Year 6 Perimeter, Area and Volume Knowledge Organiser.

Perimeter, Area and Volume — Knowledge Organiser

Key Vocabulary

- perimeter
- area
- volume
- cubic units (e.g. cm³)
- cuboid
- width
- length
- rectangle
- rectilinear
- parallelogram
- perpendicular height

Area of Rectangles

length × width = area of a rectangle
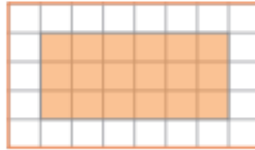
Counting squares:
area = 18cm²
Use formula:
6cm × 3cm
area = 18cm²
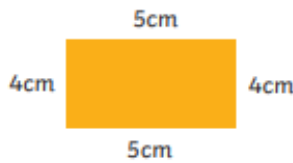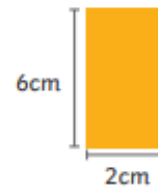
4cm

8cm
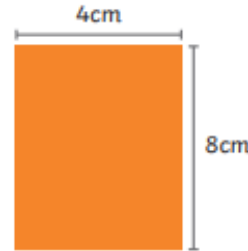
8cm × 4cm area = 32cm²

Perimeter of Rectangles

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

5cm

4cm   4cm

5cm

5cm + 4cm + 5cm + 4cm
area = 18cm²

6cm

2cm

(6 + 2) × 2
area = 16cm²

Area of Triangles

base × perpendicular height ÷ 2 = area of a triangle

3cm

8cm
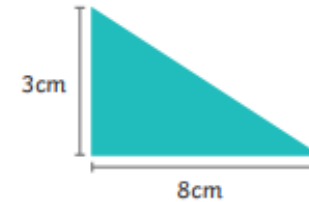
8cm × 3cm ÷ 2
area = 12cm²

perpendicular height = 5cm

6cm
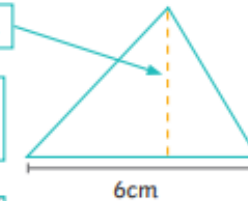
6cm × 5cm ÷ 2
area = 15cm²

Counting squares:
6 whole squares = 6cm²
6 half squares = 3cm²
6cm² + 3cm² = 9cm²
area = 9cm²

Using formula:
6cm × 3cm
÷ 2 = 9cm²

Perimeter, Area and Volume

Perimeter and Area
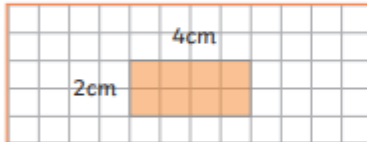
Shapes with the same area can have different perimeters.
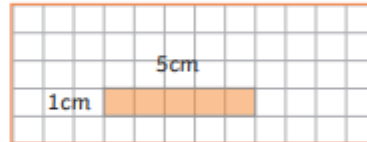
4cm
2cm

area = 8cm²   perimeter = 12cm

8cm
1cm

area = 8cm²   perimeter = 18cm

Shapes with the same perimeter can have different areas.

4cm
2cm
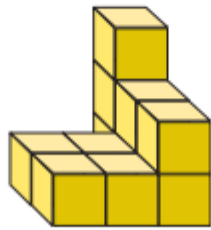
area = 8cm²   perimeter = 12cm
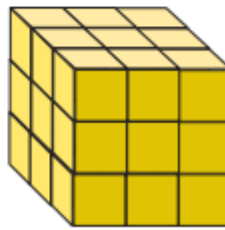
5cm
1cm

area = 5cm²   perimeter = 12cm
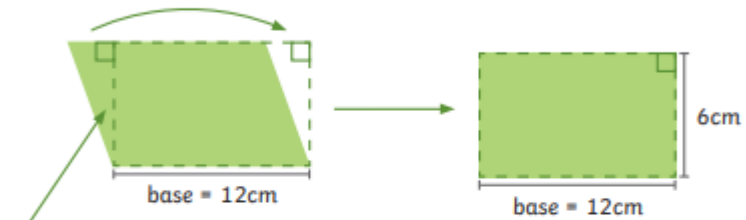
Volume - Counting Cubes

= 1cm³   11cm³   27cm³

Area of Parallelograms

base × perpendicular height = area of a parallelogram
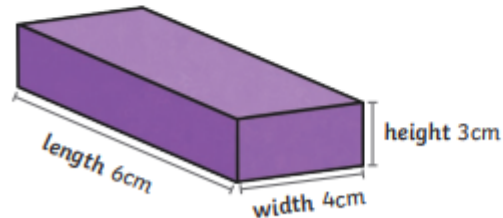
A parallelogram can be transformed into a rectangle.

base = 12cm   base = 12cm   6cm

perpendicular height = 6cm   12cm × 6cm = 72cm²

Volume of Cuboids

length × width × height = volume of a cuboid

length 6cm   width 4cm   height 3cm

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