

# Varied Fluency

## Step 1: What is Volume?

### National Curriculum Objectives:

Mathematics Year 5: (5M8) [Estimate volume \[for example, using 1 cm<sup>3</sup> blocks to build cuboids \(including cubes\)\] and capacity \[for example, using water\]](#)

### Differentiation:

**Developing** Questions to support measuring volume in cm<sup>3</sup>, up to 12cm<sup>3</sup>, using cubes/cuboids or liquid volumes where scales are in multiples of 10 or 100 and measurements fall on marked increments.

**Expected** Questions to support measuring volume in cm<sup>3</sup>, up to 24cm<sup>3</sup>, using cubes/cuboids or liquid volumes where scales are in multiples of 10 or 100 but not all increments are marked.

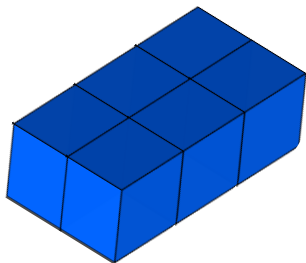
**Greater Depth** Questions to support measuring volume in cm<sup>3</sup> up to 24cm<sup>3</sup> using compound 3D shapes or liquid volumes where scales are in multiples of 10 or 100 but not all increments are marked and some measurements fall between increments.

More [Year 5 Volume](#) resources.

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## What is Volume?

1a. Complete the stem sentences to show the volume of this cuboid.



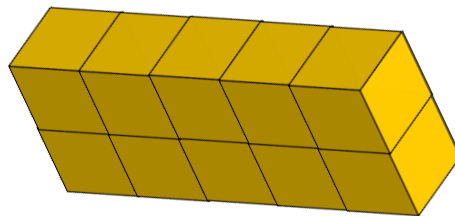
The cuboid is made up of \_\_\_\_\_ cm cubes.  
The volume of the cuboid is \_\_\_\_\_  $\text{cm}^3$ .



VF

## What is Volume?

1b. Complete the stem sentences to show the volume of this cuboid.



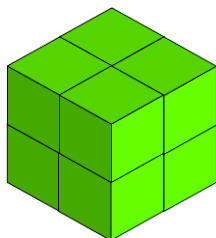
The cuboid is made up of \_\_\_\_\_ cm cubes.  
The volume of the cuboid is \_\_\_\_\_  $\text{cm}^3$ .



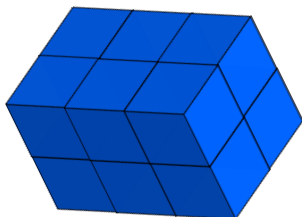
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2a. Count the cm cubes to work out the volume of the cuboids.

A.



B.



A = \_\_\_\_\_  $\text{cm}^3$

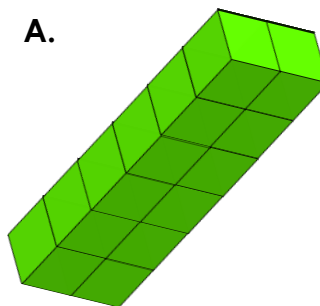
B = \_\_\_\_\_  $\text{cm}^3$



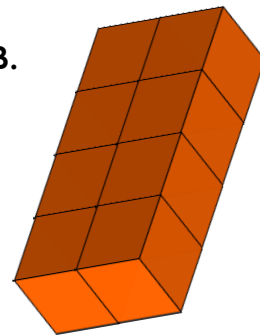
VF

2b. Count the cm cubes to work out the volume of the cuboids

A.



B.



A = \_\_\_\_\_  $\text{cm}^3$

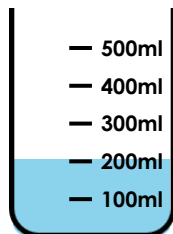
B = \_\_\_\_\_  $\text{cm}^3$



VF

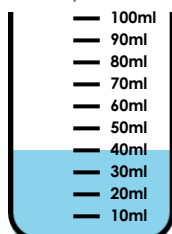
3a. Match the liquid in each container to the correct volume.

A.



40 $\text{cm}^3$

B.



