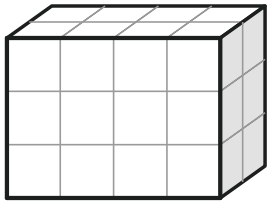
How Volume Works

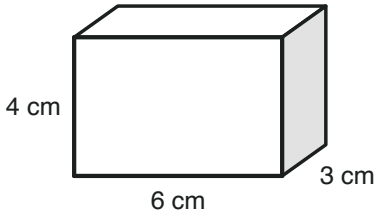
Cubic units, rectangular prisms, base area × height, and composite solids.

1. Volume is the space inside a solid



Volume is measured in **cubic units**: how many unit cubes fill the solid. The bottom layer of this prism has 4 × 2 = 8 cubes. There are 3 layers, so the volume is **8 × 3 = 24 cubic units**.

2. Rectangular prisms: length × width × height

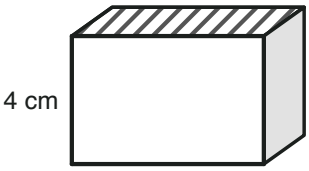


Volume = length × width × height

6 × 3 × 4 = 72 cubic cm

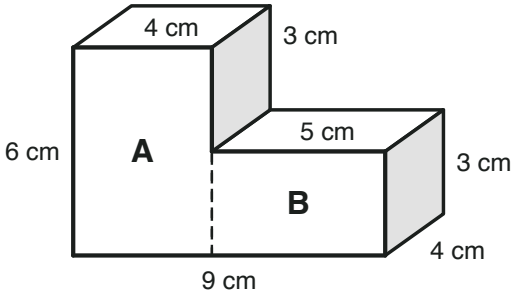
Volume uses **cubic** units: cubic cm, cubic m, cubic in, cubic ft. You may also see cm^3 or ft^3.

3. Or: area of the base × height



The base of that prism is 6 cm by 3 cm, so the **area of the base** is 18 sq cm. Each layer 1 cm tall holds 18 cubes, and there are 4 layers. **18 × 4 = 72 cubic cm**, the same answer.

4. Composite solids: split into prisms and add



A: 4 × 4 × 6 = 96

B: 5 × 4 × 3 = 60

96 + 60 = 156 cubic cm

5. Missing edge: divide

A box has a volume of 60 cubic m. It is 5 m long and 4 m wide. Multiply the edges you know: 5 × 4 = 20. Then divide: **60 ÷ 20 = 3 m** tall.

Try it: A box is 5 cm long, 2 cm wide and 6 cm tall. **Volume = _____ cubic cm**

Answer: 60 cubic cm