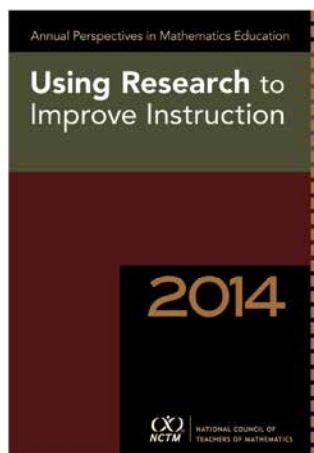


APME replaces NCTM yearbooks

Books

From NCTM

Prices on software, books, and materials are subject to change. Consult suppliers for current prices. Comments reflect reviewers' opinions and do not imply endorsement by the National Council of Teachers of Mathematics (NCTM). Individual members receive a 20 percent discount on NCTM publications. To order, call toll free (800) 235-7566 or visit www.nctm.org/catalog for the online catalog.



Annual Perspectives in Mathematics Education 2014: Using Research to Improve Instruction, Karen Karp and Amy Roth McDuffie, editors, 2014. 260 pp., \$42.95 paper. ISBN 978-0-87353-761-2. Stock no. 14774. National Council of Teachers of Mathematics; www.nctm.org.

This inaugural issue of the *Annual Perspectives in Mathematics Education (APME)* replaces the NCTM Yearbook. With the focus on using research findings to improve pre-K–16 education, this book is a valuable resource for mathematics teachers and mathematics teacher educators alike. The articles are timely, especially with regard to the implementation of the Common Core State Standards and the subsequent assessments rolled out for the 2014–2015 academic year. The authors dispel myths of what the Common Core is and what it is not and provide a concrete example of a learning trajectory within the statistics domain that teachers will understand and appreciate. The focus on such topics as problem solving and classroom discourse echoes the changes being called for in the classroom.

Many of the pedagogical changes advocated in this issue are not new; rather, they are updated to include recent legislative changes that make the research-based suggestions

imperative if we are to keep students prepared for an increasingly competitive society. Taken together, these articles call for student-centered learning and provide suggestions for how to do it—from designing professional development to implementing cognitively demanding tasks in the classroom to creating a community of learners where rich discourse and formative assessment drive instruction. This book gives evidence of research-backed teaching that works.

This inaugural issue of *APME* is a must for novice and veteran educators alike. Mathematics teaching and learning must change, and this book presents excellent examples of what needs to be done.—Crystal Marie Vesperman, *University of Wisconsin–La Crosse*.

From other publishers

For teachers

Minds on Mathematics: Using Math Workshop to Develop Deep Understanding in Grades 4–8, Wendy Ward Hoffer, 2012. 208 pp., \$28.75 paper. ISBN 978-0-325-04434-7. Heinemann; www.Heinemann.com.

Hoffer has written *Minds On Mathematics* for math educators of grades 4–8 to clarify how students' learning experiences can be sustained in workshop environments where they apprentice to develop their mathematical "thinking and doing" in a twenty-first-century classroom. The book distinguishes key differences between enriched learning environments that focus on thinking strategically in a collaborative, highly cognitive environment versus a typical classroom

focused on correct answers and rote skills.

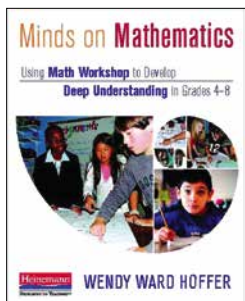
Hoffer details the success of a fractions activity with tiered questions whereby students grapple with whether a half-cup of coffee with two-sixths cup of milk will all fit into a cup. She then suggests shifting discourse to a higher cognitive task of $\frac{2}{6} + \frac{1}{3} = \frac{3}{9}$ within the same contextual situation. Prioritizing thinking toward more novel questions supports twenty-first-century skills of innovative thinking, critical problem solving, communication, and collaboration.

The book's strength is its framework for immediate implementation of such skills into the classroom. Ample student work is shown as evidence of learning and misconceptions as entry points for clarifying big ideas. Workshop photos at each grade level would be helpful to get a visual sense of differentiated groupings of “minilessons” and “work times.”

