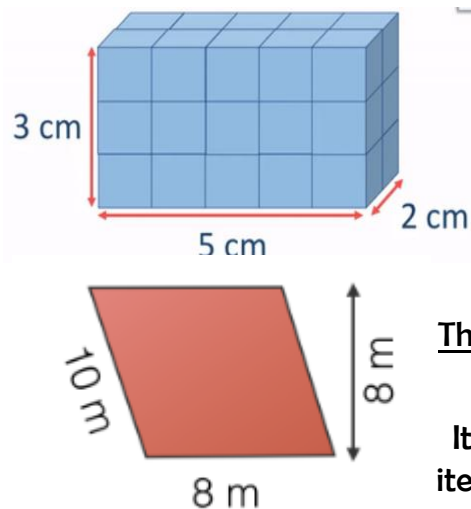


Overview

In our area, perimeter and volume unit we learn about:



- Shapes with Same Area
- Area and Perimeter
- Area of a Triangle
- Area of a Parallelogram
- What is Volume?
- Volume – Counting Cubes
- Volume of a Cuboid

This learning is important because it helps us to understand and measure the size of things in the world around us.

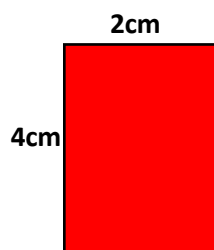
It helps us to grasp ideas such as where things will fit, what size items are in comparison to one another and distances that need to be travelled.

Area of Rectangles, Compound and Irregular Shapes

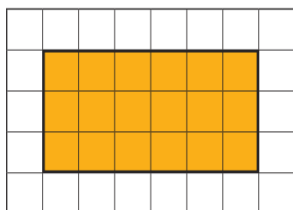
-Area is the term used to describe the amount of space taken up by a 2D shape or surface.

-Area is measured in square units - cm^2 , m^2 or km^2 .

RECTANGLES: We calculate the area of rectangles by multiplying the length by the width.

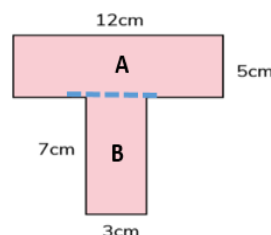


The length is 4cm. The width is 2cm. So, the area is $4cm \times 2cm = 8cm^2$



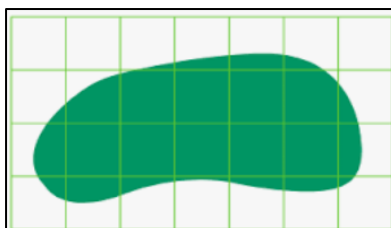
We can calculate the area of a rectangle on a grid. E.g. this rectangle is 6 squares x 3 squares = 18 squares.

COMPOUND SHAPES: Divide the shape into rectangles with known lengths and widths.



-E.g. area of rectangle A = $12cm \times 5cm = 60cm^2$. Area of rectangle B = $7cm \times 3cm = 21cm^2$
 $60cm^2 + 21cm^2 = 81cm^2$

IRREGULAR SHAPES: We can estimate the area of irregular shapes on grids by adding the number of whole squares to half the number of part squares.

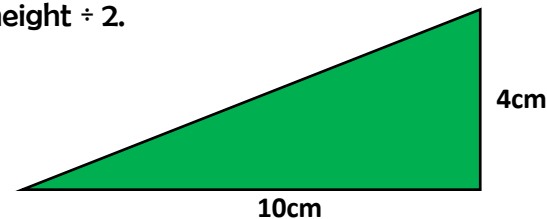


E.g. Whole squares = 7 Part squares = 18
 -Estimate = $7cm$ (whole squares) + $9cm$ (half part squares) = $16cm^2$

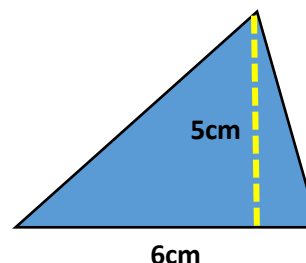
Area of Triangles and Parallelograms

Area of Triangles

Area of triangle = base x perpendicular height $\div 2$.



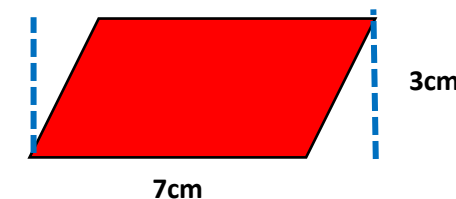
Base = 10cm Height = 4cm
 $10cm \times 4cm = 40cm$
 $40cm \div 2 = 20cm^2$



Base = 6cm Perpendicular Height = 5cm
 $6cm \times 5cm = 30cm$
 $30cm \div 2 = 15cm^2$

Area of Parallelograms

Area of parallelogram = base x perpendicular height.



Base = 7cm Perpendicular Height = 3cm
 $7cm \times 3cm = 21cm^2$

PERPENDICULAR HEIGHT

Perpendicular height means the height measured at a right angle from the base.

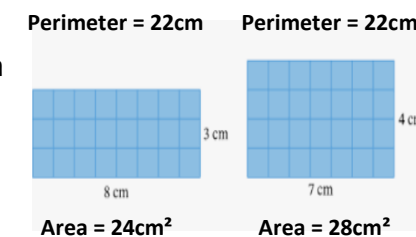
Perimeter and Area/ Volume

Perimeter and Area

-It is important to remember that shapes with the same perimeter can have different areas.

-Likewise, shapes with the same area can have different perimeters.

-See the example on the right.

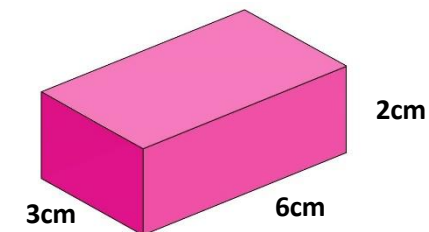


Volume of Cuboids

The volume of a cuboid is the length x the width x the height.

The volume is presented in cm/m^3 (cubed).

E.g. The volume of the cuboid on the right is: $6cm \times 3cm \times 2cm = 36cm^3$.



Key Vocabulary

Length Height Width Area Perimeter Volume Base Rectilinear Kilometre (km) Perpendicular Dimensions