

DOINGWHATWORKS



SAMPLE MATERIAL

Tasks and Question Prompts

RMC Denver Professional Development, Colorado

Topic: Improving Mathematical Problem Solving in Grades 4 Through 8

Practice: Reflect and Debrief

Teachers can use this exemplar question list, organized to align with problem-solving tasks, to prepare prompts and to help students monitor and reflect during the problem-solving process.

For suggestions on how to use prompts and task lists, listen to *Monitoring the Problem-Solving Process*, an interview with Dr. Sybilla Beckmann. The video interview is located in the Learn What Works section of the Reflect and Debrief practice.

Tasks and Question Prompts in Problem Solving

To understand the problem, ask ...

- What is this problem about?
- What is the problem asking you to find?
- How would you describe the problem in your own words?
- What do you predict the answer or result will be?

To identify relevant information, ask ...

- What information do you know? What do you need to find out?
- What information in the problem is relevant?
- What do you know about the problem so far? How can this help you?
- What facts do you have?
- What do you know that is not stated in the problem? What is implied in the problem?

To identify the problem type, ask ...

- How is this problem related to _____?
- What patterns do you notice?
- What operations will you use in solving this problem?
- What mathematical ideas do you need to use in this problem?

To recall similar problems, ask ...

- How is this problem similar to problems you have solved before?
- How did you tackle similar problems?
- How might using different numbers (simpler, fewer) in this problem help?

To promote use of visual representations, ask ...

- How could you use a diagram? Make a table? Draw a picture?
- What might you do to model the problem?
- Why did you decide to organize the information like that?

To solve problems using multiple strategies, ask ...

- What are some ways you might approach this problem?
- What strategies are you going to use?
- What tools will you need?
- What other way can you solve this problem?

To encourage monitoring the problem-solving process, ask ...

- How is your approach working?
- What have you learned or found out?
- Why did you decide to use this method?
- Why did these steps work or not work?
- When you compared your work with another student's, what did you do differently or the same?

To encourage reflection, ask ...

- How did you get your answer?
- Why does your method work?
- Why does the solution make sense?
- How can you verify the solution?
- What ideas that we have learned were useful in solving this problem?
- What would you do differently next time?