LESSON MAKER PRO

Measure the Borders

Find perimeter and area of rectangles and squares.

GRADE 4 · TEKS 4.5.C

4.5.C "use models to determine the formulas for the perimeter of a rectangle (l + w + l + w or 2l + 2w), including the special form for perimeter of a square (4s) and the area of a rectangle (l x w); and"

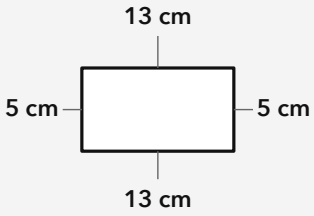
NAME _____ DATE _____

PERIMETER AND AREA RULES

For a rectangle, add all four side lengths to find perimeter: l + w + l + w, or 2l + 2w. For a square, perimeter is 4s. To find the area of a rectangle, multiply l x w.

WORKED EXAMPLE

Find the perimeter and area of the rectangle shown.

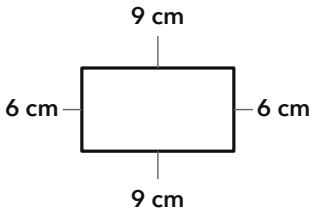


1. Perimeter = 2l + 2w.
2. P = 2(13 cm) + 2(5 cm) = 26 cm + 10 cm = 36 cm.
3. Area = l x w.
4. A = 13 cm x 5 cm = 65 square cm.

Answer: Perimeter = 36 cm; area = 65 square cm

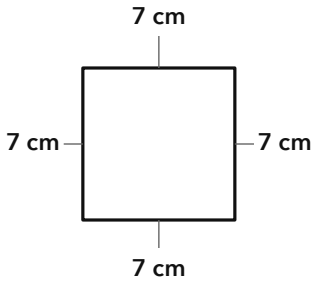
PRACTICE 6 problems

1 Find the perimeter of the rectangle shown.



ANSWER _____

2 Find the perimeter of the square shown.



ANSWER _____

3 A rectangle is 8 cm long and 3 cm wide. Find its area.

ANSWER _____

4 A rectangle is 12 m long and 2 m wide. Find its perimeter.

ANSWER _____

5 A square tile has a side length of 10 cm. Find its area.

ANSWER _____

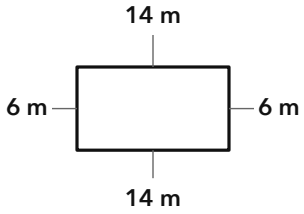
6 A rectangle is 11 in. long and 3 in. wide. Find its perimeter and its area.

ANSWER _____

_____

APPLY IT Show your work

1 The garden club needs edging around the 14 m by 6 m garden bed shown. How many meters of edging are needed?



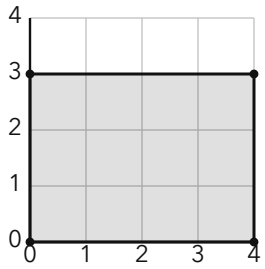
ANSWER _____

2 Maya covers a 15 cm by 8 cm rectangular comic-book display board. How many square centimeters of paper are needed?

WORK SPACE

ANSWER _____

3 Use separate paper to develop formulas from models. Trace the worked rectangle: label long sides l and short sides w. Explain l + w + l + w = 2l + 2w. Label Practice 2's square sides s and explain 4s. The shaded rectangle below has 3 rows of 4 unit squares. Count its area, then explain why a rectangle with w rows of l unit squares has area l × w.



ANSWER _____

CHALLENGE One step up

A rectangular dog park has a perimeter of 38 m. One side is 11 m long. Find the length of the other side. Then find the area of the dog park.

WORK SPACE AND ANSWER

ANSWER KEY

Measure the Borders

GRADE 4 · TEKS 4.5.C

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the perimeter of the rectangle shown.	**30 cm**
2	Find the perimeter of the square shown.	**28 cm**
3	A rectangle is 8 cm long and 3 cm wide. Find its area.	**24 square cm**
4	A rectangle is 12 m long and 2 m wide. Find its perimeter.	**28 m**
5	A square tile has a side length of 10 cm. Find its area.	**100 square cm**
6	A rectangle is 11 in. long and 3 in. wide. Find its perimeter and its area.	**Perimeter = 28 in.; area = 33 square in.**

PART 2 · APPLY IT

1. **40 m** Add all four sides, or calculate 2(14 m) + 2(6 m). The perimeter is 40 m.
2. **120 square cm** Multiply the length by the width: 15 cm x 8 cm. The area is 120 square cm.
3. **Rectangle: l + w + l + w = 2l + 2w; square: s + s + s + s = 4s; area: l × w square units. The pictured array has 3 rows of 4, hence 12 square units.** Require a learner reason tied to the actual models: two sides of each rectangle length, four equal square sides, and equal rows of unit squares. For the general area formula w rows each contain l squares, giving l×w, not merely a memorized numerical substitution.

CHALLENGE

Other side = 8 m; area = 88 square m

Accept l + w + l + w or 2l + 2w for rectangle perimeter. Accept 4s for square perimeter and correct square units for area.