TCAP/CRA

2014

4

Phase II

Comparing Fractions Task
Anchor Set

Comparing Fractions Task

a.   Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

b.   Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?
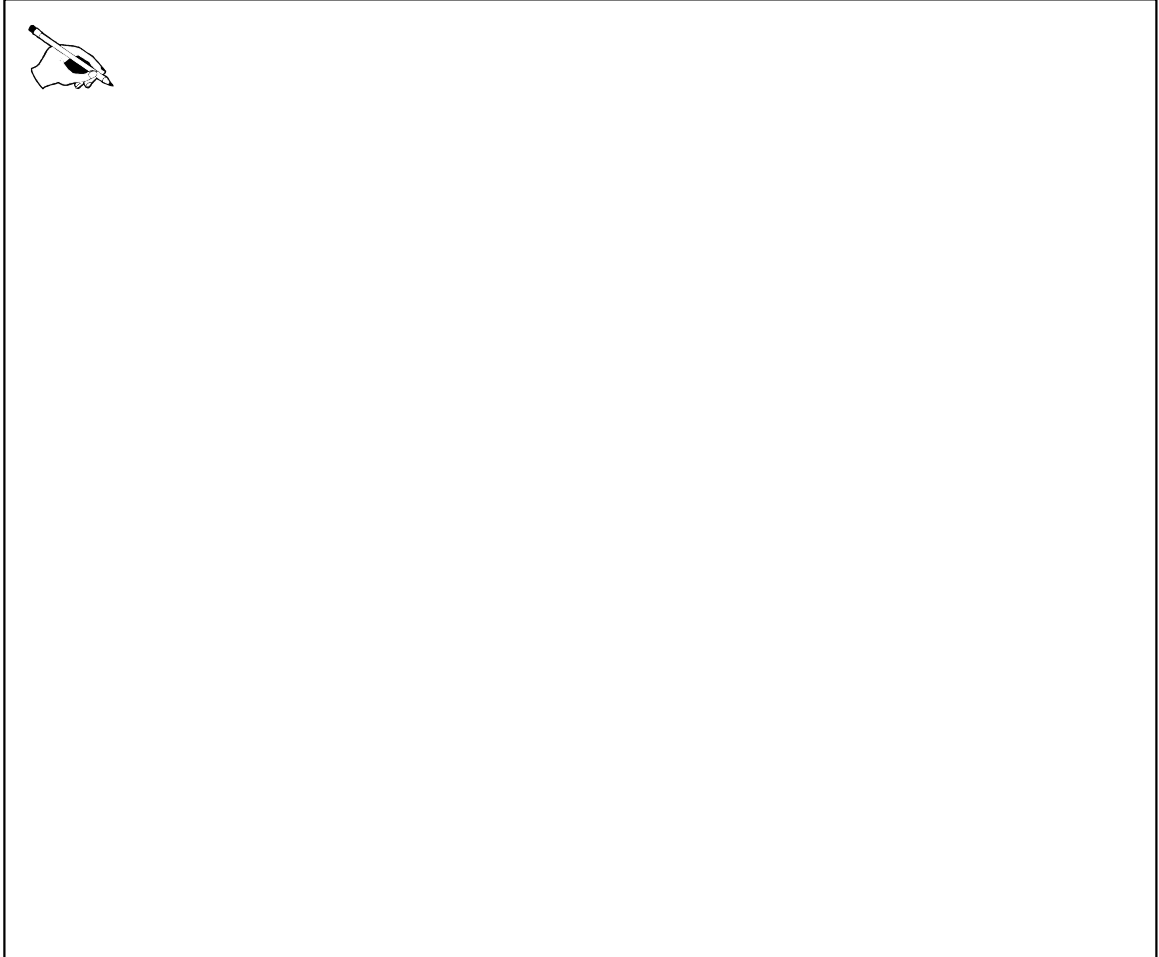
Comparing Fractions Task

c.   Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

Scoring Guide

The CCSS for Mathematical Content (2 points)

4.NF.B.3a   Represents how the addends combine to form the sum on the number line.
(1 Point)

                    _____

4.NF.A.2   Correctly compares the sums of the two equations (or any two fractions). Records the results with the symbols >, =, or <.
(**1 Point**)

                    _____

The CCSS for Mathematical Practice (3 points)

MP3   Provides a reasonable mathematical explanation for which sum (or any two fractions) is greater. Methods may include:
  – finding a common denominator;
  – converting fractions to a decimal; or
  – analyzing the length on the number line from the point of the sum to the point representing one whole.
 (1 Point)
(MP3: Construct viable arguments and critique the reasoning of others.)

MP4   Partitions the number lines with reasonable accuracy according to the denominator of the fractions in parts a and b; labeling the divisions on the line with the correct fractions.
(1 Point)
(MP4: Model with mathematics.)

MP6   Calculates the sums correctly.
(1 Point)
(MP6: Attend to precision.)

                              TOTAL POINTS: 5

The CCSS for Mathematical Content Addressed In This Task

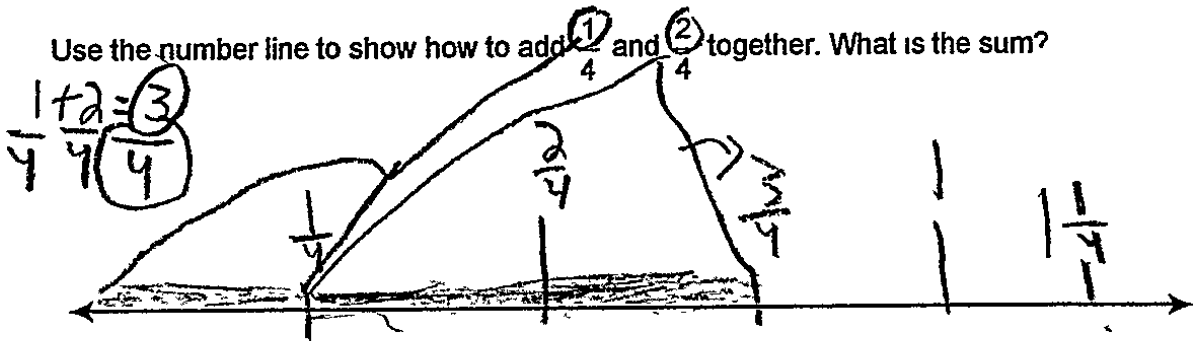| **Extend understanding of fraction equivalence and ordering.** |
|---|
| 4.NF.A.2   Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. |
| **Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.** |
| 4.NF.B.3a   Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. |

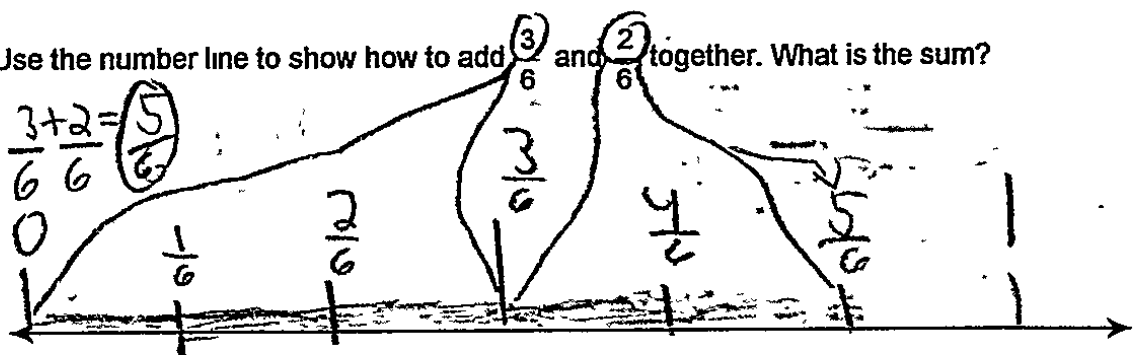| **The CCSS for Mathematical Practice*** |
|---|
| 1.   Make sense of problems and persevere in solving them. |
| 2.   Reason abstractly and quantitatively. |
| 3.   Construct viable arguments and critique the reasoning of others. |
| 4.   Model with mathematics. |
| 5.   Use appropriate tools strategically. |
| 6.   Attend to precision. |
| 7.   Look for and make use of structure. |
| 8.   Look for and express regularity in repeated reasoning. |
| |
| * Gray type indicates Mathematical Practices not addressed in this assessment. |

A-1a

Comparing Fractions Task

a.   Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

$$\frac{1+2}{4} = \frac{3}{4}$$

$$\frac{1}{4} \qquad \frac{2}{4} \qquad \frac{3}{4} \qquad 1 \qquad 1\frac{1}{4}$$

b.   Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

$$\frac{3+2}{6} = \frac{5}{6}$$

$$0 \qquad \frac{1}{6} \qquad \frac{2}{6} \qquad \frac{3}{6} \qquad \frac{4}{6} \qquad \frac{5}{6} \qquad 1$$

