

Volume of Cubes and Cuboids for Class 5

Unit: Geometry - Student Practice Worksheet

Overview: Kabir's toy box was a perfect cube. Anaya's was a long, low cuboid. Both held exactly the same number of 1 cm blocks — 216 of them. Same amount of space inside, two completely different shapes.

Practice Questions (30 Total)

Section A - Easy

Q1. Cuboid 4 cm by 3 cm by 2 cm. Volume?



- ☐ A. 24 cubic cm
- ☐ B. 9 cubic cm
- ☐ C. 24 sq cm
- ☐ D. 18 cubic cm

Q2. Volume is measured in:

- ☐ A. Square units
- ☐ B. Plain units
- ☐ C. Cubic units
- ☐ D. Litres only

Q3. A cube has sides of 3 cm. What is its volume?

- ☐ A. 9 cubic cm
- ☐ B. 27 cubic cm
- ☐ C. 6 cubic cm
- ☐ D. 3 cubic cm

Q4. Cube with 2 cm edges. Volume?



- ☐ A. 6 cubic cm
- ☐ B. 8 cubic cm
- ☐ C. 4 cubic cm
- ☐ D. 2 cubic cm

Q5. The formula for a cuboid's volume is:

- ☐ A. length $\times$ width
- ☐ B. side $\times$ side
- ☐ C. $2 \times (\text{length} + \text{width})$
- ☐ D. length $\times$ width $\times$ height

Q6. A cuboid is 5 cm long, 2 cm wide and 2 cm tall. What is its volume?

- ☐ A. 9 cubic cm
- ☐ B. 10 cubic cm
- ☐ C. 20 cubic cm
- ☐ D. 18 cubic cm

Q7. Stick cuboid 10 by 1 by 1. Volume?



- ☐ A. 10 cubic cm
- ☐ B. 12 cubic cm
- ☐ C. 100 cubic cm
- ☐ D. 1 cubic cm

Q8. The formula for a cube's volume is:

- ☐ A. side $\times$ side $\times$ side
- ☐ B. side $\times$ side
- ☐ C. $4 \times$ side
- ☐ D. $6 \times$ side

Q9. A unit cube has sides of exactly:

- ☐ A. 10 units
- ☐ B. 1 unit
- ☐ C. 100 units
- ☐ D. 0.5 units

Q10. A cube's sides are all:

- ☐ A. Different lengths
- ☐ B. Curved
- ☐ C. Always 1 cm
- ☐ D. Equal

Section B - Medium

Q11. Cube $6 \times 6 \times 6$ and cuboid $12 \times 6 \times 3$. Each volume?



- ☐ A. 216 each
- ☐ B. 108 each
- ☐ C. 72 and 216
- ☐ D. 216 and 432

Q12. A cube has a volume of 64 cubic cm. What is the length of one side?

- ☐ A. 8 cm
- ☐ B. 16 cm
- ☐ C. 32 cm
- ☐ D. 4 cm

Q13. The fish tank was 40 cm long, 20 cm wide and 25 cm tall. What is its volume?

- ☐ A. 800 cubic cm
- ☐ B. 20000 cubic cm
- ☐ C. 2000 cubic cm
- ☐ D. 85 cubic cm

Q14. Which pair of boxes can hold the same amount?



- ☐ A. 2×2×2 and 3×3×3
- ☐ B. 1×1×1 and 2×2×2
- ☐ C. 5×5×5 and 4×4×4
- ☐ D. 2×2×2 and 4×2×1

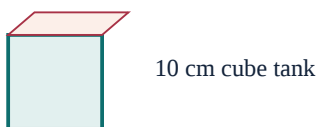
Q15. A cuboid has volume 60 cubic cm, length 5 cm and width 4 cm. What is its height?

- ☐ A. 3 cm
- ☐ B. 20 cm
- ☐ C. 12 cm
- ☐ D. 51 cm

Q16. A box is 8 cm long, 5 cm wide and 4 cm tall. What is its volume?

- ☐ A. 17 cubic cm
- ☐ B. 40 cubic cm
- ☐ C. 160 cubic cm
- ☐ D. 37 cubic cm

Q17. Cube tank, 10 cm edges. Water it holds?



- ☐ A. 30 cubic cm
- ☐ B. 100 cubic cm
- ☐ C. 1000 cubic cm
- ☐ D. 10 cubic cm

Q18. A cuboid's length is 6 cm, width 6 cm, height 6 cm. Is it also a cube?

- ☐ A. Yes, because all three sides are equal
- ☐ B. No, cuboids and cubes are unrelated
- ☐ C. Only if it holds water

- ☐ D. Only if the volume is odd

Q19. A carton is 15 cm long, 10 cm wide and 6 cm tall. What is its volume?

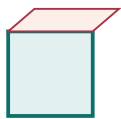
- ☐ A. 150 cubic cm
- ☐ B. 900 cubic cm
- ☐ C. 31 cubic cm
- ☐ D. 90 cubic cm

Q20. A cuboid is 12 cm long, 3 cm wide and 3 cm tall. What is its volume?

- ☐ A. 18 cubic cm
- ☐ B. 108 cubic cm
- ☐ C. 36 cubic cm
- ☐ D. 72 cubic cm

Section C - Challenge

Q21. Cube of 125 cubic cm. One side?



125 cubic cm cube

- ☐ A. 5 cm
- ☐ B. 25 cm
- ☐ C. 15 cm
- ☐ D. 41.6 cm

Q22. A cuboid's length and width are both doubled, but its height stays the same. What happens to its volume?

- ☐ A. It stays the same
- ☐ B. It doubles
- ☐ C. It becomes eight times as large
- ☐ D. It becomes four times as large

Q23. A rectangular tank 50 cm × 30 cm × 40 cm is filled with water. If 1 litre = 1000 cubic cm, how many litres does it hold?

