

Alavi

21st Century Schools



MATHEMATICS



chapter



Sessions
40/41

* 4.1. Exploring volume

Let's investigate.

How could you find out how much space there is inside this shoe box?



The amount of space inside the box can be measured by its **volume**.

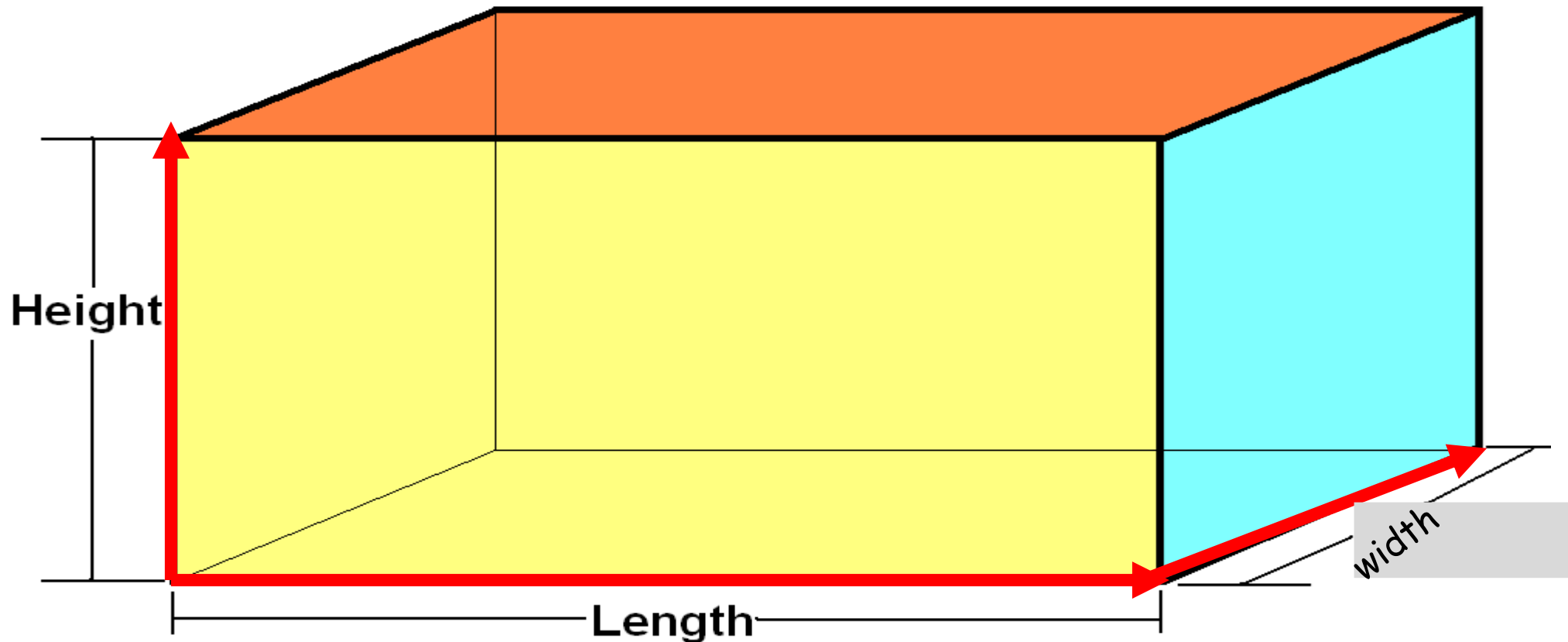
What is volume?

The amount of space that is inside a container.

Volume can be measured only for **3D** (3 dimensional) shapes.

What is volume?

Volume is measured in cm^3 (=cubic centimetre).



How to measure volume:



fill



container



measure

How to measure **volume**:



Fill in the container
with identical(similar) items,
then count them.

Hands-on teaching

Taking some identical cubes/sticks to the class.

Putting them in a box and then saying the following target language:

This box has got a volume of (number) cubes.

This box has got a volume of (number) sticks.

Doing this with different objects and boxes and asking

Ss to repeat the Target language after you.

This box has got a volume of (about) (number) apples.

This box has got a volume of (about) (number) bananas.

