

Tennessee Comprehensive Assessment Program / Mathematics

TCAP/CRA 2012-2013



Task 1: Cups of Flour Task Full Scoring Guide

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Task 1. Cups of Flour Task


Tanya and Eric discuss a task: “We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?” Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.

- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.



A large rectangular box for student response, containing a small icon of a hand writing on a notepad in the top-left corner.

- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.



A large rectangular box for student response, containing a small icon of a hand writing on a notepad in the top-left corner.



1. Cups of Flour Task Scoring Guide

The CCSS for Mathematical Content (3 points)

5.NF.4 The student determines the answer that Tanya will get. The student may do this by _____

- writing a multiplication equation, e.g., $4 \times \frac{1}{3} = \frac{4}{3}$ or $1\frac{1}{3}$.
- creating a drawing.
- showing repeated addition of 4 thirds, e.g., $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{4}{3}$ or $1\frac{1}{3}$.

5.NF.7b The student determines the answer that Eric will get. The student may do this by _____

- determining each of the 4 cups contains $\frac{3}{4}$, so 4×3 is 12.
- writing a division equation, and then inverting and multiplying, e.g.,
 $4 \div \frac{1}{3} = \frac{4}{1} \times \frac{3}{1} = 12$ recipes.
- changing both numbers to fractions with like denominators, and then dividing $\frac{12}{3}$ by $\frac{1}{3}$ to arrive at 12.

5.NF.7c The student provides an equation, a visual fraction model, or an explanation to support that the recipe can be made 12 times. The student may draw a picture of 4 _____

cups and indicate that $\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$ exist ($\frac{3}{4}$ in each of 4 cups) for a total of 12 times the recipe can be made.

Total Content Points _____

The CCSS for Mathematical Practice (3 points)

MP1 The student determines and represents with words, diagrams, and/or number lines _____
the results of $4 \times \frac{1}{3}$ and $4 \div \frac{1}{3}$. The student completes all parts of the task.

(MP1: Make sense of problems and persevere in solving them.)

MP6 The student shows accurate representations of a whole number divided by a unit _____
fraction and a whole number multiplied by a unit fraction. The explanation is carefully
formulated, thorough, and precise.

(MP6: Attend to precision.)

MP7 The student demonstrates that a whole can be partitioned into fractional parts and _____
that the parts are smaller than the whole, but, if recombined, equal the whole.

(MP7: Look for and make use of structure.)

Total Practice Points _____

Total Awarded Points _____

The CCSS for Mathematical Content Addressed in This Task

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. *For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)*

Apply and extend previous understandings of division to divide unit fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

- 5.NF.7b Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.*
- 5.NF.7c Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?*

The CCSS for Mathematical Practice*

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.


*Gray text indicates Mathematical Practices that are not addressed in this task.

Students' responses to a mathematical task provide evidence of what they understand and are able to do in relation to the standards and practices. Across tasks, this cumulative evidence shows students' understanding and abilities within a domain. When students do not respond completely to all parts of a task, they provide insufficient evidence of their mathematical understanding and abilities and therefore do not fully demonstrate the expectations of the standards and practices aligned with that task.

Task 1. Cups of Flour Task


Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.

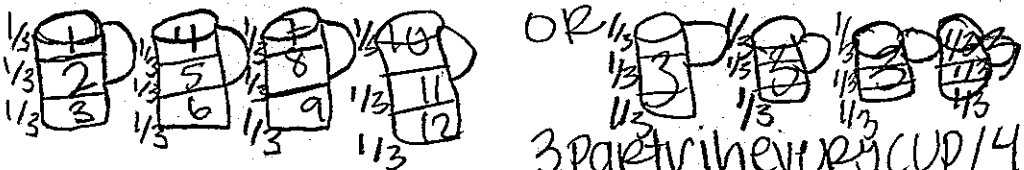
- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.

 Tanya - If you multiply 4 and $\frac{1}{3}$ you'll get $1\frac{1}{3}$.

