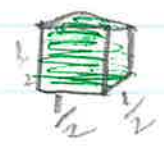
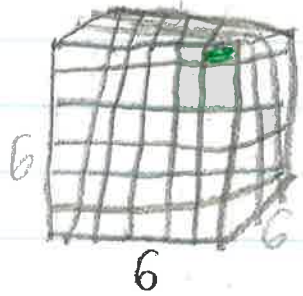


# CDC Writing

Prompt:

Tracy said the volume of this 3d shape was  $3 \times 3 \times 3$ . Mark said the volume was  $6 \times 6 \times 6 \times \frac{1}{8}$ . Who is correct? Explain with proper reasoning.

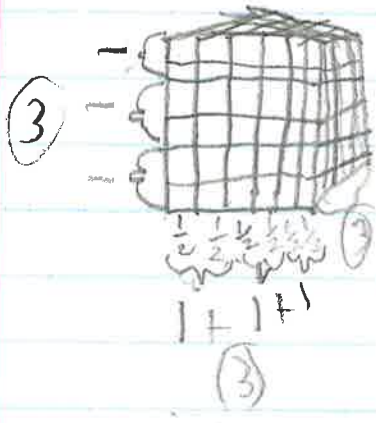


Claim:

Mark and Tracy are both correct. Because each cube is  $\frac{1}{8}$ , so 6 cubes would be equal to 3. So  $3 \times 3 \times 3$  is one way. Another way to do this is to get the volume of the big cube ( $6 \times 6 \times 6$  LWH). Then you get the volume of a single cube ( $\frac{1}{2}, \frac{1}{2}, \frac{1}{2}$ ) to get  $\frac{1}{8}$ . Then you multiply them together.

Data:

## Tracy's Procedure



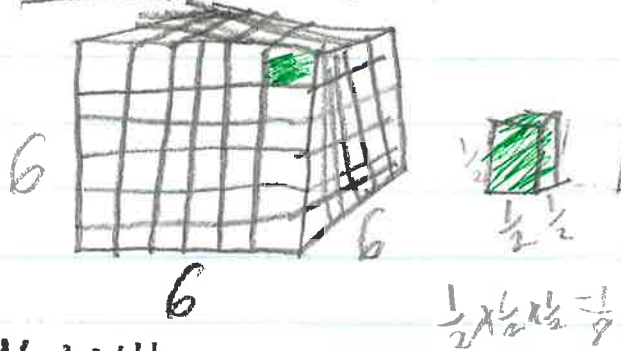
1  $3 \times 3 \times 3 = 27 \text{ in}^3$

Tracy's procedure gave us  $27 \text{ in}^3$  because each cube is  $\frac{1}{2}$  inch, 2 cubes will equal 1. So this means that each side length is 3 inches. To get the volume you use the formula LWH to get  $27 \text{ in}^3$ .

Data,  
continued

# CDC Writing

## Mark's procedure



$$V = LWH$$

$$6 \times 6 \times 6$$

$$36 \times 6$$

$$36$$

$$\times 6$$

$$216$$

$$216 \times \frac{1}{8}$$

$$\frac{216}{8} = \frac{216}{8}$$

$$\begin{array}{r} 8 \overline{) 216} \\ -16 \\ \hline 56 \end{array}$$

$$27 \text{ in}^3$$

Mark's protocol also gave us  $27 \text{ in}^3$ . This is true because the volume (with out using the small cube's length) is 216. Then you calculate the small cubes volume. Then you multiply them together to get  $216/8$ . Next you divide 8 into 216 to get the simplified form of  $216/8$  to get the volume of this cube.

Commentary:

Tracy and Mark are both correct. Tracy is correct because each cube is worth one half of an inch. This means that each edge is  $3 \text{ in}^3$ . Next you multiply the edge lengths together (this is how you get the volume) to get  $27 \text{ in}^3$ . Mark is correct because the volume (amount of cubes in the box) is  $6 \times 6 \times 6$  because the length is 6 the width is 6 and the height is 6. The

volume is 216. so next you multiply to get the volume of one cube ( $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ ) is  $\frac{1}{8}$  then you multiply 216 to  $\frac{1}{8}$  to get  $\frac{216}{8}$ . This is the answer, but it needs to be simplified. Finally you divide 8 into 216 to

2

# CDC Writing

Comments: Get 27 in<sup>3</sup>. Both Tracy and Mark  
continued: are correct, but in my opinion Tracy's method is simpler  
and you are less likely to make a  
mistake.

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