Chapter 7 Application Guide

Use the application guide to connect these ideas and tools to your classroom practices.

Chapter 7 Topics	Connect to Your Classroom
Teaching meanings of the operations	Offer word problems with contexts that support direct modeling using concrete and pictorial models to help students understand the meaning of operations before relying solely on equations. Vary the problem types to expose students to a variety of word problem structures.
Applying mental math	Support students' mental math strategies during number talks and while problem solving with strategies like number splitting, Bridge to 10, and compensation.
Building fact fluency	Rather than relying on worksheets to support fluency with basic facts, try games like Sums of Ten Go Fish and Addition Top-It that encourage reasoning strategies. Use an individualized approach as you review a student's must-practice facts. Emphasize reasoning, the application of the properties of the operations, and strategies before expecting students to ***just know*** their facts.
Visualizing multiplication	Include multiplication word problems that students can represent with manipulatives or draw. Incorporate a variety of problems, repeated addition, groups of or sets of, rectangular array, area, and combinations to prompt students to visualize multiplication in distinctive ways based on the context of the problem.
Reasoning with multiplication	Sequence your teaching, practicing, and expectations for fact mastery. Teach the foundational facts (2s, 5s, 10s, 0s, 1s, and multiplication squares) and then derived facts. Doing this will help students use those foundational facts as a jumping-off point (derived facts) to help them solve unknown facts.
Categorizing division	Integrate both types of division (measurement and partitive) through word problems before relying too much on symbols or equations for division. Encourage students to draw visuals of the problems to build understanding of the meaning of the division operation and the process of partitioning or sharing.
Reasoning with division	Help students to see how a division problem might be solved using either multiplication or division. They might find it easier to choose a multiplication reasoning strategy to apply than to use division in isolation.
Applying place value to the operations	Play games like And 10 More, build numbers with base 10 blocks, and display a hundred chart to help students explore patterns and relationships in our base 10 system. Give students ample time with concrete materials and regrouping using explicit trading before introducing the algorithm for regrouping.