

Measurement 4, Volume and scaling

Curious Cuboids

How this will help your child

- This activity will allow your child to practise finding the volume of cuboids.
- It will also help them to understand how to use a formula to identify the correct calculation to use.

Words and phrases to use

cuboid, volume (how much space something takes up), width, length, height, dimensions, cubic centimetres (cm³), formula

You will need

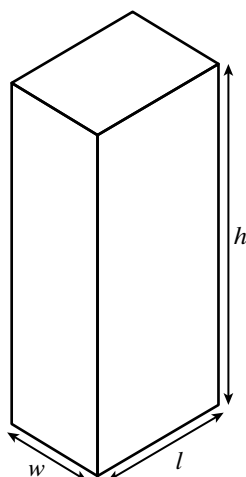
- A pencil

During the activity, look at what your child can do

- Use the formula to find the volume of a cuboid.

What to do

- Look at the picture and table on the Curious Cuboids sheet with your child. Talk about what they show: four cuboids, A–D, each one larger than the last and each with the same height, 10 cm.



Volume of a cuboid = width × length × height
or
 $V = w \times l \times h$

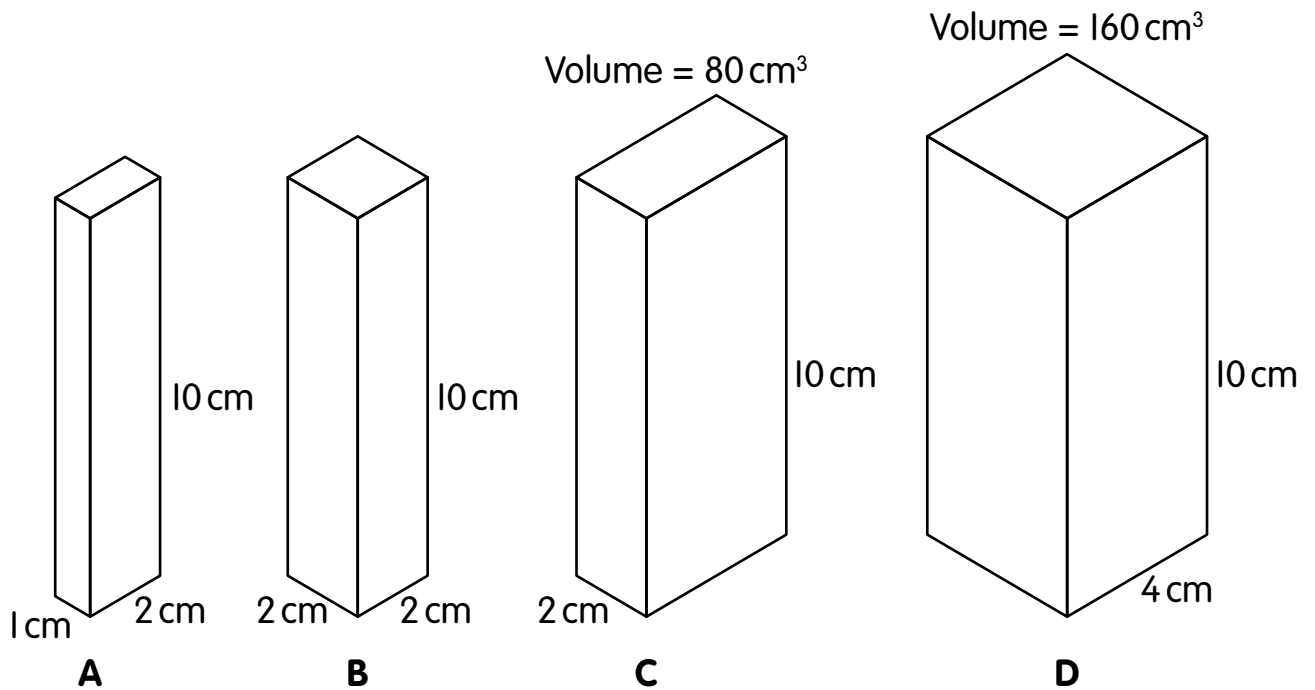
1

- Talk with your child about what volume is – the amount of space something takes up – and the units it is measured in, cubic centimetres (cm³) or, for liquids, millilitres (ml).
- Look at Cuboid A together. Talk about how to calculate its volume, helping your child to explain the formula for the volume of a cuboid, Volume = width × length × height. **1** Work together to match the width, length and height in the table with the picture of Cuboid A.
- Ask your child to work out the volume of Cuboid A and enter it in the table ($1 \times 2 \times 10 = 2 \times 10 = 20$). Emphasize that, since the units used for width, length and height are centimetres, the unit of the volume is cubic centimetres.
- Ask your child to calculate the volume of Cuboid B and enter it in the table ($2 \times 2 \times 10 = 4 \times 10 = 40$).
- Next, ask your child how to use the volume, width and height to work out the missing length for Cuboid C. Help them to identify that in this case $2 \times \text{length} \times 10 = 80$, and that the only way this could be true is if the length is 4 cm.
- Talk with your child about how to calculate the missing width for Cuboid D: width × 4 × 10 = 160. So width × 40 = 160. They can then divide 160 by 40 to find the width (4 cm).

Next steps ...

- Ask your child to identify cuboid-shaped objects around the house, e.g. boxes, food cartons, books. Challenge them to estimate the volume of each object, then measure its dimensions (width, length and height), calculate the volume and compare it with their estimate.
- While out and about look for cuboid-shaped objects (e.g. litter bins, phone boxes) and ask your child to estimate their volumes by first estimating the dimensions (in centimetres or in metres).

Curious Cuboids



Cuboid	Width (cm)	Length (cm)	Height (cm)	Volume (cm ³)
A	1	2	10	
B	2	2	10	
C	2		10	80
D		4	10	160