MATHEMATICS · GRADES 4-6

Perimeter versus area

Difficulty level: Intermediate

Mathematics: Grades 4-6

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Overview of the concept

This is how you know whether you need fencing for the distance around a yard or sod for the ground inside it, since the two jobs need different measurements. A fence follows the edge, so it is measured in metres, while sod covers the ground inside, so it is measured in square metres. Mixing them up means ordering the wrong thing, like buying sod by the metre of fence. A painter faces the same choice, since paint covers a wall and trim runs along its edge.



Rule

Perimeter measures the distance around the outside of a shape, in units like cm.

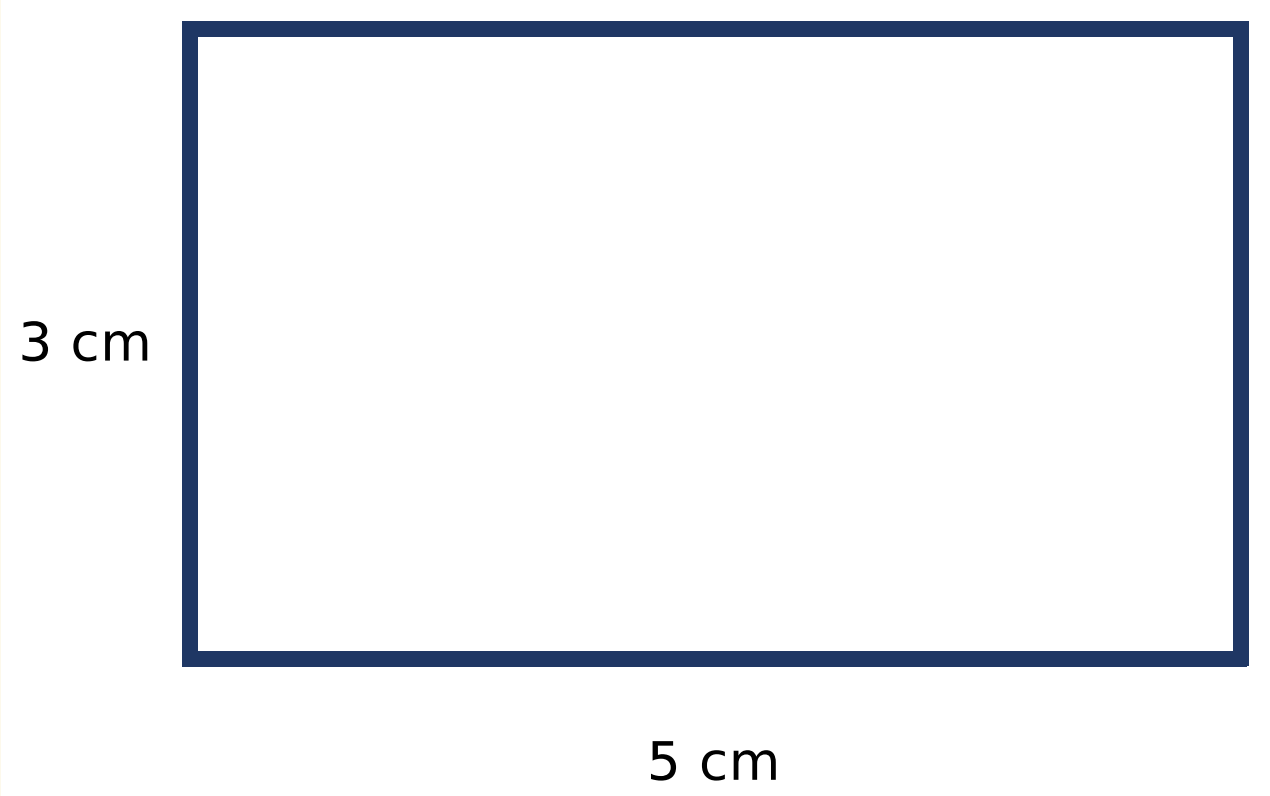
Area measures the surface inside the shape, in square units like cm^2. Fencing and borders use perimeter. Covering a surface uses area.

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Worked examples

EXAMPLE 1

Q A rectangle is 5 cm by 3 cm. Perimeter or area: fencing it?



SOLUTION

Fence goes around the edge

Perimeter: 5 + 3 + 5 + 3 = 16 cm

Fencing uses perimeter

Fencing runs around the outside edge.

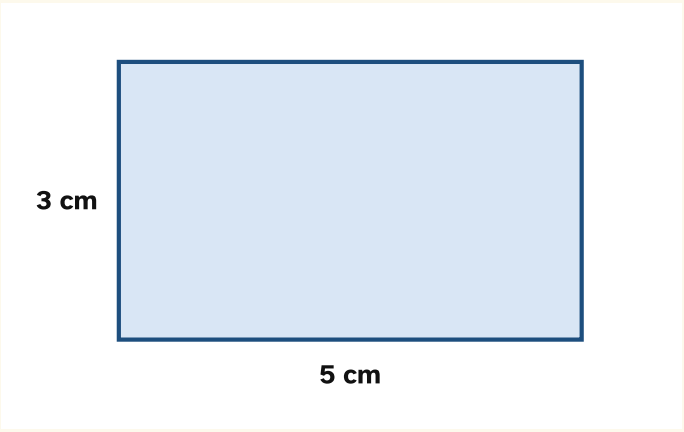
The outside edge is the perimeter: 5 + 3 + 5 + 3 = 16 cm

So fencing uses perimeter, in cm.

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EXAMPLE 2

Q Same rectangle. Painting it?



SOLUTION

Paint covers the surface

Area: $5 \times 3 = 15$ cm^2

Painting uses area

Paint covers the whole surface inside.

The surface is the area: $5 \times 3 = 15$ cm^2

So painting uses area, in cm^2.

Practice questions

1 A garden is 4 m by 6 m. Fencing goes all the way around it. What is the perimeter of the garden?

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2 A room is 4 m by 6 m. Carpet covers the whole floor. What is the area of the floor?

- **A** 24 m^2
- **B** 20 m
- **C** 24 m
- **D** 20 m^2

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3 A picture is 7 cm by 3 cm. A border runs around the edge of the picture. What is the perimeter of the picture?

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4 A wall is 7 m by 3 m. Paint covers the whole wall. What is the area of the wall?

- **A** 20 m
- **B** 21 m^2
- **C** 21 m
- **D** 20 m^2

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5 A border around a picture uses perimeter or area?

- **A** Perimeter
- **B** Area

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6

Tiling a floor uses perimeter or area?

A Perimeter

B Area

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7

A fence runs around a square garden with side 7 m. How much fencing is needed?

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8 A square floor has side 7 m. Tiles cover the whole floor. What is the area of the floor?

A 28 m

B 49 m

C 28 m^2

D 49 m^2

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9 A square garden has a perimeter of 36 m. How long is each side?

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10 **A square floor has an area of 36 m². How long is each side?**

A 6 m

B 9 m

C 18 m

D 12 m

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ANSWER KEY

1. 20

2. 24 m^2

3. 20

4. 21 m^2

5. Perimeter

6. Area

7. 28

8. 49 m^2

9. 9

10. 6 m

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