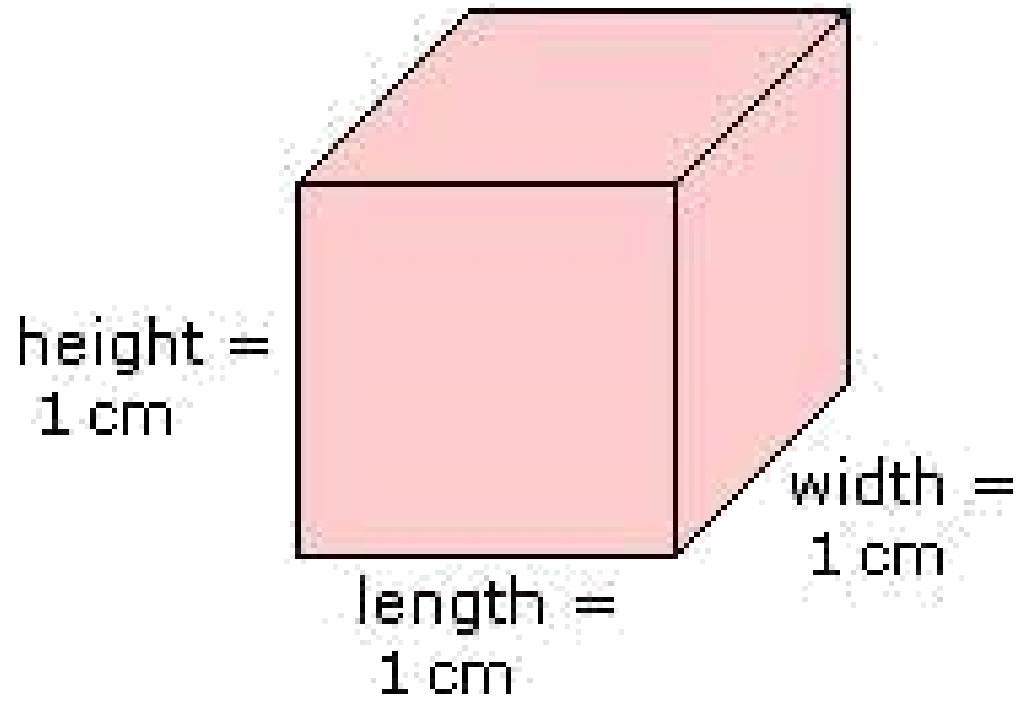
Tell them (about) is used because the items do NOT fill the box completely.

How to measure **volume**:



