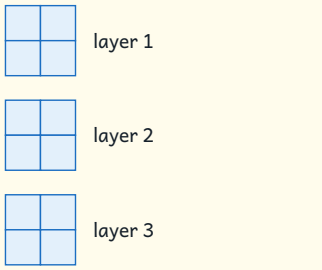
Lesson 58

Volume — counting unit cubes in a cuboid

COUNTING CUBES IN A CUBOID

1. The bottom layer is **2** cubes wide and **2** cubes deep, so it holds **2** × **2** = **4** cubes.
2. The cuboid is **3** cubes high, so there are **3** equal layers.
3. Multiply: **4** × **3** = **12**.



2 x 2 = 4 cubes per layer, 3 layers

WARM-UP

Use the squared space to draw the cube builds and work out how many cubes each holds.

Patterns

1. Sketch a cuboid 2 cubes wide, 2 cubes deep and 3 cubes high, then write its total (2 x 2) x 3.
2. Sketch the crate 5 cubes wide, 3 cubes deep and 4 cubes high, then work out (5 x 3) x 4.
3. For Mia's box, write the bottom layer 6 x 4, then multiply by the 5 layers to find (6 x 4) x 5.

PRACTICE

1. Sam builds a wall of cubes that is **3** cubes wide and **2** cubes high in one layer. How many unit cubes does it hold?

SPOT THE MISTAKE

Sean counts the unit cubes in a cuboid that is 4 cubes long, 3 cubes wide and 2 cubes high like this:

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4 × 3 = 12
Volume = 12 cubes
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Sean is wrong. What did he forget? What is the correct volume?

REFLECT How is counting cubes for volume different from counting squares for area?

MEASURES