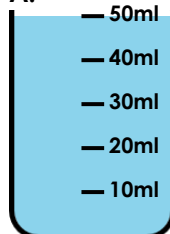
200 $\text{cm}^3$



VF

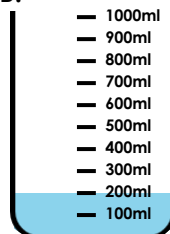
3b. Match the liquid in each container to the correct volume.

A.



200 $\text{cm}^3$

B.

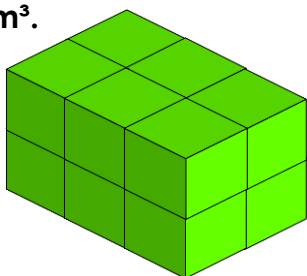


50 $\text{cm}^3$



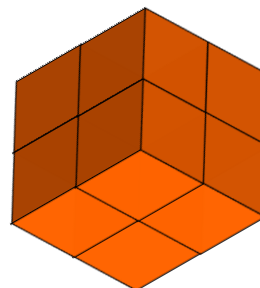
VF

4a. True or false? The volume of this cuboid is 16 $\text{cm}^3$ .



VF

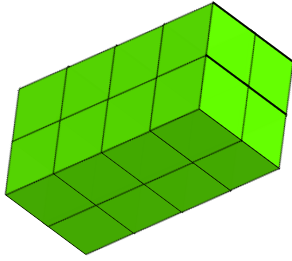
4b. True or false? The volume of this cuboid is 12 $\text{cm}^3$ .



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## What is Volume?

5a. Complete the stem sentences to show the volume of this cuboid.



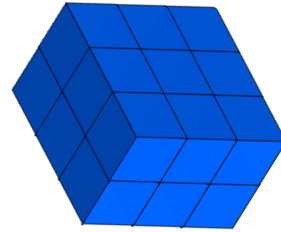
The cuboid is made up of \_\_\_\_\_ cm cubes.  
The volume of the cuboid is \_\_\_\_\_  $\text{cm}^3$ .



VF

## What is Volume?

5b. Complete the stem sentences to show the volume of this cuboid.

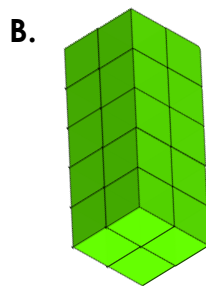
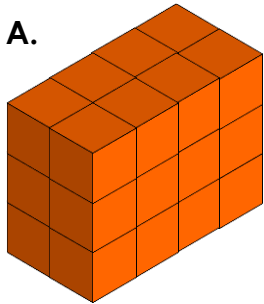


The cuboid is made up of \_\_\_\_\_ cm cubes.  
The volume of the cuboid is \_\_\_\_\_  $\text{cm}^3$ .



VF

6a. Count the cm cubes to work out the volume of the cuboids.

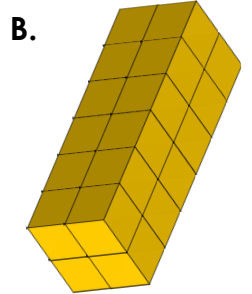
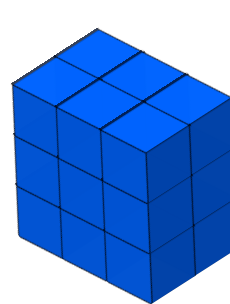


A = \_\_\_\_\_  $\text{cm}^3$

B = \_\_\_\_\_  $\text{cm}^3$

VF

6b. Count the cm cubes to work out the volume of the cuboids

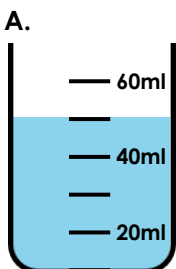


A = \_\_\_\_\_  $\text{cm}^3$

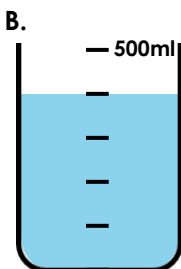
B = \_\_\_\_\_  $\text{cm}^3$

VF

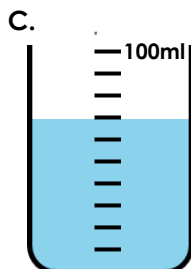
7a. Match the liquid in each container to the correct volume.