using cubic centimetre

cm³

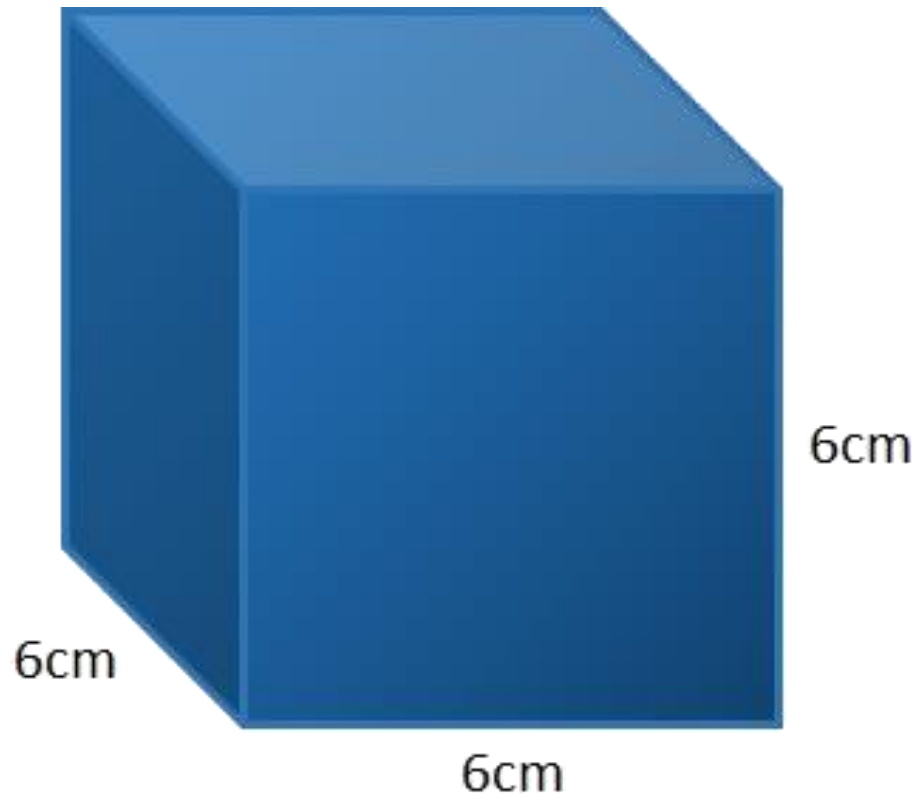


$$1 * 1 * 1 = 1$$

The volume of
this shape is

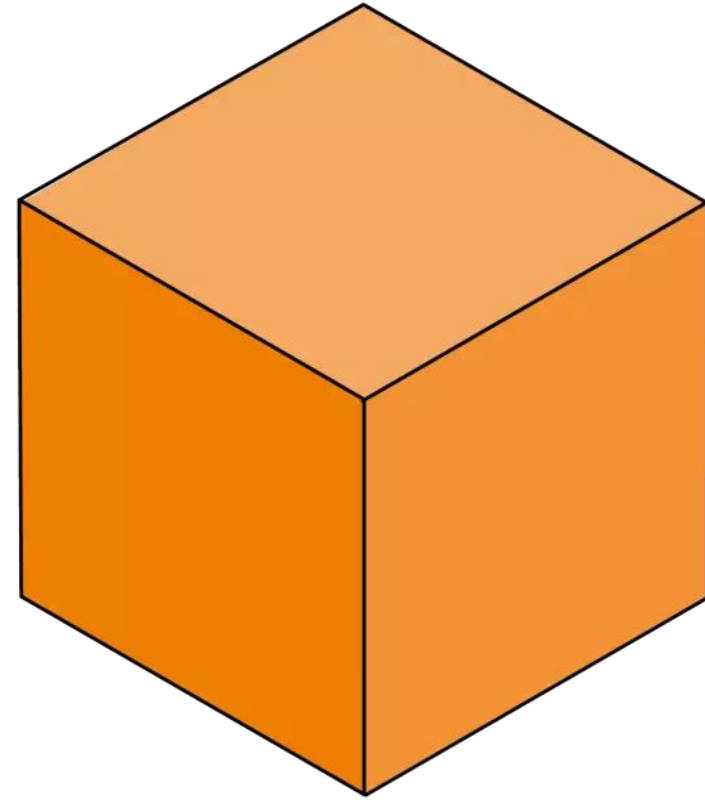
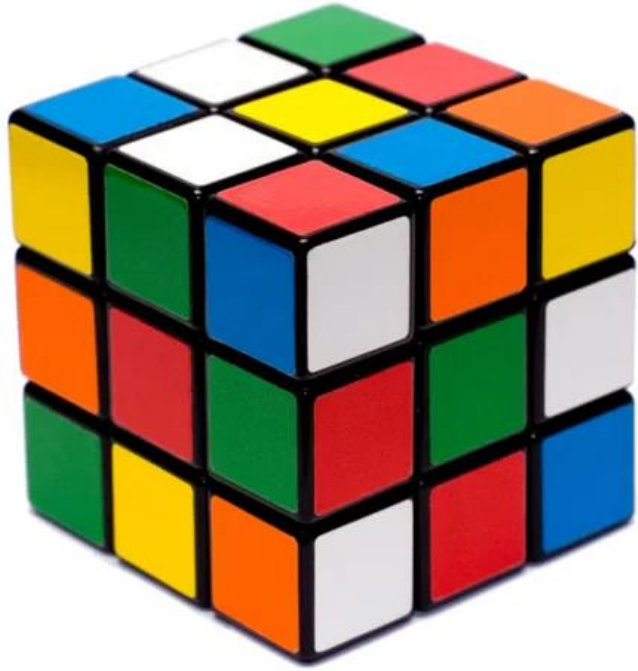
$$1 \text{ cm}^3$$

