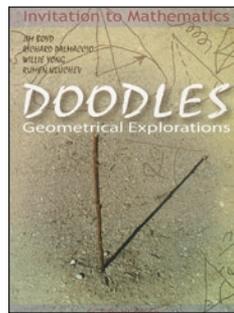


FROM OTHER PUBLISHERS

Doodles: Geometrical Explorations, Jim Boyd, Richard Palmaccio, Rumen Uluchev, and Willie Yong, 2005. 80 pp., \$12.95 paper. SCT Publishing (Singapore); U.S. distributors: Book People; (804) 288-4346; www.bookpeoplerichmond.com.



This book presents one hundred geometrical problems, or “doodles,” discussed in three different sections. The first section contains the doodling of Clever Jim as he passes

time in Professor Bear’s mathematics class. Jim challenges himself to solve his doodles, thereby ignoring or frustrating Professor Bear’s effort to teach. The second section, “More Doodles,” is similar to the first, but the exposition is a set of instructions for drawing a figure, followed by a conjecture that seems consistent with a reasonably accurate version of the intended figure. The third section, “On Your Own,” is like the previous two sections except no solutions are provided. In a concluding section, solutions to the first eighty problems are provided. Trigonometry, coordinate, vector, and the more familiar Euclidean plane geometry are used to establish a stated conjecture. In some cases more than one approach is used to prove it.

This text will be appreciated by puzzle lovers, especially those who enjoy geometry. Students in an honors level geometry class would be challenged by a number of the “doodles.” This is a text where paper, pencil, and much patience are a must. Your first “doodle” may require additional attempts to get a correct figure. The authors urge the reader to communicate their solutions to the problems in the third section. There is

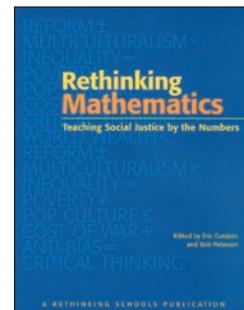
an e-mail address noted on the inside front cover.

An errata sheet is needed, as there are at least two instances where the instructions are hazy. A reading of the solutions section cleared up two of the problems. The author’s introduction contains the caveat that it is sometimes a challenge to give precise instructions for drawing complicated figures. In any case, the authors have compiled a great set of problems that will delight those readers who like a geometrical challenge.

—Charles W. Mitchell Jr.

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Rethinking Mathematics: Teaching Social Justice by the Numbers, Eric Gutstein and Bob Peterson, eds., 2005. 180 pp., \$16.95 paper. ISBN 0-942961-54-4. Rethinking Schools; (800) 669-4192; www.rethinkingschools.org.



Rethinking Mathematics: Teaching Social Justice by the Numbers, edited by Eric Gutstein and Bob Peterson, represents the latest effort of non-profit publisher

Rethinking Schools to foster school reform with a focus on issues of equity and social justice. The book consists primarily of political and social perspectives, with sample lessons to illustrate their application.

The contributors include secondary school teachers, graduate students, and college professors, as well as the editors and others associated with Rethinking Schools.

It is refreshing to encounter the notion that mathematics does not always have to be linked to science, that social studies, and indeed high-interest social

Prices on software, books, and materials are subject to change. Consult the suppliers for the current prices. The comments reflect the reviewers’ opinions and do not imply endorsement by the National Council of Teachers of Mathematics.

issues, provide a rich context for applying mathematics skills. For the mathematics teacher who wants to “teach for social justice,” as the editors say, this book will reinforce their perspective and provide some good ideas for lessons, including racial profiling and probability, corporate control of the media and equation-of-best-fit to a linear graph, globalization, labor and the environment, and linear programming.

Most of the mathematics, however, is not rigorous. Much of the mathematical thrust is numeracy, which is valuable, though no mention is made of the guru in that field, John Allen Paulos. The lessons provided consist in large part of collecting data and making ratios. At least one, calculating how large a stack of 135 billion one-dollar-bills would be, is a bit silly. The mere use of numerals, such as the numbers of slaves owned by the founding fathers, does not a useful mathematics application make.

There is a problem with presenting easily influenced young students a party line along with their mathematics, though the editors may be right that “no math teaching . . . is actually ‘neutral.’” But to say that “traditional forms of math . . . frankly, are immoral in a world as unjust as ours” will limit this book’s appeal to teachers who already share that perspective and will alienate the rest.

Minor drawbacks of the book include a poor index, which does not allow the reader to look up specific mathematics skills and find what lesson they are located in, and the omission of the U.S. Statistical Abstract as a resource, probably the most comprehensive source of data available.

—Terry Vatter

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Statistics: A Guide to the Unknown,

Roxy Peck, George Casella, George W. Cobb, Roger Hoerl, Deborah Nolan, Robert Starbuck, and Hal Stern, 4th ed., 2006. xxiv + 440 pp. £32.99 paper. ISBN 0-534-37282-1. Thomson Learning; (800) 354-9706; www.thomson.com.