ERIC - If you divide 4 and $\frac{1}{3}$ you'll get 12.

- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.

 Eric was right because when you draw a picture of 4 cups of flour, and cut each one into 3 parts you'll get 12, here is an example.



in all
 4×3
 $= 12$.

Guide 1

Litho 10138

Total Content Points: 3 (5.NF.4, 5.NF.7b, 5.NF.7c)

Total Practice Points: 3 (MP1, MP6, MP7)


The student determines Tanya's answer by providing the explanation "If you multiply 4 and $\frac{1}{3}$ you'll get $1\frac{1}{3}$ " (5.NF.4). The student determines Eric's answer by dividing 4 by $\frac{1}{3}$, and draws four cups with each cup divided into thirds, explaining that there are "3 parts in every cup/ 4 cups in all, so $4 \times 3 = 12$ " to support that the recipe can be made 12 times (5.NF.7b, 5.NF.7c). The drawings and explanations provided indicate a clear understanding of fractions as parts of a whole, which can be recombined to equal the whole (MP7). The student correctly completes all parts of the task, making sense of the problems and persevering in solving them through carefully formulated written explanations and accurate drawings (MP1, MP6).

Total Awarded Points: 6 out of 6

Task 1. Cups of Flour Task

Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.

- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.

 Tanya will get $1\frac{1}{3}$. Eric would get 12 which would be the correct answer. Eric.


per recipe

$4 \times \frac{1}{3} = 1\frac{1}{3}$

0 $\frac{1}{3}$ $\frac{2}{3}$ 1 $1\frac{1}{3}$ $1\frac{2}{3}$ 2 $2\frac{1}{3}$ $2\frac{2}{3}$ 3 $3\frac{1}{3}$ $3\frac{2}{3}$ 4 flour

0 1 2 3 4 5 6 7 8 9 10 11 12 how many recipes

- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.

 Eric is correct because you are trying to figure out how many time you can make the recipe with 4 cups of flour. You would do 4 cups of flour divide by $\frac{1}{3}$ the amount of flour that goes in on recipe.

Guide 2

Litho 10135

Total Content Points: 3 (5.NF.4, 5.NF.7b, 5.NF.7c)

Total Practice Points: 3 (MP1, MP6, MP7)

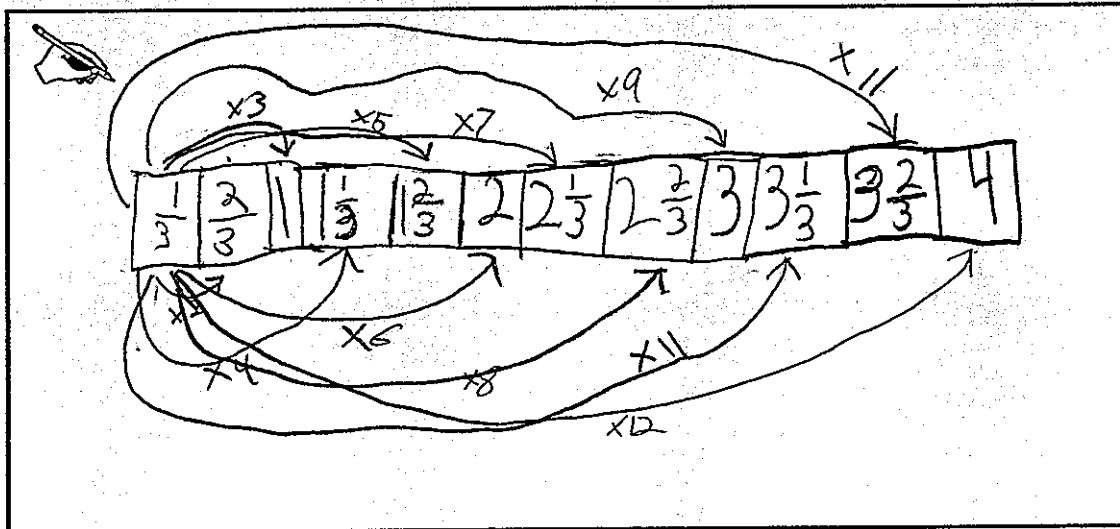
The student determines Tanya's answer by showing that $\frac{1}{3} \times 4 = 1\frac{1}{3}$ (5.NF.4). Using a double number line, the student divides 4 cups into thirds and determines the four cups will yield 12 recipes (5.NF.7b). The student establishes that Eric's method is the correct way to answer the question and supports this by referring to the double number line given (5.NF.7c). The double number line and explanation demonstrate a clear understanding of fractions as parts of a whole (MP7). The student correctly completes all parts of the task, making sense of the problems and persevering in solving them (MP1), and carefully formulates the explanation using a double number line (MP6).

