



## **ANOKA TECHNICAL COLLEGE LIBRARY** **MATHEMATICS: POPULAR WORKS—THE** **WORLD OF MATH AND YOU**

**Beiler, Albert H. *Recreations in the Theory of Numbers: The Queen of Mathematics Entertains.* Dover, 1966.**

**QA 95 .B44 1966**

Readers will become acquainted with divisors, perfect numbers, the ingenious invention of congruences by Gauss, scales of notation, endless decimals, Pythagorean triangles, oddities about squares, methods of factoring, mysteries of prime numbers, Gauss's Golden Theorem, polygonal and pyramidal numbers....

**Benson, Donald C. *A Smoother Pebble: Mathematical Explorations.***

**Oxford Press, 2003. QA 21 .B46**

This book takes a novel look at the topics of school mathematics--arithmetic, geometry, algebra, and calculus. In this stroll on the mathematical seashore we hope to find, quoting Newton, "...a smoother pebble or a prettier shell than ordinary..." This book assembles a collection of mathematical pebbles that are important as well as beautiful. I: Bridging the gap -- Ancient fractions -- Greek gifts -- The music of the ratios -- II: The shape of things -- Tubeland -- The calculating eye -- III: The great art -- Algebra rules -- The root of the problem -- Symmetry without fear -- The magic mirror -- IV: A smoother pebble -- On the shoulders of giants -- Six -minute calculus -- Roller-coaster science.

**Berlinghoff, William P. *Math Through the Ages: A Gentle History for Teachers and Others.* Oxton House**

**2004. QA 21 .B47 2004**

History in the mathematics classroom -- The history of mathematics in a large nutshell -- Beginnings -- Greek mathematics -- Meanwhile, in India -- Arabic mathematics -- Medieval Europe -- The 15th and 16th centuries -- Algebra comes of age -- Calculus and applied mathematics -- Rigor and professionalism -- Abstraction, computers, and new applications -- Mathematics today -- Sketches -- 1. Keeping count : writing whole numbers -- 2. Reading and writing arithmetic : where the symbols came from -- 3. Nothing becomes a number : the story of zero -- 4. Broken numbers : writing fractions -- 5. Something less than nothing? : negative numbers -- 6. By tens and tenths : metric measurement -- 7. Measuring the circle : the story of pi -- 8. The Cossic art : writing algebra with symbols -- 9. Linear thinking : solving

first degree equations -- 10. A square and things : quadratic equations -- 11. Intrigue in renaissance Italy : solving cubic equations -- 12. A cheerful fact : the Pythagorean theorem -- 13. A marvelous proof : Fermat's last theorem -- 14. On beauty bare : Euclid's plane geometry -- 15. In perfect shape : the Platonic solids -- 16. Shapes by the numbers : coordinate geometry -- 17. Impossible, imaginary, useful : complex numbers -- 18. Half is better : sine and cosine -- 19. Strange new worlds : the non-Euclidean geometries -- 20. In the eye of the beholder : projective geometry -- 21. What's in a game? : the start of probability theory -- 22. Making sense of data : statistics becomes a science -- 23. Machines that think? : electronic computers -- 24. The arithmetic of reasoning : logic and boolean algebra -- 25. Beyond counting : infinity and the theory of sets -- What to read next -- The reference shelf -- Fifteen historical books you ought to read -- The Internet and other media.

**Clawson, Calvin C. *Mathematical Sorcery: Revealing the Secrets of Numbers.* Plenum, 1999. QA 93 .C62 1999**

The secret of constellations, the enigma of the golden mean, and the brilliance of a proof--these are just some of the wonders Clawson explores with unbridled delight in this recreational math book. Clawson urges us to tackle functions, tangents, and the concept of infinity. He helps us intuitively comprehend these and other building blocks of mathematics through explaining their discovery and uses.

**Darling, David J. *The Universal Book of Mathematics: From Abracadabra to Zeno's Paradoxes.* Book Sales Inc., 2004. REF QA 5 .D27 2007**

The Universal Book of Mathematics will take the same wide-angle approach of David's other encyclopedias, with entries on everything from puzzles and codes to historical biographies of key mathematicians, along with every significant number, shape, ratio, dimension, theorem, conjecture, set, and paradox in the mathematical universe. A wonderful resource for the amateur mathematician, an inviting browse for the recreational math buff, and an essential reference for the dedicated student of numbers.