Overall, I highly recommend this book. It is a clear road map that honestly lays out criteria needed to instill and sustain a classroom that uses the workshop model where student engagement is high but consistency in implementation is challenging.—*Rebecca Murry, United Nations International School, New York, New York.*

Teaching Student-Centered Mathematics: Developmentally Appropriate Instruction for Grades Pre-K–2, John A. Van de Walle, LouAnn H. Lovin, Karen S. Karp, and Jennifer M. Bay-Williams, 2013. 416 pp., \$48.50 paper. ISBN 978-0-13-282482-8. Pearson; www.allynbaconmerrill.com.

The focus of this publication is professional development. Every area of the mathematics curriculum is addressed in the book. Mathematical practices, critical areas for CCSSM, and NCTM's Curriculum Focal Points are included. Dozens of student videos, virtual manipulatives,



blackline masters, and other online resources showcase student thinking and problem solving.

The content is intended to give practicing teachers and preservice teachers the understandings and tools they will need to implement pre-K–grade 2 math standards. This text will help teachers teach mathematics for understanding and use

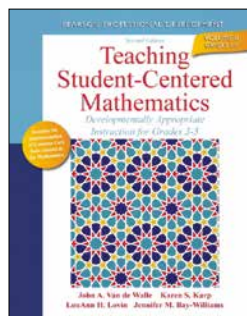
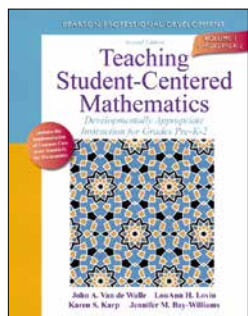
problem solving in every domain. Games, manipulatives, free technology sites, and an online PD Toolkit provide support for teachers.

Many areas of this book could be considered strengths. I particularly liked the chapter on geometry. Primary teachers often request accurate definitions for the vocabulary they must introduce. This book offers descriptions, sorts, and rigorous activities that provide the platform needed for deep understanding that will lay a foundation for the coming years.

I used some of this material for a pre-K–grade 2 training of practicing teachers. They enjoyed using the number-sense and ten-frame activities. They plan to use the place-value chart with the double ten frame in the ones/units place with their students.

I highly recommend this book for professional development, PLCs, or faculty book studies. In my professional opinion, this book does not have any major flaws.—*Leslie Marrie S. Lasater, Middle Tennessee State University and math consultant for MC², Murfreesboro, Tennessee.*

Teaching Student-Centered Mathematics: Developmentally Appropriate Instruction for Grades 3–5, John A. Van de Walle, Karen S. Karp, LouAnn H. Lovin, and Jennifer M. Bay-Williams, 2013. 464 pp., \$48.50 paper. ISBN 978-0-13-282487-3. Pearson; www.allynbaconmerrill.com.



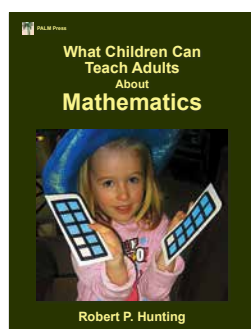
This comprehensive resource integrates theory with classroom applications and activities. The book is divided into two parts. The first part deals with issues related to establishing a student-centered

environment, such as teaching mathematics through problem-solving, assessing learning, differentiating instruction, and teaching students with exceptionalities. The second part includes individual chapters that address teaching student-centered mathematics in a variety of mathematical domains. Each of the chapters in this second part of the book includes problem-based activities and tasks to engage and support students in learning mathematics.

The book also includes many additional resources for teachers. For example, a table titled Activities at a Glance includes the activities found in the book as well as the mathematical goal for each activity. This will assist teachers in locating appropriate activities for classroom use. In addition, connections to the Common Core State Standards for Mathematics are made throughout the book.

Teaching Student-Centered Mathematics: Developmentally Appropriate Instruction for Grades 3–5 is intended for use by practicing teachers in grades 3–5. However, all teachers of students in kindergarten through eighth grade will find this book to be a valuable resource for both individual and schoolwide use. The authors effectively meet their goals for the book: as a reference for mathematics content; a source of research-based strategies; and a resource of robust, problem-based tasks and activities. This is a book that belongs in the professional library of all teachers of K–grade 8.—Ann McCoy, *University of Central Missouri–Warrensburg*.

