window on resources

BOOKS

FROM NCTM
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Focus in Grade 8: Teaching with Curriculum Focal Points

Jane F. Schielack, series advisor, 2010. 139 pp., $34.95 paper. Stock no. 13632. ISBN 978-0-87353-650-9. National Council of Teachers of Mathematics; www.nctm.org.

Dense and to the point, this guide offers great potential for deepening teachers' pedagogical content knowledge within the Grade 8 Curriculum Focal Points. The material will support veterans as well as teachers who are new to these topics who wish to take a fresh look, make new connections, and ultimately guide students to forge a deeper and more meaningful understanding of grade 8 mathematics.

Each Focal Point is discussed in depth through an overview of related content from earlier grades. The book offers a clear articulation of the core understandings on which grade 8 students should build, a progression of sample problems that can scaffold conceptual development, and an emphasis on real-life contexts and mathematical connections. The reader comes away with a much clearer understanding of how and why each Focal Point is truly what the name implies, along with an expanded vision of how to structure effective student explorations.

Numerous sample problems present believable contexts that are accessible to the typical eighth grader. Hypothetical student-teacher dialogues around those problems illustrate how essential understandings can be derived.

Most of the problems are easily adaptable for classroom use. Although the dialogue often feels artificial, the astute reader will focus on the goals and the unfolding of students' mathematical understanding rather than the language presented.

I would recommend this book as a professional development tool that is best used by teams of teachers to develop problems and discuss component understandings of the Focal Points.

—Anna Maria Licameli,
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Manchester, MA 01944

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FROM OTHER PUBLISHERS

Designing Professional Development for Teachers of Science and Mathematics

Susan Loucks-Horsley, Katherine E. Stiles, Susan Mundry, Nancy Love, and Peter W. Hewson, 2010. 424 pp., $39.95 paper. ISBN 978-1-4129-7414-1. Corwin Press; www.CorwinPress.com.

This book discusses a framework for providing professional development (PD). The authors have drawn from research related to how people learn, standards-based instruction, professional learning communities, student data, and their first-hand experience providing professional development to give PD providers ample information.

Practical tools, such as "Questions to Consider," are given for each stage of the PD design framework. The section on analyzing student learning and data explores practical goals for professional development. The authors emphasize the importance of quality PD so that leaders can connect theory to practice. To ensure a collegial learning environment, they present a learning model that describes the facilitator role of the PD provider. Change is cyclical; therefore, examples of ongoing opportunities for evaluation, reflection, and revision are described. The book concludes with some case studies of developers' experiences with the design framework. These personal experiences present additional practical information to consider for specific kinds of PD and contexts.

This book is a user-friendly guide filled with tools and resources for anyone planning to provide professional development. One weakness is that some of the potentially useful resources are only briefly described in the text (i.e., the stages of concern survey) instead of giving the complete document.

I would highly recommend this book to anyone who is serious about developing and providing relevant and transformative professional development to teachers and school leaders.

—Sarah Harris,
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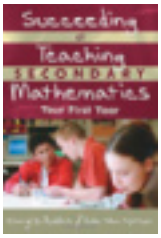
Succeeding at Teaching Secondary Mathematics Your First Year

Cheryl D. Roddick and Julie Sliva Spitzer, 2010. 136 pp., $25.95 paper. ISBN 978-1-4129-2763-5. Corwin Press; www.CorwinPress.com.



As many of us already know, being a first-year teacher can be a daunting experience. Fortunately, fellow educators Roddick and Spitzer have written a book to help first-year and beyond math teachers navigate these rough waters. The authors describe two teaching scenarios that contain excellent teaching strategies, including differentiation. They then discuss other critical areas of successful math instruction, including today's standards-based teaching environment, student engagement, special populations of students, and assessment.

To complete their approach to first-year teaching success, they present a chapter that discusses designing a curriculum, meeting the entire body of standards, connecting teaching to the teaching done immediately before and after the particular math class, connecting it across the curriculum, and staying focused on the big ideas and the students. Throughout the text, the authors refer to the original two scenarios and point out the positive teaching components of the lessons.

Several additional aspects of the text are worth mentioning. First, the authors spend considerable time discussing both the NCTM Content and Process Standards. Second, they describe Glasser's five basic needs along with the three modes of learning.

I enjoyed reading this book. It would be a nice addition to any burgeoning library of a new teacher.

—Roy C. Lander, PATH Academy, Atlanta, GA 30319

Teaching Mathematics with Virtual Manipulatives

Patricia S. Moyer-Packenham, 2010. Gr. K–8, 165 pp., $24.95 paper. ISBN 978-1-58324-318-3. Didax; www.didax.com.