In 1961, Frederic Mosteller and Paul Clifford conducted the NBC Continental Classroom course in probability and statistics. I well remember getting

up early each morning to see it, and I began teaching the subject with the inspiration of that course and with *Introductory Probability and Statistical Inference*, published by the College Entrance Examination Board. This book helped teachers all over the country introduce this subject into the high school curriculum.

Frederic Mosteller and others produced the first edition of *Statistics: A Guide to the Unknown* in 1971. The present edition consists of essays by specialists in various fields giving vivid descriptions of the uses of statistics in their areas. Therefore, this is not a textbook, but is intended to be useful as a supplementary text for introductory statistics courses.

The table of contents lists the twenty-five essays by their data source (such as samples, surveys, experiments, field studies) and also by the statistical methods used (including sampling, tables and graphs, hypothesis testing, Bayesian analysis, regression, modeling, and quality control). One essay deals with the methods used in determining the population of Amur tigers in eastern Siberia, since it is impossible to count each one and make sure no individual has been counted more than once. Another uses a gamma distribution to predict the arrival in the United States of Africanized honeybees.

One essay explains a probability model for calculating the possibility of colliding with objects in space. After more than 3,000 space flights in the last forty-some years, an estimated 200,000 pieces of space debris are floating around the earth, ranging from paint chips to pieces of machinery. Since even a paint flake can ruin a space flight, this is a serious matter. In another essay, DNA testing is explained in an analysis of the O. J. Simpson trial. The last essay in the book describes a simple statistical analysis by which a wine producer can predict the quality of a vintage, and hence its price, from the weather during its growing season.

I heartily recommend this book because it shows in most interesting ways how statistics is actually used in science, in business, and by the government.

—Andrew Linn

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USA and International Mathematical Olympiads 2004, Titu Andreescu, Zuming Feng, and Po-Shen Loh, eds., 2005. 100 pp., \$34.95 paper. ISBN 0-88385-819-3. Mathematical Association of America; (800) 331-1622; www.maa.org.

This book, edited by Titu Andreescu, Zuming Feng, and Po-Shen Loh, presents the problems from the USA Mathematical Olympiad (USAMO) Team Selection Test and International Mathematical Olympiad (IMO), all from 2004. After an excellent introduction, three problem sets are presented. In subsequent sections the editors give hints, formal solutions, problem credits and a glossary. They also list the Olympiad results for 2000 through 2004 as well as cumulative IMO results.

The book’s introduction is excellent. The first paragraph clearly defines what the book is dealing with: “Olympiad-style exams consist of several challenging essay type problems. Correct and complete solutions often require deep analysis and careful argument. Olympiad questions can seem impenetrable to the novice, yet most can be solved using elementary high school mathematics, cleverly applied.” As you read the book you will see firsthand the relevance of that paragraph. The introduction also includes helpful ideas to encourage and guide the reader toward solving these types of problems.

The main part of the book is the presentation and solution of the Olympiad type problems. These problems are not for “everyday math man” but could be used in part or in whole in a variety of situations. Get the book, not with the intention of solving every problem, but to see new problems with unique ways to solve them. You will probably learn new ways and methods to solve your own problems by dealing with these.

The appendix listings are enjoyable. I saw the names of students I had seen at other mathematics competitions such as the American Regions Math League (ARML).

This book is for those who desire challenging problems or those who teach students who need to be challenged.

—William Rogge

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The Compact Cosmos: Journey through Space, and Time, Matt Tweed, ISBN 0-8027-1455-2; **Sacred Number: The Secret Qualities of Quantities**, Miranda Lundy, ISBN 0-8027-1456-0; **Weaving: Methods, Patterns, and Traditions of the Oldest Art**, Christina Martin, ISBN 0-8027-1457-9. Each book: 64 pp., \$10 cloth. Wooden Books series, Walker & Company; (212) 727-8300; www.walkerbooks.com.

These three volumes, part of the Wooden Books series, are of questionable value to readers of the *Mathematics Teacher*.

According to the publisher's Web site, the series is intended to deliver "simple introductions to timeless sciences and vanishing arts," once considered "utterly universal" but now almost forgotten.

Unfortunately, if these three volumes are representative of the series as a whole, the effort could hardly be considered a success.

Take, for example, *Sacred Number*, by Miranda Lundy. The entire book considers numbers in the centuries before 1500, but does not even describe a perfect number as Euclid would. Prime numbers are merely listed on the last page of the book.

More than half of *The Compact Cosmos* by Matt Tweed is diagrams. It covers about twenty-five different topics, which means that each topic is allotted only two pages: one of text, plus one of diagrams.

I would not recommend these books.

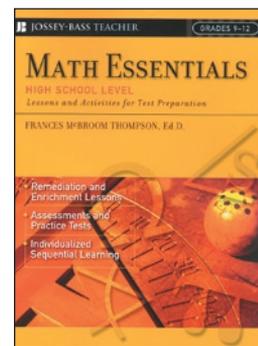
—John Kurtzke
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facilitator's guide and 2 CDs. Heinemann; (800) 225-5800; www.heinemann.com.