A-1b
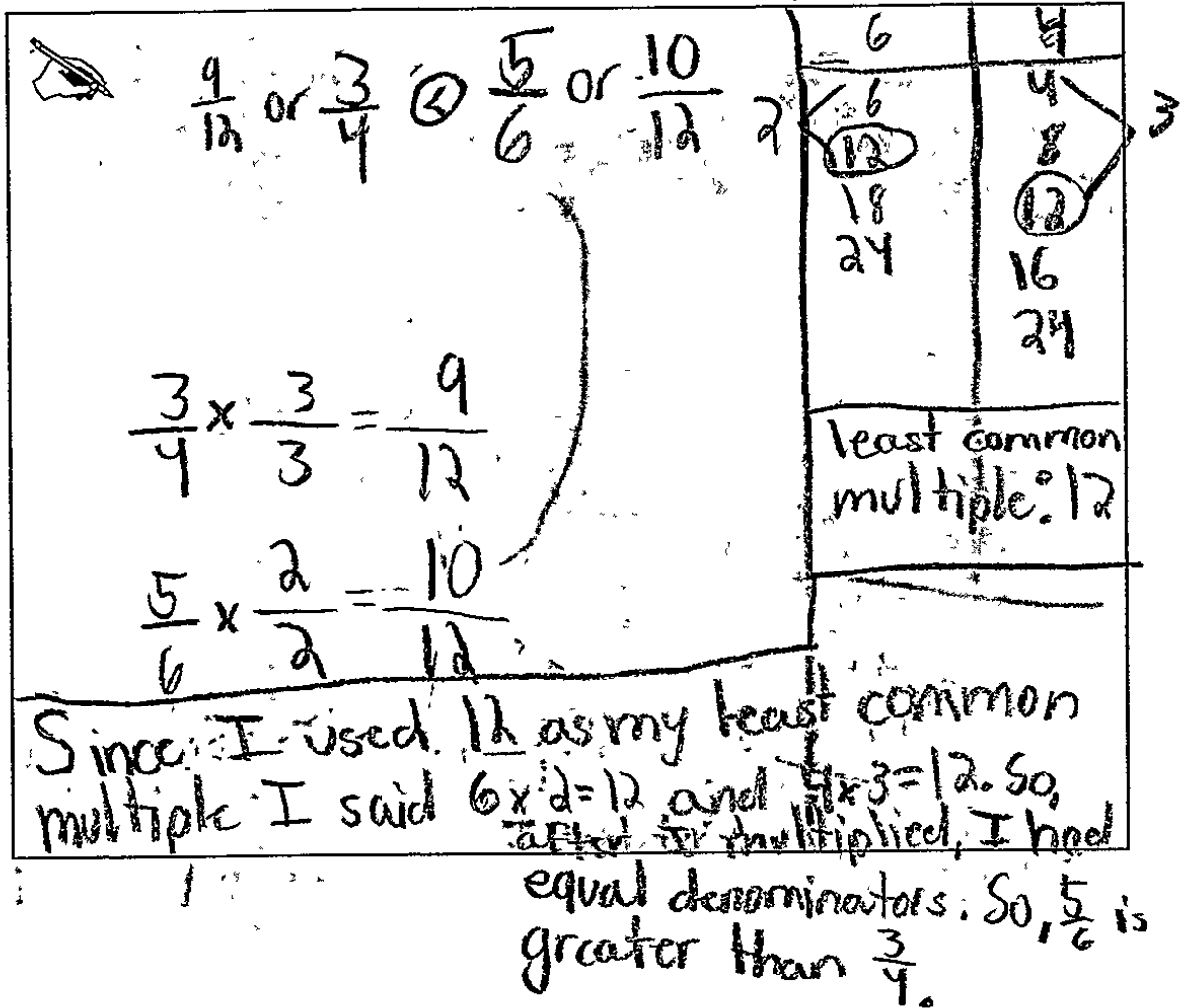
Comparing Fractions Task

c.   Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

$$\frac{9}{12} \text{ or } \frac{3}{4} \enspace < \enspace \frac{5}{6} \text{ or } \frac{10}{12}$$

$$\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$$

$$\frac{5}{6} \times \frac{2}{2} = \frac{10}{12}$$

6
6
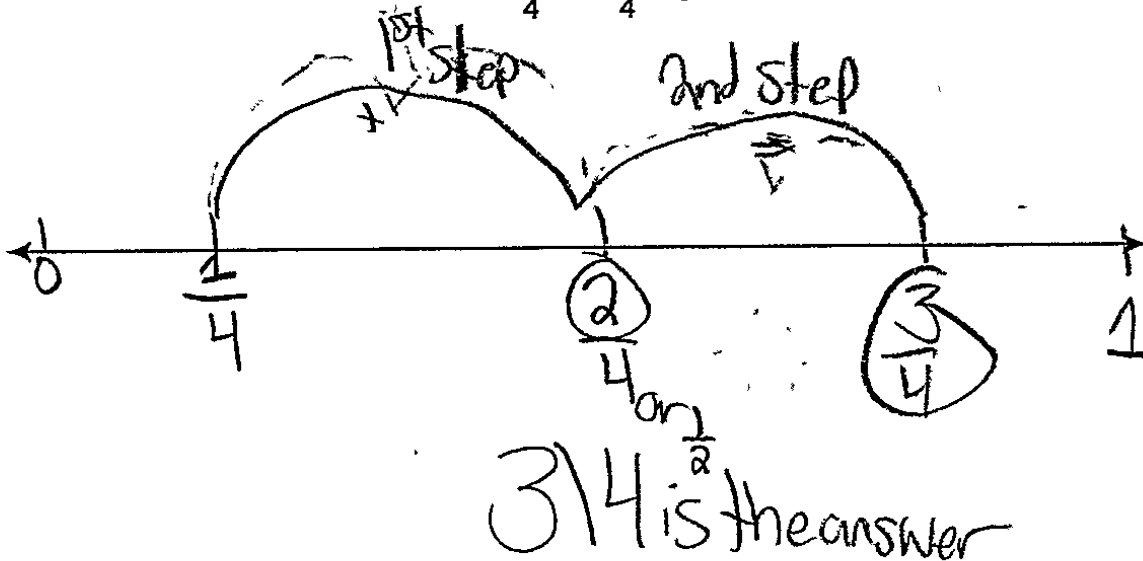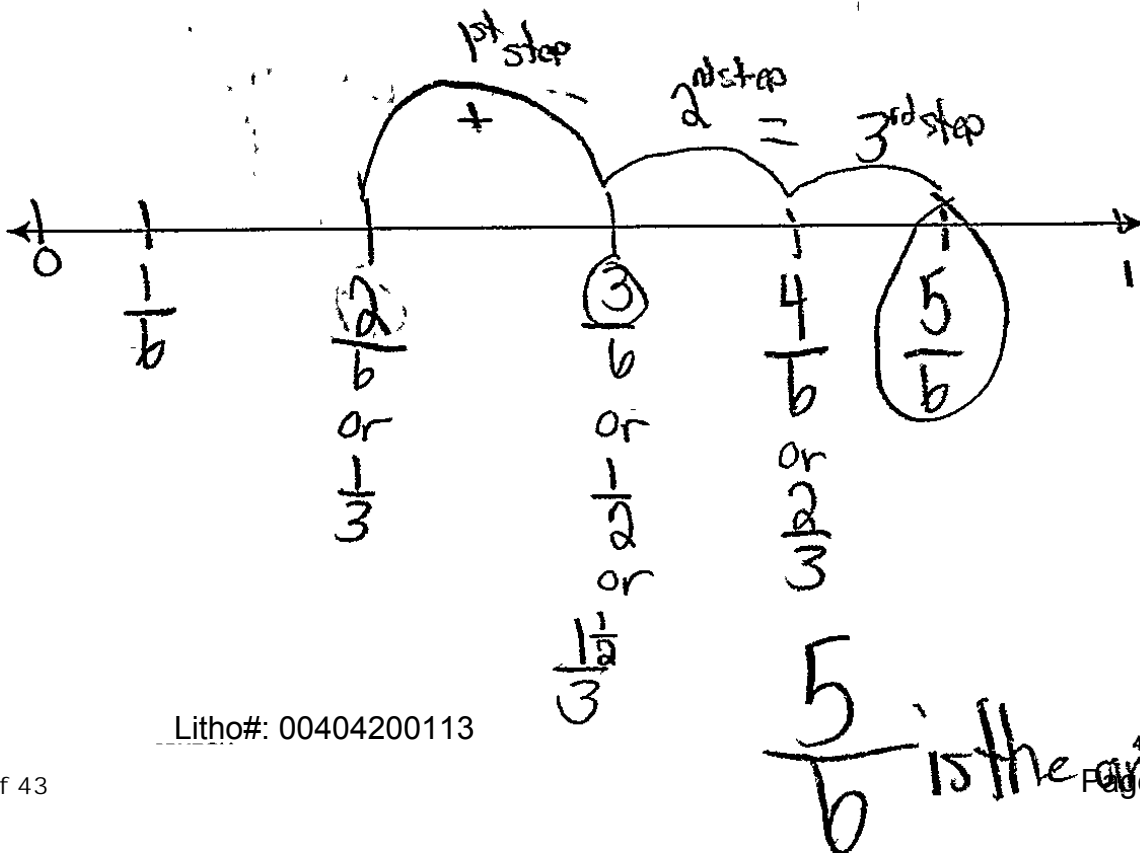(12)
18
24

4
4
8
(12)
16
24

least common
multiple: 12

Since I used 12 as my least common multiple I said 6×2=12 and 4×3=12. So, after I multiplied, I had equal denominators. So, $\frac{5}{6}$ is greater than $\frac{3}{4}$.

Anchor 1   Litho 00284200110

Total Content Points: 2   (4.NF.B.3a, 4.NF.A.2)

Total Practice Points: 3   (MP3, MP4, MP6)

In Parts A and B, the student represents how the addends combine to form the sum on the number line. In Part B, the student places the first $\frac{3}{6}$ of the number line inside a bracket and the second $\frac{2}{6}$ of the number line inside a second bracket. The end of the second bracket indicates the sum, $\frac{5}{6}$. The student further clarifies by drawing a thick line on the number line from 0 to $\frac{5}{6}$ and attaches the brackets to the numerators of both addends in the prompt with circles. The student's work in Part A is similar (4.NF.B.3a). In Part C, the student correctly compares the sums of the two equations, indicating that $\frac{3}{4}$ is less than $\frac{5}{6}$ using the < symbol (4.NF.A.2), and the student provides a reasonable mathematical explanation of which sum is greater based upon the method of finding a common denominator for the two fractions (MP3). In Parts A and B, the student partitions the number lines with reasonable accuracy according to the denominator of the fractions and labels the divisions on the line with correct fractions (MP4). The student calculates both sums from Parts A and B correctly (MP6).

