Grade 8 / Scored Student Samples ITEM #2

SMARTER BALANCED PERFORMANCE TASK

Focus Standards and Claim

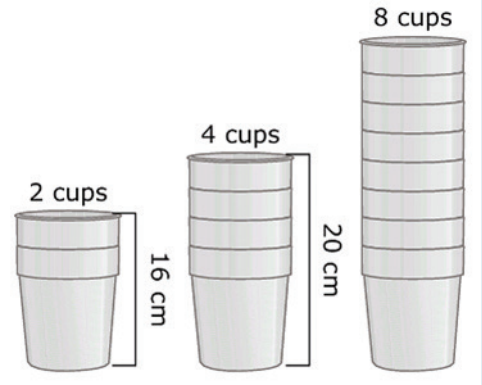
Claim 2

7.EE.B.3

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

How tall, in cm, is 1 cup? Explain how you determined the height of 1 cup.

Understanding Proficiency A Partnership of WestEd and SCALE

Scoring Guide

SCORE	2 POINTS	1 POINT	0 POINTS
	Student correctly calculates the height of one cup and provides a mathematically logical explanation as to how he/she calculated the height.	Student correctly calculates the height of one cup and provides an explanation that is not mathematically logical OR the student ***only*** calculates the height of a single cup.	All other responses.

Sample Responses

Student Sample A

2 POINTS

2 cups are 16cm and 4 are 20cm. Two cups only increased it by 4cm so since they only add the lip each lip is 2cm. If you subtract 2cm from 16cm you get 14cm.

One cup is 14cm tall.

SCORE RATIONALE

The student correctly calculated the height of 1 cup, and provided a mathematically logical explanation as to how he/she calculated the height. The response earns full credit of 2 points.

Student Sample B

2 POINTS

The difference between 16cm (2c) and 20 cm (4c) was 4cm. 4cm / 2 = 2.

2 cm = the lip of the cup

x = 16 – 2

x = 14

1 cup is 14 cm

SCORE RATIONALE

The student correctly calculated the height of 1 cup and provided a mathematically logical explanation as to how he/she calculated the height. The response earns full credit of 2 points.

Student Sample C

2 POINTS

1 cup is 14 cm. I figured this out by looking at the pattern of 4 cups, so with two cups it is 16 cm and to figure out the size of one cup you have to subtract the lip of the second cup with the stack of two. I figured out how big the lip is by using the 4 cups stacked height and subtracted it by the 2 cups height and got 4 which then there are 2 lips so 1/2 of 4 is 2 cm which is my height of lip on a cup.

SCORE RATIONALE

The student correctly calculated the height of 1 cup and provided a mathematically logical explanation as to how he/she calculated the height. The extra detail in the response provides clear evidence of reasoning about the situation. The response earns full credit of 2 points.

Student Sample D

1 POINT

14

SCORE RATIONALE

The student provided the correct height of a single cup, but the response does not include an explanation. The response earns partial credit of 1 point.

Student Sample E

1 POINT

It is 14 cm because every cup is 2cm.

SCORE RATIONALE

The student calculated the height of a single cup, but the explanation is not mathematically logical. The idea of every cup being 2 cm is not expressed adequately, nor is it correct, even though the response provides evidence of recognition that each cup adds 2 cm to the height of the stack. The response earns partial credit of 1 point.

Student Sample F

1 POINT

I think one cup is about 14cm.

I determined this because the lip of the cup seems to be about 2cm so that would leave you with 14cm.

SCORE RATIONALE

The student correctly estimated the height of a single cup and developed an explanation. However, the response provides minimal evidence of mathematical reasoning, and the explanation does not have a sufficient level of precision. The response earns partial credit of 1 point.

Student Sample G

1 POINT

16cm – 2cm = 14cm

I used the height of the 2 cups (16cm) and subtracted the height of one lip of a cup.

SCORE RATIONALE

The student correctly calculated the height of a single cup, and described a process for determining this height, but the explanation provided is not adequately supported with mathematics. The response refers to "the height of one lip of a cup," without an indication of how the value was determined. The response earns partial credit of 1 point.

Student Sample H

0 POINTS

2 cups = 16cm

16 / 2 = 8cm

The height of one cup is 8cm. I divide 16 by 2 and I got 8 cm.

SCORE RATIONALE

The response does not differentiate between parts of the cup, or indicate how they influence the height of the stack or the height of a single cup. The student did not check his/her result with the second stack to see that it would also be the same. The response earns 0 points.

Student Sample I

0 POINTS

I determind it as 4 since 4 equally goes into most the figures shown.

SCORE RATIONALE

The response suggests that the student looked for some numerical pattern between the stacks, but did not make the connection between the height of the cups and the growth pattern. The response earns 0 points.

Student Sample J

0 POINTS

1 cup is 8 cm. I know this by adding eight plus eight which equals 16cm. 16cm is 2 cups and 8cm is 1 cup.

SCORE RATIONALE

The student focused on the first stack and did not identify the parts of the cup to reason about the height of the stack or the height of a single cup. The response earns 0 points.