

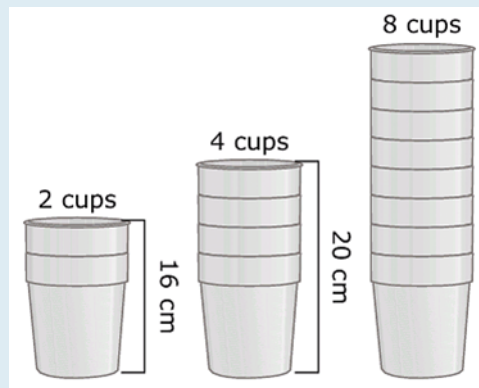
Focus
Standards
and Claim

Claim 3
6.EE.B

Stimulus

Stacks of Cups

Your science classroom uses cups for many experiments. Your teacher ordered lots of cups from a catalog. The catalog is not very good. It has the following picture, but no other useful information.



Your teacher wants you to help her get organized for when the cups arrive next week. Using only the information shown in the picture, she asks you to figure out some other specific measurements.

Item Prompt

The catalog is advertising a stack of these cups that is 95 cm tall. Lori says, "That must be a misprint because a stack of that height is not possible."

Do you agree or disagree with Lori? Explain your reasoning.

Sample Responses

Sample Response A	I agree with Lori if you added all the cups up you would not get 95 cm. You would get 88cm.
Sample Response B	$95 - 12 = 83 / 2 = 41.5$ I agree with Lori, because a stack of cups 95cm tall would have to be 41 1/2 cups, which can't be.
Sample Response C	I agree. If you use the previous equation the stack would be 41.5 cups which could never happen. $12+2n=95$ minus 12 on both sides $12+2n-12=95-12 = 2n=95-12=83$ 83 divide both sides by 2 $2n/2 =83/2$ $n=41.5$
Sample Response D	I disagree because the second stack is at 20 and it went up to 95, that is not correct.
Sample Response E	I disagree with Lori because a stack of cup can be tall, a cup by itself would maybe be a misprint. 95 cm is not tall for a stack of cups.

Sample Response F	<table border="1"> <thead> <tr> <th>Cups</th> <th>Height</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>14</td> </tr> <tr> <td>2</td> <td>16</td> </tr> <tr> <td>3</td> <td>18</td> </tr> <tr> <td>4</td> <td>20</td> </tr> <tr> <td>6</td> <td>84</td> </tr> <tr> <td>7</td> <td>98</td> </tr> <tr> <td>8</td> <td>112</td> </tr> </tbody> </table> <p>I agree with Lori because my table shows a constant rate and 7 cups is the closest number to 95 cm but its not because the one after which is 6 cups is 84 cm and there is no solution.</p>	Cups	Height	1	14	2	16	3	18	4	20	6	84	7	98	8	112
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Sample Response G	<p>I agree because the lip and the base are both even numbers and if you stack all the even measurements it will never be an odd number.</p> <p>Or if you take the equation</p> $h = 12 + (n * 2)$ $95 = 12 + (n * 2)$ $83 = n * 2$ $41.5 = n$ <p>You can't have .5 of a cup so it is impossible.</p>																
Sample Response H	<p>I agree with Lori because that amount of cups would be to heavy and fall over.</p>																
Sample Response I	<p>Agree because if you start a 1 cup = 14 height then 2 cup = 16 height then 3 cup = 18 height it is not possible for you to get it.</p>																
Sample Response J	<p>It is possible there if you subtract the big part which is 8 then you divide 87 by 4 and each cup is 21.75cm.</p>																

Sample
Response K

I agree because since 1 cup is 14 cm and all the lids are 2cm the height of any stack has to be even.