Total Awarded Points: 5 out of 5

Comparing Fractions Task

a. Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

1st step 2nd step

$\frac{1}{4}$ ② ③
      $\frac{}{4}$ $\frac{}{4}$ 1
      or $\frac{1}{2}$

3\4 is the answer

b. Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

1st step 2nd step 3rd step

$\frac{1}{6}$ ②   ③ $\frac{4}{6}$ ⑤
      $\frac{}{6}$ $\frac{}{6}$ $\frac{5}{6}$
      or   or   or
      $\frac{1}{3}$ $\frac{1}{2}$ $\frac{2}{3}$
               or
            $\frac{1\frac{1}{2}}{3}$

$\frac{5}{6}$ is the answer

A-2b

Comparing Fractions Task

c.   Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

$$\frac{5}{6} > \frac{3}{4}$$

$$\frac{10}{12} \text{ is bigger} \quad \frac{9}{12} \text{ is smaller}$$

$$\frac{6}{12} \quad \frac{4}{8} = \frac{12}{12}$$

Because I drew a T-chart and wrote the denominators at the top and listed the numbers that are multiples of it. Then I find when I see the same multiple like 12. 4 and 6 can go into 12. On 3/4 I said how many times does 4 go into 12 and I multiplied 3 by that number and got 9. Then I did the same thing with the 6 and said how many times does six go into 12 and I multiplied 5 by that and got 10.

Comparing Fractions

Anchor 2   Litho 00404200113

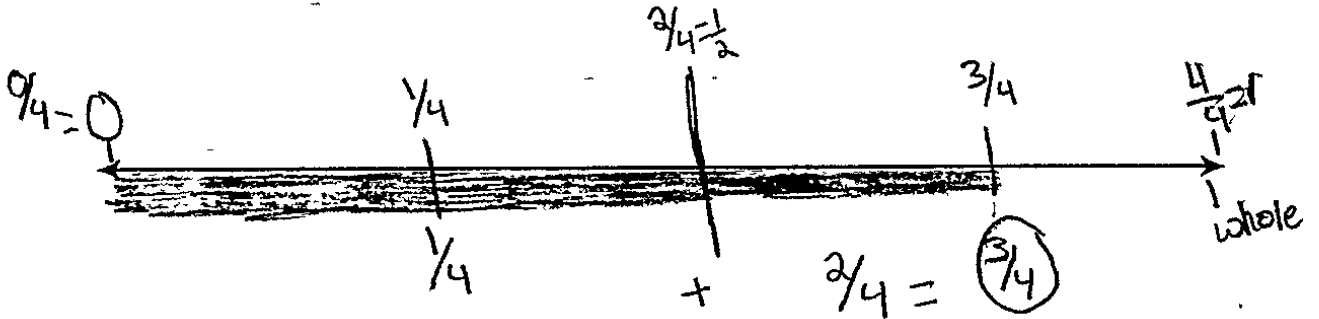Total Content Points: 2   (4.NF.B.3a, 4.NF.A.2)

Total Practice Points: 3   (MP3, MP4, MP6)

In Parts A and B, the student represents how the addends combine to form the sum on the number line. In Part A, the student begins with the first addend, $\frac{1}{4}$. The second addend is represented by the number of steps: the student moves two fourths on the number line to land on the sum, $\frac{3}{4}$. In Part B, the student begins with the second addend, $\frac{2}{6}$, otherwise repeating the same pattern as Part A (4.NF. B.3a). In Part C, the student correctly compares the sums of the two equations and shows that $\frac{5}{6}$ is greater than $\frac{3}{4}$ using the > symbol (4.NF.A.2). The student provides a reasonable explanation for which sum is greater based upon the method of finding a common denominator (MP3). In Parts A and B, the student partitions the number lines with reasonable accuracy according to the denominator of the fractions, and labels the divisions on the line with correct fractions (MP4). The student calculates both sums from Parts A and B correctly (MP6).
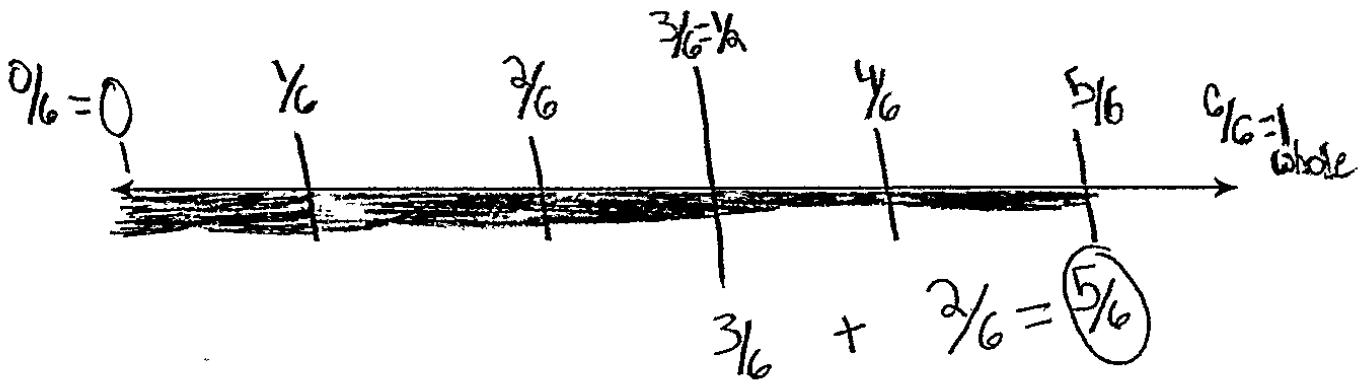
Total Awarded Points: 5 out of 5

Comparing Fractions Task

a.   Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

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

whole

$\frac{1}{4}$ $+$ $\frac{2}{4} =$ (3/4)

b.   Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

$\frac{0}{6}=0$ $\frac{1}{6}$ $\frac{2}{6}$ $\frac{3}{6}=\frac{1}{2}$ $\frac{4}{6}$ $\frac{5}{6}$ $\frac{6}{6}=1$ whole

$\frac{3}{6}$ $+$ $\frac{2}{6} =$ (5/6)

Litho#: 00214200110

Comparing Fractions Task

c. Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

$\frac{9}{12} = 3/4$ $<$ $5/6 = \frac{10}{12}$ $\frac{6}{6}$ $\frac{4}{4}\frac{7}{8}$ (I) (12)

$5/6 \times \frac{2}{2} = \frac{10}{12}$ $\qquad$ $3/4 \times \frac{3}{3} = \frac{9}{12}$

I found my Least Common Denominator. Then got equivalent fractions for $5/6$ and $3/4$ and compared my equivalent fractions which were $\frac{9}{12}$ and $\frac{10}{12}$ so I remembered that the open side goes to the largest number and that was $\frac{10}{12}$ so I used the less than sign $(<)$.

Anchor 3   Litho 00214200110

Total Content Points: 2   (4.NF.B.3a, 4.NF.A.2)

Total Practice Points: 3   (MP3, MP4, MP6)

In Parts A and B, the student indicates each addend with a thick, solid line colored in on the number line, ending at the sum. The student also indicates each addend by writing the parts of the equations underneath the number line corresponding to where the first addend ends, and to the middle of where the second addend is being added in both Parts A and B. In these ways, the student represents how the addends combine to form the sum on the number line by drawing both addends which combine to end at the sum (4.NF.B.3a). In Part C, the student correctly compares two equations, indicating that $\frac{3}{4}$ is less than $\frac{5}{6}$ using the < symbol (4.NF.A.2). The student provides a reasonable mathematical explanation for which sum is greater based upon the method of finding a common denominator (MP3). In Parts A and B, the student partitions the number lines with reasonable accuracy according to the denominator of the fractions and labels the divisions on the line with correct fractions (MP4). The student calculates both sums from Parts A and B correctly (MP6).

Total Awarded Points: 5 out of 5

Comparing Fractions Task

a. Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

b. Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

Litho#: 00274200113

A-4b

Comparing Fractions Task

c. Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

$$\frac{3}{4} < \frac{5}{6}$$

I decided to use < symbol becaus

Anchor 4   Litho 00274200113

Total Content Points: 1   (4.NF.A.2)

Total Practice Points: 3   (MP3, MP4, MP6)

In Parts A and B, the student does not represent how the addends combine to form the sum on the number line. The student indicates the correct sum on each number line with a dot, but makes no special indication for the addends, other than indicating that $\frac{2}{4}$ and $\frac{3}{6}$ are each one half of their respective number lines, which is irrelevant to the task (no credit for 4.NF.B.3a). In Part C, the student correctly compares the sums of the two equations by indicating that $\frac{3}{4}$ is less than $\frac{5}{6}$ using the < symbol (4.NF.A.2). The student provides a reasonable mathematical explanation for which sum is greater by providing a visual comparison of equal-length bars divided into fourths and sixths to represent the fractions (MP3). In Parts A and B, the student partitions the number lines with reasonable accuracy according to the denominator of the fractions and labels the divisions on the line with correct fractions (MP4). The student calculates both sums from Parts A and B correctly (MP6).
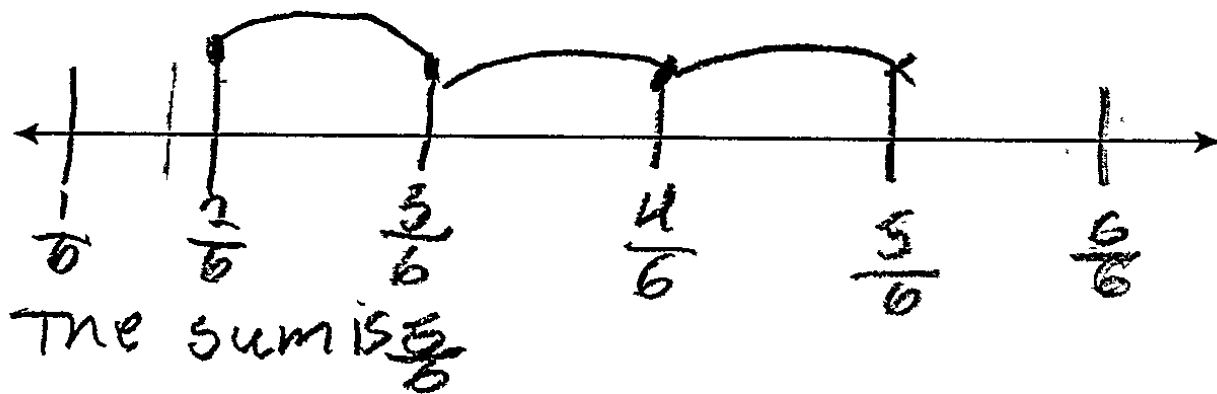
Total Awarded Points: 4 out of 5

