| Focus Standards and Claim	Claim 2 3.MD.A

Stimulus	**Art Day!**
	
	 You are helping your 4th grade class organize an Art Day.
	
	 There will be three stations:
	
	 • Painting
	 • Pottery
	 • Chalk Art
	
	 You have two tasks. You will help create the supply list and the schedule for Art Day.
	
	 Task 1: Supply List
	 You need to make sure there are enough supplies at each station for everyone to participate. You will use the following information to create a list of art supplies for your class.
	
	 • There are 24 students in your class.
	 • Each student needs –
	   – 2 paint brushes for the Painting Station.
	   – 3 pounds of clay for the Pottery Station.
	   – 5 pieces of chalk for the Chalk Art Station.
	
	 Task 2: Schedule
	 You also need to help plan the schedule for Art Day using the following information.
	
	 • The day starts at 9:00 a.m. and ends at 2:00 p.m.
	 • Your entire class will rotate through the three stations together.
	 • The Break has to be at least 10 minutes.
	 • The Break and Lunch together total 1 hour.
	 • The three stations (Painting, Pottery, and Chalk Art) do **not** need to be the same amount of time, but each one has to be 30 minutes or longer.

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Item Prompt

When the class went to the Painting Station at 9:00 a.m., the container of paint was completely full. After 6 of the 24 students got their share of paint, the paint level had dropped to the level shown in the following picture.

Paint Level

Paint Level

Paint

Paint

At 9:00 a.m. paint container is full.

After 6 students got their share of paint, the level is here.
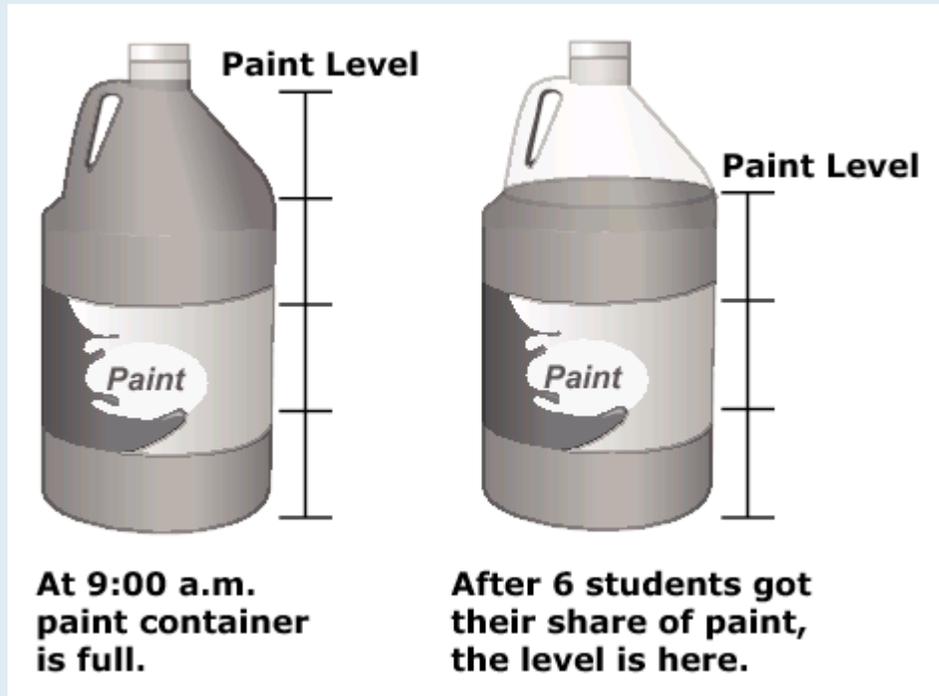
Katie thinks there is not enough paint for the rest of the students.

Do you agree with Katie? Explain why or why not. Use the information shown in your explanation.

Scoring Guide

SCORE	1 POINT	0 POINTS
	Student states whether he/she agrees or disagrees with Katie and provides a mathematically logical explanation as to why or why not.	The student may agree or disagree, but does not supply any logical explanation for his/her response.

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Sample Responses

Student Sample A

1 POINT

No she is wrong there is enough because 6 kids got less than one fourth of paint but there's 24 kids, and 4 X 6 = 24 so there's enough for everybody to use some paint.

SCORE RATIONALE

The response includes a clear statement of disagreement with Katie. The student stated that 6 kids used less than 1/4 of the paint, and provided a correct calculation of the number of groups of 6 students in the class of 24 students (4 x 6 = 24). Although the explanation would be more thorough if the ideas were more explicitly connected, the central comparison that is relevant for determining if there is enough paint is clearly present. This comparison is between the estimated portion of paint used (less than 1/4 of the total available) and the portion of students in the class who have used the paint so far (exactly 1/4). The response receives full credit of 1 point.

Student Sample B

1 POINT

No, I do not agree with katie because 4x6=24 so there is anough for everyone

people 6 - 1 group – less than 1/4

people 6 - 2 group – a little more than 1/4

people 6 - 3 group – a little more than 1/4

people 6 - 4 group – a little more than 1/4

SCORE RATIONALE

The student stated that there is enough paint because 4 x 46 = 24. On its own, this statement would not be a sufficient explanation, however the student then used the information provided in the diagram to create a model to demonstrate a possible distribution of the paint across 4 equal groups of 6 people each. The response earns full credit of 1 point.

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Student Sample C

1 POINT

No there are 4 different levels each level
6 students use and 4 X 6 = 24 so there is enough

SCORE RATIONALE

In this response, the student interpreted the diagram in a straightforward way, and used basic number sense and contextualized problem-solving skills to argue that there is enough paint: There are 4 levels identified on the paint container, and 6 students used up the amount of paint indicated by the first of the 4 levels. The student provided the fact that 4 x 6 = 24 to represent 4 groups of 6 in 24. Four levels of paint indicate 4 portions of paint for each group of 6 students, and there are 4 groups of 6 students in all. Because there is no evidence of recognition that the portion sizes are unequal, some may not want to give this response 1 point. However, the explanation is logical, and this response squeaks by for full credit of 1 point.

Student Sample D

0 POINTS

I disagree with Katie because some people will use more paint and some people will use less paint so it depends on students.

SCORE RATIONALE

This response demonstrates an understanding that there is an element of unpredictability in the situation. It is unclear that all groups will use approximately the same amount of paint; this is an assumption that must be made. That said, the student did not demonstrate any mathematical thinking or reasoning, and the response earns 0 points.

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Student Sample E

0 POINTS

I think there is enough paint because there is only 3 stations so paint brushes and 3 pounds of clay and 5 pieces of chalk so I think it will be enough I do not agree with Katie

SCORE RATIONALE

The response does not include evidence of logic or reasoning about the amount of paint left in the container compared to how many people used the paint and how many students still need to use the paint. The student used all of the given information from Task 1 to attempt to justify a disagreement with Katie, but did not provide a logical explanation that referred to the diagram given for the problem. The response earns 0 points.

Student Sample F

0 POINTS

4 levels 4 −4 = 0 levels left but everyone got to use.

24 students

24 − 18 = 6

24 / 6 = 4 and 6 students = 1 level of paint

SCORE RATIONALE

It appears that the student attempted to apply his/her understanding of creating equal groups of 6 students, and used repeated subtraction to estimate if there would be enough paint. However, the response does not include a clearly expressed argument and does not include evidence of a logical explanation. The response earns 0 points.

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