400 $\text{cm}^3$



70 $\text{cm}^3$

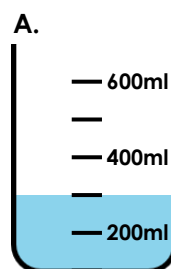


50 $\text{cm}^3$

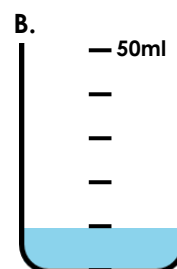


VF

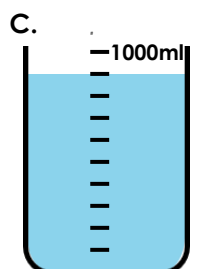
7b. Match the liquid in each container to the correct volume.



10 $\text{cm}^3$



900 $\text{cm}^3$

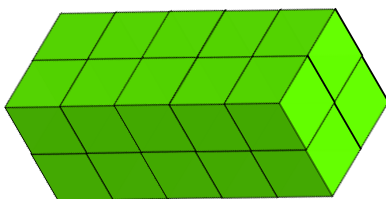


300 $\text{cm}^3$



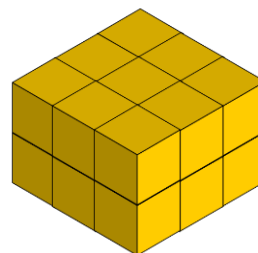
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8a. True or false? The volume of this cuboid is 24 $\text{cm}^3$ .



VF

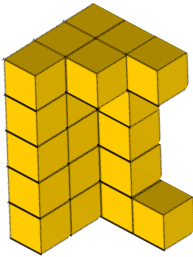
8b. True or false? The volume of this cuboid is 21 $\text{cm}^3$ .



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## What is Volume?

9a. Complete the stem sentences to show the volume of this cuboid.



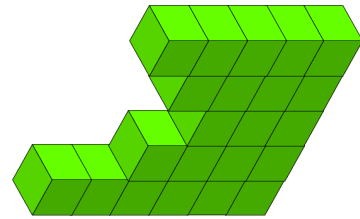
The cuboid is made up of \_\_\_\_\_ cm cubes.  
The volume of the cuboid is \_\_\_\_\_ cm<sup>3</sup>.



VF

## What is Volume?

9b. Complete the stem sentences to show the volume of this cuboid.



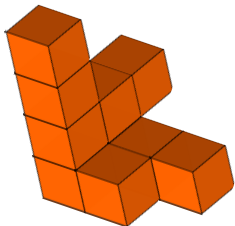
The cuboid is made up of \_\_\_\_\_ cm cubes.  
The volume of the cuboid is \_\_\_\_\_ cm<sup>3</sup>.



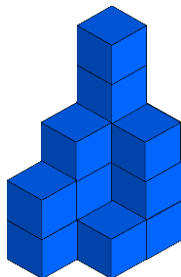
VF

10a. Count the cm cubes to work out the volume of the cuboids.

A.



B.



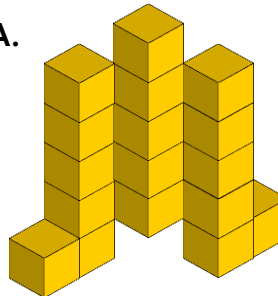
A = \_\_\_\_\_ cm<sup>3</sup>

B = \_\_\_\_\_ cm<sup>3</sup>

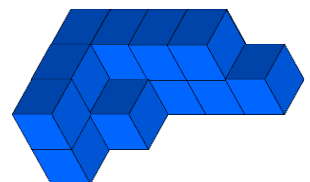
VF

10b. Count the cm cubes to work out the volume of the cuboids

A.



B.



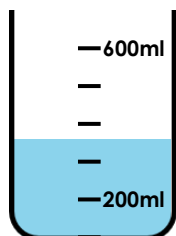
A = \_\_\_\_\_ cm<sup>3</sup>

B = \_\_\_\_\_ cm<sup>3</sup>

VF

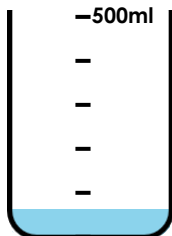
11a. Match the liquid in each container to the correct volume.