Comparing Fractions Task

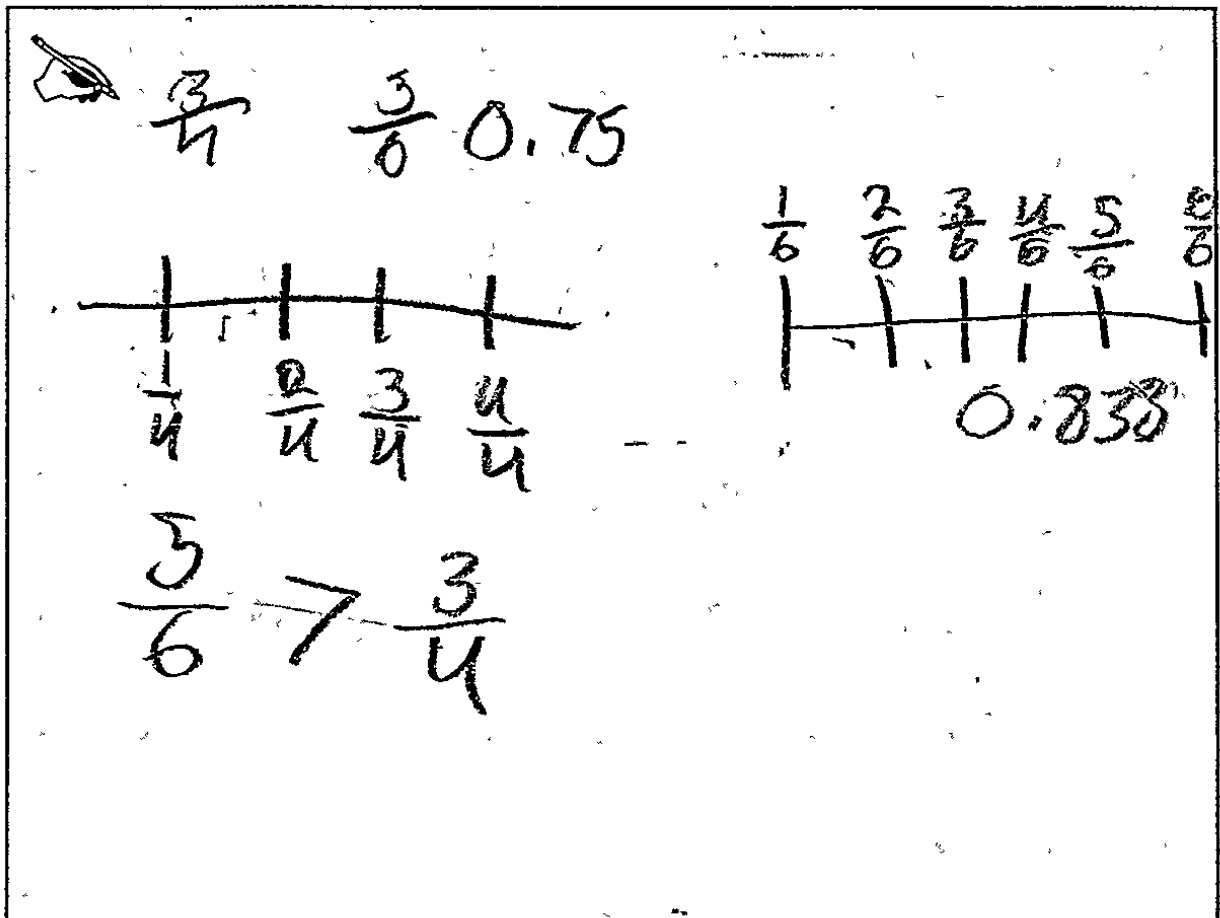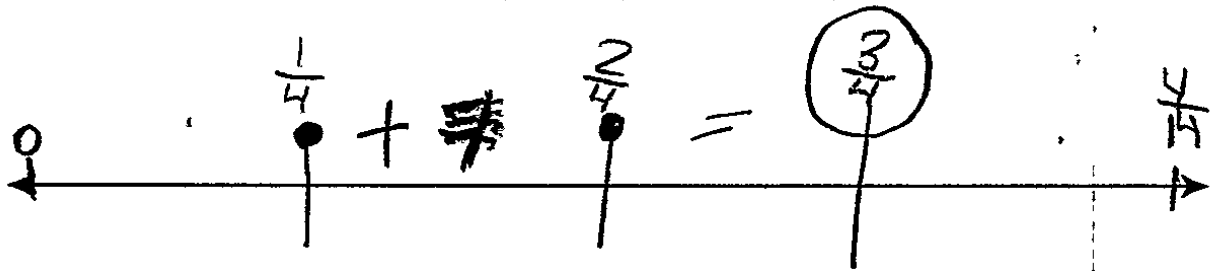a.   Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

$$\frac{1}{4} \qquad \frac{2}{4} \qquad \frac{3}{4} \qquad \frac{4}{4}$$

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

b.   Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

$$\frac{1}{6} \qquad \frac{2}{6} \qquad \frac{3}{6} \qquad \frac{4}{6} \qquad \frac{5}{6} \qquad \frac{6}{6}$$

The sum is $\frac{5}{6}$

Comparing Fractions Task

c.   Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

$$\frac{3}{4} \qquad \frac{3}{6} \quad 0.75$$

$$\frac{1}{6} \quad \frac{2}{6} \quad \frac{3}{6} \quad \frac{4}{6} \quad \frac{5}{6} \quad \frac{6}{6}$$

$$\frac{1}{4} \quad \frac{2}{4} \quad \frac{3}{4} \quad \frac{4}{4}$$

$$0.833$$

$$\frac{5}{6} > \frac{3}{4}$$
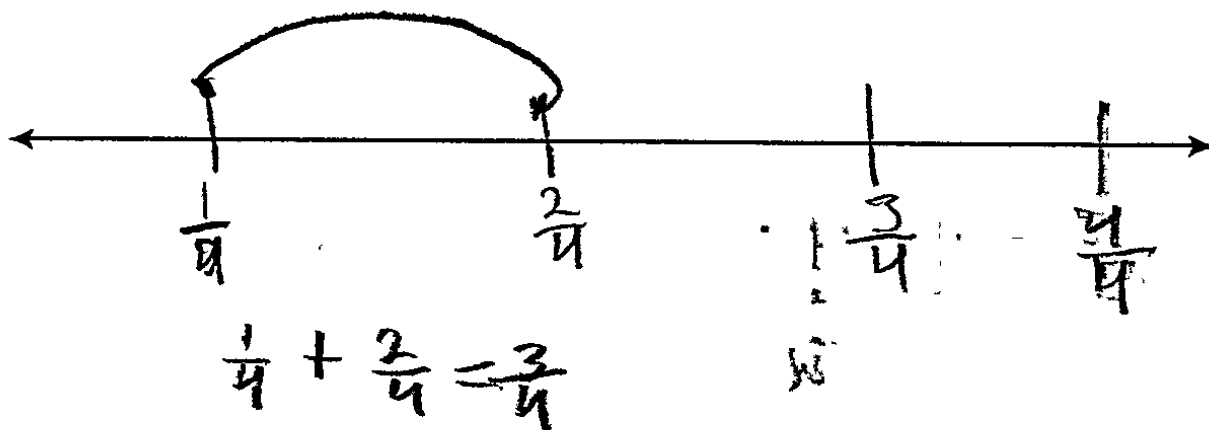
Anchor 5   Litho 00024200092

Total Content Points: 1   (4.NF.A.2)

Total Practice Points: 3   (MP3, MP4, MP6)

In Part A, the student does not correctly represent how the addends combine to form the sum on the number line. In Part A, the student stops at $\frac{2}{4}$ instead of $\frac{3}{4}$, either incorrectly indicating the sum or failing to complete the model. Although Part B is correct, both parts must be complete and correct to receive credit (no credit for 4.NF.B.3a). In Part C, the student accurately compares the sums of the two equations and shows that $\frac{5}{6}$ is greater than $\frac{3}{4}$ using the > symbol (4.NF.A.2). The student provides a reasonable mathematical argument by converting the fractions to decimals (MP3). In Parts A and B, the student partitions the number lines with reasonable accuracy according to the denominator of the fractions and labels the divisions on the line with correct fractions (MP4). The student calculates both sums from Parts A and B correctly (MP6).

Total Awarded Points: 4 out of 5

A-6a

Comparing Fractions Task

a.   Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

$$\frac{1}{4} + \frac{2}{4} = \boxed{\frac{3}{4}}$$

$$\frac{3}{4}$$

KEY
- ● = dot
- + = adding
- = means equal

b.   Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?
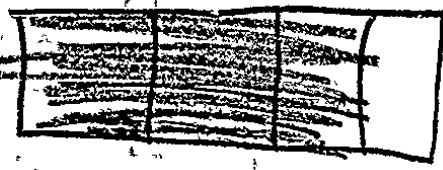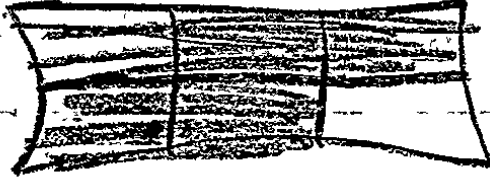
$$\frac{2}{6} + \frac{3}{6} = \boxed{\frac{5}{6}}$$

$$\frac{5}{6}$$

Litho#: 0032420009
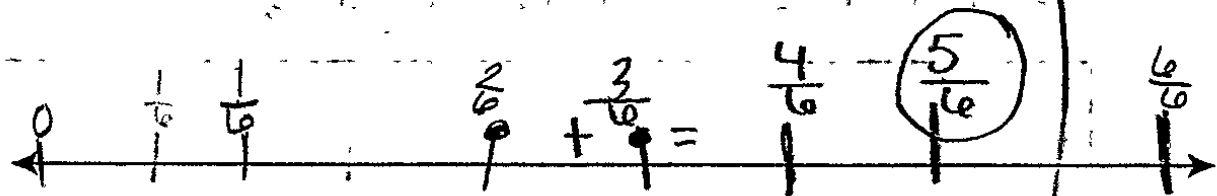
Comparing Fractions Task

Compare the sums you found in part a and part b using >, < or = Explain how you decided which symbol to use.