What Children Can Teach Adults About Mathematics. 2013. Robert P. Hunting. 132 pp., \$11.99 e-book. *Partnership for Advancing the Learning of Mathematics*; www.palm-ed.com.



Written for the general public, this book describes the development of mathematical concepts in children ages twenty-four months to eleven years. Framing five children's notions of number, space, and measurement in the philosophy

of radical constructivism, the author introduces adults to the complex ways that children acquire knowledge of these ideas.

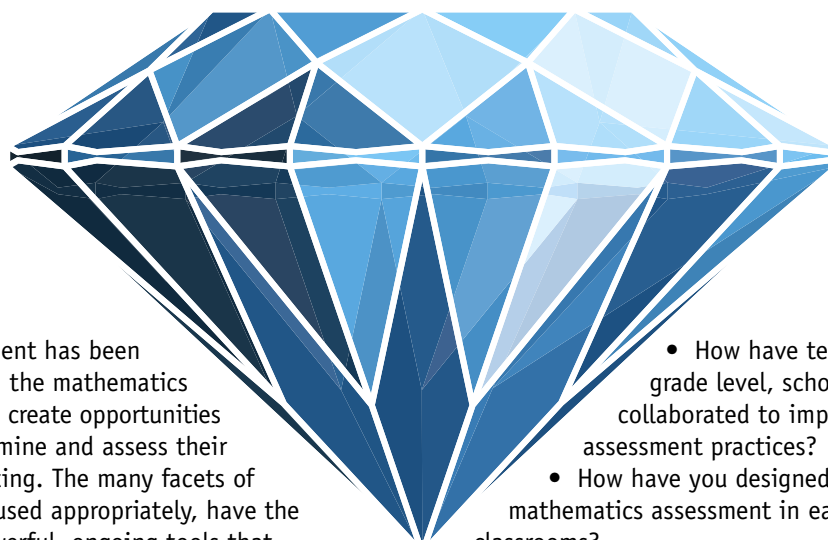
Although the use of integrated technology (some difficult to understand and/or see), photographs, and well-thought-out explanations of complex mathematical terms often created a comprehensible manuscript, the abundance of assumptions made about children's thinking, based on a limited sample size and inadequate details of reasoning explicated through interviews, raised my concern about the validity of the author's claims of what children could teach adults about mathematics. Additionally, notions of learning through social engagement frequently appeared in the text as rationale for mathematical development, yet the explanations aligned with developmental models of knowledge acquisition based on a participant's interaction with a tool. For example, the author states that a toddler developed spatial reasoning when pushing a box across the floor and that another child learned partitioning when setting the table—social interactions missing in both. Ball (1992) described the fallacy in believing that children automatically draw conclusions through working with manipulatives when, realistically, learning occurs through using tools while engaging in scaffolded discourse with mathematically knowledgeable people (Lave and Wenger 1991; Vygotsky 1980).

Although an interesting read, the book lacks empirical evidence supporting the conclusions and has a narrow reference list, among other limitations, preventing me from recommending it for purchase.—Meg Burke, *Penn State–Erie, The Behrend College, Pennsylvania*.

REFERENCES

- Ball, Deborah Loewenberg. 1992. "Magical Hopes: Manipulatives and the Reform of Math Education." *American Educator* 16 (2): 14–18.
- Lave, Jean, and Etienne Wenger. 1991. *Situated Learning: Legitimate Peripheral Participation*. New York: Cambridge University Press.
- Vygotsky, L. S. 1980. *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, Massachusetts: Harvard University Press.

2016 FOCUS ISSUE: REVEALING THE FACETS OF ASSESSMENT



The role of assessment has been evolving rapidly. In the mathematics classroom, students create opportunities for teachers to examine and assess their mathematical thinking. The many facets of assessment, when used appropriately, have the potential to be powerful, ongoing tools that provide evidence of student progress and support student learning in mathematics.