This book presents a comprehensive overview of using virtual manipulatives to teach K–8 mathematics. It provides a balanced summary of the research, a useful scheme for classifying virtual manipulatives, and detailed explanations of their advantages for helping students learn mathematics. Practical guidelines for selecting virtual manipulatives and their appropriate uses are provided. The early chapters also provide guidance on assessment and examples of classroom action research using virtual manipulatives. An entire chapter is devoted to helpful technical information that supports the effective use and troubleshooting of the National Library of Virtual Manipulatives.

Teachers will appreciate the fifteen classroom-ready sample lessons featuring twelve different virtual manipulatives, five lessons each from the K–2, 3–5, and 6–8 grade bands. The lessons are divided among the Number and Operations, Algebra, Geometry, and Data Analysis and Probability Content Standards. Each lesson contains a discussion of its mathematics, NCTM Standards, objectives, vocabulary, detailed teacher notes, assessment questions, and extensions. A helpful "What to Expect from Students" section shares typical student responses and likely misconceptions. "Tips for Teachers" provides guidance and support that are specific to the effective use of the virtual manipulative. Some lessons also have ready-to-use activity sheets.

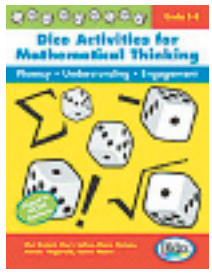
With its combination of background information, practical guidelines, technical tips, and sample lessons, this book is an excellent resource for K–8 teachers interested in using virtual manipulatives. It emphasizes that the virtual manipulative must enhance the teaching and learning of mathematics and should not be used just to use technology and because it is available.

—Sue McMillen, Buffalo State College, Buffalo, NY 14222

PRODUCTS

Dice Activities for Mathematical Thinking

Mary Saltus and Chet Delani, 2010. Grades 5–8, 136 pp. $12.95 paper. ISBN 978-1-58324-326-8. Didax; www.didax.com.



This workbook is filled with over seventy-five number operation activities that can be used with the whole class, with groups, or by individual students. The authors suggest that the preferred format is two teams of two students.

All activities begin with students rolling dice and applying the results to primes, composites, factorials, summation, square roots, or square numbers to win a game. The engaging game format will help students develop a working fluency with numbers beyond the four basic operations.

The book provides multiple levels and types of activities that will aid in differentiating the practice of these concepts. In addition, the last chapter contains exploration activities that challenge students to develop their mathematical thinking by devising winning strategies. These activities

are easy to organize for a class but could also be used as anchor activities for students working independently. The instructions are easy to understand and should be self-explanatory for most students. The summation concept and symbol, which are used in this book, are not usually part of a middle school curriculum, but the concept is readily understandable to students at this grade level.

I would recommend this book for teachers looking for more engaging ways to have their students practice numerical operations beyond the four basic operations of whole numbers.

