

**Key Vocabulary**

perimeter

area

volume

cubic units (e.g. cm<sup>3</sup>)

cuboid

width

length

rectangle

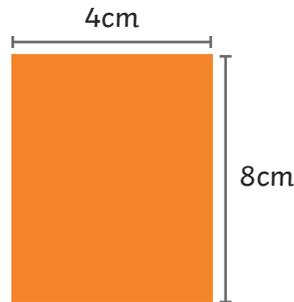
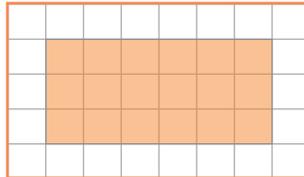
rectilinear

parallelogram

perpendicular height

**Area of Rectangles**

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



**Counting squares:**

$\text{area} = 18\text{cm}^2$

**Use formula:**

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

$\text{area} = 18\text{cm}^2$

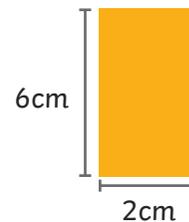
$8\text{cm} \times 4\text{cm} \text{ area} = 32\text{cm}^2$

**Perimeter of Rectangles**

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



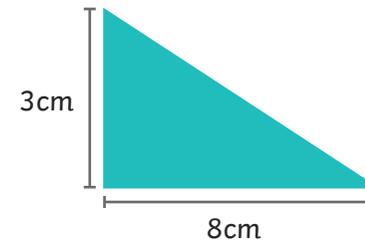
$5\text{cm} + 4\text{cm} + 5\text{cm} + 4\text{cm}$   
 $\text{area} = 18\text{cm}^2$



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

**Area of Triangles**

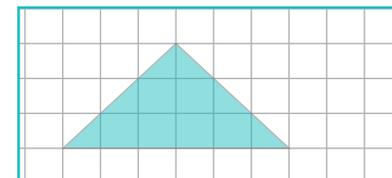
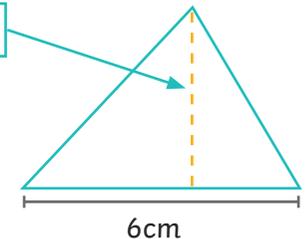
$\text{base} \times \text{perpendicular height} \div 2 = \text{area of a triangle}$



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

**perpendicular height = 5cm**

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



**Counting squares:**

6 whole squares =  $6\text{cm}^2$

6 half squares =  $3\text{cm}^2$

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

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

**Using formula:**

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

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

Perimeter and Area

Shapes with the same area can have different perimeters.

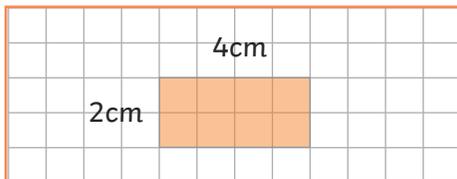


area =  $8\text{cm}^2$  perimeter =  $12\text{cm}$

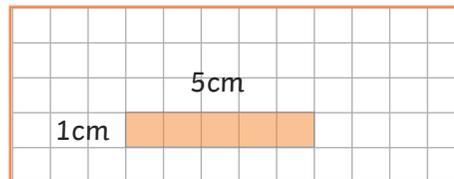


area =  $8\text{cm}^2$  perimeter =  $18\text{cm}$

Shapes with the same perimeter can have different areas.

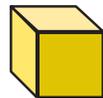


area =  $8\text{cm}^2$  perimeter =  $12\text{cm}$

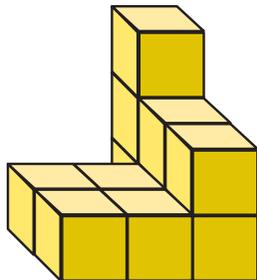


area =  $5\text{cm}^2$  perimeter =  $12\text{cm}$

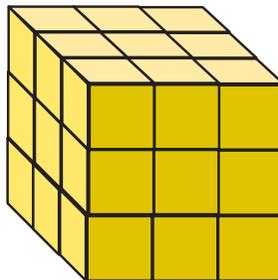
Volume - Counting Cubes



=  $1\text{cm}^3$



$11\text{cm}^3$

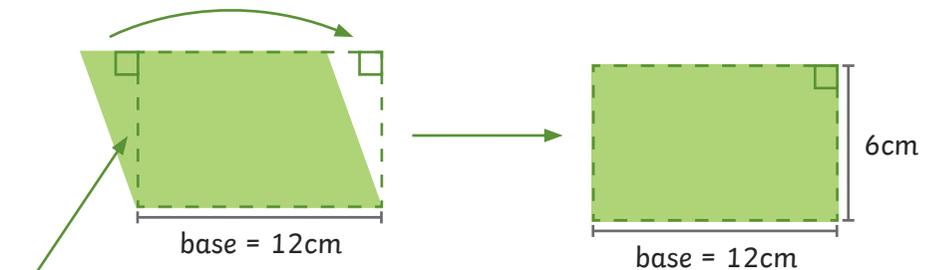


$27\text{cm}^3$

Area of Parallelograms

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

A parallelogram can be transformed into a rectangle.

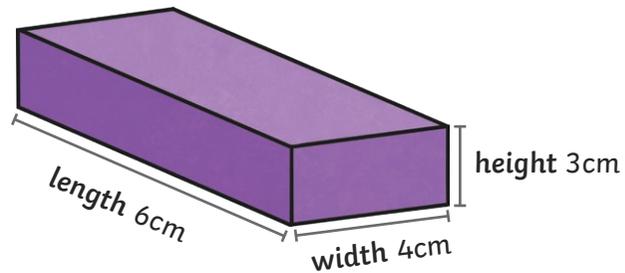


perpendicular height =  $6\text{cm}$

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

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 =  $72\text{cm}^3$