

Volume is the amount of solid space that something takes up. Volume is measured in cubed units. For example, cubic centimetres (cm<sup>3</sup>) or cubic metres (m<sup>3</sup>).



You can calculate the volume of shapes in different ways

## Key Vocabulary

length

width

height

cubed

cubic  
centimetre

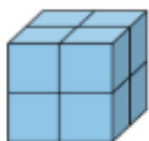
cube

cuboid

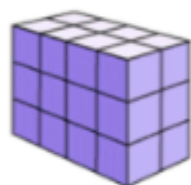
faces

### Cubes and Cuboids

- 1) Work out the area of one face.
- 2) Multiply the area of that face by the depth of the shape.



$$\begin{aligned} \text{Area of face} &= 2\text{cm} \times 2\text{cm} = 4\text{cm}^2 \\ 4\text{cm}^2 \times 2\text{cm} &= 8\text{cm}^3 \\ \text{Volume} &= 8\text{cm}^3 \end{aligned}$$



$$\begin{aligned} \text{Area of face} &= 2\text{cm} \times 3\text{cm} = 6\text{cm}^2 \\ 6\text{cm}^2 \times 4\text{cm} &= 24\text{cm}^3 \\ \text{Volume} &= 24\text{cm}^3 \end{aligned}$$

### Irregular Shapes

You can simply count the amount of squares.



6cm<sup>3</sup>



10cm<sup>3</sup>



8cm<sup>3</sup>



For shapes like this you can use the strategy for cubes and cuboids and then take away the missing cubes.

$$8\text{cm}^2 \times 2\text{cm} = 16\text{cm}^3$$

$$16\text{cm}^3 - 1\text{cm}^3 = 15\text{cm}^3$$

$$\text{Volume} = 15\text{cm}^3$$



Difference between Volume and Capacity:  
**Capacity** is the amount of liquid a container can hold.  
**Volume** is how much space an object takes up.