The purpose of the material is for in-service training of teachers in grades 6–10. The material consists of two CDs (one for facilitators, one for participants) and a written guide for facilitators. The participant CD includes video clips of actual classroom episodes involving the teaching of linear functions. The material is presented in five modules. The first is a foundation module consisting of eight 3-hour sessions. Modules two through five are extension modules, and each is designed for a specific purpose: launching a lesson or task; making use of student ideas during discussion; interpreting and responding to unexpected student methods; and examining equivalence and proof. Each of the eighteen sessions has an accompanying video clip. There are a total of 54 hours of in-service for all the modules.

The facilitator's guide is well done and helpful. The resources are extensive. In fact, they were overwhelming when I first looked at the material. More direction could be given to the facilitator about what to look at first on the CDs and how the video clips and sessions match up. I had to keep opening the clips until I found the one that went with a particular session. A computer with two CD drives would be helpful for the facilitator, but not necessary.

—Lee Osburn
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Each of its thirty objectives contains detailed teacher instructions, along with three lessons: manipulative, pictorial, and independent practice. The lessons include lists of materials, worksheets, and answer keys, and each of the four major sections ends with a multiple-choice practice test and answer key. A list of typical student errors accompanies each objective. This paperback is not intended to be a student workbook, but individual teachers are permitted to reproduce the pages and illustrations for classroom use.

An example of the style is seen in the section on Algebraic Thinking and Applications, Objective 6: Identify Two Given Linear Equations, Given in Algebraic Form or Graphic Form, as Parallel, Perpendicular, or with the Same x - or y -Intercept. Activity 1, the manipulative stage, builds on students' prior knowledge of graphing. Pairs of students use a straightedge, building mat, and index cards to graph lines, compute slopes, determine y -intercepts, and write equations for perpendicular lines. In Activity 2, the pictorial stage, pairs of students graph line A and perform a translation on at least two points of line A to draw line B . When students have completed all four exercises in this activity, they are asked to write a statement that describes the relationship between the slopes and the y -intercepts. The third activity, independent practice, is a seven-question multiple-choice practice that requires some abstract thinking. The author keeps the practice short so that there is class time available to process student work. It is recommended that all three activities within an objective be used so students can progress from hands-on to paper-and-pencil drawing to abstract notation.

The lessons in the Geometry and Measurement section are especially good, since geometry lends itself to more hands-on activities. For the most part, however, the lessons include activities that many teachers have seen before,

PRODUCTS

Learning and Teaching Linear Functions: Video Cases for Mathematics Professional Development, 6-10, Nanette Seago, Judith Mumme, and Nicholas Branca, 2004. \$150.00 paper. ISBN 0-325-00682-2. System Requirements for CD-ROMs: Windows/PC: Pentium Processor, 266Mhz, Windows 98, 64MB RAM, SVGA Color Display, 8X CD-ROM Drive, Sound Card, 16-bit Flash Player and Acrobat Reader. Macintosh: PowerPC Processor, G3/233Mhz, System 8.5.5, 64MB RAM, SVGA Color Display, 8X CD-ROM Drive, 16-bit Flash Player and Acrobat Reader. Package contains a 44-page

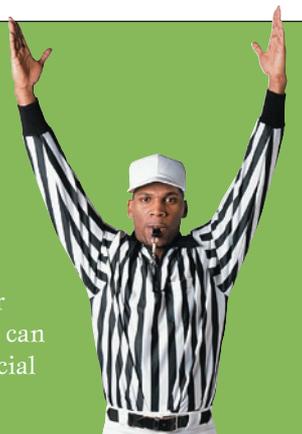
Math Essentials, High School Level: Lessons and Activities for Test Preparation, Frances McBroom Thompson, 2005. 384 pp., \$32.95 paper. ISBN 0-7879-6603-7. John Wiley & Sons; (800) 956-7739; www.wiley.com.

Math Essentials, High School Level is designed to prepare all students, from gifted to learning disabled, for standards-based mathematics testing. This voluminous book is replete with lessons, which are divided into four sections: algebraic thinking and applications; graphs, statistics and probability; linear and quadratic functions and their properties; and geometry and measurement with applications.

Get Involved!

If you would like to referee manuscripts or review materials for the *Mathematics Teacher*, go to www.nctm.org/mt for information.

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such as measuring the circumference of a plastic lid and comparing it to the diameter, cutting the slant triangle parts from a parallelogram to form a rectangle, and aligning the interior angles of a triangle to form a straight angle.

For several reasons, this text ultimately is not useful. First, the assessments are multiple-choice, but nearly half of the questions on standards-based tests are open-ended, requiring students to write, graph, explain, and show their work. Certainly, a book with a main objective of preparing students for standards-based testing must include these open-ended assessments. Another serious drawback is that this text does not meet a real need. Modern secondary mathematics textbooks already include a plethora of ancillary resources that address state standards and standards-based testing. In many school systems, there is not enough time in the curriculum or money in the budget to purchase yet another manual that furnishes little new information to improve instruction.

—Patricia A. Daley

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