Your notes

KS3 Maths: revision notes

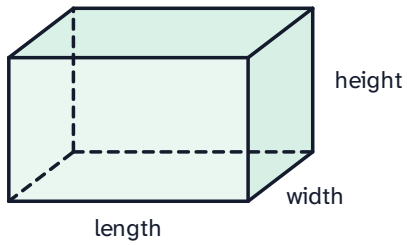
Volume

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Volume

- **Volume** is the amount of space inside a 3D shape, measured in cubic units such as cm^3 and m^3.
- **Cuboid**: length × width × height. A **cuboid** 5 cm by 4 cm by 3 cm has a **volume** of 60 cm^3. Cube: side × side × side.
- **Prism**: area of the **cross-section** × length. A triangular **prism** with a triangle of base 4 cm and height 3 cm, and a length of 10 cm, has a volume of 6 × 10 = 60 cm^3.
- Cylinder: $\pi \times \text{radius}^2 \times \text{height}$.



Surface area

- The **surface area** is the total area of all the faces. Sketch the net to help.
- A **cuboid** has three pairs of faces: **surface area** = 2 × (lw + lh + wh). A cube with sides of 2 cm has a **surface area** of 6 × 4 = 24 cm^2.

Capacity

- **Capacity** is how much a container holds. 1 cm^3 = 1 ml, and 1000 cm^3 = 1 **litre**.
- 1 m^3 = 1 000 000 cm^3 = 1000 **litres**.

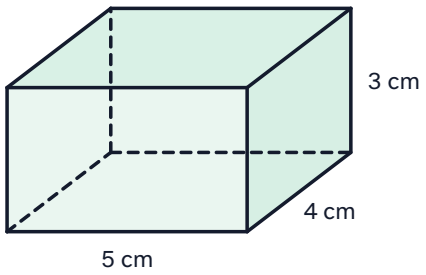
Key terms

Volume	The amount of space inside a 3D shape.
Cubic centimetre	A unit of volume: a cube with sides of 1 cm (cm^3).
Cuboid	A 3D shape with six rectangular faces.
Prism	A 3D shape with the same cross-section all along its length.
Cross-section	The shape you see when you cut straight through a prism.
Surface area	The total area of all the faces of a 3D shape.
Capacity	How much a container can hold.
Litre	A unit of capacity equal to 1000 cm^3.

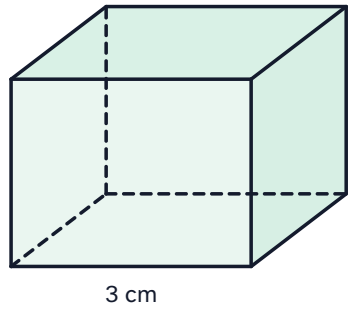
Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What is the volume of a cuboid 5 cm by 4 cm by 3 cm?



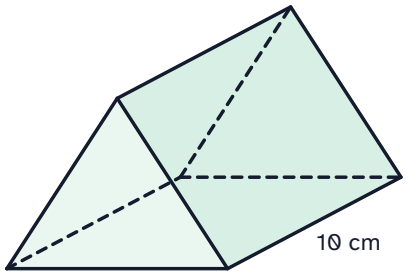
2. What is the volume of a cube with sides of 3 cm?



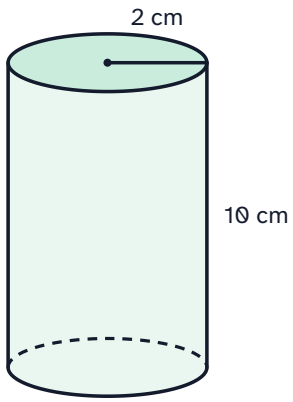
3. How do you find the volume of a prism?

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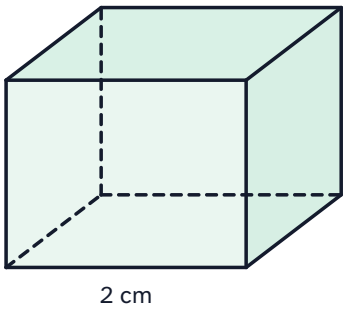
4. A prism has a cross-section of 12 cm^2 and a length of 10 cm. What is its volume?



5. How many cm^3 are in 1 litre?
6. What is the volume of a cylinder with a radius of 2 cm and a height of 10 cm? (Use $\pi = 3.14$.)



7. What is the surface area of a cube with sides of 2 cm?



8. A tank holds 5000 cm^3 of water. How many litres is this?

Answers

1. 60 cm^3
2. 27 cm^3
3. Area of the cross-section times the length
4. 120 cm^3
5. 1000

Your notes

6. 125.6 cm^3
7. 24 cm^2
8. 5 litres

What to do next

Practise 12 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

Free revision for GCSE and KS3 at lycolearn.co.uk. Some notes are for one exam board only, and say so in brackets.

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