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[Home](#) / [SN Bookshelf](#) / [Book Reviews](#) / [Book review](#)

## **BOOK REVIEW: THE PRINCETON COMPANION TO MATHEMATICS, TIMOTHY GOWERS, ED**

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### **Review by Tom Siegfried**

Math is everywhere, from the gas station and grocery store to the stock market and science magazines. And it shows up, of course, in schools at all levels. But the educational system doesn't provide enough math for most people to appreciate its scope, or understand its intrinsic powers or practical applications.

For those with a deep interest in understanding such things, this book provides a reasonably accessible, technically precise and thorough account of all of math's major aspects—from the basics of algebra, geometry, algorithms and proofs to the essential features of Hilbert spaces and Hamiltonians. Much is understandable to anyone with a good high school math background; sometimes more advanced education is better.

Added attractions include biographical sketches of close to 100 famous mathematicians, a comprehensive chronology of mathematical events throughout history and engaging discussions of math's influence. This book covers such diverse areas as communications, chemistry, biology, economics, image compression, the flow of "traffic" in all sorts of networks (including transportation), music and medical statistics.

Students of math will find this book a helpful reference for understanding their classes; students of everything else will find helpful guides to understanding how math describes it all.

*Princeton Univ. Press, 2008, 1,034 p., \$99*