Perimeter, Area and Volume - Year 6

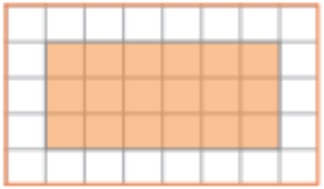
Knowledge Organiser

Key Vocabulary

- perimeter
- area
- volume
- cubic units (e.g. cm^3)
- cuboid
- width
- length
- rectangle
- rectilinear
- parallelogram
- perpendicular height

Area of Rectangles

length × width = area of a rectangle



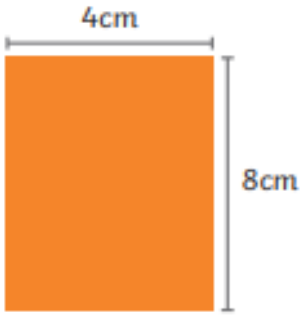
Counting squares:

area = $18cm^2$

Use formula:

6cm × 3cm

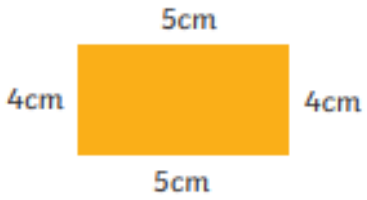
area = $18cm^2$



8cm × 4cm area = $32cm^2$

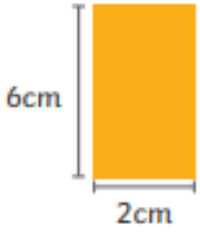
Perimeter of Rectangles

perimeter = length + width + length + width or (length + width) × 2



5cm + 4cm + 5cm + 4cm

perimeter = 18cm

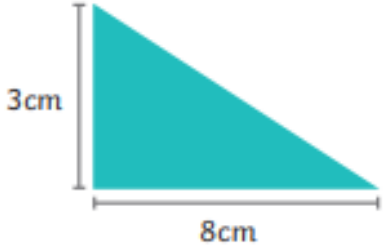


(6 + 2) × 2

perimeter = 16cm

Area of Triangles

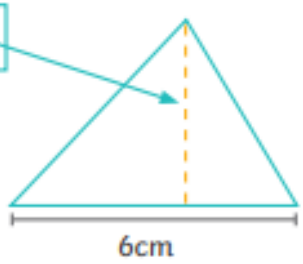
base × perpendicular height ÷ 2 = area of a triangle



8cm × 3cm ÷ 2

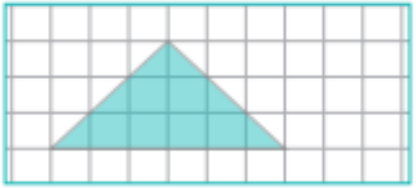
area = $12cm^2$

perpendicular height = 5cm



6cm × 5cm ÷ 2

area = $15cm^2$



Counting squares:

6 whole squares = $6cm^2$

6 half squares = $3cm^2$

$6cm^2 + 3cm^2 = 9cm^2$

area = $9cm^2$

Using formula:

6cm × 3cm

÷ 2 = $9cm^2$

Images not drawn to scale

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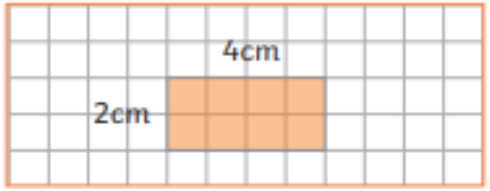
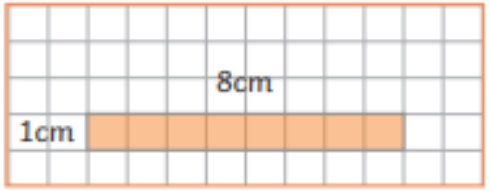
Perimeter and Area

Shapes with the same area can have different perimeters.

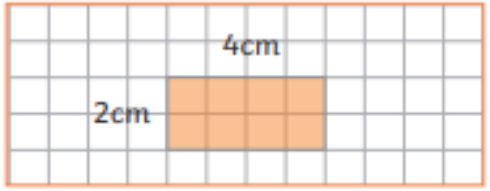


area = 8cm² perimeter = 12cm

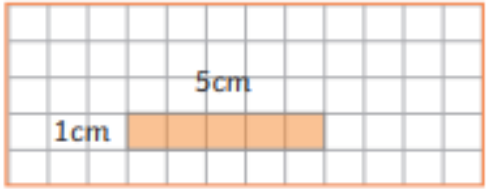


area = 8cm² perimeter =18cm

Shapes with the same perimeter can have different areas.



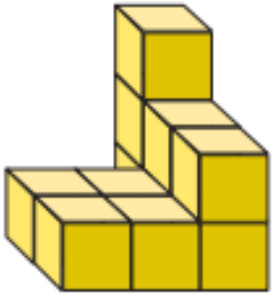
area = 8cm² perimeter = 12cm



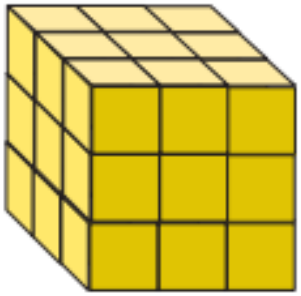
area = 5cm² perimeter = 12cm

Volume - Counting Cubes

= 1cm³



11cm³

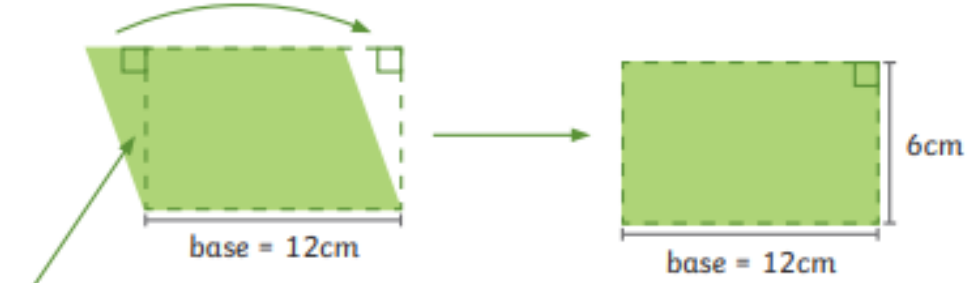


27cm³

Area of Parallelograms

base × perpendicular height = area of a parallelogram

A parallelogram can be transformed into a rectangle.

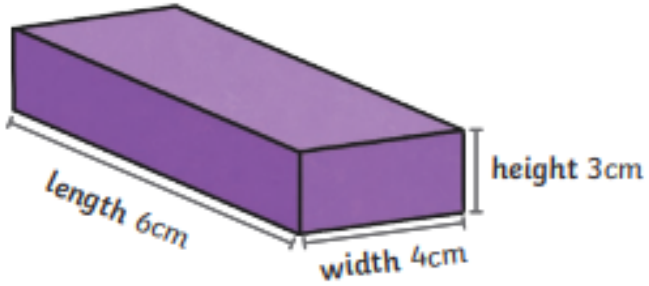


perpendicular height = 6cm

12cm × 6cm =72cm²

Volume of Cuboids

length × width × height = volume of a cuboid



Multiply dimensions in **any** order:
3cm × 6cm × 4cm
volume = 72cm³

Images not drawn to scale