

Measuring Volume with Unit Cubes - Guided Lesson Explanation**Explanation#1**

Step 1) Remind yourself of the formula:

Volume of a rectangular prism = length x width x height

As the problems states each of those measures is 3 cm.

Step 2) The length is 4 cubes across or $4 \times 3 \text{ cm} = 12 \text{ cm}$

The width is 2 cubes or $2 \times 3 \text{ cm} = 6 \text{ cm}$

The height is 1 cube or $1 \times 3 \text{ cm} = 3 \text{ cm}$

Volume of this rectangular prism = $12 \text{ cm} \times 6 \text{ cm} \times 3 \text{ cm} = \mathbf{216 \text{ cm}^3}$

Step 3) The answer will be '**b**'.

Explanation#2

Back to our old friend: Volume = length x width x height

All the measures are 4 cm. We are going to do this one slightly different than before to show you an alternative method.

It stands to reason that if all the cubes are the same exact size, finding the volume of 1 cube would allow us to find the total volume. We can just multiple that volume by the number of cubes we have.

Volume of 1 cube = $4 \text{ cm} \times 4 \text{ cm} \times 4 \text{ cm} = 64 \text{ cm}^3$

We have 16 cubes. The total volume would be $16 \times 64 \text{ cm}^3 = \mathbf{1,024 \text{ cm}^3}$

Explanation#3

Step 1) Let's use the strategy that we just used in number 2.

Volume of object = total number of cubes x volume of 1 cube

Volume of object = $6 \times (2 \text{ cm} \times 2 \text{ cm} \times 2 \text{ cm})$ or $6 \times 8 \text{ cm}^3$

Volume of object = 48 cm^3