- ☐ A. 6 litres
- ☐ B. 60 litres

- ☐ C. 600 litres
- ☐ D. 0.6 litres

Q24. Which cuboid holds more, $4 \times 3 \times 2$ or $6 \times 2 \times 2$?



- ☐ A. The first is larger
- ☐ B. The second is larger
- ☐ C. They are exactly equal, both 24 cubic units
- ☐ D. Cannot be determined without a ruler

Q25. All three sides of a cuboid are doubled. What happens to its volume?

- ☐ A. It becomes eight times as large
- ☐ B. It doubles
- ☐ C. It becomes four times as large
- ☐ D. It stays the same

Q26. A cube has a volume of 216 cubic cm. What is its side length?

- ☐ A. 36 cm
- ☐ B. 72 cm
- ☐ C. 6 cm
- ☐ D. 108 cm

Q27. 500 cubes, each 20 cm on a side. Total volume?



- ☐ A. 8,000 cubic cm
- ☐ B. 400,000 cubic cm
- ☐ C. 10,000 cubic cm
- ☐ D. 4,000,000 cubic cm

Q28. Why is volume measured in CUBIC units rather than square units?

- ☐ A. Because it counts unit cubes filling three-dimensional space
- ☐ B. Because volume is always bigger than area
- ☐ C. It's just a naming convention with no real reason
- ☐ D. Because cubes are the only shape with volume

Q29. A box has volume 240 cubic cm, height 5 cm, and length 8 cm. What is its width?

- ☐ A. 40 cm
- ☐ B. 6 cm
- ☐ C. 24 cm
- ☐ D. 48 cm

Q30. Ms. Rao's fish tank example showed 1 cubic cm of water fills exactly 1 cubic cm of space. Why does this matter for finding capacity?

- ☐ A. It only works for fish tanks, not other containers
- ☐ B. It means a container's volume in cubic cm directly tells you how much liquid it can hold
- ☐ C. It means water always has zero volume
- ☐ D. It has nothing to do with capacity

Answer Key

- Q1:** (A) (a) 24 cubic cm. Volume = $4 \times 3 \times 2 = 24$ cubic cm.
- Q2:** (C) (c) Cubic units, since it counts unit cubes.
- Q3:** (B) (b) 27 cubic cm. Volume = $3 \times 3 \times 3 = 27$ cubic cm.
- Q4:** (B) (b) 8 cubic cm. Volume = $2 \times 2 \times 2 = 8$ cubic cm.
- Q5:** (D) (d) length $\times$ width $\times$ height.
- Q6:** (C) (c) 20 cubic cm. Volume = $5 \times 2 \times 2 = 20$ cubic cm.
- Q7:** (A) (a) 10 cubic cm. Volume = $10 \times 1 \times 1 = 10$ cubic cm.
- Q8:** (A) (a) side $\times$ side $\times$ side.
- Q9:** (B) (b) 1 unit — the basic building block used to count volume.
- Q10:** (D) (d) Equal — that's what makes it a cube rather than a general cuboid.
- Q11:** (A) (a) 216 each. $6 \times 6 \times 6 = 216$ and $12 \times 6 \times 3 = 216$ — exactly equal volumes.
- Q12:** (D) (d) 4 cm. $4 \times 4 \times 4 = 64$.
- Q13:** (B) (b) 20000 cubic cm. Volume = $40 \times 20 \times 25 = 20,000$ cubic cm.
- Q14:** (D) (d) $2 \times 2 \times 2$ and $4 \times 2 \times 1$ — both give 8 cubic units, despite very different shapes.
- Q15:** (A) (a) 3 cm. Height = $60 \div (5 \times 4) = 60 \div 20 = 3$ cm.
- Q16:** (C) (c) 160 cubic cm. Volume = $8 \times 5 \times 4 = 160$ cubic cm.
- Q17:** (C) (c) 1000 cubic cm. Volume = $10 \times 10 \times 10 = 1000$ cubic cm.
- Q18:** (A) (a) Yes — a cube is simply a cuboid where all three sides happen to be equal.
- Q19:** (B) (b) 900 cubic cm. Volume = $15 \times 10 \times 6 = 900$ cubic cm.
- Q20:** (B) (b) 108 cubic cm. Volume = $12 \times 3 \times 3 = 108$ cubic cm.
- Q21:** (A) (a) 5 cm. $5 \times 5 \times 5 = 125$.
- Q22:** (D) (d) Four times as large — doubling two of the three factors multiplies the volume by $2 \times 2 = 4$.
- Q23:** (B) (b) 60 litres. Volume = $50 \times 30 \times 40 = 60,000$ cubic cm = 60 litres.
- Q24:** (C) (c) They are exactly equal, both 24 cubic units — $4 \times 3 \times 2 = 24$ and $6 \times 2 \times 2 = 24$.
- Q25:** (A) (a) Eight times as large — doubling all three factors multiplies the volume by $2 \times 2 \times 2 = 8$.
- Q26:** (C) (c) 6 cm. $6 \times 6 \times 6 = 216$.
- Q27:** (D) (d) 4,000,000 cubic cm. One box = $20 \times 20 \times 20 = 8000$ cubic cm; 500 boxes = $500 \times 8000 = 4,000,000$.
- Q28:** (A) (a) Because volume counts how many unit cubes fill a three-dimensional space, unlike area's flat unit squares.
- Q29:** (B) (b) 6 cm. Width = $240 \div (8 \times 5) = 240 \div 40 = 6$ cm.

Q30: (B) (b) It means a container's volume in cubic cm directly tells you how much liquid it can hold — volume and liquid capacity are the same measurement.

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