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## Math Matters: Grades K-8, Understanding the Math You Teach

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2006 ♦ Math Solutions

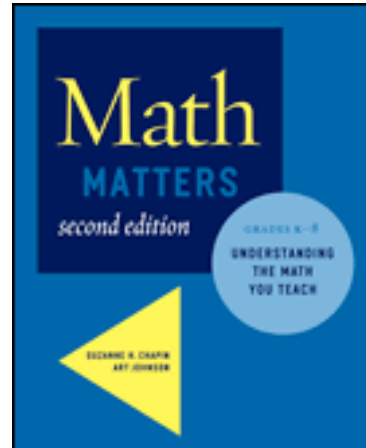
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### DESCRIPTION

*Math Matters: Grades K-8, Understanding the Math You Teach*, by Suzanne H. Chapin and Art Johnson, is based on the belief that teachers cannot teach well what they do not understand. Each of the fourteen chapters in the second edition focuses on an important mathematics topic that is studied in elementary or middle grades. Each chapter includes a brief introduction followed by numbered sections that address different aspects of the topic. Along with explanations of the mathematical concepts basic to the topic, each section also introduces and defines related terms. Chapters include activities that can be done alone, with a colleague, or with a study group. Each activity is followed by a thorough discussion of the mathematics involved and how the ideas fit into the trajectory of mathematics in elementary and middle school. In the second edition, each chapter concludes with questions for reflection and discussion. Readers are directed to web sites that support understanding of mathematics for both teachers and students. The fourteen topics include:



1. Number Sense
2. Computation
3. Addition and Subtraction
4. Multiplication and Division
5. Fractions
6. Decimals
7. Percent
8. Ratios
9. Algebra
10. Geometry
11. Spatial Sense
12. Measurement
13. Statistics
14. Probability

## STAGE 1 LEADERSHIP DEVELOPMENT

*Math Matters: Grades K–8, Understanding the Math You Teach*, by Suzanne H. Chapin and Art Johnson, supports stage 1 leadership development for coaches interested in deepening their own knowledge of K-8 mathematics and the teaching of K-8 mathematics. Each chapter provides tools and resources for self-reflection and growth. In addition, a list of web site resources for each chapter is included. Specialists should self-select a topic for consideration. The topic may be selected based on personal interest or curriculum emphasis.

Using the selected chapter or chapters from the book, specialists should read the introduction to the topic and note terms related to the topic. Working alone or with a colleague or study group, specialists should work through each activity, doing the mathematics first before reading the discussion that accompanies each activity. After reading the discussion notes for an activity, try to create a similar activity using information from the notes. After working through the various activities in the chapter refer to the list of web sites and explore the activities online. Look for connections between the activities and discussion notes in the book and the activities you find on the web sites. Finally, use the discussion questions to reflect on your understanding of the topic. For those working alone, the discussion questions are worthwhile prompts for a reflection journal. For those working with a colleague or study group, the discussion questions may also provide structure for a chapter-debrief session.

## STAGE 2 LEADERSHIP DEVELOPMENT

*Math Matters: Grades K–8, Understanding the Math You Teach*, by Suzanne H. Chapin and Art Johnson, supports stage 2 leadership development for specialists working to collaborate and implement the Teaching and Learning Principle and working with teachers in developing Indicator 3: *Every teacher participates in continuous and meaningful mathematics professional development and learning in order to improve his or her practice*. Each chapter focuses on a topic of mathematics. Specialists may select a chapter for study with an individual teacher or a group of teachers based on interest or curriculum emphasis.

Information may be presented as a reading and shared using a text rendering protocol. Information on the development of the topic for a range of grade levels may be found in the “Teaching” section near the end of the chapter. The activities included in the chapter provide opportunities for teachers to “do the math” and deepen their understanding as the specialist facilitates discussions guided by the notes and information included with each activity. Teachers will benefit from the figures presented in the book and from using the materials described in the book as they work through the activities. The list of web sites provides additional opportunities for teachers to interact with the topic using technology. A list of discussion questions, found at the end of each chapter, is useful for debriefing the work of the group and also for personal reflection by the participants.

