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| **NC.5.NF.1****How Much String?**  |
| **Domain** | **Numbers and Operations - Fractions** |
| **Cluster** | **Use equivalent fractions as a strategy to add and subtract fractions.** |
| **Standard(s)** | **NC.5.NF.1**: Add and subtract fractions, including mixed numbers, with unlike denominators using related fractions: halves, fourths, and eighths; thirds, sixths, and twelfths; fifths, tenths, and hundredths.* Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
* Solve one- and two-step word problems in context using area and length models to develop the algorithm. Represent the word problem in an equation.
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| **Materials** | Paper and pencilOptional: fraction bars or pattern blocks |
| **Task** | How Much String? Each of the Girl Scouts has 6 feet of string. **Part 1:** For a project, they use a certain amount of string. How much wood does each person have left?

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| **Person** | **Amount of String Used** | **Amount of String Left** |
| Amelia | 4 $\frac{1}{2}$ feet |  |
| Briana | 5 $\frac{1}{4}$ feet |  |
| Catherine | $3\frac{1}{6}$ feet |  |
| Fiona | $\frac{2}{8}$ foot |  |
| Kristy | 2 $\frac{2}{3}$ feet |  |

**Part 2:** If Amelia, Briana, and Fiona put their leftover string together, how much string will they have left?If did Catherine and Kristy put their leftover string together, how much string will they have left? **Part 3:** Using your work from Part 2, if all five girls put their leftover string together, how many feet of string will they have?**Part 4:** Write an explanation about how you solved Part 3. Solutions:* Part 1: Correctly finds the amount of string left:

Amelia- $1\frac{1}{2}$ feet, Briana- $\frac{3}{4}$ foot, Catherine- $2\frac{5}{6}$ feet, Fiona- $5\frac{6}{8}$ feet, Kristy- $3\frac{1}{3}$ feet* Part 2: Amelia, Briana, and Fiona- $8 $feet; Catherine and Kristy- $6\frac{1}{6}$ feet
* Part 3: 14 $\frac{1}{6}$ feet

Part 4: The explanation includes an accurate description of how the student added fractions to find the correct answer. |

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| **Rubric** |
| **Level I****Not Yet** | 1. **Level II**
2. **Progressing**
 | **Level III****Meets Expectations** |
| * Student is not yet able to solve more than one part of this task.
 | * Student correctly solves 2 or 3 parts of this task correctly.
 | * Student correctly solves all 4 parts of this task.
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| **Standards for Mathematical Practice** |
| **1. Makes sense and perseveres in solving problems.** |
| **2. Reasons abstractly and quantitatively.** |
| **3. Constructs viable arguments and critiques the reasoning of others.** |
| **4. Models with mathematics.** |
| 5. Uses appropriate tools strategically. |
| **6. Attends to precision.** |
| 7. Looks for and makes use of structure. |
| 8. Looks for and expresses regularity in repeated reasoning. |

How Much String?

Each of the Girl Scouts has 6 feet of string.

**Part 1:** For a project, they use a certain amount of string. How much wood does each person have left?

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| **Person** | **Amount of String Used** | **Amount of String Left** |
| Amelia | 4 $\frac{1}{2}$ feet |  |
| Briana | 5 $\frac{1}{4}$ feet |  |
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| Fiona | $\frac{2}{8}$ foot |  |
| Kristy | 2 $\frac{2}{3}$ feet |  |

**Part 2:**

If Amelia, Briana, and Fiona put their leftover string together, how much string will they have left?

If did Catherine and Kristy put their leftover string together, how much string will they have left?

**Part 3:**

Using your work from Part 2, if all five girls put their leftover string together, how many feet of string will they have?

**Part 4:**

Write an explanation about how you solved Part 3.