A.



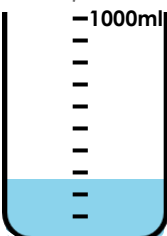
50cm<sup>3</sup>

B.



250cm<sup>3</sup>

C.



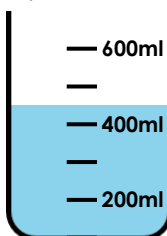
350cm<sup>3</sup>



VF

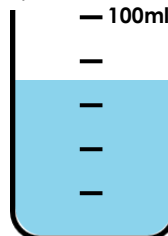
11b. Match the liquid in each container to the correct volume

A.



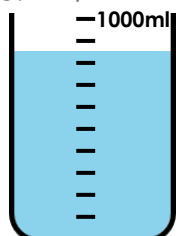
70cm<sup>3</sup>

B.



850cm<sup>3</sup>

C.

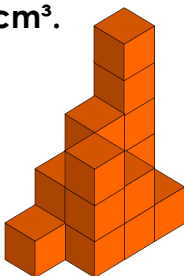


450cm<sup>3</sup>



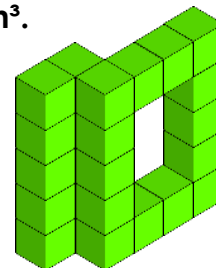
VF

12a. True or false? The volume of this cuboid is 13cm<sup>3</sup>.



VF

12b. True or false? The volume of this cuboid is 21cm<sup>3</sup>.



VF

## Varied Fluency What is Volume?

### Developing

- 1a. The cuboid is made out of 6 cm cubes.  
The volume of the cuboid is 6cm<sup>3</sup>
- 2a. A = 8cm<sup>3</sup>; B = 12cm<sup>3</sup>
- 3a. A. 200cm<sup>3</sup>; B. 40cm<sup>3</sup>
- 4a. False. It is 12cm<sup>3</sup>

### Expected

- 5a. The cuboid is made out of 16 cm cubes. The volume of the cube is 16 cm<sup>3</sup>.
- 6a. A = 24cm<sup>3</sup>; B = 20cm<sup>3</sup>.
- 7a. A. 50cm<sup>3</sup>; B. 400cm<sup>3</sup>; C. 70cm<sup>3</sup>.
- 8a. False. It is 20cm<sup>3</sup>

### Greater Depth

- 9a. The cuboid is made out of 23 cm cubes.  
The volume of the cube is 23 cm<sup>3</sup>
- 10a. A = 10cm<sup>3</sup>; B = 14cm<sup>3</sup>.
- 11a. A. 350cm<sup>3</sup>; B. 50cm<sup>3</sup>; C. 250cm<sup>3</sup>.
- 12a. False. It is 17cm<sup>3</sup>

## Varied Fluency What is Volume?

### Developing

- 1b. The cuboid is made out of 10 cm cubes. The volume of the cube is 10 cm<sup>3</sup>
- 2b. A = 12cm<sup>3</sup>; B = 8cm<sup>3</sup>
- 3b. A. 50cm<sup>3</sup>; B. 200cm<sup>3</sup>
- 4b. False. It is 8cm<sup>3</sup>

### Expected

- 5b. The cuboid is made out of 18 cm cubes. The volume of the cube is 18 cm<sup>3</sup>.
- 6b. A = 18cm<sup>3</sup>; B = 24cm<sup>3</sup>.
- 7b. A. 300cm<sup>3</sup>; B. 10cm<sup>3</sup>; C. 900cm<sup>3</sup>.
- 8b. False. It is 18cm<sup>3</sup>

### Greater Depth

- 9b. The cuboid is made out of 22 cm cubes.  
The volume of the cube is 22 cm<sup>3</sup>
- 10b. A = 18cm<sup>3</sup>; B = 14cm<sup>3</sup>.
- 11b. A. 450cm<sup>3</sup>; B. 70cm<sup>3</sup>; C. 850cm<sup>3</sup>.
- 12b. False. It is 24cm<sup>3</sup>