

BOOKS

FROM NCTM

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Getting into the Mathematics Conversation

2008. xvi + 423 pp., \$39.95 paper. Stock no. 13292. ISBN 978-0-87353-601-1. National Council of Teachers of Mathematics; (800) 235-7566; www.nctm.org.

While reading *Getting into the Mathematics Conversation*, I became aware that there is no one way to teach mathematics to everyone. This book, which combines articles from three NCTM school journals, reflects the role that we, as teachers, play in the classroom. The goal is to provide insight into the different aspects that constitute learning in mathematics.

Different cultures and socioeconomics play important roles in how each individual student perceives mathematics. Knowing about these differences is essential when leading a discussion for understanding. For example, not everyone eats pumpkin pie during Thanksgiving. As educators, we must consider many quantifiers when presenting concepts to students.

The book contains different exercises that help teachers bridge these differences. How do students really view the job of a mathematician? How can literature enhance the

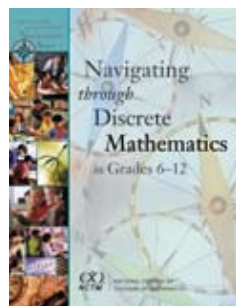
classroom? How do students perceive algebra? What role can the history of mathematics play in the classroom?

Students bring a variety of resources into the classroom. As teachers, we must listen to students talk and speak to them so that they understand. All teachers—from those beginning their careers to those who have years in the classroom—will benefit from reading this book.

—Rebecca J. Kessler,
*The Miami Valley School,
Dayton, OH 45429*

Navigating through Discrete Mathematics in Grades 6–12

2008. viii + 209 pp., \$48.95 paper. ISBN 978-0-87353-586-1. Stock no. 12996. National Council of Teachers of Mathematics; (800) 235-7566; www.nctm.org.



The books in the Navigations Series have proved to be valuable resources for many states and districts, and this

volume is no exception. The topic of discrete mathematics, although not a stand-alone strand in NCTM's *Principles and Standards for School Mathematics*, is woven throughout the other strands. Many states and districts include aspects of discrete mathematics in their standards. However, some teachers and curriculum supervisors may be unaware of what content falls under the domain of this topic.

Because many teachers and administrators are not familiar with discrete mathematics and have had no formal training in this area, this resource should be a valuable supplement to many libraries.

In addition to presenting meaningful activities for students in grades 6–12, this resource provides background material and explicit information on the mathematics involved in three main topic areas: systematic listing and counting, vertex-edge graphs, and iteration and recursion. Two chapters are devoted to each topic; one directed toward middle school, grades 6–8, and the other chapter geared for high school, grades 9–12. The topics in the “Systematic Listing and Counting” chapters are the foundation for probability. The chapters on “Vertex-Edge Graphs” may initially be foreign to teachers with little discrete mathematics experience, but the book provides background material and activities for teachers to develop these concepts. The topics included in the “Iteration and Recursion” chapters are the building blocks for algebra.

It should be noted that Navigations books on discrete mathematics targeting grades pre-K–5 will be released by spring 2009; for districts without discrete mathematics in their curricula and teachers with little experience in this area, this additional resource may also be needed to properly develop the topic.

I would strongly recommend this book as a school resource at a variety of levels. As a middle school teacher in a district without discrete mathematics standards, I have ended the school year with vertex-edge graph problems. This resource is a welcome addition to the activities that I have previously presented. As a teacher ed-

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ucator, I believe these activities would be appropriate in both mathematics content and methods courses to help preservice and in-service teachers develop the mathematics content using a standards-based approach.

—Patricia G. Kridler,
George Mason University,
Fairfax, VA 22030

FROM OTHER PUBLISHERS

Family Math Night: Math Standards in Action in Middle School

Jennifer Taylor-Cox and Christine Oberdorf, 2006. viii + 104 pp., \$29.95 paper. ISBN 1-59667-028-2. Eye On Education; (888) 299-5350; www.eyeoneducation.com.

This resource for teachers contains thirty activities that can be used when planning a middle school Family Math Night. Supporting each activity is a one-page teacher's guide and a ready-to-copy page for students and family members. The teacher page includes a materials list, helpful hints, answers, and an explanation of each activity's connection to the content strands that are part of NCTM's Standards.

Each student activity page contains directions for completing the activity, questions that parents can ask their child, and an additional challenge problem. The challenge problems vary in difficulty level.

An introductory chapter addresses the goals of holding a Family Math Night. It also explains the organization of the book, discusses the teacher's role, and provides additional tips for producing a successful event. There is a suggested form letter for inviting families to Family Math Night. Although there is a great deal of preparation required for a Family Math Night, this book can provide some relief by helping teachers gather together activities and construct parent letters and instructions.

The authors intend for the activities to be completed in stations, though there is neither mention of the approximate time needed for completing each activity nor the number of stations they recommend using. Both authors provide an e-mail contact and the possibility to schedule professional development opportunities regarding Family Math Night.

Overall, this book contains a good variety of activities and will serve as a useful resource for teachers wanting to produce a Family Math Night.

—Bonnie Spence,
University of Montana,
Missoula, MT 59812

It's A Money Thing! A Girl's Guide to Managing Money

The Women's Foundation of California, 2008. Ages 13 and up. 100 pp., \$12.99 paper. ISBN 978-0-8118-4427-7. Chronicle Books; (800) 759-0190; www.chroniclekids.com.



From the teen-related illustrations on the cover to the colorful casual fonts inside, *It's A Money Thing!* is geared toward engaging and empowering young girls in concepts of finance. As Kathleen Brown states in her introduction, "knowledge is power." This book sets out to educate young women about how to be financially healthy.

