



# **Implementing Standards-Based Mathematics Instruction: A casebook for professional development**

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## **Description**

These materials focus on one key idea: cognitive demand. Materials build on research on mathematical tasks and instructional practices that support students deepening problem solving skills and conceptual understanding of mathematics. The first part of the book describes high and low cognitive demand tasks. It then shares research findings of the teacher moves that either maintain cognitive demand or lower cognitive demand of tasks. Part II of the book provides written cases of classroom experiences demonstrating the maintenance or decline of cognitive demand with discussion questions and additional insights that help the reader see the classroom practices.

## **Participants**

The idea of cognitive demand is useful for teachers K-12. However, cases in this casebook are at the middle-school level. This is a particularly useful idea for schools considering textbook adoption because it provides a tool for examining mathematical tasks. If a group of teachers were interested in cognitive demand but were not at the middle level, they could use the first 3 chapters of the book to understand the construct and then use other materials that are grade-level appropriate.

## **Facilitators**

This book is best used when facilitated by a professional mathematics educator. The cases in the book are helpful, but need the guidance of a math educator to help pull apart.

## **Format**

Facilitation materials are available that can help the facilitator summarize key ideas in Part I. The construct of cognitive demand and instructional practices that support the maintenance or decline of cognitive demand can be done in 3 hours. Cases should be used to make sense of these key ideas. Each of the 7 cases can be read and discussed in 2-3 hour sessions, though in our experience it takes deliberate time and strategy to help teachers see instructional moves that support student learning.

## **Materials**

Implementing Standards –Based Mathematics Instruction: A casebook for professional development. (2000). ISBN 0-8077-3907-3. Teachers College Press