

Perimeter, Area & Volume

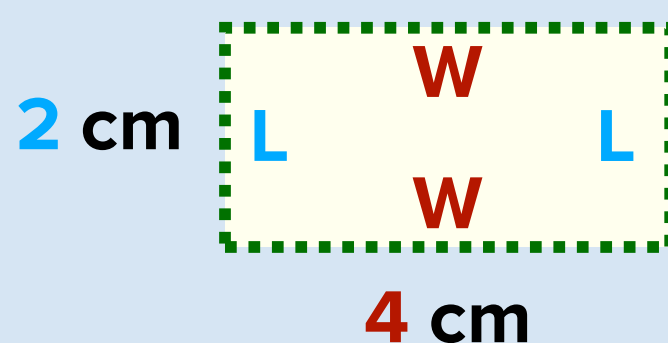
Perimeter is the length around the outside of a 2D shape.

Perimeter = P

Length = L

Width = W

Perimeter = **length** + **width** + **length** + **width**



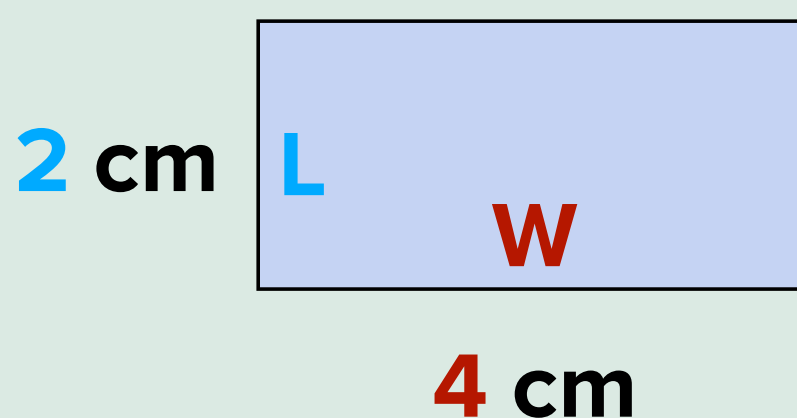
$$2 + 4 + 2 + 4 = 12$$

Perimeter = **12 cm**

You could also use the formula $P = 2(L+W)$

Area is the amount of space taken up by a 2D shape.

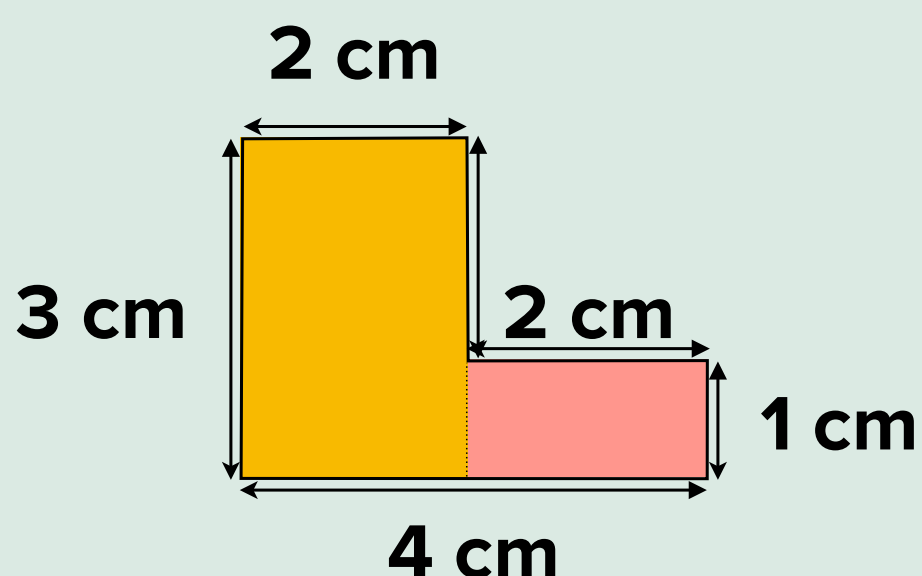
Area of a rectangle



Area = **length** × **width**

$$2 \text{ cm} \times 4 \text{ cm} = 8 \text{ cm}^2$$

Area of a compound shape



Split the shape up into smaller rectangles.

