

# Rectangle Mission

Use sketches and formulas with fractions and decimals.

GRADE 5 • MA.5.GR.2.1

**MA.5.GR.2.1** "Find the perimeter and area of a rectangle with fractional or decimal side lengths using visual models and formulas."

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## MEASURE THE BORDER AND INSIDE

Perimeter is the distance around a rectangle, so add the length and width, then multiply by 2:  $P = 2(\text{length} + \text{width})$ .  
Area is the space inside a rectangle, so multiply the length by the width:  $A = \text{length} \times \text{width}$ . A quick sketch with labeled sides can help you see the border and the inside.

## WORKED EXAMPLE

A rectangle is 2.5 units long and 1.2 units wide. Find its perimeter and area.

1. Sketch a rectangle and label the length 2.5 units and the width 1.2 units.
2.  $P = 2(2.5 + 1.2) = 2(3.7) = 7.4$  units.
3.  $A = 2.5 \times 1.2 = 3$  square units.

**Answer: Perimeter: 7.4 units; Area: 3 square units**

## PRACTICE 6 problems

- 1** Draw a quick labeled rectangle with side lengths  $\frac{3}{4}$  unit and  $\frac{2}{3}$  unit. Find its area.

ANSWER \_\_\_\_\_

- 2** A rectangle has a length of 1.5 cm and a width of 0.8 cm. Find its perimeter.

ANSWER \_\_\_\_\_

- 3** A rectangle is  $2\frac{1}{4}$  m long and  $1\frac{1}{2}$  m wide. Find its perimeter and area.

ANSWER \_\_\_\_\_

- 4** A rectangle has side lengths 0.6 in. and 1.7 in. Find its perimeter and area.

ANSWER \_\_\_\_\_

- 5** A rectangle has a length of  $\frac{5}{6}$  ft and a width of  $\frac{1}{2}$  ft. Find its perimeter.

ANSWER \_\_\_\_\_

- 6** A rectangle is 3.25 yd long and 0.4 yd wide. Find its area.

ANSWER \_\_\_\_\_

## APPLY IT Show your work

- 1** A gaming club makes a rectangular scoreboard that is 3.6 ft long and 1.25 ft wide. They put tape all around its edge. How many feet of tape do they need?

WORK SPACE

ANSWER \_\_\_\_\_

- 2** For a game-day banner, a class uses a rectangular piece of fabric that is  $1\frac{1}{4}$  m long and  $\frac{3}{4}$  m wide. What is the area of the fabric?

WORK SPACE

ANSWER \_\_\_\_\_

## CHALLENGE One step up

### CHALLENGE

A rectangular robotics mat has an area of  $4\frac{1}{2}$  square ft. One side is  $1\frac{1}{2}$  ft. Find the other side length and the perimeter. Explain how you know.

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## PART 1 • PRACTICE

| # | PROBLEM                                                                                                    | ANSWER                                                                                  |
|---|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1 | Draw a quick labeled rectangle with side lengths $\frac{3}{4}$ unit and $\frac{2}{3}$ unit. Find its area. | <b><math>\frac{1}{2}</math> square unit</b>                                             |
| 2 | A rectangle has a length of 1.5 cm and a width of 0.8 cm. Find its perimeter.                              | <b>4.6 cm</b>                                                                           |
| 3 | A rectangle is $2\frac{1}{4}$ m long and $1\frac{1}{2}$ m wide. Find its perimeter and area.               | <b>Perimeter: <math>7\frac{1}{2}</math> m; Area: <math>3\frac{3}{8}</math> square m</b> |
| 4 | A rectangle has side lengths 0.6 in. and 1.7 in. Find its perimeter and area.                              | <b>Perimeter: 4.6 in.; Area: 1.02 square in.</b>                                        |
| 5 | A rectangle has a length of $\frac{5}{6}$ ft and a width of $\frac{1}{2}$ ft. Find its perimeter.          | <b><math>2\frac{2}{3}</math> ft</b>                                                     |
| 6 | A rectangle is 3.25 yd long and 0.4 yd wide. Find its area.                                                | <b>1.3 square yd</b>                                                                    |

## PART 2 • APPLY IT

- 9.7 ft of tape** Add the side lengths, then multiply by 2:  $2(3.6 + 1.25) = 2(4.85) = 9.7$ .
- $\frac{15}{16}$  square m** Multiply the side lengths:  $1\frac{1}{4} \times \frac{3}{4} = \frac{5}{4} \times \frac{3}{4} = \frac{15}{16}$ .

## CHALLENGE

**The other side is 3 ft because  $1\frac{1}{2} \times 3 = 4\frac{1}{2}$ . The perimeter is 9 ft because  $2(3 + 1\frac{1}{2}) = 9$ .**

Accept equivalent fraction and decimal forms when they are exact, such as  $7\frac{1}{2}$  and 7.5. Accept a labeled rectangle sketch as a visual model, but require correct perimeter or area units.