

# New books, games, and activities

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## Books

### For students

**Math Fun with Dr. Vectra and Friends,** James H. Livers, 2007. 110 pp., \$16.95 paper. ISBN 978-0-615-17368-9. Ages 10 and up. Little Eagle Press; [www.doctorvectra.com](http://www.doctorvectra.com).

This book gives an account of two young children's twenty-one visits with their mathematics mentor. During each visit, Dr. Vectra introduces a problem with a solution based on number patterns, or he presents a different application for a pattern already introduced. The topics include arithmetic procedures for retrieving a specific four-digit number; producing the same three-digit number from any number divisible by 3; quickly finding the sum of a series; finding the sum of cubes as the square of sums; multiplying equal mixed numbers; finding friendly numbers and perfect numbers; using multiples of 1001 and remainders of division by 7, 11, and 13 to determine any number under 1000; and so on.

Livers offers an interesting collection of the type of number patterns and operational shortcuts that children find fun, and he poses these problems and solutions in the friendly atmosphere of children casually dropping by the home of a teacher. However, the children are aged 7 and 10, whereas the problems are recommended for ages 10 and older. The language is stiff for readers of any age, and constant religious references further narrow the appeal for use in secular school settings. The reasoning behind each solution is rarely given. Many examples bypass the simple algebraic explanation. A mathematical error occurs on page 80, line 15:

"... each factor is a divisor and the product of any two or more factors is also a divisor" should read "...each factor is a divisor and the product of any two or more *prime* factors is also a divisor."

Teachers may find some of the problems interesting to present in class, but these and many similar shortcuts and patterns with explanations are readily available through other sources.—*Marianne Prokop, Hamden, CT 06518.*

### For teachers

**Differentiated Instruction for K–8 Math and Science: Ideas, Activities, and Lesson Plans,** Mary Hamm and Dennis Adams, 2008. 150 pp., \$29.95 paper. ISBN 978-1-59667-071-6. Eye On Education; [www.eyoneducation.com](http://www.eyoneducation.com).

Hamm and Adams provide a well-organized, comprehensive overview of multiple intelligences and the nuts and bolts of using differentiated instruction in mathematics and science. Emphasizing the social nature of learning, the authors give information to help teachers organize lessons that optimize students' learning strengths as they work toward math and science competencies.

After an introduction to the elements of differentiated instruction, the authors give details of the national standards and guiding documents, first for math and then for science. They emphasize the importance of computational understanding, reasoning, genuine problem solving, and connections among mathematical ideas in differentiating for math instruction. They

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highlight the importance of building on prior knowledge and skills to develop deeper understanding for both math and science. They define expected learning outcomes for both subject areas, with examples of specific lessons to achieve those outcomes and discuss classroom management for the differentiated classroom. The lesson templates and sample activities follow a format that includes the standards, important learning points, and differentiation suggestions. The focus is first on identifying learning targets and then on defining learning opportunities to meet these targets and indicators of success.

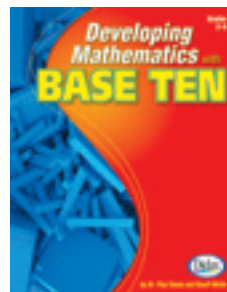
This book would make an excellent addition to a preservice education class or as a book study for a continuing professional development opportunity.—*Shirley Ferguson, Lebanon School District, Lebanon, NH 03766.*

**Where's the Wonder in Elementary Math? Encouraging Mathematical Reasoning in the Classroom**, *Judith McVarish, 2008. 200 pp., \$29.95 paper. ISBN 978-1-415-95716-8. Taylor and Francis Group; www.taylorandfrancis.com.*

Judith McVarish seeks to convince teachers that, in this standards-based assessment world in which educators find themselves, little thought is given to the development of mathematical reasoning skills, and instead, the focus has become test performance. This lack of attention to thinking skills has caused a lack of enthusiasm in students' attitudes—about school in general and mathematics specifically. Her aim is to encourage a shift in school culture toward promoting engagement through inquiry-based learning opportunities. I do not think any educator needs convincing on this point. Although her discussion has obvious strengths, as well as transcripts that demonstrate students' active engagement, the book itself is text-heavy, and reading it is laborious. It contains little white space, and graphic images (all black-and-white) are sparse.

This reminds me of the kind of book that students in an education program might be forced to read. It contains little for the seasoned teacher. The topic is most definitely an area of concern, but other researchers and authors address it much better. On a Likert scale of 1–5 (5 being exemplary), I would rate this book a 2+.—*Kathy Bacon, Manassas City Public Schools, Manassas, VA 20110.*

## Et cetera



**Developing Mathematics with Base Ten**, *Paul Swan and Geoff White, 2006. 96 pp., \$14.95 paper. Grades 2–6. ISBN 978-1-58324-246-5. Didax; www.didax.com.*

This book contains games and activities for use with base-ten blocks to help students develop mathematical understanding and computational fluency. Although a few activities are devoted to metric system measurement, most of them focus on place value and computing whole numbers and decimals.

Features of the book make it a valuable resource for the classroom teacher. It contains a short section detailing experiences that students should have before using base-ten blocks. Throughout the book, the authors give information about possible problems that students may encounter when using the blocks or games. Activities include variations and challenges, making them easy for classroom teachers to adapt to meeting individual student needs. Some activities include examples of classroom dialogue. Most activities are accompanied by reminders to stay rooted in problem situations and focused on asking students to explain their thinking.

Activities covering multiplication are weak; missing are activities that use an area model of multiplication and build students' understanding of the distributive property of multiplication for multidigit numbers.

The book's major strengths are its emphasis on conceptual understanding of computation and its focus on students' mathematical thinking and communication. I would recommend this book for teachers in search of activities to help their students build understanding of place value and computation.—*Kristen Pearson, Granger Elementary School, Salt Lake City, UT 84119.*

**Developing Mathematics with Pattern Blocks**, *Paul Swan and Geoff White, 2006. 96 pp., \$14.95. Grades K–5. ISBN 1-58324-245-7. Didax; www.didax.com.*