Total Awarded Points: 6 out of 6


Task 1. Cups of Flour Task

Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.

- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.



- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.

 ERIC will get the answer correct because $4 \div \frac{1}{3} = 12$ and $12 \cdot \frac{1}{3} = 4$

Guide 3

Litho 3995

Total Content Points: 3 (5.NF.4, 5.NF.7b, 5.NF.7c)

Total Practice Points: 2 (MP1, MP7)

The student uses a tape diagram to illustrate Tanya's answer, $\frac{1}{3} \times 4 = 1\frac{1}{3}$ (5.NF.4), and

Eric's answer, $4 \div \frac{1}{3} = 12$ (5.NF.7b), by dividing the diagram into sections of $\frac{1}{3}$ cup and

indicating that there are 12 sections of $\frac{1}{3}$ in the 4 cups. The student determines that


Eric's answer is the correct way to solve the problem by dividing 4 into thirds on the tape diagram (5.NF.7c). The student completes all parts of the task and represents the correct solutions on the tape diagram (MP1), clearly demonstrating an understanding of fractions as parts of a whole (MP7). Repeating the multiplication by 11 twice and omitting the multiplication of 10 on the tape diagram indicate a lack of precision (no credit for MP6).

Total Awarded Points: 5 out of 6


Task 1. Cups of Flour Task

Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.

- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.

 If you did $4 \div \frac{1}{3}$ it would give you 12 to equal how many times he could use the recipe. If you multiplied it, it would equal $1 \frac{1}{3}$ that would just be saying what it equals not how many they could use in all

- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.

 Eric is correct because if you divide it it will tell you how many time it would take, but if you multiply it, it just says what those two numbers would equal to.

$4 \overset{\text{cups}}{\div} \frac{1 \overset{\text{cup}}{\text{recipe needed}}}{3} = 12$ $4 \times \frac{1 \overset{\text{cup}}{\text{recipe needed}}}{3} = 1 \frac{1}{3}$

Guide 4

Litho 3985

Total Content Points: 3 (5.NF.4, 5.NF.7b, 5.NF.7c)

Total Practice Points: 1 (MP1)

The student determines Tanya's answer using the multiplication equation $4 \times \frac{1}{3} = 1\frac{1}{3}$

(5.NF.4). The student determines Eric's answer using the division equation $4 \div \frac{1}{3} = 12$


and decides that Eric solved the problem correctly (5.NF.7b, 5.NF.7c). The student completes all parts of the problem using accurate equations (MP1), but the explanation ("if you divide it it will tell you how many time it would take, but if you multiply it, it just says what those two numbers would equal to") is not carefully formulated (no credit for MP6), and does not clearly demonstrate that the student understands fractions as parts of a whole (no credit for MP7).

Total Awarded Points: 4 out of 6

Task 1. Cups of Flour Task

Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.

- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.

