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Smith, Margaret Schwan; Silver, Edward A.; Stein, Mary Kay

Improving instruction in rational numbers and proportionality. Using cases to transform mathematics teaching and learning. Volume 1.

New York, NY: Teachers College Press (ISBN 978-0-8077-4529-8/pbk). 160 p. (2005).

Publisher's description: Helping students develop an understanding of important mathematical ideas is a persistent challenge for teachers. In this book, one of a three-volume set, well-known mathematics educators Margaret Smith, Edward A. Silver, and Mary Kay Stein provide teachers of mathematics the support they need to improve their instruction. They focus on ways to engage upper elementary, middle school, and high school students in thinking, reasoning, and problem solving to build their mathematics understanding and proficiency. The content focus of Volume 1 is rational numbers and proportionality. Using materials that were developed under the NSF-funded COMET (cases of mathematics to enhance teaching) program, each volume in the set features:

- cases from urban, middle school classrooms with ethnically, racially, and linguistically diverse student populations. Each case illustrates an instructional episode in the classroom of a teacher who is implementing standards-based instruction.
- the teachers' perspective, including their thoughts and actions as they interact with students and with key aspects of mathematical content.
- cognitively challenging mathematics activities that are built around samples of authentic classroom practice.
- facilitation chapters to help professional developers "teach" the cases, including specific guidelines for
- facilitating discussions and suggestions for connecting the ideas presented in the cases to a teacher's own practice. As a complete set, this resource provides a basis on which to build a comprehensive professional development program to improve mathematics instruction and student learning. For the Volumes 2 and 3 see [ME 2015b.00727; ME 2015b.00696].

Classification: F43 F83 D83