Authored by the Women's Foundation of California, this book moves from looking at how a girl already supports the global economy with every purchase to working, investing, and giving back. The chapter titled "It's Your Lifestyle, Girlfriend!" accurately depicts the shock that many young people experience when they receive their first paycheck and experience how taxes, FICA, and other deduc-

tions affect actual pay. The chapter shows the importance of saving, regardless of income level; the pros and cons of credit cards; and how to create a realistic budget—all good, solid information that young people need.

A handy resource section and glossary are included as well. Throughout the book, space is given for readers who wish to make journal entries and record ideas about starting a business, saving for retirement, playing the stock market, and contributing to charities. Readers should note that this book is rooted in concepts, not computation.

Overall, I would highly recommend this book. I also hope the authors will consider a version for boys, as well.

—Melinda Griffin,
The College of William & Mary,
Williamsburg, VA 23187

The Math Process Standards Series, Grades 6–8

Susan O'Connell, series ed., 2008. Introduction to Problem Solving, 176 pp., ISBN 978-0-325-01296-4. Introduction to Communication, 176 pp., ISBN 978-0-325-01732-7. Introduction to Reasoning and Proof, 160 pp., ISBN 978-0-325-01733-4. Introduction to Representation, 160 pp., ISBN 978-0-325-01387-9. Introduction to Connections, 128 pp., ISBN 978-0-325-01240-7. \$25 each, paper. Heinemann; (800) 225-5800; www.heinemann.com.

The Math Process Standards Series for Grades 6–8 is a set of five books; each book has a CD. Each book addresses a different strand of mathematics as set forth by NCTM. They are designed to give teachers some additional tools that they can use to teach content.

Each book begins with a few chapters of general instruction for teachers, then delves into several chapters that contain activities to be

used with students. *Introduction to Problem Solving*, for example, contains two chapters of general information followed by eight chapters that each address a different strategy. Two more general chapters conclude the book. The CD that accompanies each book contains all the classroom resources. Names and numbers can be changed in all projects to be customized for any classroom. Although an individual teacher could use this series, I think it would be a great resource for professional development with a group from one campus or from an entire district.

—Margaret Reed,
Lake Jackson Intermediate School,
Lake Jackson, TX 77566

Problem-Based Learning for Math and Science: Integrating Inquiry and the Internet, 2nd ed.

Diane L. Ronis, 2007. 176 pp., \$27.95 paper. ISBN 978-1-4129-5559-1. Corwin Press; (800) 233-9936; www.corwinpress.com.

Are you looking to integrate real-world applications, higher-order thinking skills, and technology into your mathematics or science classroom? This book can help you. It discusses the problem-based learning (PBL) method while engaging students in multidisciplinary projects steeped in the NCTM's Standards, National Science Education Standards, and the National Education Technology Standards.

Each project contains detailed teacher notes, student handouts, and evaluations (including rubrics and self-assessments).

Chapters 1–3 explain in detail the relevance and rigor of problem-based learning. Chapter 4 offers strategies for implementing problem-based learning in the mathematics and science classroom. Chapter 5 focuses on evaluating and assessing projects, and chapter 6 outlines opportunities for

community partnerships.

My eighth-grade geometry students and I tackled the Building Bridges project. From the moment it was introduced, my students were engaged in higher-order thinking and problem solving. Students conducted extensive Internet research applied to design and construction of a toothpick bridge according to parameters outlined in the project's background information. Teams of students formed construction companies, organized necessary materials, researched bridge construction, and ultimately built their toothpick bridges. Viewing the finished models and watching student presentations were the highlight of our semester. I recommend this book to middle school and high school teachers looking for problem-based learning activities for their students.

—Lois Elkins Coles,
Brentwood Middle School,
Brentwood, TN 37027

The Simple Book of Not-So-Simple Puzzles

Serhiy Grabarchuk, Peter Grabarchuk, and Serhiy Grabarchuk Jr., 2008. 199 pp., \$19.95 paper. ISBN 978-1-56881-418-6. A K Peters; (781) 416-2888; www.akpeters.com.

This book contains more than 100 puzzles, challenges, and brain teasers. It is designed to challenge readers to think differently; increase their level of perseverance; and improve their problem-solving skills, spatial creativity, and logical reasoning. Although this book is being reviewed for *MTMS*, I think it is better suited for high school and above.

The book contains a good assortment of puzzles and challenges, including word scenarios, numeric scenarios, logical thinking situations, and geometric representations. Some of the challenges are somewhat confusing. For the most part, the

solutions are good, although some might require further explanation for students to fully understand them.

For example, looking at the Pentomino Switch on page 40, I sense that there could be multiple meaningful patterns achieved. It took some time for me to digest what this particular problem was asking. The solution on page 89 is interesting but not easily understood. I am hesitant to think that many readers would understand the purpose of the dots in the explanation. This is just one of several examples.

I did not use this book with any students, although I have used similar problems with students in the past. From those experiences, I know how important it is to pose questions clearly, avoid challenges with too many possible solutions, and make the solutions extremely clear. Many of the challenges in this book do these things but many do not.

Although the book is well worth publishing, I need to caution about the levels of difficulty. I think it would be wise to separate the challenges into three or more categories, with the more obvious challenges placed before the more obscure ones. For example, Elliptic Proportions is a nice question, but it is quite intense to appear early in the book. After finding this question early in the book, readers might decide that these puzzles are beyond their abilities and not attempt others later in the book.

With a strong mathematics background and confidence in my abilities to solve puzzles and work with logic, I found that some of these puzzles were quite challenging, and a number of the explanations were even more of a challenge. I enjoyed this book, but caution needs to be taken as to what level this is proposed for and how the challenges are arranged in the book.

—Larry White,
retired public school teacher
and university teacher educator ●