—Martha Croley,
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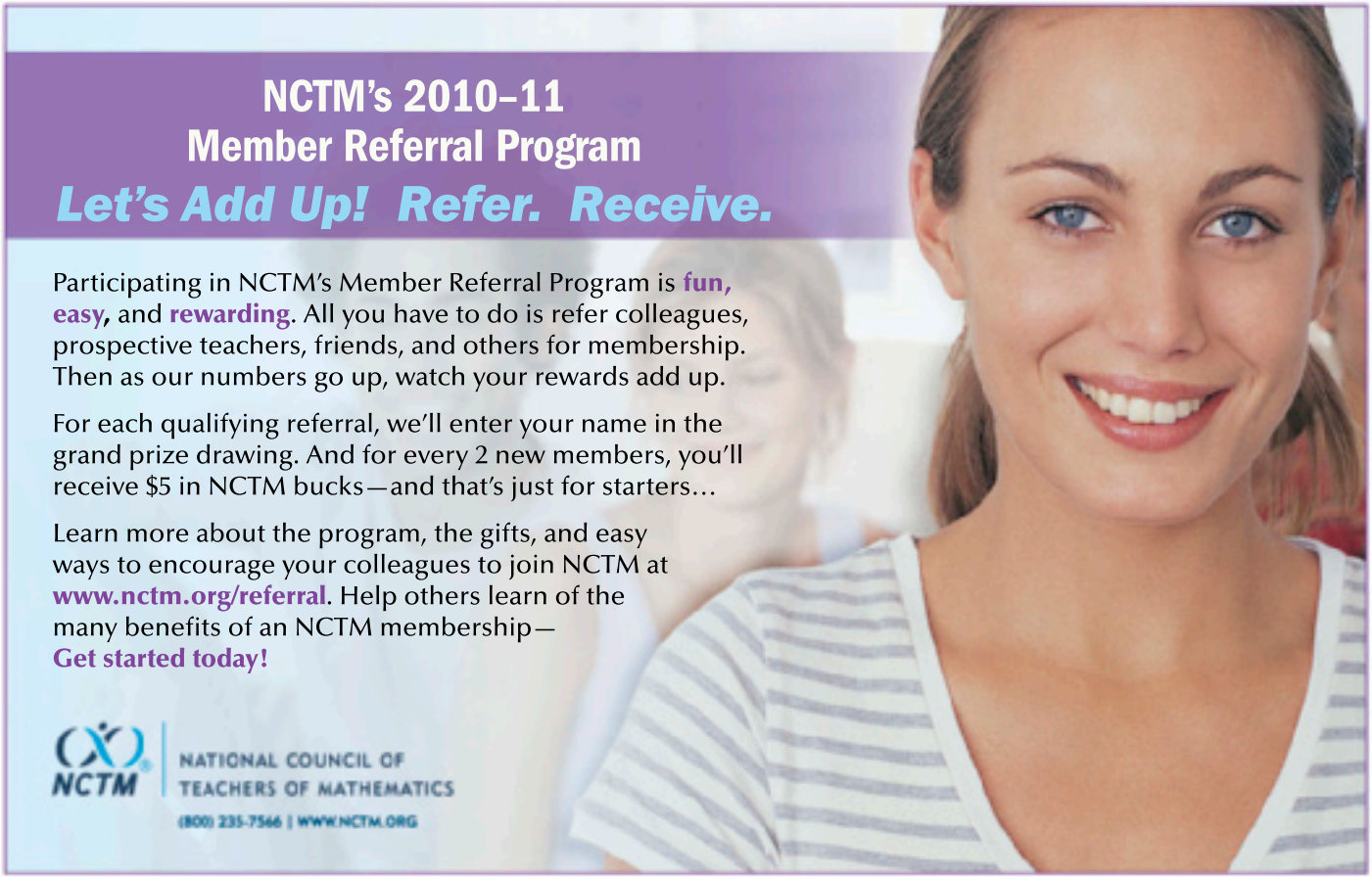
Lesson Study in Practice: A Mathematics Staff Development Course

Jane Gorman, June Mark, and Johannah Nikula, 2010. Binder, book, and DVD, $195.00. Heinenmann; www.heinemann.com.

Lesson study has emerged as a professional development opportunity for teachers. This includes a structure for teachers to plan, teach, observe, and revise a lesson in the actual classrooms where they teach. The authors of this course have created a well-designed and organized resource for leading a professional development course on lesson study.

The binder includes facilitator notes and participant materials, a DVD of supplemental materials, and a leader's handbook. The course is organized into ten sessions ranging in length from three to six hours and includes pacing times. An agenda is included for each session to help facilitators plan and budget their meeting times. Each section's facilitator notes include the materials needed, an overview, and guiding questions for the session. The wealth of items to choose from include a PowerPoint presentation, activity handouts, and informational articles as well as templates that lesson study teams can use to organize their progress.

Leaders are often faced with the dilemma of how to keep the benefits



of professional development going beyond the initial immersion. I appreciate that the leader's handbook explains lesson study in depth and contains a section on sustaining the process beyond the first cycle by building partnerships with school administration and incorporating expertise from outside the school team. A section is also written by lesson study team members who share insights into the process and identify potential pitfalls.

Having facilitated many lesson study teams, I would highly recommend this resource for teachers. It will serve as an excellent planning tool for leaders who want to incorporate this worthwhile professional development tool in their school or district.

—Melinda Griffin,
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SOFTWARE

Bill Nye's Solving for X Pre–Algebra, Volume 1: Infinite Fractions, Exponents, Signed Numbers and Proportional Reasoning

2009. $29.99 classroom edition DVD. Includes an interactive whiteboard assessment game and downloadable educator's guide. ISBN 1-59753-244-4. Disney Educational Productions; www.DisneyEducation.com.

This DVD, intended for middle school students, introduces the topics of infinite fractions, exponents, signed numbers, and proportional reasoning. Bill Nye presents a vignette for each topic. These vignettes are not a substitute for actual exploration but rather to capture student interest.

My summer school students did enjoy the vignettes but still needed additional clarification on the mathematics presented. I was not able to access the interactive whiteboard game or the downloadable educator's guide with my laptop.

I would recommend using the DVD with students. The math, which is presented in a realistic context, could serve as a springboard for a discussion and exploration of the topics. Each clip is approximately six minutes long, so they are not time-consuming.

—Amy S. Lamb,
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