Manuscripts that address the following questions or other questions about assessment are encouraged:

- How have you balanced the various types of math assessments (e.g., formative, summative, assessment of learning, assessment for learning, assessment as learning)?
- How have you designed assessments to capture conceptual understanding, reasoning, and procedural fluency?
- How can formative assessment strategies be used to inform teacher decisions within and between mathematics lessons?
- How can mathematics instruction be designed to support students becoming effective self-assessors?
- How has your use of rigorous mathematical tasks supported and advanced your assessment of students' mathematical thinking?
- In what ways have you engaged in assessment of the Common Core's Standards for Mathematical Practice (e.g., construct viable arguments, model with mathematics)?
- How have you used feedback to support students' mathematical learning?

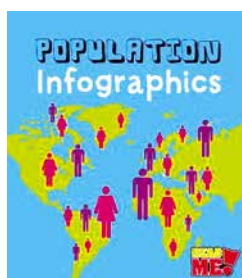
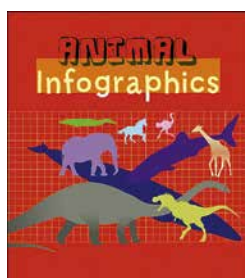
- How have teachers in your grade level, school, or district collaborated to improve mathematics assessment practices?
- How have you designed and managed mathematics assessment in early childhood classrooms?
- What strategies have you used to ensure that assessment methods are appropriate for various populations of students, such as English language learners, children with disabilities, and gifted learners?
- How has technology supported your work of assessing students' mathematical understanding?

Limit your manuscript to 2500 words excluding references and figures. Figures and photographs may be embedded in the manuscript for review purposes; however, on acceptance of your manuscript, you must supply source files for all exhibits. In addition, should the manuscript ultimately be accepted for publication, parent/guardian permission will be required for publication of all student work and photographs.

On a separate cover page, state clearly that the manuscript is being submitted for the October 2016 *Teaching Children Mathematics* (TCM) Focus Issue: Revealing the Facets of Assessment. Author identification should appear on the cover page only. Access <http://tcm.msubmit.net> to submit completed manuscripts to TCM by **July 31, 2015**. Visit www.nctm.org/journal submissions for detailed manuscript preparation guidelines.

For students

Animal Infographics; Population Infographics, Chris Oxlade, 2014. 32 pp. each, \$7.99 cloth. *Animal ...* ISBN 978-1-4109-6216-4; *Population ...* ISBN 978-1-4109-6218-8. Heinemann /Raintree; www.capstonepub.com.



These two books contain a wide array of effective infographics. One book explores the population of countries, cities, and other demographic categories. The second book uses infographics to compare animal size, food, and even a food pyramid. The books succeed in demonstrating different creative ways to use infographics in addition to line graphs, bar graphs, and pictographs. For example, flags of the ten countries with the greatest population are proportionate to their relative population. *Animal Infographics* uses a speedometer with speech bubbles to compare the fastest flying animals.

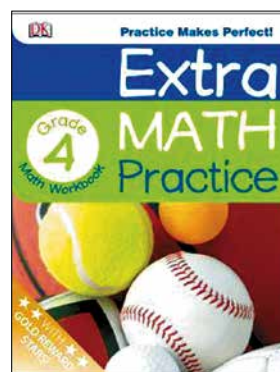
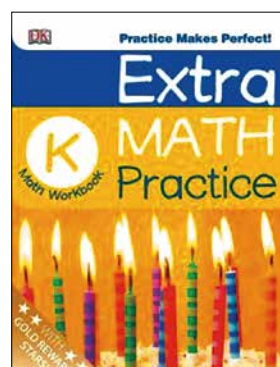
Intended for students in grades 3–5, the book does an admirable job of representing many ways to compare data. The text provides an effective medium to highlight the connection between reading and math.

In guided reading, the book could serve as a useful supplement to mathematics instruction. However, several teachers who previewed the book expressed a desire to have questions within the text to encourage critical thinking

as well as provide a more natural connection to math.

Both books have much to like with regard to graphic depiction of comparing numbers. However, my students showed little interest in choosing and reading these books because the graphics and book cover are dated in appearance compared to other children's literature and the Internet. Although the content is pedagogically sound, I would recommend many other resources with richer images before this one.—Tom Parker, *Northwestern Elementary*, Albion, Pennsylvania.