$\frac{3}{4}$ (<) $\frac{5}{6}$

$\frac{5}{6}$ is greater because, if you drew 2 bars and colored in the fraction. Then $\frac{5}{6}$ would be greater.

$\frac{3}{4}$

$\frac{5}{6}$

KEY
< = that number is greater.

▦ = $\frac{3}{4}$

▦ = $\frac{5}{6}$

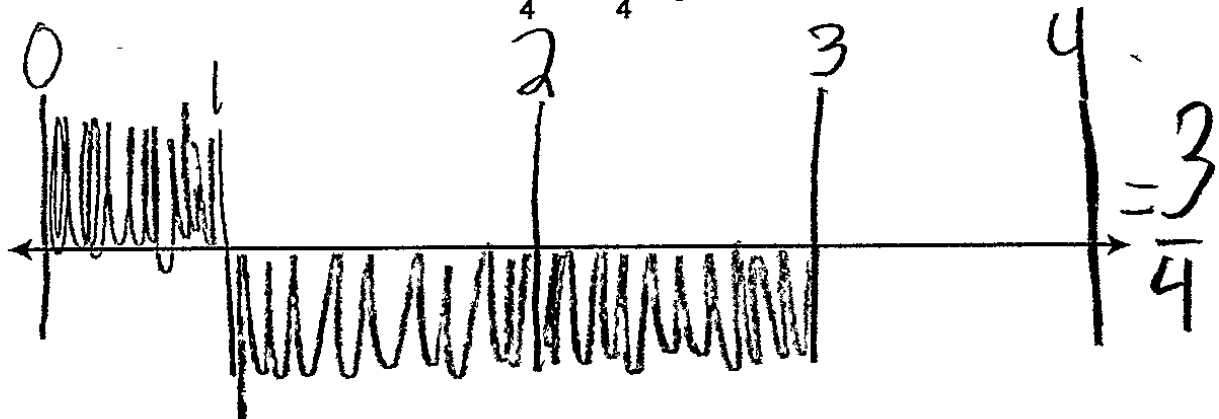Anchor 6　　　　　　　　Litho 00324200093

Total Content Points: 1　　　(4.NF.A.2)

Total Practice Points: 3　　　(MP3, MP4, MP6)

In Parts A and B, the student does not represent how the addends combine to form the sum on the number line. Although the student has placed a dot or circle on each addend and sum and has written the equation on or near the number line, the student is not using the spatial qualities of the number line to graphically indicate the relationship between quantities (no credit for 4.NF.B.3a). In Part C, the student correctly compares the sums of the two equations by indicating that $\frac{3}{4}$ is less than $\frac{5}{6}$ using the $<$ symbol (4.NF.A.2). The student provides a reasonable mathematical explanation for which sum is greater by using a visual comparison of two similarly-sized bars with fourths and sixths colored in to represent the fractions (MP3). In Parts A and B, the student partitions the number lines with reasonable accuracy according to the denominator of the fractions, and labels the divisions on the line with correct fractions (MP4). The student calculates both sums from Parts A and B correctly (MP6).
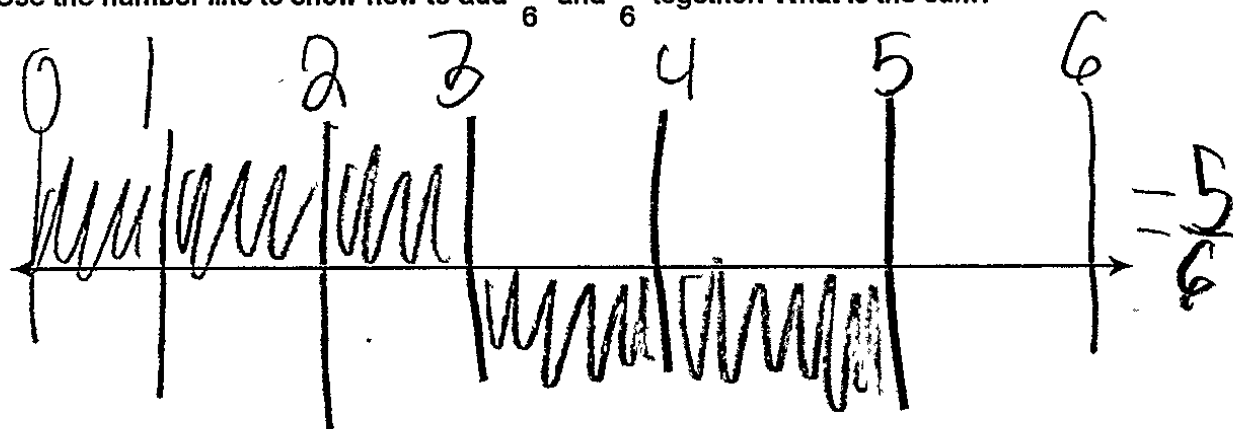
Total Awarded Points: 4 out of 5

A-7a

Comparing Fractions Task

a. Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

$= \frac{3}{4}$

b. Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

$= \frac{5}{6}$

Comparing Fractions Task

c.   Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

$$\frac{3}{4} \times \frac{3}{3} = \frac{6}{12} \quad \bigcirc< \quad \frac{10}{12} = \frac{2}{2} \div \frac{5}{6}$$

Anchor 7   Litho 00404200110

Total Content Points: 2   (4.NF.B.3a, 4.NF.A.2)

Total Practice Points: 1   (MP6)

In Parts A and B, the student represents how the addends combine to form the sum on the number line. The student represents each addend by darkening the appropriate number of divisions on a number line representing one unit, where the numerators are represented but the denominators are not. The combination of darkened bars ends at the point representing the sum (4.NF.B.3a). In Part C, the student correctly compares the sums of the two equations, indicating that $\frac{3}{4}$ is less than $\frac{5}{6}$ using the < symbol (4.NF.A.2). The student attempts a reasonable mathematical explanation for which sum is greater based on finding a common denominator, but incorrectly calculates that $\frac{3}{4}$ is equivalent to $\frac{6}{12}$ (no credit for MP3). In Parts A and B, the student partitions the number line with reasonable accuracy, but mislabels the number line with whole numbers rather than fractions (no credit for MP4). The student calculates both sums from Parts A and B correctly (MP6).
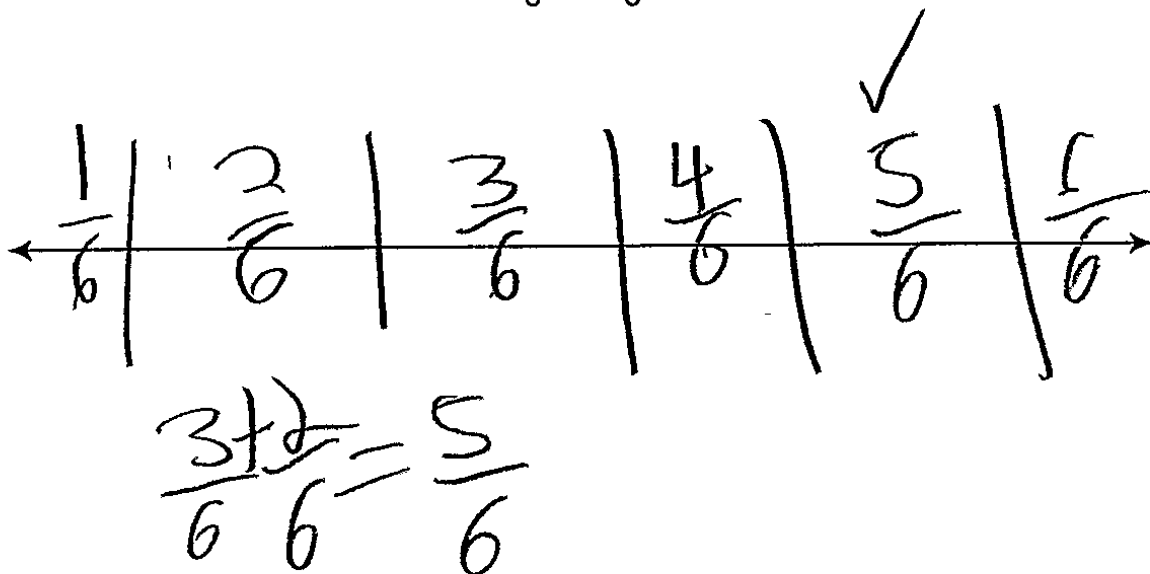
Total Awarded Points: 3 out of 5

