

Perimeter, Area and Volume

Key Vocabulary

perimeter

area

volume

cubic units (e.g. cm^3)

cuboid

width

length

rectangle

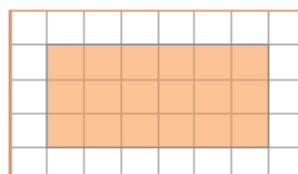
rectilinear

parallelogram

perpendicular height

Area of Rectangles

$\text{length} \times \text{width} = \text{area of a rectangle}$



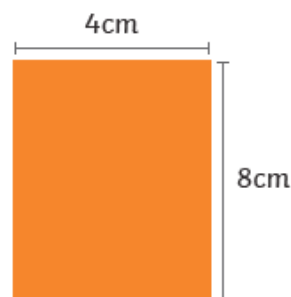
Counting squares:

area = 18cm^2

Use formula:

$6\text{cm} \times 3\text{cm}$

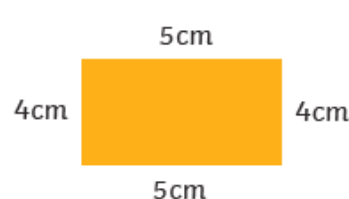
area = 18cm^2



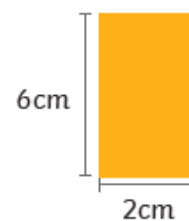
$8\text{cm} \times 4\text{cm} \text{ area} = 32\text{cm}^2$

Perimeter of Rectangles

$\text{perimeter} = \text{length} + \text{width} + \text{length} + \text{width}$ or $(\text{length} + \text{width}) \times 2$



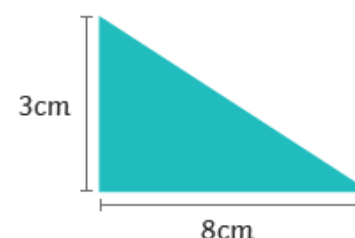
$5\text{cm} + 4\text{cm} + 5\text{cm} + 4\text{cm}$
area = 18cm^2



$(6 + 2) \times 2$
area = 16cm^2

Area of Triangles

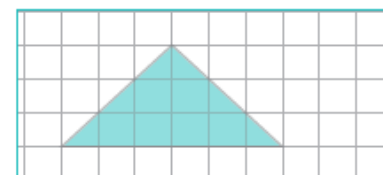
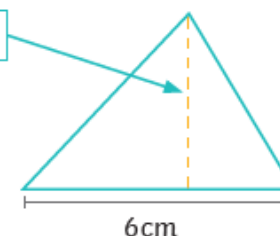
$\text{base} \times \text{perpendicular height} \div 2 = \text{area of a triangle}$



$8\text{cm} \times 3\text{cm} \div 2$
area = 12cm^2

perpendicular height = 5cm

$6\text{cm} \times 5\text{cm} \div 2$
area = 15cm^2



Counting squares:

6 whole squares = 6cm^2

6 half squares = 3cm^2

$6\text{cm}^2 + 3\text{cm}^2 = 9\text{cm}^2$

area = 9cm^2

Using formula:

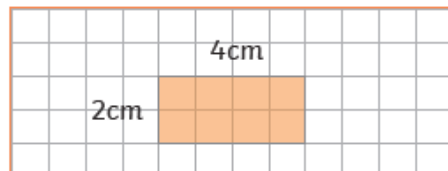
$6\text{cm} \times 3\text{cm}$

$\div 2 = 9\text{cm}^2$

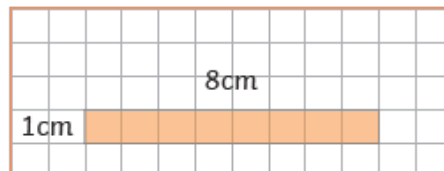
Perimeter, Area and Volume

Perimeter and Area

Shapes with the same area can have different perimeters.

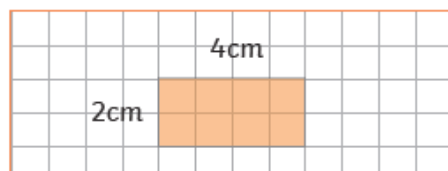


area = 8cm^2 perimeter = 12cm

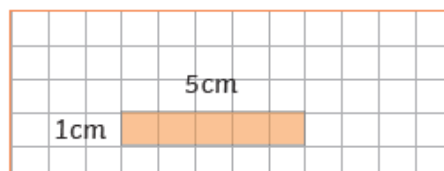


area = 8cm^2 perimeter = 18cm

Shapes with the same perimeter can have different areas.



area = 8cm^2 perimeter = 12cm

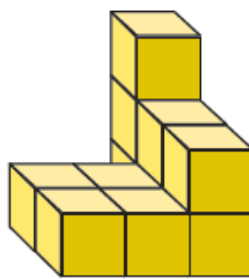


area = 5cm^2 perimeter = 12cm

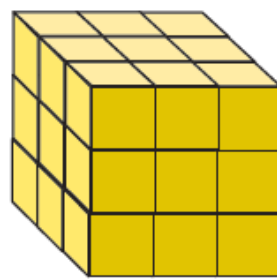
Volume - Counting Cubes



= 1cm^3



11cm^3

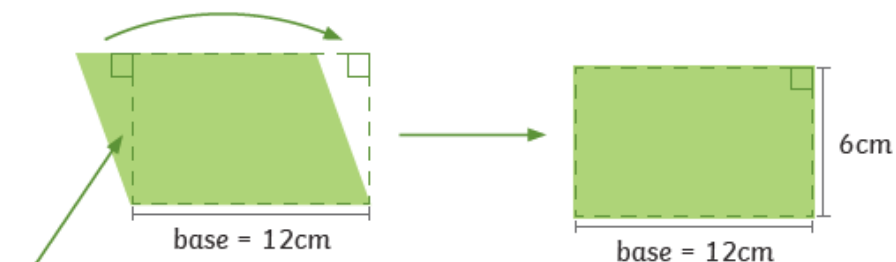


27cm^3

Area of Parallelograms

base $\times$ perpendicular height = area of a parallelogram

A parallelogram can be transformed into a rectangle.

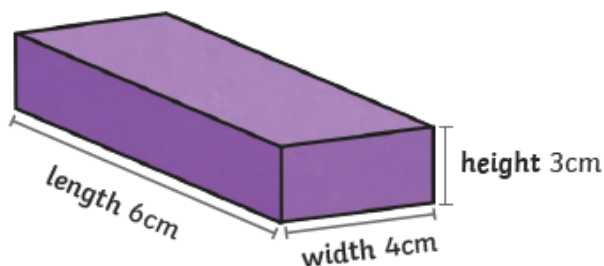


perpendicular height = 6cm

$12\text{cm} \times 6\text{cm} = 72\text{cm}^2$

Volume of Cuboids

length $\times$ width $\times$ height = volume of a cuboid



Multiply dimensions in **any** order:

$3\text{cm} \times 6\text{cm} \times 4\text{cm}$

volume = 72cm^3