Chapter 3 Application Guide

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

Chapter 3 Topics	Connect to Your Classroom
Teaching problem solving	Strive to teach through problem solving to emphasize inquiry and reasoning, rather than teaching for or about problem solving. Make space for productive struggle, honor mistakes, and reinforce progress and effort.
Encouraging students' self-reflection	Lockstep heuristics can become procedural over time. Instead, post simple self-reflection prompts or questions that can scaffold and support without taking over thinking or limiting creative thinking.
Defining a problem	Engagement and relevance contribute to students' commitment to persevering to solve a difficult problem. But this can't happen if students are given short, routine problems for which they immediately have a strategy. Activate problem solving with rich problems that promote deep thinking and discussion.
Implementing problem-solving tasks	Use tasks that focus on big ideas rather than discreet procedures, cover multiple objectives, integrate other subject areas, and provide a cultural connection to students' funds of knowledge. Look to reputable sources such as the NCTM for problem sets.
Avoiding tricks and key words	Your classroom can be alive with productive struggle, collaborative problem solving, communication, and reasoning when you de-emphasize teacher modeling and shortcuts such as using key words or tricks to problem solving.
Discussing problem solving	Offer rich tasks, give time and space for productive struggle, and use talk moves and questioning to facilitate discussion. Develop a community of respect, tact, and good listeners.
Teaching vocabulary	Teach math vocabulary intentionally by making time to introduce, explore, and review terms. Integrate vocabulary into the body of a lesson. Use games, lessons, and activities to make learning fun and memorable. Model the correct use of terms in your own speech so that you do not perpetuate misuses or misconceptions.