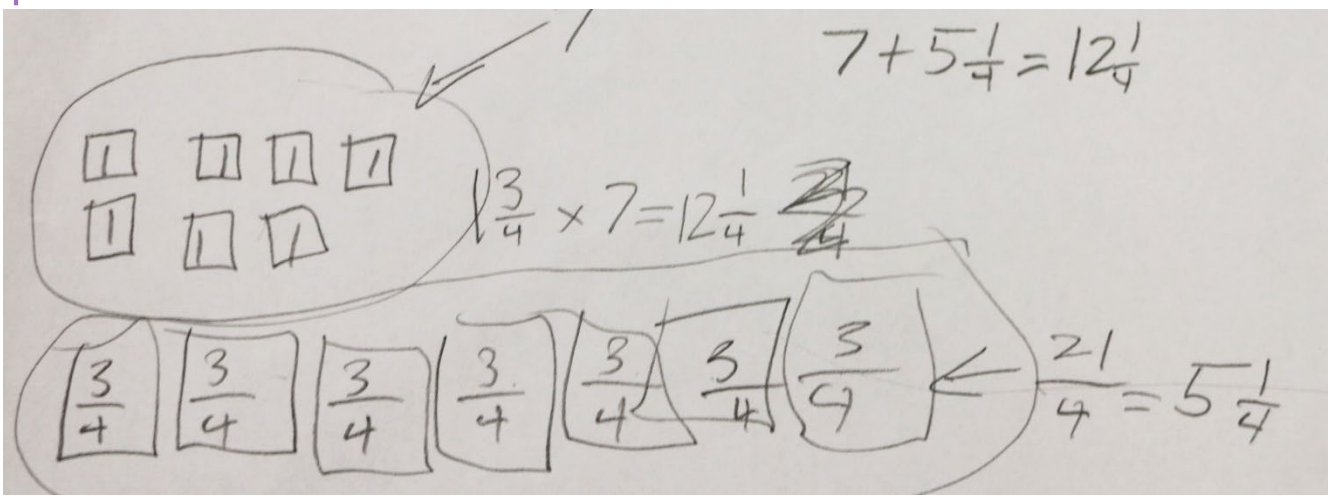
SUGAR COOKIES

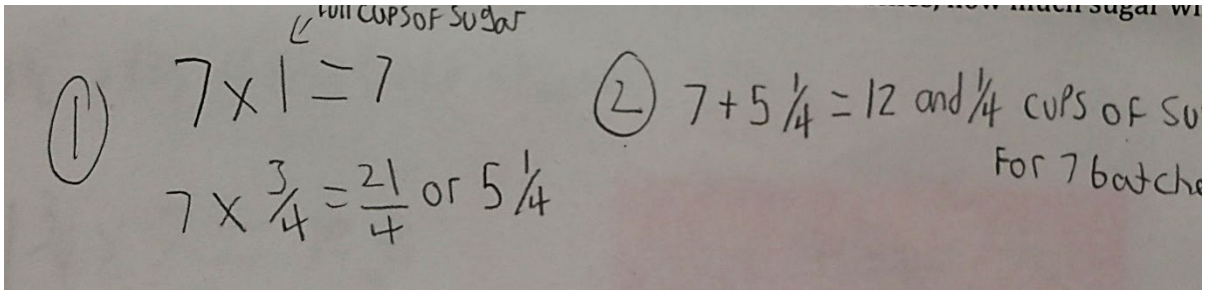
OPERATION I Multiply any fraction by a whole number using models and symbols

Sample 3



The student has decomposed the mixed number into two parts in order to multiply the recipe by seven. The student first focuses on the whole, showing 7 wholes. Continuing with this strategy, the student adds $\frac{3}{4}$ seven times, to get a sum of $\frac{21}{4}$, which he/she then converts to$5\frac{1}{4}$. This demonstrates an understanding that when adding fractions, the denominator or units stay the same and the count of the numerator increases. The student also clearly demonstrates an understanding of converting improper fractions to mixed number form. The student combines the quantity from each part ("$7 + 5\frac{1}{4}$ ", top right) to find the accurate final answer of $12\frac{1}{4}$.

Sample 4



In this sample, the student uses the distributive property by which they multiply the whole by seven, then multiply the fraction $\frac{3}{4}$ by seven. The products are added together to produce a final answer. It's possible that this student has memorized the algorithm, and may be able to produce an accurate answer symbolically. As educators, we need to avoid the assumption that this strategy demonstrates understanding of multiplication with fractions (it may, but we would need more information, such as a representation that communicates meaning or a conversation with the student, before we can make that evaluation).