Comparing Fractions Task

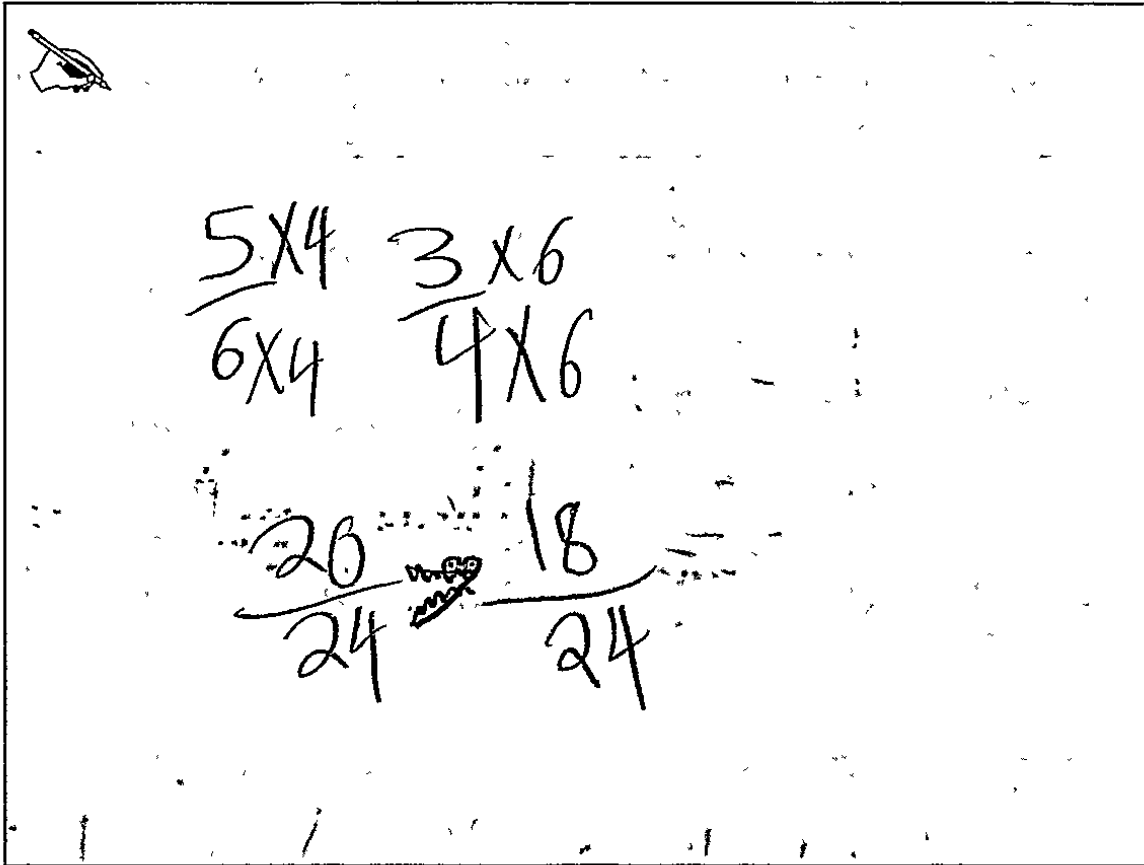a   Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

$$\frac{1}{4} \quad \frac{2}{4} \quad \frac{3}{4} \quad \frac{4}{4}$$

$1+2=3$
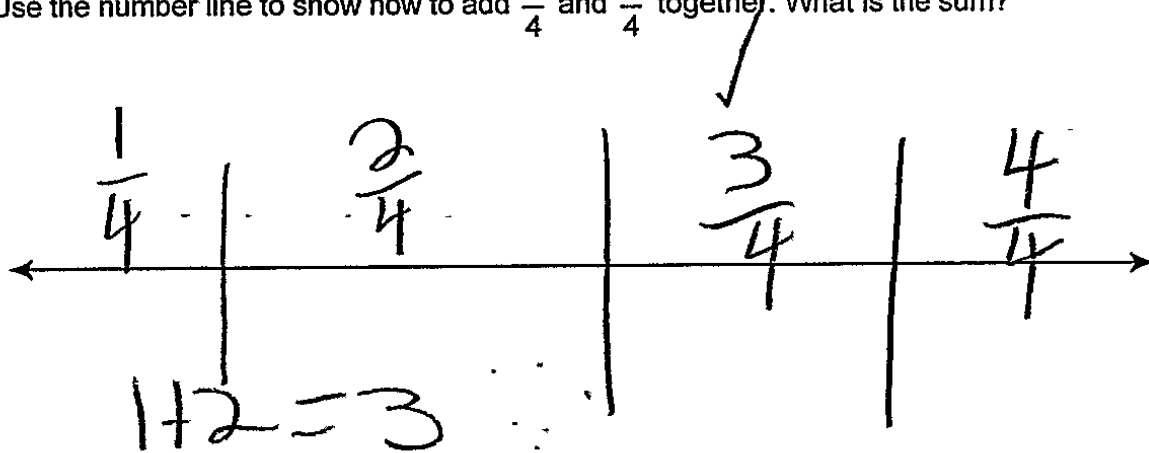
$\frac{1}{4}+\frac{2}{4}=\frac{3}{4}$ ...then put a 4 as your denomonator.

b.   Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

$$\frac{1}{6} \quad \frac{2}{6} \quad \frac{3}{6} \quad \frac{4}{6} \quad \frac{5}{6} \quad \frac{6}{6}$$

$\frac{3}{6}+\frac{2}{6}=\frac{5}{6}$

Litho#: 00214200113

Comparing Fractions Task

c.   Compare the sums you found in part a and part b using >, <, or =. Explain how you decided
which symbol to use

$$\frac{5 \times 4}{6 \times 4} \qquad \frac{3 \times 6}{4 \times 6}$$

$$\frac{20}{24} \qquad \frac{18}{24}$$

Anchor 8   Litho 00214200113

Total Content Points: 1   (4.NF.A.2)

Total Practice Points: 2   (MP3, MP6)

In Parts A and B, the student does not represent how the addends combine to form the sum on the number line (no credit for 4.NF.B.3a). In Part C, the student correctly compares the sum of the two equations by showing that $\frac{5}{6}\left(\frac{20}{24}\right)$ is greater than
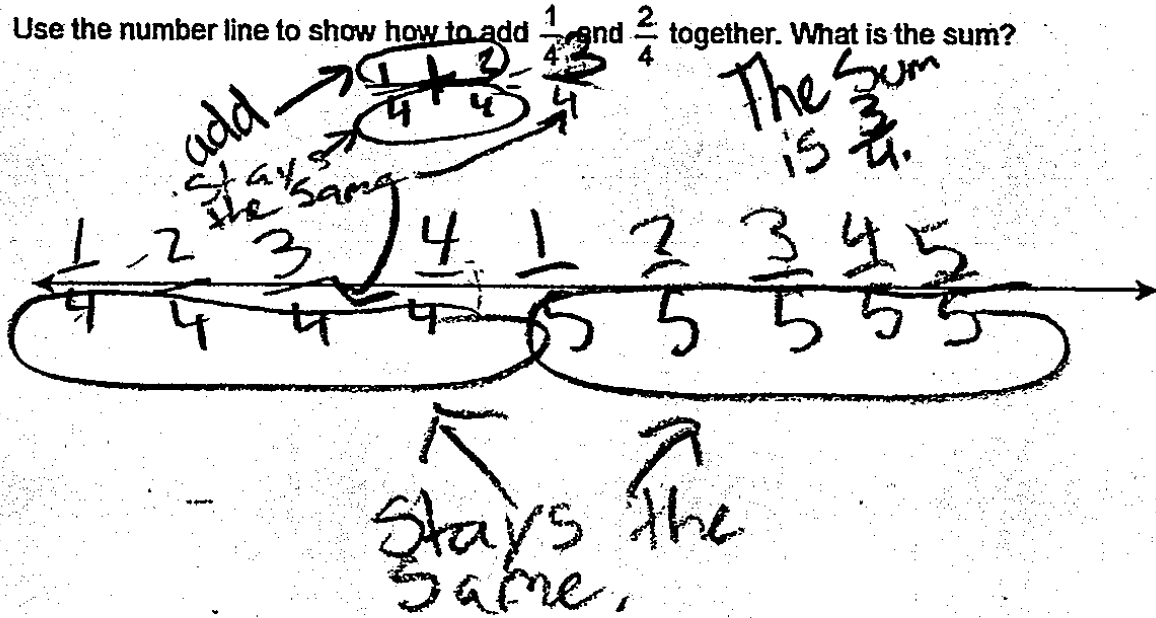
$\frac{3}{4}\left(\frac{18}{24}\right)$ using the > symbol (4.NF.A.2). The student provides a reasonable mathematical explanation for which sum is greater based on finding a common denominator between the two fractions (MP3). In Parts A and B, the student incorrectly partitions the number lines, dividing the line into segments and placing the fractions between, rather than on, the divisions (no credit for MP4). The student calculates both sums from Parts A and B correctly (MP6).
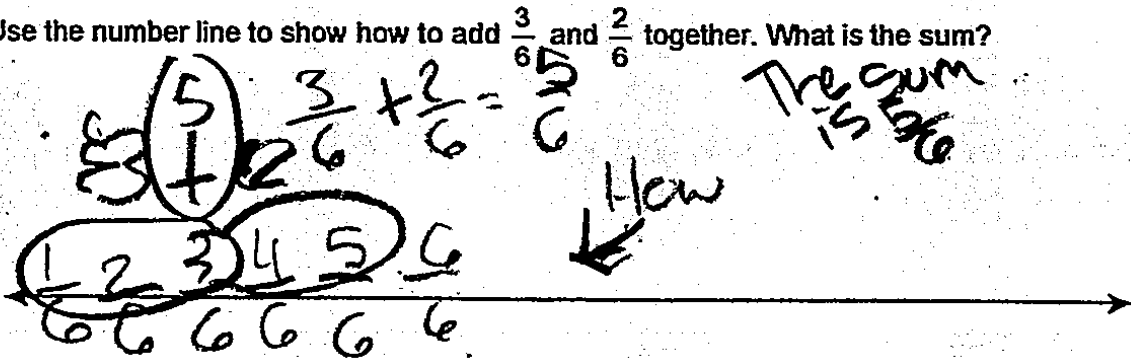
Total Awarded Points: 3 out of 5

Comparing Fractions Task

a. Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

add → $\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$

stays the same

The sum is $\frac{3}{4}$.

$$\frac{1}{4} \quad \frac{2}{4} \quad \frac{3}{4} \quad \frac{4}{4} \quad \frac{1}{5} \quad \frac{2}{5} \quad \frac{3}{5} \quad \frac{4}{5} \quad \frac{5}{5}$$

Stays the same.

b. Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

$\frac{5}{+}$ $\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$

The sum is $\frac{5}{6}$

How

$$\frac{1}{6} \quad \frac{2}{6} \quad \frac{3}{6} \quad \frac{4}{6} \quad \frac{5}{6} \quad \frac{6}{6}$$

Comparing Fractions Task

c. Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

Part b is $\frac{2}{6}$ and $\frac{3}{6}$ it has to be $\frac{3}{6}$ look

The denominature stays the same because there Both Six

$\frac{2}{6}$ ⓛ $\frac{3}{6}$

Both first

3 is bigger than two

1 2 ③
↑
Before

Anchor 9   Litho 00104200146

Total Content Points: 1   (4.NF.A.2)

