

Misconception/Error	Suggested Intervention
<p>Students were able to represent individual fractions, but could not connect them into a single “whole”</p>	<ul style="list-style-type: none"> • Use rectangular wholes (not just circular) to represent fractions • Use fraction squares (virtual or concrete) to help students transition to drawing “cake cutting models” to find equivalent fractions and common denominators • Practice dividing area/region models more than one way (e.g., showing $\frac{1}{2}$ and $\frac{2}{4}$ of the same whole) • Practice adding simple with unlike denominators using drawings/pictures rather than using an algorithm; transition to using a common denominator algorithm for more challenging fractions
<p>Difficulty with vocabulary</p>	<ul style="list-style-type: none"> • Use interactive word walls • Be sure to use accurate mathematics vocabulary when working/thinking aloud with small group of students • Have students create individual word wall or vocabulary cards to keep in their notebooks (portfolio) • Include pictures, examples, and non-examples for vocabulary (e.g., concept map)
<p>Difficulty communicating their thinking</p>	<ul style="list-style-type: none"> • Consistently model your own thinking for students (i.e., “think alouds”) • Think/Pair/Share – Be sure to provide quiet think time and then allow sufficient “pair” time before students share, in order to avoid having the same students always sharing • Expect students to explain their thinking on a regular basis, both orally and in writing. • Ask “How do you know?” and “Why did you do it that way?” more often • Allow sufficient wait time

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	<ul style="list-style-type: none"> • Expect all students (not just those who are struggling) to model their thinking using manipulatives and pictures • Represent answers multiple ways
<p>Unable to complete the problem; difficulty with multistep problem solving, in general</p>	<ul style="list-style-type: none"> • Provide graphic organizers or a problem-solving model (e.g., Singapore bar models) • Occasionally pose problems and ask students to describe what the problem is asking and how/why the problem might be solved, without actually having them solve the problem every time • Pose challenging questions and allow students the opportunity to struggle with them • Ask students to share their thinking and explain their problem solving in order to help students see that there is typically more than one way to approach every problem • Encourage students to create their own problems and explain their solution methods