$$\text{volume} = \text{height} \times \text{length} \times \text{width}$$



$6 * 6 * 6 = 216$
The volume of
this shape is
 216 cm^3

volume = height \times length \times width



cube

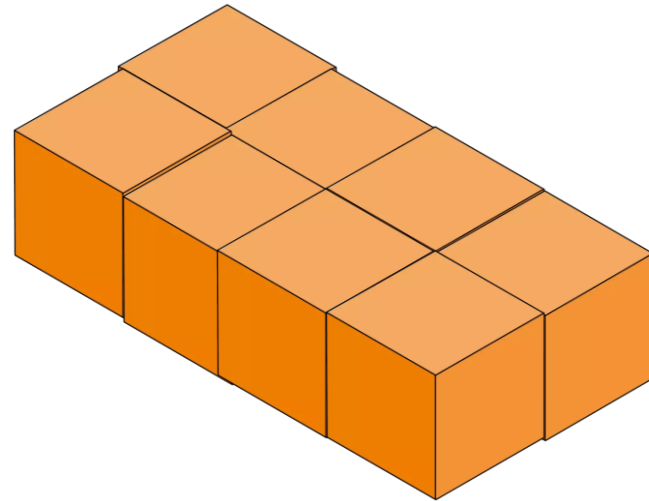
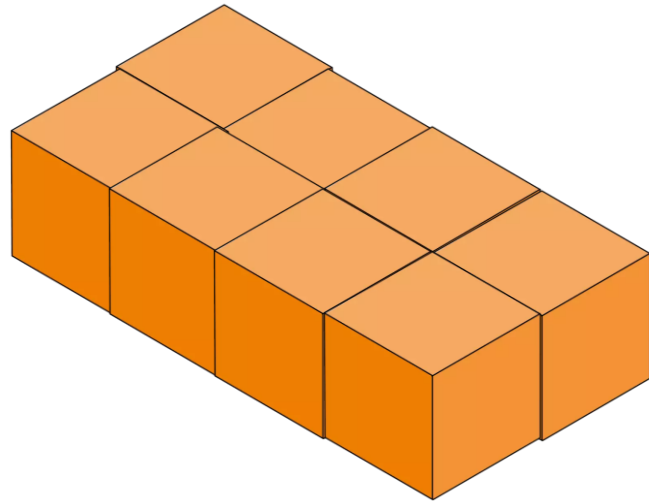
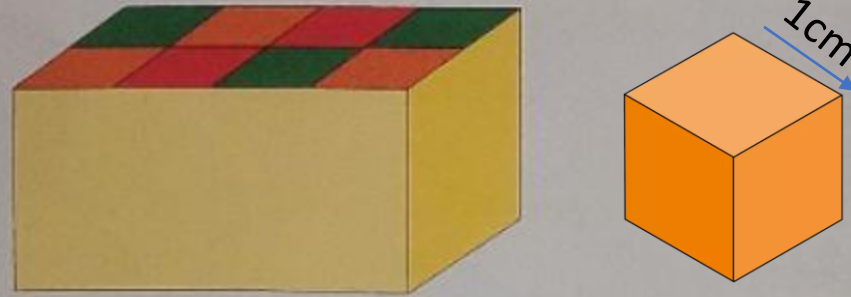


layer

This box holds 2 layers of cubes.

There are 2 rows of 4 cubes, or 8 cubes in each layer.

So, the volume of this box is 16 cubic centimetres, or 16cm^3 .