 ~~Eric~~ can figure it out. ~~4 x 1/3 = 1 1/3 cups~~

~~4 x 1/3 = 1 1/3 cups~~

$4 \div \frac{1}{3} =$ the number of times $\frac{1}{3}$ cups go into the recipe

Eric

$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1$ cup flour

$\frac{1}{3} \frac{1}{3} \frac{1}{3}, \frac{1}{3} \frac{1}{3} \frac{1}{3}, \frac{1}{3} \frac{1}{3} \frac{1}{3}$

$4 = 4$ 12 times

Tanya


$4 \times \frac{1}{3} = \frac{4}{3}, \frac{1}{3}, \frac{1}{3}$

$1 = \frac{1}{3}, \frac{1}{3}, \frac{1}{3}$

$1 = \frac{1}{3}, \frac{1}{3}, \frac{1}{3}$

$1 = \frac{1}{3}, \frac{1}{3}, \frac{1}{3}$

- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.

 Eric, I know that $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1$ cup so multiply the cups of flour (4) by 1 and get 4. So if there are 3, $\frac{1}{3}$ cups in 1 cup then $3 \times 4 = 12 \frac{1}{3}$ cups and 12 times you can create the recipe.

Guide 5

Litho 4007

Total Content Points: 2 (5.NF.7b, 5.NF.7c)

Total Practice Points: 1 (MP7)

Although this response contains some work relating to multiplying $4 \times \frac{1}{3}$, the work does not indicate the solution to the expression (no credit for 5.NF.4). For this reason, the student has not completed all parts of the task (no credit for MP1), nor has the student provided an accurate calculation of a whole number multiplied by a unit fraction (no credit for MP6). The student correctly determines Eric's answer (12) by adding $\frac{1}{3} + \frac{1}{3} + \frac{1}{3}$ for each cup of flour and multiplying the number of $\frac{1}{3}$ cups by 4 (5.NF.7b). The student identifies Eric as having the correct solution to the problem and formulates an accurate explanation ("if there are 3, $\frac{1}{3}$ cups in 1 cup then $3 \times 4 = 12 \frac{1}{3}$ cups and 12 times you can create the recipe") (5.NF.7c). The student's explanation indicates a clear understanding of fractions as part of a whole (MP7).

Total Awarded Points: 3 out of 6

Task 1. Cups of Flour Task

Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.

- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.

$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$
 $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 4$
 $1\frac{1}{3} + 1\frac{1}{3} + 1\frac{1}{3} = 4$ twelve $\frac{1}{3} = 4$
 $4 \times \frac{1}{3} = 1\frac{1}{3}$
 $4 \div \frac{1}{3} = 12$

- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know. *both*

$4 \div \frac{1}{3} = 12 \leftarrow \text{Eric}$
 Both are right!
 I took twelve $\frac{1}{3}$ added together 12 times = 4.
 Tanya $\rightarrow 4 \times \frac{1}{3} = 1\frac{1}{3} = 1\frac{1}{3} + 1\frac{1}{3} + 1\frac{1}{3} = 4$
 To get her answer she could do this

Guide 6

Litho 10229

Total Content Points: 2 (5.NF.4, 5.NF.7b)

Total Practice Points: 1 (MP7)


The student correctly determines Tanya's answer with the multiplication equation $4 \times \frac{1}{3} = 1\frac{1}{3}$ and by adding $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1\frac{1}{3}$ (5.NF.4). The student correctly determines Eric's answer with the division equation $4 \div \frac{1}{3} = 12$ and by adding $\frac{1}{3}$ twelve times (5.NF.7b). By incorrectly stating that Tanya and Eric are both right (no credit for 5.NF.7c), the student does not clearly demonstrate having made sense of the problem (no credit for MP1). An inaccurate equation ($4 \times \frac{1}{3} = 1\frac{1}{3} = 1\frac{1}{3} + 1\frac{1}{3} + 1\frac{1}{3} = 4$) indicates a lack of precision (no credit for MP6), but the addition in the student's explanations indicates a basic understanding of fractions as being parts of a whole that can be recombined to equal the whole (MP7).

