

### Key Vocabulary

perimeter

area

volume

cubic units (e.g.  $\text{cm}^3$ )

cuboid

width

length

rectangle

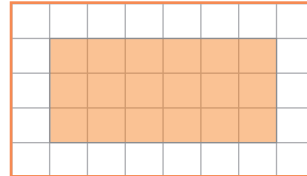
rectilinear

parallelogram

perpendicular height

### Area of Rectangles

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



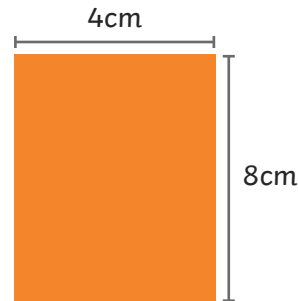
**Counting squares:**

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

**Use formula:**

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

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



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

### Perimeter of Rectangles

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

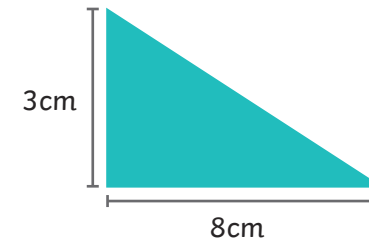


$5\text{cm} + 4\text{cm} + 5\text{cm} + 4\text{cm}$   
area =  $18\text{cm}^2$

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

### Area of Triangles

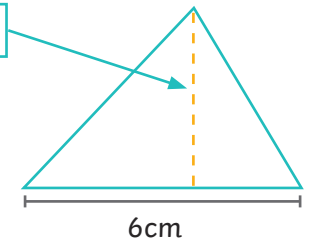
$\text{base} \times \text{perpendicular height} \div 2 = \text{area of a triangle}$



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

**perpendicular height** = 5cm

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



**Counting squares:**

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

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

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

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.

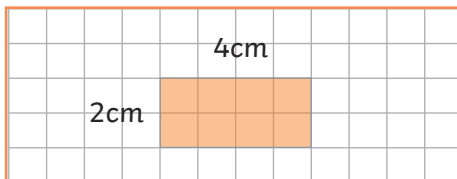


area =  $8\text{cm}^2$  perimeter = 12cm

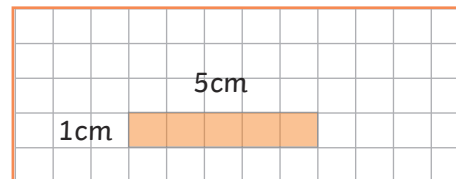


area =  $8\text{cm}^2$  perimeter = 18cm

Shapes with the same perimeter can have different areas.



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

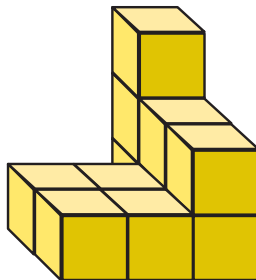


area =  $5\text{cm}^2$  perimeter = 12cm

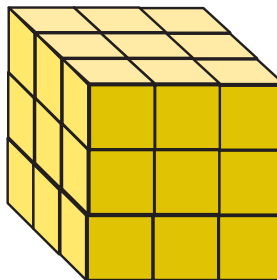
## Volume - Counting Cubes



=  $1\text{cm}^3$



$11\text{cm}^3$

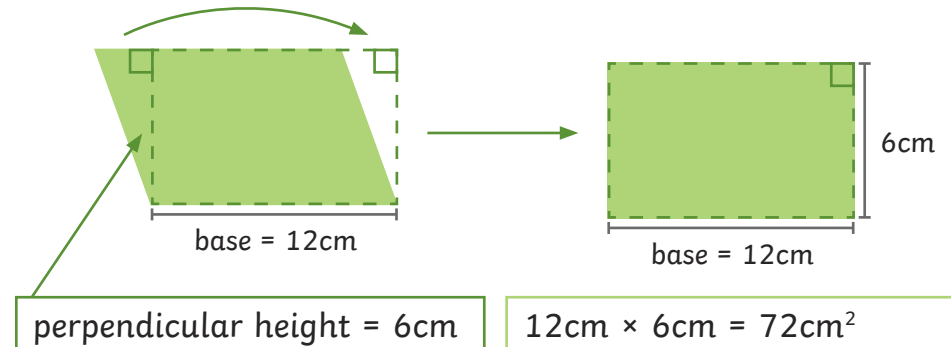


$27\text{cm}^3$

## Area of Parallelograms

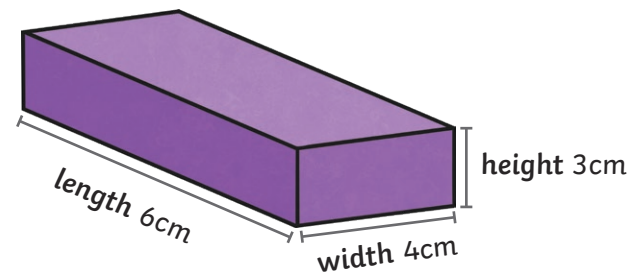
base  $\times$  perpendicular height = area of a parallelogram

A parallelogram can be transformed into a rectangle.



## 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 =  $72\text{cm}^3$