$$V = 1 * 1 * 1 = 1 \text{ cm}^3$$

$$16 * 1 \text{ cm}^3 = 16 \text{ cm}^3$$

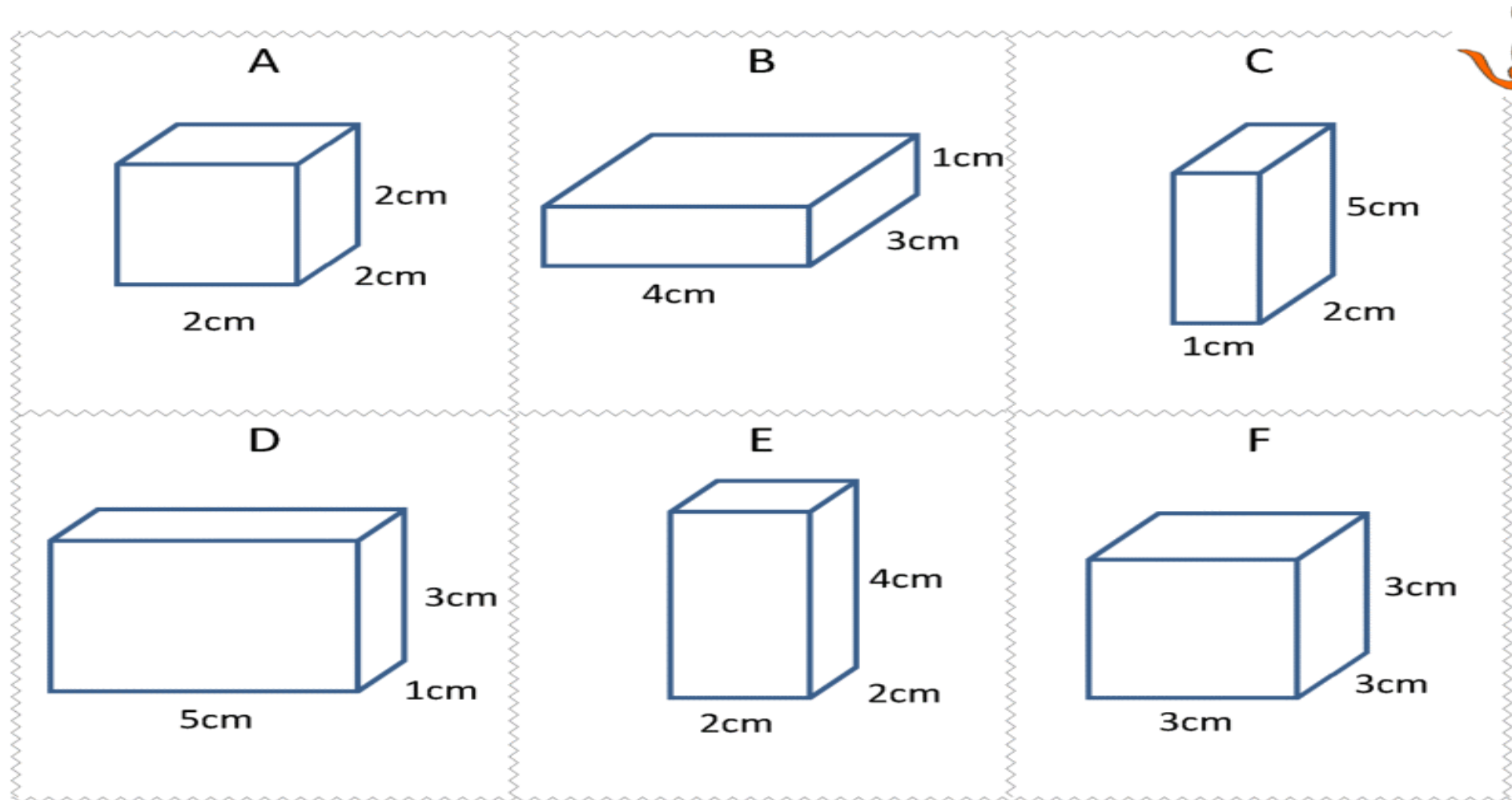
Volume is the amount of s...
that is inside a c... .

Volume can be measured only for
... shapes.

Volume is measured in

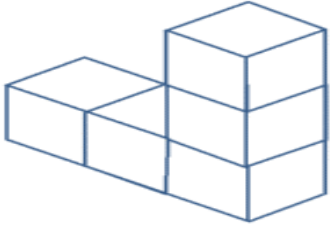
... .

Which shape's volume is : 12 cm^3
 15 cm^3
 27 cm^3



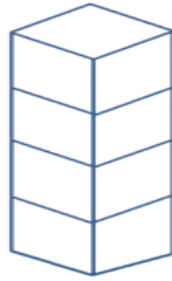
Write down the volume of each of these shapes by working out the number of cubes.

