 1** Use the model. Each small square is 1 square unit. [] Find the area and perimeter.

ANSWER _____

- 2** A rectangle is 8 units long and 2 units wide. Find the area and perimeter.

ANSWER _____

- 3** Use the model. Each small square is 1 square unit. [] Find the area and perimeter.

ANSWER _____

- 4** A rectangle is 9 units long and 4 units wide. Find the area and perimeter.

ANSWER _____

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

ANSWER _____

- 6** A rectangle is 10 units long and 7 units wide. Find the area and perimeter.

ANSWER _____

APPLY IT Show your work

- 1** The garden club makes a rectangular pollinator garden that is 12 feet long and 6 feet wide. How many square feet of ground will the garden cover? How many feet of edging are needed to go around it?

WORK SPACE

ANSWER _____

- 2** Jada is making a rectangular poster that is 11 inches long and 8 inches wide. Find the area of the poster. Then find the length of ribbon needed to make a border around all four sides.

WORK SPACE

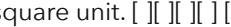
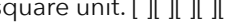
ANSWER _____

CHALLENGE One step up

CHALLENGE

Rectangle A is 12 units long and 5 units wide. Rectangle B has the same perimeter as Rectangle A, but Rectangle B is 7 units wide. Find the length of Rectangle B. Then find the area of both rectangles. Which rectangle has the greater area?

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Use the model. Each small square is 1 square unit. [] Find the area and perimeter.	Area: 12 square units; Perimeter: 14 units
2	A rectangle is 8 units long and 2 units wide. Find the area and perimeter.	Area: 16 square units; Perimeter: 20 units
3	Use the model. Each small square is 1 square unit. [] Find the area and perimeter.	Area: 18 square units; Perimeter: 18 units
4	A rectangle is 9 units long and 4 units wide. Find the area and perimeter.	Area: 36 square units; Perimeter: 26 units
5	A square has side lengths of 5 units. Find its area and perimeter.	Area: 25 square units; Perimeter: 20 units
6	A rectangle is 10 units long and 7 units wide. Find the area and perimeter.	Area: 70 square units; Perimeter: 34 units

PART 2 • APPLY IT

1. **Area: 72 square feet; Perimeter: 36 feet** Multiply 12 by 6 to find the area. Add $12 + 6 + 12 + 6$ to find the edging length.
2. **Area: 88 square inches; Perimeter: 38 inches** Multiply 11 by 8 for the poster area. Add the four side lengths, or use $2 \times (11 + 8)$, for the ribbon length.

CHALLENGE

Rectangle A perimeter: 34 units. Rectangle B length: 10 units. Rectangle A area: 60 square units. Rectangle B area: 70 square units. Rectangle B has the greater area.

Accept correct equations that lead to the listed answers. Area answers should use square units, and perimeter answers should use linear units.