Extra Math Practice: K Workbook; Extra Math Practice: Grade 4 Workbook, Sean McArdle, 2013. \$5.99 ea. paper. Kindergarten ISBN 978-1-4654-0938-6; Grade 4 ISBN 978-1-4654-0934-8. DK Publishing; www.dk.com.



The content of these skills-practice books match the Common Core State Standards for kindergarten and fourth-grade math, respectively. The books appeal to children. They come across as fun, friendly practice. Lots of problems appear on a page; however, the pages are divided so that the problems can be done in sets. The only downside is that there is only one page per skill, and some have multiple sets, whereas others have only one.

The gold star rewards did not seem to pique the interest of the children with whom I used the book, and there is only one star per skill instead of per section on the page. These books are great if you use them as homework practice or morning work.—Chrystal Reis, *Lake Park Elementary*, Midwest City, Oklahoma.

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2016

Call for Chapters

Annual Perspectives in Mathematics Education

Mathematical Modeling and Modeling Mathematics

The 2016 Annual Perspectives in Mathematics Education (APME) volume: Mathematical Modeling and Modeling Mathematics will consist of chapters that represent current thinking and promising practices devoted to effectively incorporating models and mathematical modeling in the teaching and learning of mathematics K–12. The focus on mathematical modeling in the Common Core State Standards for Mathematics (CCSSM) is of particular interest because it had not been given explicit and detailed attention in previous U.S. standards documents for school mathematics. Additionally, mathematical modeling holds a privileged place in the CCSSM as it is the only topic that is both a conceptual category and a Standard for Mathematical Practice.

In light of the heightened attention to using models and mathematical modeling in school mathematics, both nationally and internationally, this volume will examine the benefits and challenges of implementing modeling through multiple lenses—clarifying constructs; task and curriculum design considerations, especially in a digital world; effective instructional practices, including elaborating equitable and culturally relevant pedagogies; student learning; assessment of modeling experiences; and supporting teachers' learning.

Chapter manuscripts should make strong links between research and practice and highlight important issues as they relate to implementing models and mathematical modeling in the classroom. Each chapter should appeal to a broad audience, which may include mathematics educators in a variety of capacities, such as curriculum designers/developers, assessment developers, teachers, teacher leaders, professional development leaders, mathematics teacher educators, and researchers.

See the full call for chapters at www.nctm.org/APMEcalls.

The following are intended as suggestions, not limitations, for potential authors.

Sample of Possible Topics

- ◆ Describe and discuss the terms and constructs associated with models and modeling such as “model,” “modeling,” “building a model,” and “using a model.” How are these terms used similarly and differently across grades, contexts, and strands (e.g., algebra, geometry, statistics)? What role do models and modeling serve in teaching and learning and/or in mathematics as a discipline?
- ◆ How can existing curriculum be used or adapted to support the teaching of mathematical modeling?
- ◆ What innovative opportunities for teaching, learning, and engaging are created by new technologies (e.g., mobile technologies, GPS-enabled technologies)? By emerging deeply digital instructional materials?
- ◆ Describe and illustrate how the practice of mathematical modeling can support problem-based learning that enables students to develop important mathematics.
- ◆ What interdisciplinary approaches are effective for teaching and learning mathematical modeling, and what are their distinguishing features?
- ◆ Discuss ways models, modeling contexts, and modeling can be used as part of equitable and/or culturally relevant pedagogies.
- ◆ Describe how students' work with models and modeling can be assessed (formatively and/or summatively) or used as a tool for making students' thinking more visible as part of assessment.
- ◆ What does research and/or practice suggest about the mathematical knowledge for teaching (MKT) that supports effective teaching of mathematical modeling or modeling mathematics at particular grades or grade bands?

Details for Submission

Prospective authors must fill out an Intention to Submit form, found at www.nctm.org/APMEcalls, and send it to Christian.Hirsch@wmich.edu by March 1, 2015.