1)



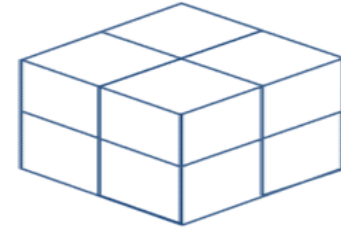
Volume: _____ cubes

2)



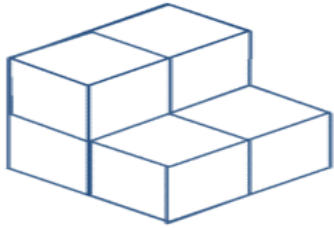
Volume: _____ cubes

3)



Volume: _____ cubes

4)



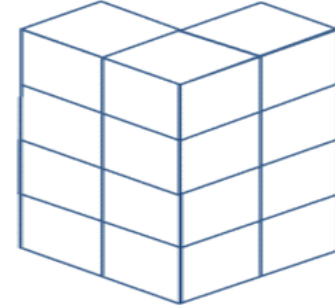
Volume: _____ cubes

5)



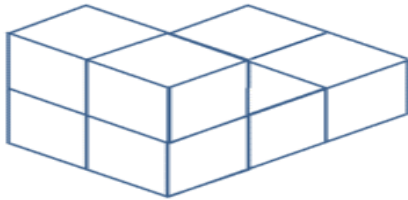
Volume: _____ cubes

6)



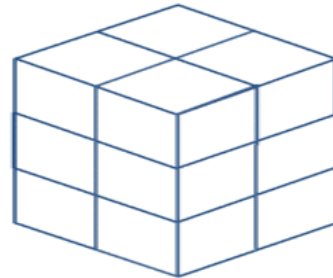
Volume: _____ cubes

7)



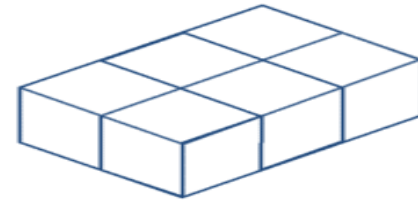
Volume: _____ cubes

8)



Volume: _____ cubes

9)



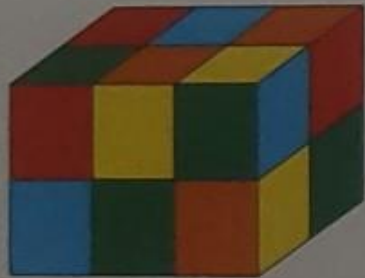
Volume: _____ cubes

1. Make each object with centimetre cubes.

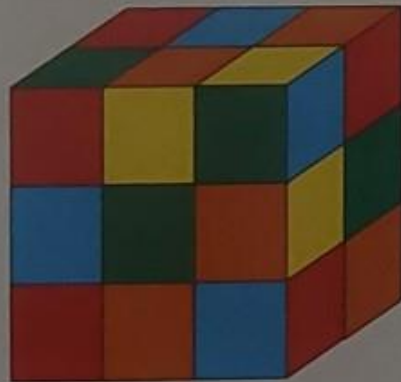
Find the volume of each object.

Order the objects from least to greatest volume.

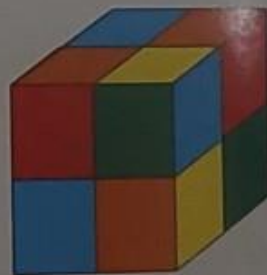
a)



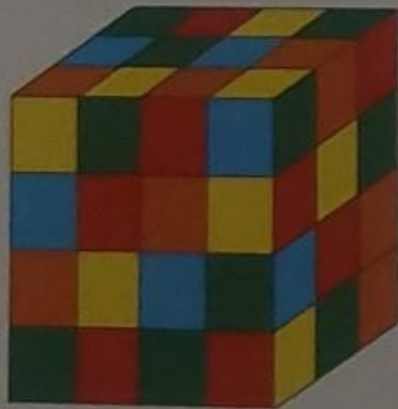
b)



c)



d)