Total Practice Points: 2   (MP3, MP6)

In Parts A and B, the student does not represent how the addends combine to form the sum on the number line (no credit for 4.NF.B.3a). In Part C, the student misunderstands which two fractions to compare, and instead compares fractions other than the sums. However, these fractions are compared correctly using the < symbol to indicate that $\frac{2}{6}$ is less than $\frac{3}{6}$ (4.NF.A.2). The student provides a mathematical explanation for which of the two provided fractions is greater by explaining that $\frac{2}{6}$ and $\frac{3}{6}$ have the same denominator ("The denominature stays the same because there Both six") and that "3 is bigger than two" (MP3). In Part A, the student demonstrates a lack of understanding of how to properly represent fractions on a number line by inappropriately grouping the fourths and fifths (no credit for MP4). The student calculates the sum correctly in Parts A and B (MP6).
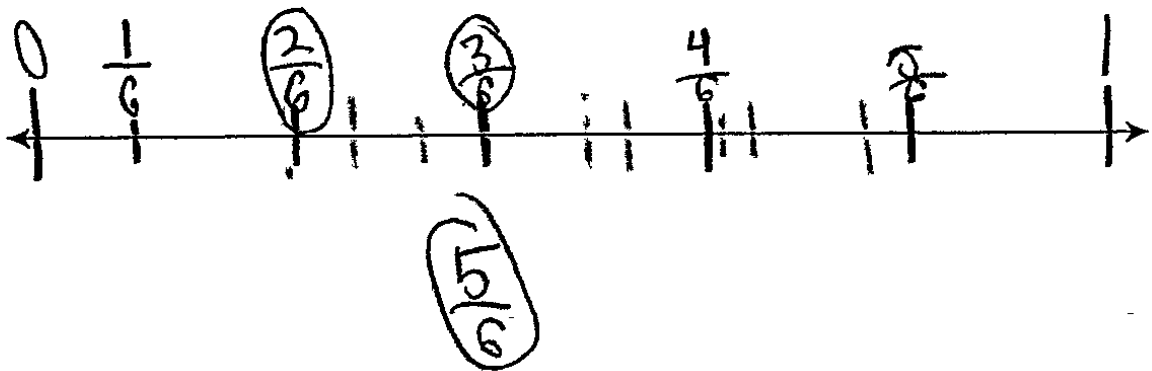
Total Awarded Points: 3 out of 5

Comparing Fractions Task

a. Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?
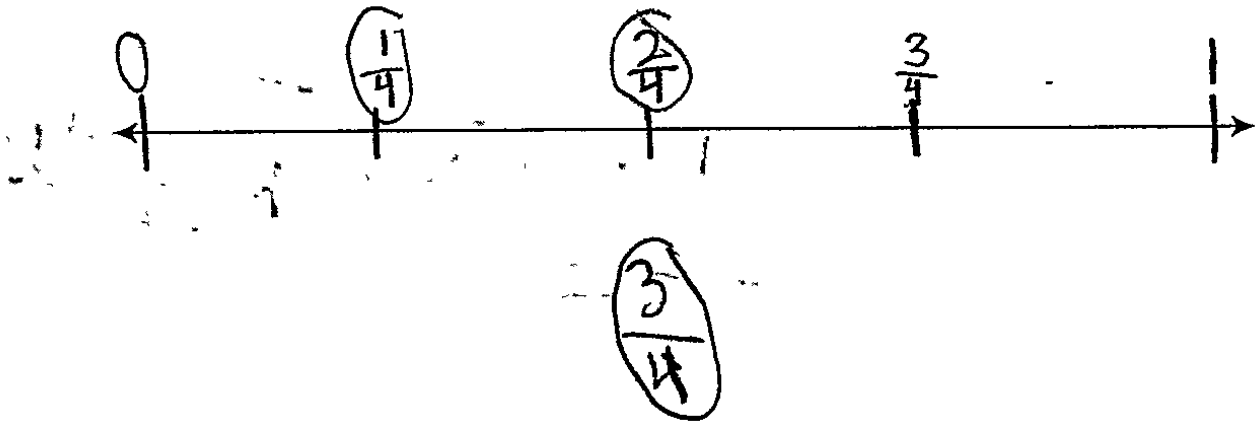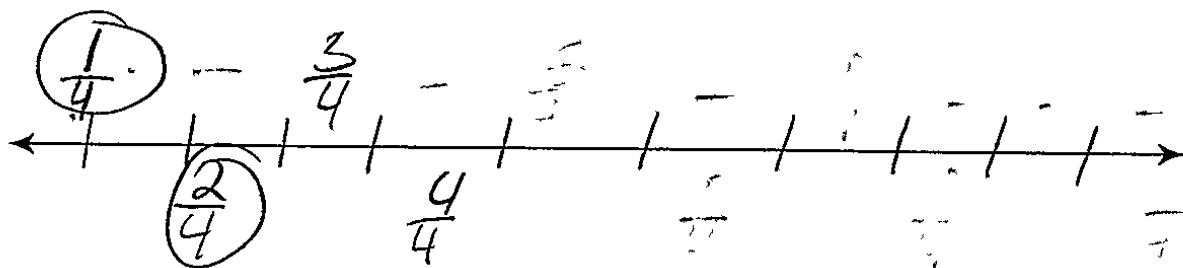

b. Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

Comparing Fractions Task

c. Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

I think it is this > symbol becuase the smaller fraction is a biger rema

$$\frac{3}{4} \times 3 \quad \frac{9}{12}$$

$$\frac{3}{4} \bigcirc > \frac{5}{6}$$

$$\frac{5}{6} \times 2 \quad \frac{10}{15}$$

$$\frac{1}{12} \bigotimes \frac{10}{12}$$

Anchor 10   Litho 00084200113

Total Content Points: 0

Total Practice Points: 2   (MP4, MP6)

In Parts A and B, the student does not represent how the addends combine to form the sum on the number line (no credit for 4.NF.B.3a). In Part C, the student incorrectly compares the sums of the two equations, using the > symbol to indicate that $\frac{3}{4}$ is greater than $\frac{5}{6}$ (no credit for 4.NF.A.2). The student's explanation for Part C, "I think it is this > symbol becuase the smaller fraction is a biger" does not indicate that the student adequately understands which sum is greater (no credit for MP3). In Parts A and B, the student partitions the fractions on the number line with accuracy and labels the divisions on the line with the correct fractions (MP4) The student calculates the sums correctly (MP6).

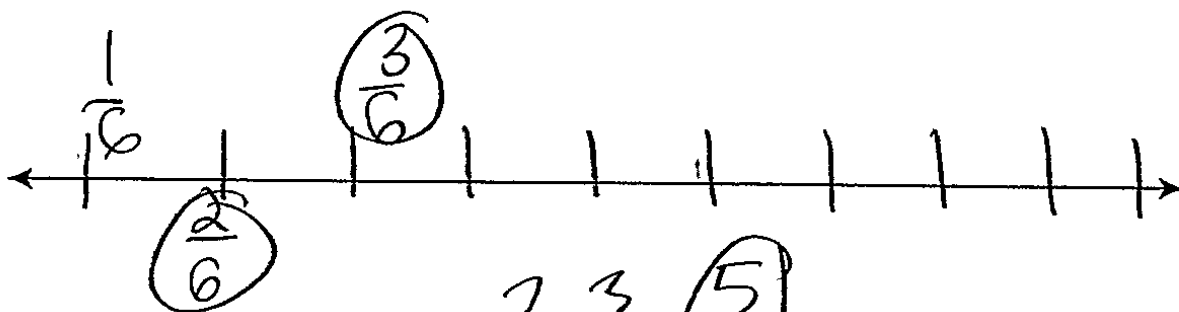Total Awarded Points: 2 out of 5

Comparing Fractions Task

a. Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

common
den. keep it

b. Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

$$\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$$

commom
den. keep
it

Litho#: 00064200102

A-11b

Comparing Fractions Task

c. Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

I saw commom dens. , and I also saw that there was less than and more than things den. There were differnt top numbers and the same bottom, numbers.
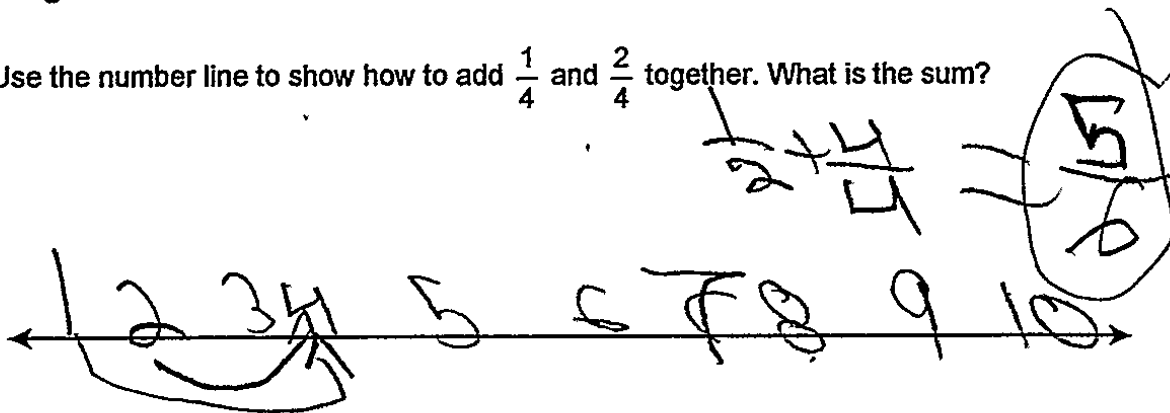
Litho#: 00064200102

Anchor 11   Litho 00064200102

Total Content Points: 0

Total Practice Points: 1   (MP6)

