Y5 Area Perimeter Volume

KS2 Y5 Maths · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

A cuboid is built from 1 cm cubes: 4 cubes long, 3 cubes wide and 2 layers high. What is its volume?

Step 1 · Cubes in one layer

$4 \times 3 = 12$

Step 2 · Two layers

$12 \times 2 = 24$

Answer: 24 cm^3

Check: Count the cubes in the top layer and double it: 12 + 12 = 24 ✓

2. Now try one with the steps

A cube is made from 1 cm cubes with 3 cubes along each edge. What is its volume?

Step 1 · One layer

Step 2 · 3 layers

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. A shape is made of 15 cubes, each 1 cm^3. What is its volume?

2. One layer of a cuboid has 5 × 2 cubes. There are 3 layers. What is the volume?

3. A cuboid is 3 cubes long, 3 cubes wide and 1 layer high. What is its volume?

4. A cube has 2 cubes along each edge. How many 1 cm cubes is it made from?

5. What unit would you use for the volume of a small box: cm^2, cm^3 or cm?

6. Which is the better estimate for the capacity of a bath: 150 ml or 150 litres?

7. A cuboid has 4 layers of 6 cubes. What is its volume?

8. A bottle holds 2 litres. How many millilitres is that?

9. A cuboid is 5 cubes long, 4 cubes wide and 3 layers high. What is its volume?

10. A cuboid has a volume of 36 cm^3. Each layer has 12 cubes. How many layers are there?

11. Using exactly 12 cubes, write two different cuboids you could build (length × width × layers).

12. A 1.5 litre bottle of squash fills glasses of 300 ml. How many glasses?

13. A cube is built from 64 small cubes. How many small cubes are along each edge?

14. A fish tank holds 30 litres. It is filled using a 750 ml jug. How many full jugs are needed?

4. Before you hand it in

Counting only the cubes you can see in a picture.
Count one layer (rows × cubes in a row), then multiply by the number of layers.

Writing a volume as 24 cm^2.
Volume is measured in cubes: cm^3 (cubic centimetres) or m^3.

Thinking capacity and volume are unrelated.

Volume is how much space something takes up. Capacity is how much a container can hold. 1 ml of water fills 1 cm^3.