The full chapter manuscript is to be submitted electronically by **May 1, 2015**, to the same email address. Details regarding submission requirements will be sent once your Intention to Submit form is received. Late or partial manuscripts cannot be considered. All chapter submissions will be blind peer-reviewed, and authors will receive feedback within 8 weeks.



NATIONAL COUNCIL OF
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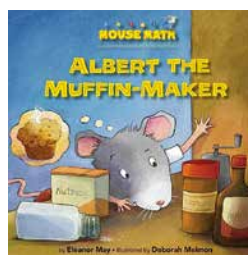
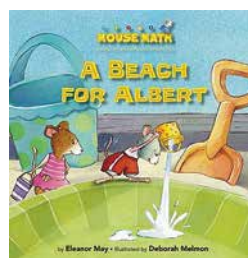
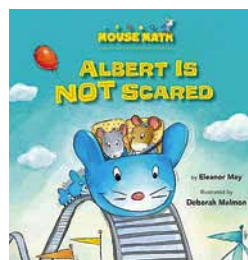
Mouse Math: Albert Is Not Scared; Mouse Math: A Beach for Albert, Eleanor May, 2013. 32 pp. ea., \$7.95 ea. paper. *Albert Is Not Scared* ISBN 978-1-57565-629-8; *A Beach for Albert* ISBN 978-1-57565-531-4. The Kane Press; www.kanepress.com.

Connecting mathematics to real-life experience makes concepts more relevant to students. Through the adventures of two mice, Albert and Wanda, author Eleanor May links kindergarten Common Core standards to real-life experiences that primary students can relate to. She presents informational topics through fictional settings.

Taking place in an *amusement* park, *Albert Is Not Scared* relates the experience of riding amusement park rides to develop students' understanding of positional words. *A Beach for Albert* introduces the concept of comparing items on the basis of the capacity attribute. Although the books target prekindergarten through first-grade students, because of the complexity of their text, these two books are designed to be read aloud to students. In addition to pictures and words that explain the concepts, the books also include mini lesson plans detailing how to extend the ideas presented in the stories.

Prekindergarten students and kindergartners found the stories entertaining when they heard them read aloud, and they eagerly participated in several of the suggested activities. The books and their accompanying lesson plans proved to be valuable sup-

plementary resources for specific kindergarten Common Core State Standards for Mathematics. (However, they should not be considered for the sole means of instruction because they do not completely address the standards.) In addition, these books



could be a beneficial supplement to a parent resource center because of their amusing, engaging stories and easy-to-follow lesson plans that parents could implement at home.—*Melissa Madsen, W. C. Britt Elementary School, Snellville, Georgia.*

Mouse Math: Albert the Muffin-Maker, Eleanor May, 2014. 32 pp., \$7.95 paper. ISBN 978-1-57565-632-8. The Kane Press; www.kanepress.com.

Part of a pre-K–grade 3 series aimed at making fun stories in which mathematics arises in the lives of two little mice, this story has Albert work to compile the ingredients needed to make muffins as indicated by a recipe list. Unable to find items in his own kitchen, he visits neighbors—and even the house cat—to request and acquire ingredients. The author aims to help

children with the use of ordinal numbers, and she emphasizes the “first ingredient,” of flour, a “second ingredient” of oatmeal, and so on as Albert obtains his items.

The story engages humorously because Albert finds a need to borrow all the ingredients and becomes a bit bothersome to his neighbors. The use of the ingredient list to introduce ordinal numbers is a bit weak. It is not clear why Albert would need the flour before the oatmeal. The teacher and the author should be prepared for questions like, “Why is oatmeal second?” However, the distributing of muffins at the end does provide an ordinal list simply because it can be used as a sequence of chronological events.

The story is fun and appropriate for young children. After the class reads this story, the teacher could follow up by carrying out steps of a recipe in which the order matters (as cooks would know); the appendix of Fun Activities provides an example of one. Enjoying the story made me want to check out other books from the series.—*Usha Kotelawala, Fordham University, New York.*

GIVE US YOUR SUGGESTIONS

If you know of a new book or product that you would like to see reviewed in *Teaching Children Mathematics*, let us know. Send information about the item to tcmreviews@nctm.org. Include the title and the publisher's name. We will be sure to consider the item for the Reviewing and Viewing department.