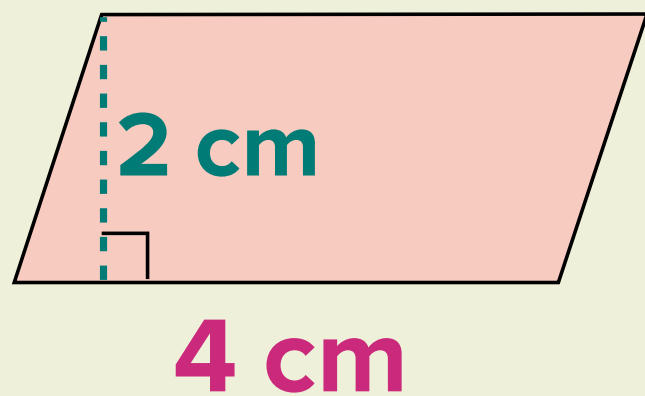
$$3 \text{ cm} \times 2 \text{ cm} = 6 \text{ cm}^2$$

$$1 \text{ cm} \times 2 \text{ cm} = 2 \text{ cm}^2$$

$$6 \text{ cm}^2 + 2 \text{ cm}^2 = 8 \text{ cm}^2$$

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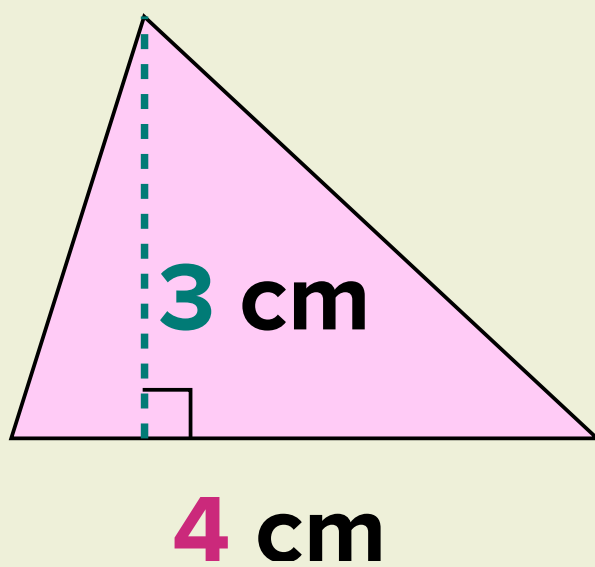
Area of a parallelogram



Area = **base** × **perpendicular height**

$$4 \text{ cm} \times 2 \text{ cm} = 8 \text{ cm}^2$$

Area of a triangle



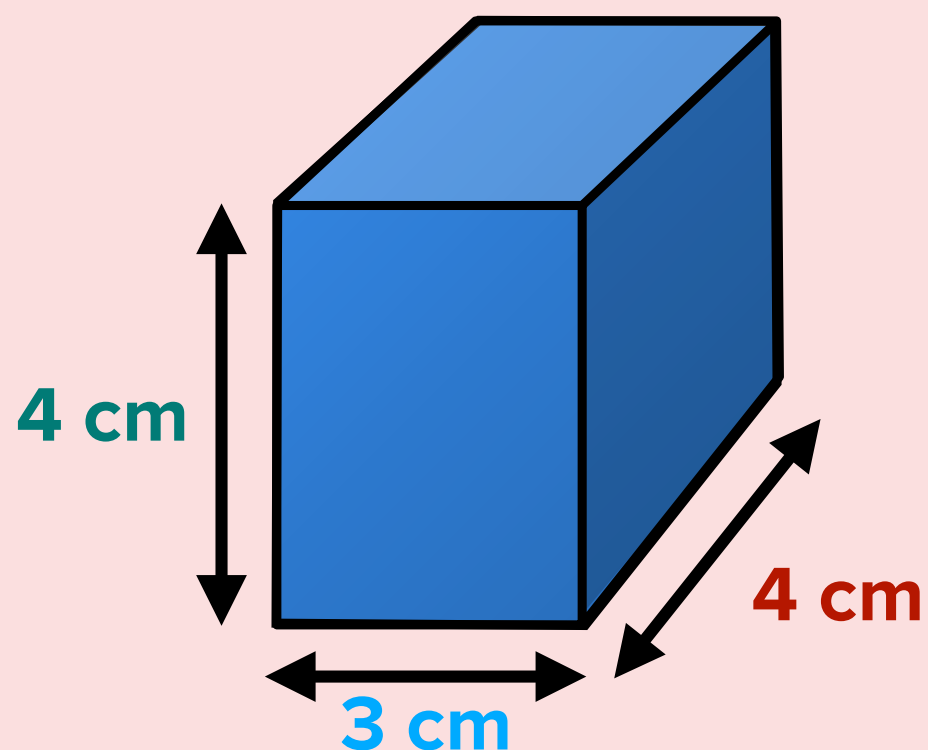
Area = $\frac{\text{base} \times \text{perpendicular height}}{2}$

$$\frac{4 \text{ cm} \times 3 \text{ cm}}{2}$$

$$12 \text{ cm}^2 \div 2 = 6 \text{ cm}^2$$

Volume is the amount of space taken up by a 3D shape.

Volume of a cuboid



Volume = **length** × **width** × **height**

$$3 \text{ cm} \times 4 \text{ cm} \times 4 \text{ cm} = 48 \text{ cm}^3$$