In Parts A and B, the student does not represent how the addends combine to form the sum on the number line (no credit for 4.NF.B.3a). In Part C, the student neither correctly compares the sums of the two fractions (no credit for 4.NF.A.2) nor gives an adequate mathematical explanation of which sum is greater. The student attempts to explain that there is a common denominator, but does not provide a mathematical equation or valid reasoning (no credit for MP3). In Part A, the student partitions the lines with reasonable accuracy according to the denominator of the fractions in Parts A and B. Sufficient divisions would be labeled with the correct fractions for credit, except that the student labels inaccurately by placing the label $\frac{4}{4}$ too far away from the appropriate division (no credit for MP4). The student calculates the sums correctly (MP6).
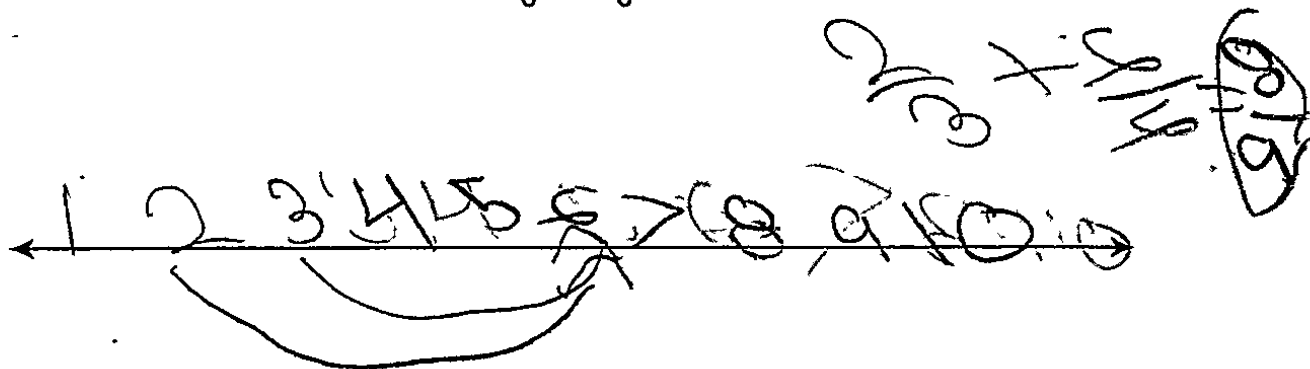
Total Awarded Points: 1 out of 5

Comparing Fractions Task

a. Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?
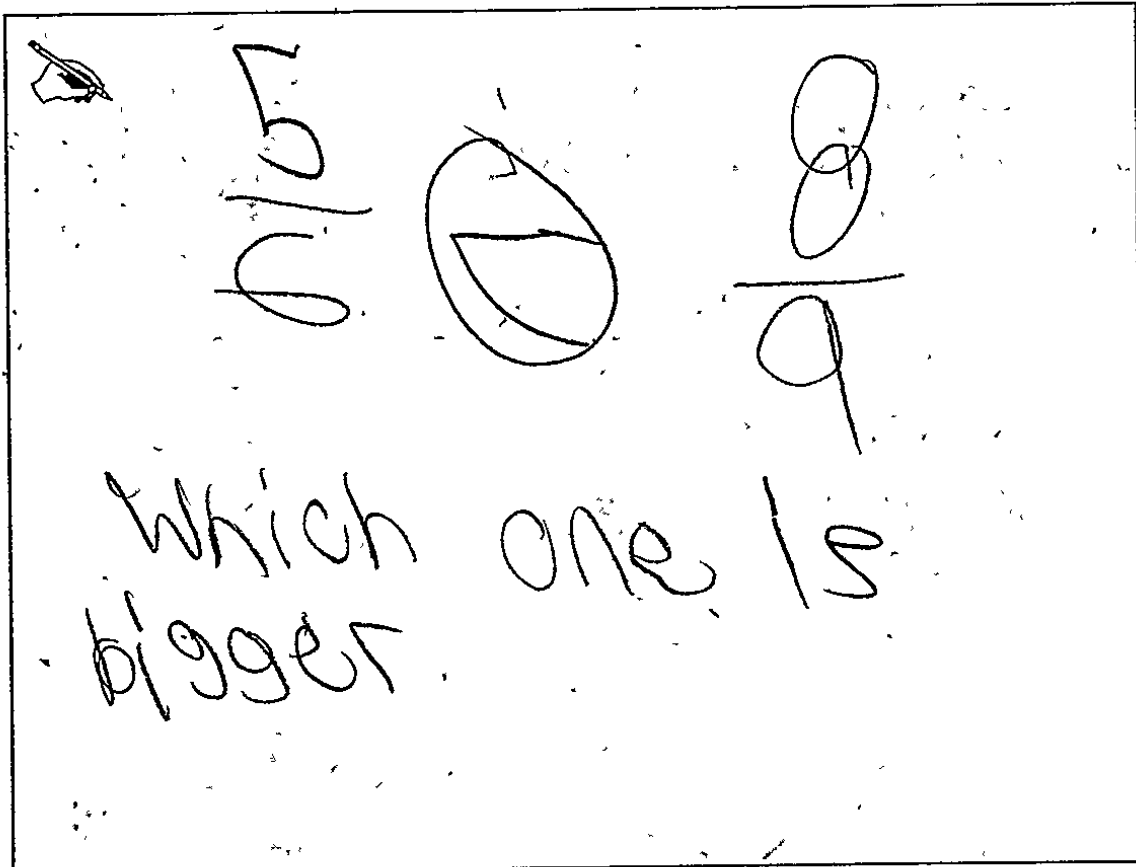
b. Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

Comparing Fractions Task

c.   Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

$$\frac{5}{5} \bigcirc \frac{8}{9}$$

which one is bigger

Anchor 12   Litho 00464200110
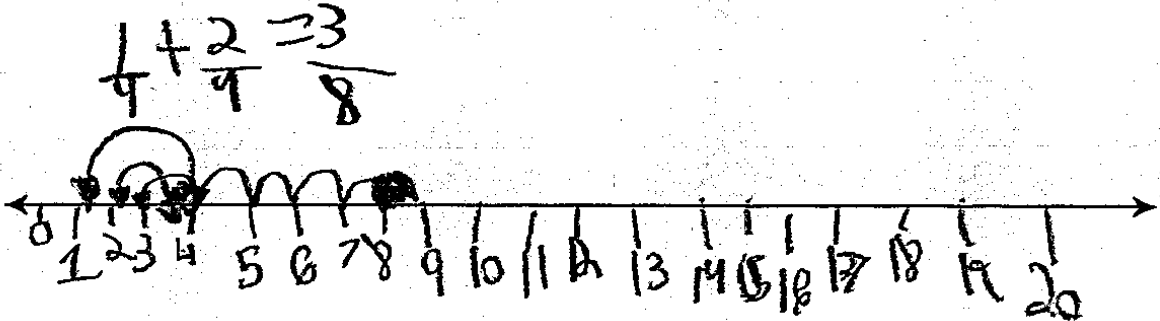
Total Content Points: 1   (4.NF.A.2)

Total Practice Points: 0

In Parts A and B, the student incorrectly represents how the addends combine to form the sums on the number line. By drawing lines from numbers representing the addends to the sums, the student is not providing a spatial representation of the quantities combined. Additionally, even considering the values on the number line as just the numerators of the fractions, they are not all the correct numerators to express the fractions provided (no credit for 4.NF.B.3a). In Part C, the student correctly compares the two sums arrived at in Parts A and B, $\frac{5}{6}$ and $\frac{8}{9}$, indicating that $\frac{5}{6}$ is less than $\frac{8}{9}$ using the < symbol (4.NF.A.2). In Part C, the student's attempt at a mathematical argument, "Which one is bigger," fails to provide any reasoning for why $\frac{8}{9}$ is greater than $\frac{5}{6}$ (no credit for MP3). In Parts A and B, the student mislabels the number line with whole numbers rather than fractions (no credit for MP4). The student does not calculate the sums correctly in Parts A and B (no credit for MP6).
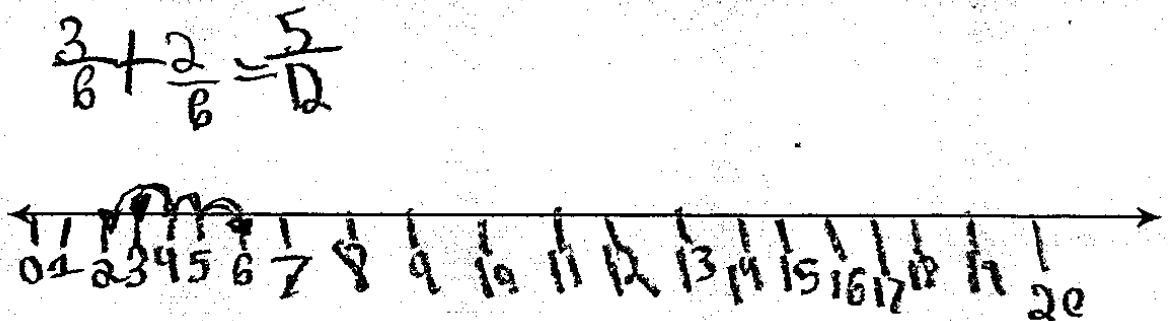
Total Awarded Points: 1 out of 5

Comparing Fractions Task

a.   Use the number line to show how to add $\frac{1}{4}$ and $\frac{2}{4}$ together. What is the sum?

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{8}$$

b.   Use the number line to show how to add $\frac{3}{6}$ and $\frac{2}{6}$ together. What is the sum?

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{12}$$

Comparing Fractions Task

c.   Compare the sums you found in part a and part b using >, <, or =. Explain how you decided which symbol to use.

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{8}$$

Ⓐ

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{12} \longrightarrow$$ Because when I add it got Biger numbus then the othus that why I pick that one

Anchor 13   Litho 00494200146

Total Content Points: 0

Total Practice Points: 0

In Parts A and B, the student does not represent how the addends combine to form the sum on the number line (no credit for 4.NF.B.3a). The student incorrectly compares the sums of two equations using an invalid mathematical symbol (no credit for 4.NF.A.2) and does not provide a reasonable mathematical explanation for which sum is greater (no credit for MP3). The student fails to label the divisions on the number line with the correct fractions in Parts A and B (no credit for MP4). The student does not calculate the sums in Parts A and B correctly (no credit for MP6).

Total Awarded Points: 0 out of 5