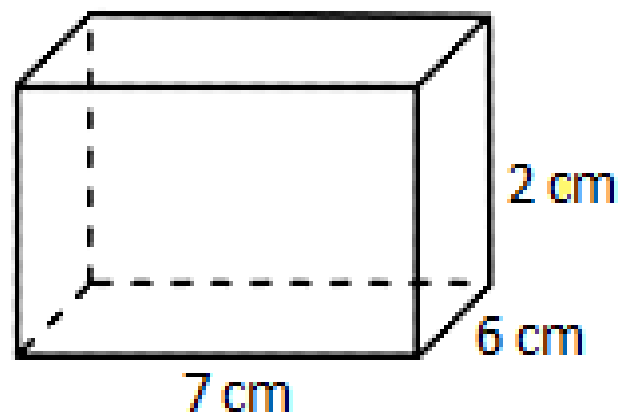
e)



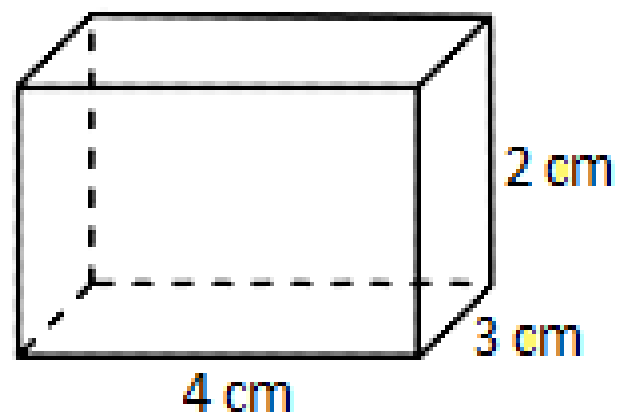
f)



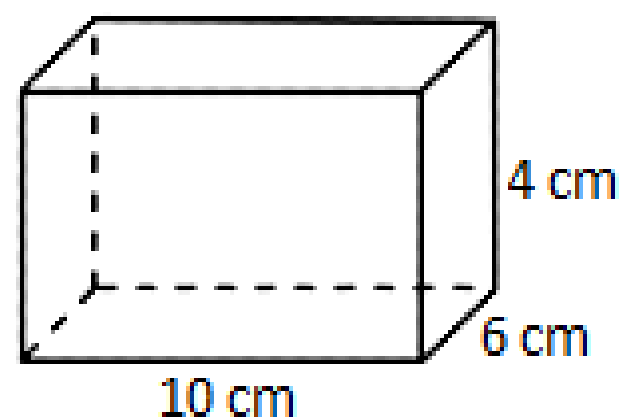
(i)



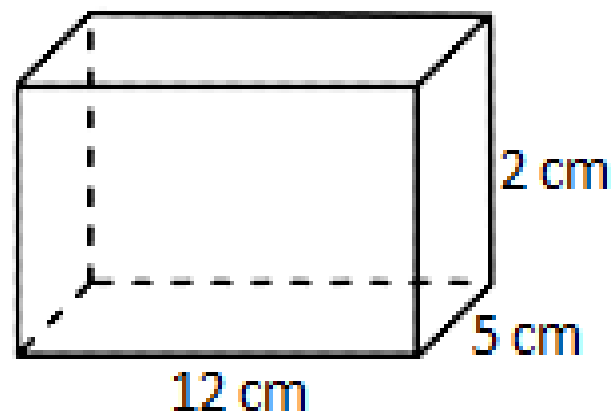
(ii)



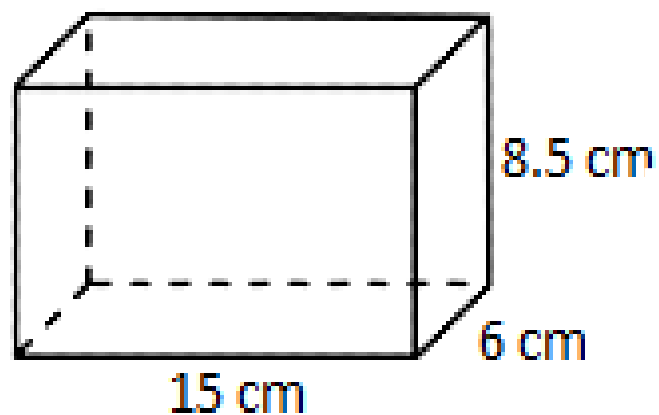
(iii)



(iv)



(v)



(vi)

