Review of Recommendations

Recommendation 1.

Prepare problems and use them in whole-class instruction.

1. Include both routine and non-routine problems in problem-solving activities.
2. Ensure that students will understand the problem by addressing issues students might encounter with the problem's context or language.
3. Consider students' knowledge of mathematical content when planning lessons.

Recommendation 2.

Assist students in monitoring and reflecting on the problem-solving process.

1. Provide students with a list of prompts to help them monitor and reflect during the problem-solving process.
2. Model how to monitor and reflect on the problem-solving process.
3. Use student thinking about a problem to develop students' ability to monitor and reflect.

Recommendation 3.

Teach students how to use visual representations.

1. Select visual representations that are appropriate for students and the problems they are solving.
2. Use think-alouds and discussions to teach students how to represent problems visually.
3. Show students how to convert the visually represented information into mathematical notation.

Recommendation 4.

Expose students to multiple problem-solving strategies.

1. Provide instruction in multiple strategies.
2. Provide opportunities for students to compare multiple strategies in worked examples.
3. Ask students to generate and share multiple strategies for solving a problem.

Recommendation 5.

Help students recognize and articulate mathematical concepts and notation.

1. Describe relevant mathematical concepts and notation, and relate them to the problem-solving activity.
2. Ask students to explain each step used to solve a problem in a worked example.
3. Help students make sense of algebraic notation.