Fraction Decimal Equivalents
Check Your Understanding

One indicator of how well a student understands fraction decimal equivalents is to compare a student's work and explanation for a problem with how other students have responded to the same problem. Students, parents, or teachers can use the following problem and sample responses to evaluate understanding.

Directions for the Student:

1) Solve the following problem and explain your work and answer.
2) Compare your work to the sample responses in order to determine if your work indicates deep, partial, or beginning understanding.

Problem:

Sean, Sam, and Sara took a test. This is how they shared their results with each other. Sean said he got $\frac{65}{100}$ of the items on the test correct. Sam said his score was 0.7 and Sara said she got $\frac{3}{5}$ of the items correct. Who got the best score on the test? Who got the lowest score?

Level of Understanding	Sample Student Response	Comments
Deep Understanding	**Student 1:** "The decimal is seven tenths. That's the same as seventy hundredths. Three fifths is the same as six tenths or sixty hundredths. So, Sam got the highest score. Sean was next and Sara got the lowest score." $0.7 = \frac{70}{100}$ $\frac{3}{5} = \frac{6}{10}$ or $\frac{60}{100}$	By converting all of the scores to fractions with hundredths as the denominator, the student can compare $\frac{70}{100}$, $\frac{65}{100}$, and $\frac{60}{100}$.
	Student 2: "Sam got seven tenths. Sara got six tenths. Sean was between them. So Sam got the best score."	This student knew that $\frac{65}{100}$ is between $\frac{6}{10}$ and $\frac{7}{10}$.

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Partial Understanding	**Student 3:** $\frac{65}{100}$ 0.7 $\frac{3}{5}$ $\frac{7}{10}$ "I don't know."	This student understands how to convert 0.7 to a fraction. But, the student does not understand how to compare fractions. Work with equivalent fractions is needed.
	Student 4: "Three fifths is the same as $\frac{6}{10}$ or $\frac{60}{100}$. So that's less than $\frac{65}{100}$. Zero point seven is less."	This student understands equivalent fractions. The student does not read 0.7 correctly and does not seem to understand decimals.

Level of Understanding	Sample Student Response	Comments
Beginning Understanding	**Student 5:** "Sixty-five and one hundred are bigger numbers, so Sean got the highest score."	This student believes that when the numerator and denominator are larger numbers, the fraction must be larger. The student is not thinking about the number of equal parts in the whole and the number of parts being considered.
	Student 6: "Sara got the most problems right. She only missed two and Sean and Sam missed more."	This student does not seem to understand the meaning of the fractions or decimals in this context.