

NWEA Assessment Item Illustrating 5.NF.A.2

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Domain: Number and Operations—Fractions

5.NF.A: Use equivalent fractions as a strategy to add and subtract fractions.

Calculator Availability: No

Use the information to answer the question.

Mr. Kain has several yards of fabric. He uses $1\frac{1}{4}$ yards to make pillows and $2\frac{2}{3}$ yards to make a tablecloth. Now he has $1\frac{5}{6}$ yards of fabric left.

How many yards of fabric did Mr. Kain have originally? Move numbers into the boxes to show the answer. If there is no whole number, put a 0 in the first box.

| | | | |
|----------------------|----------------------|-------|--|
| <input type="text"/> | <input type="text"/> | yards | |
|----------------------|----------------------|-------|--|

| | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |

Alignment: 5.NF.A.2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.*

Adding and subtracting fractions with unlike denominators are major components of the fraction work for grade 5. In earlier grades, students gained experience solving whole-number word problems using all the problem types outlined in Table 1 of the CCSS Mathematics Glossary. These problem types also apply to solving problems with numbers other than whole numbers. The word problem in this item is a start-unknown, take-from problem type. Students need experience solving problems with a wide variety of contexts to build understanding of fractions as numbers and of how fractions apply to real-world situations.

Coherence: This standard represents the application of the work with equivalent fractions that students did in grades 3^{3.NF.A.3} and 4.^{4.NF.A} It also builds upon the grade 4 work of adding and subtracting fractions and mixed numbers with like denominators.^{4.NF.B.3} In grade 5, students also solve problems involving fractions with unlike denominators based on data from line plots.^{5.MD.B.2} In grade 7, students will apply their knowledge of fraction computation to computing with rational numbers.^{7.NS.A}

Rigor: This item attends to application and procedural skill. Although students need to interpret the context, the mathematics involved is directly indicated. Students then use the grade-level procedure of adding with unlike denominators to solve.

Answer Key: There are multiple equivalent correct responses. One sample correct response is shown.

Use the information to answer the question.

Mr. Kain has several yards of fabric. He uses $1\frac{1}{4}$ yards to make pillows and $2\frac{2}{3}$ yards to make a tablecloth. Now he has $1\frac{5}{6}$ yards of fabric left.

How many yards of fabric did Mr. Kain have originally? Move numbers into the boxes to show the answer. If there is no whole number, put a 0 in the first box.

$$\boxed{5} \frac{\boxed{3}}{\boxed{4}} \text{ yards}$$

| | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
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