

# Volume of Rectangular Prisms

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Math Words

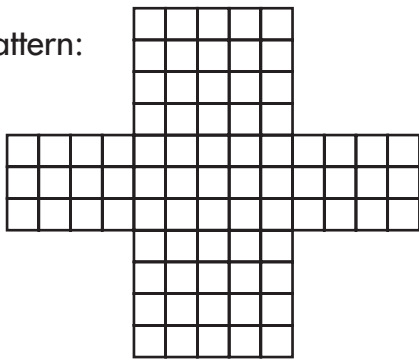
• volume

Volume is the amount of space a 3-D object occupies. You can think of the volume of a box as the number of cubes that will completely fill it.

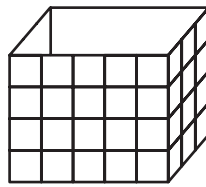
Both Olivia and Joshua solved this problem about the volume of a box.

How many cubes will fit in this box?

Pattern:



Picture:

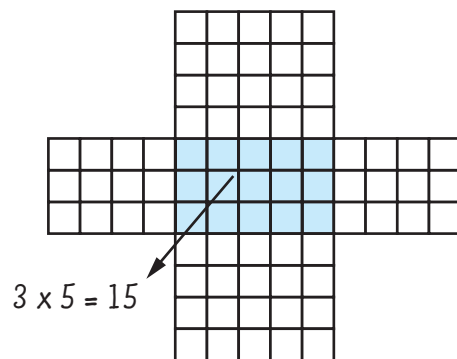


**Olivia:** There will be 15 cubes on the bottom layer of the box.

When you fold up the sides of the pattern, there will be four layers.

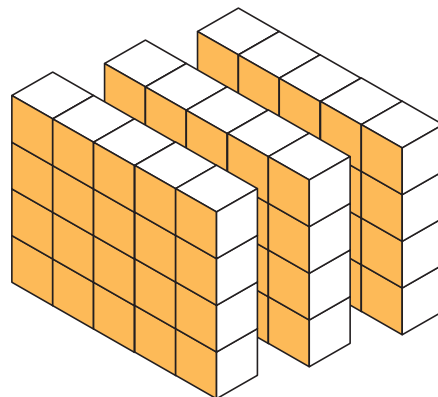
$$4 \times 15 = 60$$

The box will hold **60 cubes**.



**Joshua:** The front of the box is 4 by 5, so there are 20 cubes in the front of the box.

The box goes back 3 slices, so 20, 40, **60 cubes** will fit in the box.



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Martin solved this problem:

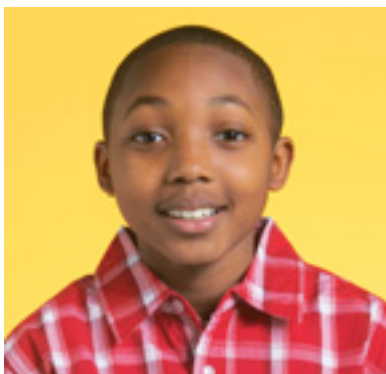
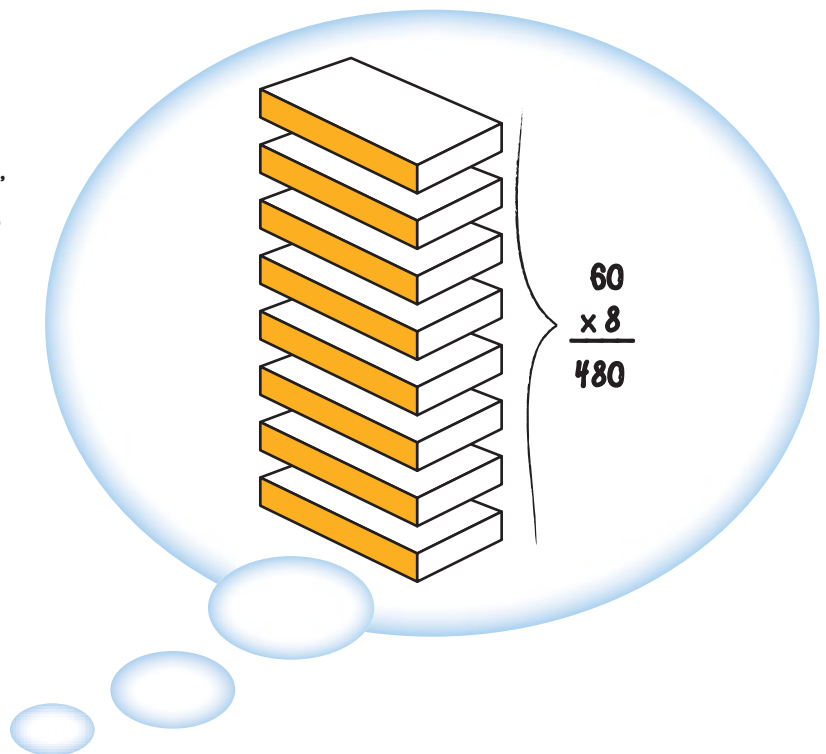
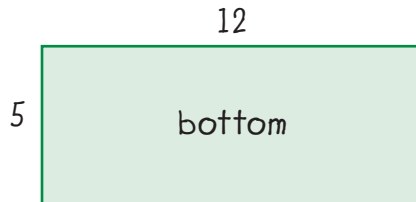
The bottom of a box is 12 units by 5 units.  
The box is 8 units high. What is the volume of the box?

## Martin's solution

The bottom layer of the box will have 60 cubes because  $12 \times 5 = 60$ .

Since the box has 8 layers, the total number of cubes is  $60 \times 8$ .

So, the volume of the box is **480 cubes**.



Write a strategy for finding the volume of a rectangular prism. Think about how you can determine the number of cubes that fit in a box, whether you start with the box pattern, the picture of a box, or a written description of the box.