

Misconception/Error	Suggested Intervention
Vocabulary understanding	<ul style="list-style-type: none"> • Use foldable-like graphic organizer for students to record examples and pictorial representations of fractions • Cross-curricular integration in science using measurement involving fractions • Relate to prior vocabulary knowledge (teacher must know common vocabulary from previous grades) • Provide example/non-example including pictures
Communicating mathematical thinking	<ul style="list-style-type: none"> • Provide students with several opportunities to “math talk”, justify answers (teachers model this as an expectation) • Students draw multiple representations to communicate their thinking (pictures, models, and communicate in a journal). • Think-Pair-Share strategy to encourage “math talk” • Show an anchor chart of “Exceptional” student work as a model for students of how to think mathematically. • Teacher highlights pictures, words, and symbols used in student explanation of mathematical thinking. • Use of sentence frames and starters • “Unpack” the rubric with students to provide an understanding of communication and for students to self-assess. • Student will share thinking; answer “Why” and “How”.
Defining the whole	<ul style="list-style-type: none"> • Provide variety of models (food- candy bars with sections, money - one-half, one-fourth, four-tenths, three-fourths of a dollar, etc., sets, linear/measurement-, region/area) • Task that provides opportunities for modeling, critical thinking, and problem solving

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	<ul style="list-style-type: none"> • Model changing the whole using manipulatives (i.e.; pattern blocks)
Spatial reasoning/understanding equal parts	<ul style="list-style-type: none"> • Use grid paper to cut out equal parts of the whole to compare by placing on top of each other • Compare equal parts of a region/area and a set model
Understanding one-half	<ul style="list-style-type: none"> • Creating a personal student set of fraction strips • Length/measurement models (use of a number line, ruler, yard stick) • Use of a clock and money to model half • Changing the “whole”, changes the “half” • Use of geoboards to create a model and show one-half; then recreate onto geoboard paper
Multiple solutions	<ul style="list-style-type: none"> • Provide open-ended tasks with multiple solutions • Variety of math manipulatives available for students to utilize for problem solving • Students need opportunities to model their thinking and to be able to communicate mathematically • Students need to make connections between solutions; How? Why? • Use a graphic organizer to communicate that there is an expectation for multiple solutions • Journaling to strengthen written mathematical communication to include pictures, numbers, words, symbols • Student strategy groups