

# MeTEOR Performance Task

## Sixth Grade

Mathematics  
*Souvenir Storage*



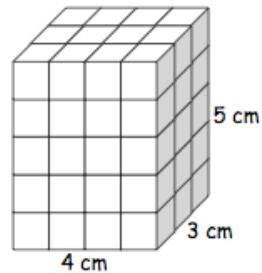
## Performance Task Item: Souvenir Storage

### Task/Question 1:

- A. What is the *definition* of volume for a 3-dimensional figure?
  
- B. What is the *formula* for finding volume in right rectangular prism?

### Task/Question 2:

- A. Calculate the volume of the figure:



- B. If the height of the figure in Part A were doubled, how would that change the volume? Show all calculations.

**Task/Question 3:**

## Souvenir Storage



Jean works at a warehouse company. The store manager, Mrs. Guyton, would like to use an empty box to store 26,000 puzzle cube souvenirs that she will give out to customers. The edge length of the puzzle cube is  $\frac{1}{8}$ '. The boxes come in 3 sizes:



### Box Sizes

Box A:  $2\frac{1}{4}$ ' by  $2\frac{1}{2}$ ' by 8'

Box B:  $2\frac{1}{4}$ ' by  $2\frac{1}{2}$ ' by 12'

Box C:  $2\frac{1}{4}$ ' by  $2\frac{1}{2}$ ' by 4'



**A.** Which box should Jean use to store all of the souvenir cubes?

**B.** Defend your choice using viable mathematical arguments:

Box A	Box B	Box C

**Task/Question 4:**

- A.** Look around your home. Find an area and explore the volume of that area (under a bed, under the stairs, in a closet, in the garage etc...).

Use your understanding of volume to design, reorganize, or create a space in your home that becomes more functional than it is currently being used.

Create a presentation of the process, with emphasis on how the understanding of volume assisted you in the redesign.



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