Total Awarded Points: 3 out of 6

Task 1. Cups of Flour Task

Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.


- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.

 $\frac{4}{1} \times \frac{1}{3} = \frac{4}{3}$ or $1\frac{1}{3}$
 $4 \div \frac{1}{3} = 12$

Tanya will get $\frac{4}{3}$ or $1\frac{1}{3}$ if she simplifies it. First she multiplies the denominators then the numerators to get the answer.

Eric will get 12, because he will swap the placement of each fraction. Then he will change it from a division to multiplication. Finally he will flip the numerator and denominator.

- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.

 Tanya because multiplying a fraction is like dividing a whole number.

Guide 7

Litho 3973

Total Content Points: 2 (5.NF.4, 5.NF.7b)

Total Practice Points: 0


The student determines Tanya's answer using the multiplication equation $\frac{4}{1} \times \frac{1}{3} = \frac{4}{3}$ or $1\frac{1}{3}$ (5.NF.4), and Eric's answer using the division equation $4 \div \frac{1}{3} = 12$ (5.NF.7b). The student incorrectly states that Tanya's approach to solving the problem is right (no credit for 5.NF.7c), which demonstrates a lack of understanding of the task (no credit for MP1). The student's explanations ("he will swap the placement of each fraction" and "multiplying a fraction is like dividing a whole number") are not carefully formulated, demonstrating a lack of precision (no credit for MP6). Despite the correct calculations shown, the student's explanations do not indicate a basic understanding of fractions as parts of a whole (no credit for MP7).

Total Awarded Points: 2 out of 6

Task 1. Cups of Flour Task

Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.


- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.

 Tanya's answer would be correct because if you were to divide it you would get 12 cups of flour and all you need is $\frac{1}{3}$ and Tanya's answer is $\frac{1}{3}$.

Tanya: $4 \times \frac{1}{3} = \frac{4}{3}$

Eric: $4 \div \frac{1}{3} = 12$

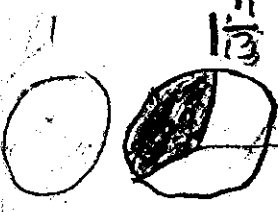
- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.

 Tanya determine the number of times the recipe can be made.

$\frac{1}{3}$

— CUPS

△ flour



Guide 8

Litho 10094

Total Content Points: 2 (5.NF.4, 5.NF.7b)

Total Practice Points: 0

The student determines Tanya's answer using the multiplication equation $4 \times \frac{1}{3} = 1\frac{1}{3}$ and Eric's answer with the division equation $4 \div \frac{1}{3} = 12$ (5.NF.4, 5.NF.7b). The student incorrectly identifies Tanya as having the correct solution to the problem (no credit for 5.NF.7c), indicating a lack of understanding of the problem (no credit for MP1). The student's explanation for choosing Tanya's solution ("if you were to divide it you would get 12 cups of flour and all you need is $\frac{1}{3}$ and Tanya's answer is $1\frac{1}{3}$ ") is confusing and not carefully formulated, demonstrating a lack of precision (no credit for MP6). The explanation does not indicate a sufficient understanding of fractions as being parts of a whole (no credit for MP7).

Total Awarded Points: 2 out of 6

Task 1. Cups of Flour Task

Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.

- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.

Handwritten work for part (a):

we have 4c flour, 1 recipe is $\frac{1}{3}$ a cup of flour

Tanya's work: $4 \times \frac{1}{3} = \frac{4}{3} \rightarrow \frac{3}{1}$

Eric's work: $4 \div \frac{1}{3} = \frac{4}{\frac{1}{3}} = \frac{4 \times 3}{1} = \frac{12}{1} = 12$

Handwritten calculations include: $4 \times \frac{1}{3} = \frac{4}{3}$, $4 \div \frac{1}{3} = \frac{4}{\frac{1}{3}} = \frac{4 \times 3}{1} = \frac{12}{1} = 12$, and a long division problem $3 \overline{)12}$ with a remainder of 0.

- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.

Handwritten explanation for part (b):

I know that Tanya can make the recipe more times than Eric because she used the Times Table or TT.

Guide 9

Litho 10091

Total Content Points: 1 (5.NF.4)

Total Practice Points: 0


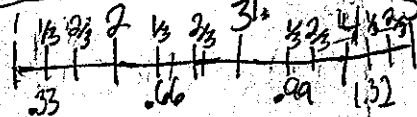
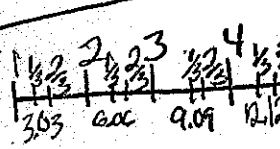
The student determines Tanya's answer by multiplying $\frac{4}{1} \times \frac{1}{3}$ and recognizing that the result is equal to 4 divided by 3, getting the answer $1\frac{1}{3}$ (5.NF.4). The student incorrectly determines Eric's answer as $\frac{1}{12}$ (no credit for 5.NF.7b). The student does not specifically state who is correct, and incorrectly implies Tanya has the correct solution to the problem (no credit for 5.NF.7c). This and the inaccurate calculation of Eric's solution demonstrate a lack of understanding of the problems and a lack of perseverance in solving them (no credit for MP1). An inaccurate calculation of a whole number divided by a unit fraction ($\frac{4}{1} \div \frac{1}{3} = \frac{4}{1} \times \frac{3}{1} = \frac{12}{1} = \frac{1}{12}$) and an explanation that is incorrect and not carefully formulated ("Tanya can make the resipy more times than Eric becaus she yoused the Times Table") indicate both a lack of precision and a lack of understanding of fractions as parts of a whole (no credit for MP6, no credit for MP7).

Total Awarded Points: 1 out of 6


Task 1. Cups of Flour Task

Tanya and Eric discuss a task: "We have 4 cups of flour. One recipe requires $\frac{1}{3}$ of a cup of flour. How many times can the recipe be made with the available flour?" Tanya claims that she can use the problem $4 \times \frac{1}{3}$ to figure out the number of times the recipe can be made. Eric claims that he can use the problem $4 \div \frac{1}{3}$ to answer the question.

- a. Use diagrams, number lines, or an explanation to determine the answers that Tanya and Eric will each get.

 Tanya	Eric
$4 \times \frac{1}{3} = 1.32$ $4 \times .33$	$4 \div \frac{1}{3} = 12.12$ $4 \div .33 = 12.12$
<p>I found the answer by changing the fraction to a decimal and multiplying it by 4 to get 1.32.</p>  <p>On the number line I showed what each one was times 3.</p>	<p>On the number line I divided each number by .33 and got those answers below.</p> 

- b. Tell which student will correctly determine the number of times the recipe can be made with the 4 cups of flour and explain how you know.

 Eric is correct because if it's 4

Total Content Points: 0

Total Practice Points: 0

The student determines Tanya's and Eric's answers using decimals instead of fractions, and therefore does not demonstrate the ability to multiply or divide fractions (no credit for 5.NF.4, no credit for 5.NF.7b). The student identifies Eric's answer as correct, but the number lines and explanations provided are too unclear to adequately support that the recipe can be made 12 times (no credit for 5.NF.7c). The student does not accurately represent $4 \times \frac{1}{3}$ or $4 \div \frac{1}{3}$ (no credit for MP1). Inaccurate calculations ($4 \times \frac{1}{3} = 1.32$ and $4 \div \frac{1}{3} = 12.12$), incorrect number lines labeled improperly (no $1\frac{1}{3}$, $1\frac{2}{3}$, etc.) and explanations that are not carefully formulated indicate a lack of attention to precision and a lack of sufficient understanding of fractions as being parts of a whole (no credit for MP6, no credit for MP7).

Total Awarded Points: 0 out of 6