

Shape Space Detectives

Find area and perimeter in rectangle shapes.

GRADE 3 • MA.3.GR.2.4

MA.3.GR.2.4 "Solve mathematical and real-world problems involving the perimeter and area of composite figures composed of non-overlapping rectangles with whole-number side lengths."

NAME _____

DATE _____

AREA AND PERIMETER

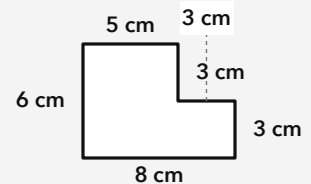
To find area, split a shape into rectangles or subtract a missing rectangle. To find perimeter, add only the outside side lengths. Do not count a shared inside edge.

WORKED EXAMPLE

Find the area and perimeter of the figure.

1. Use one 8 cm by 6 cm rectangle.
2. Subtract the missing 3 cm by 3 cm corner: $48 - 9 = 39$.
3. Add the outside sides: $8 + 3 + 3 + 3 + 5 + 6 = 28$.

Answer: Area = 39 cm^2 ; perimeter = 28 cm.



PRACTICE 4 problems

- 1** A 9 cm by 7 cm rectangle has a 2 cm by 4 cm corner cut out. Find its area.

ANSWER _____

- 2** An 11 cm by 7 cm rectangle has a 2 cm by 4 cm corner cut out. Find its perimeter.

ANSWER _____

- 3** A 10 cm by 4 cm rectangle has a 7 cm by 2 cm rectangle attached below it. The entire 7 cm side joins the leftmost 7 cm of the 10 cm side, with no overlap. Find the area and perimeter of the combined shape.

ANSWER _____

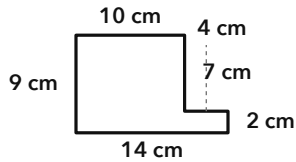
- 4** A 12 cm by 9 cm rectangle has a 4 cm by 7 cm corner cut out. Find its area.

ANSWER _____

APPLY IT

Show your work

- 1** A school garden has the shape shown. How many square centimeters of soil does it cover? How many centimeters of fence are needed?



ANSWER _____

- 2** A game club makes a floor mat by joining a 13 cm by 7 cm rectangle and a 4 cm by 2 cm rectangle. How much fabric does the mat use?

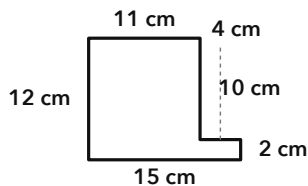
WORK SPACE

ANSWER _____

CHALLENGE

One step up

Find the area and perimeter of the patio. Explain how you found both.



WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A 9 cm by 7 cm rectangle has a 2 cm by 4 cm corner cut out. Find its area.	55 cm²
2	An 11 cm by 7 cm rectangle has a 2 cm by 4 cm corner cut out. Find its perimeter.	36 cm
3	A 10 cm by 4 cm rectangle has a 7 cm by 2 cm rectangle attached below it. The entire 7 cm side joins the leftmost 7 cm of the 10 cm side, with no overlap. Find the area and perimeter of the combined shape.	Area = 54 cm²; perimeter = 32 cm.
4	A 12 cm by 9 cm rectangle has a 4 cm by 7 cm corner cut out. Find its area.	80 cm²

PART 2 • APPLY IT

- 98 cm² of soil; 46 cm of fence** Area: $14 \text{ by } 9 - 4 \text{ by } 7 = 98$. Perimeter: $14 + 2 + 4 + 7 + 10 + 9 = 46$.
- 99 cm²** Add the areas of the two non-overlapping rectangles: $13 \text{ by } 7 + 4 \text{ by } 2 = 99$.

CHALLENGE

Area = 140 cm²; perimeter = 54 cm. Subtract the 4 cm by 10 cm missing rectangle from a 15 cm by 12 cm rectangle, then add all six outside sides.

Accept equivalent correct area and perimeter statements with units. For the challenge, accept any clear explanation that subtracts the missing rectangle for area and adds only outside sides for perimeter.