which direct their smartphones and tablet PCs to rich Internet resources accompanying the text.

From investigations of prime numbers to geometry, game theory, combinatorics, and cryptanalysis, du Sautoy brings readers on a journey from the elemental, through a myriad of serendipitously interconnected topics, to the esoteric. Each chapter is captivating in and of itself, drawing readers in to follow each theme to the extent of their mathematical ability. However, du Sautoy weaves a serpentine topical path, demonstrating an impressive number of interconnections and applications, engrossing readers in mathematical investigations far beyond expectation.

Much of *The Numbers Mysteries* is beyond the rudimentary. High school and college mathophiles will benefit from this book as they recognize the intricately woven mathematical, scientific, historic, and sociological tapestry exposed by the authors. *The Numbers Mysteries* could be a valuable asset in further igniting the interests of fledgling mathematicians, as

topics for further investigation or as a pleasant recreational read.

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Rediscovering Mathematics: You Do the Math, Shai Simonson, 2011. 207 pp., $64.95 cloth. ISBN 978-0-88385-770-0. Mathematical Association of America; www.maa.org.

What exactly does a mathematician do? If mathematics is so challenging, why bother? These are the types of questions that Shai Simonson, with thirty years of experience in teaching many subjects, explores. Simonson effectively demonstrates why mathematics can be thrilling to teachers and students and yet so complex at the same time.

Through thirteen digestible chapters, Simonson travels the landscape of mathematics, visiting such topics as proof, series, figurate numbers, and game theory. Each chapter begins with an accessible observation, such as, Why do decimal expansions of some fractions terminate, whereas others repeat a particular cyclical length? Thematic topics are further explored, often by interspersing mathematical history or inviting puzzles. In his many examples, the author draws rich connections between algebraic, geometric, and numerical representations. Through transitional problems or open extension questions of varying difficulty, readers are frequently invited to engage in mathematical dialogue.

The book would be a captivating resource for two main audiences: teachers and gifted students. First, the author passionately advocates that teachers represent mathematics as an interactive enterprise that creates inquisitive students rather than memorizers. The problems and explanations serve as exemplary resources for teachers to act as "a conductor of a symphony," always probing students to dig deeper into generalizations. Second, the book could serve as a supplementary textbook for gifted students driven to explore nontraditional mathematical topics. The prose and detailed

explanations make this book a must-have for the mathematically curious.

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Teaching Numeracy: 9 Critical Habits to Ignite Mathematical Thinking, Margie Pearse and K. M. Walton, 2011. 240 pp., $33.95 paper. ISBN 978-1-4129-9223-7. Corwin; www.corwin.com.

"Help us revolutionize American mathematics instruction—one classroom at a time" (p. xii); this is the gauntlet cast by Pearse and Walton. The reason American students do not measure up in international comparisons of mathematics achievement, the authors posit, is because of their weak number sense. In addressing this weakness, Pearse and Walton have organized ten years of research experience in the field of numeracy into a framework for developing mathematically literate students—students who think through, rather than simply know, mathematics.

Part 1 provides a description of the nine habits that constitute this framework. The authors not only justify each habit in light of results from research but also provide concrete lesson ideas that they have used in their classrooms to help develop each habit. Lesson ideas ("How can I use this in my math class tomorrow?") are categorized by early elementary school and combined upper elementary and middle school levels, making this book a valuable resource for both practicing and preservice teachers at these levels.

In part 2, the authors propose five facets of numeracy-based lesson planning. Again, results from research provide a backdrop for each component, and the authors include more concrete examples for implementation. Appendices include three samples of numeracy-based lesson plans (division, elapsed time, and surface area of a right rectangular prism) that incorporate the five essential components as well as reproducible masters for implementation.

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