**Devlin, Keith J. *The Math Instinct: Why Your're a Mathematical Genius (Along with Lobsters, Birds, Cats, and Dogs)*. Thunder's Mouth Press, 2005. QA 93 .D4588**

Out of the minds of babies -- Elvis: the Welsh corgi who knows calculus -- What is mathematics? -- Where am I and where am I going? -- Nature's architects: the creatures that can do math of construction -- Natural artists: the animals (and plants) that create beautiful patterns -- It's just a step to the right: the math of motion -- The eyes have it: the hidden math of vision -- Animals in the math class -- Razor sharp: the mathematical tricks of street traders and supermarket shoppers -- All numbers great and small -- The trouble with meaningless math -- Tapping into our math instinct.

**Devlin, Keith J. *The Numbers Behind NUMBER3S : Solving Crime with Mathematics*. Plume, 2007. HV 8073.5 .D485 2007**

Finding the hot zone : criminal geographic profiling -- Fighting crime with statistics 101 -- Data mining : finding meaningful patterns in masses of information - - When does the writing first appear on the wall? changepoint detection -- Image enhancement and reconstruction -- Predicting the future : Bayesian inference -- DNA profiling -- Secrets-- making and breaking codes -- How reliable is the evidence? doubts about fingerprints -- Connecting the dots : the math of networks -- The prisoner's dilemma, risk analysis, and counterterrorism -- Mathematics in the courtroom -- Crime in the casino : using math to beat the system.

**Gerdes, Paulus. *Geometry from Africa: Mathematical and Educational Explorations*. Mathematical Association of America, 1999. QA 461 .G52 1999.**

Geometrical and educational explorations inspired by African cultural activities -- On geometrical ideas in Africa south of the Sahara -- From African designs to discovering the Pythagorean theorem -- Geometrical ideas in crafts and possibilities for their educational exploration -- 'Sona' sand drawing tradition and possibilities for its educational use.

**Osserman, Robert. *Poetry of the Universe*. Anchor Books, 1996. QA 93. O87 1996**

Osserman, a Stanford University professor who developed a math and physics course for humanities majors, manages to convey some of the fascination of

these two fields without getting involved in technical details and without talking down to his audience. His seamless development leads the reader almost effortlessly from the early efforts of the ancients to measure the earth through the open problems in modern cosmology.

**Pappas, Theoni. *Mathematical Footprints: Discovering Mathematical Impressions All Around Us*. Wide World/Tetra, 1999. QA 99 .P377 1999**

This journey across the spectrum of human activities takes a creative look at the role mathematics has played since prehistoric times. From its many uses in medicine and its appearance in artwork to its patterns in nature and its central role in the development of computers, mathematics is presented in a fun-to-read, nonthreatening manner.

**Pappas, Theoni. *More Joy of Mathematics: Exploring Mathematics All Around You*. World Wide/Tetra, 1991. QA 93 .P37 1991**

Mathematics is everywhere-in soap bubbles, electricity, da Vinci's masterpieces, even in an ocean wave. Contains a treasure trove of clearly illustrated mathematical ideas, concepts, puzzles, and games. Find out what a googol is, visit hotel infinity, read a thorny logic problem that stumped them back in the 8th century.

**Paulos, John Allen. *A Mathematician Reads the Newspaper*. Anchor Books, 1996. QA 93 .P385 1996**

The author reveals the hidden mathematical angles in countless media stories. His real life perspective on the statistics we rely on and how they can mislead is for anyone interested in gaining a more accurate view of their world. The book is written with a humorous and knowledgeable style that makes it great reading.

**Steinhaus, Hugo. *Mathematical Snapshots*. Dover 1999. QA 93 .S713 1999**

Mathematical Snapshots consists of 13 chapters presenting mathematical riddles, puzzles, and paradoxes in a nonthreatening style.

**Stewart, Ian. *Another Fine Math You've Got Me Into*. Dover 2003. QA 95 .S723 2003**

Some of the catchy titles and subjects are:

1. Tile and error, tiling a rectangular surface.
2. Knights of the flat torus, about knight tours of a

chessboard.

3. Another vine math you've got me into, a combinatorial problem of planting several varieties of grapes in plots so that all pairs are together in one and only one plot, etc.

4. Sofa, so good, on moving a sofa through tight places.

All subjects are presented with clarity and thoroughly resolved by the end of the chapter.

This work is the rarest of mathematical books. It presents solid, sophisticated mathematics in a manner that people could read just for the jokes. A vine piece of work.

**Stewart, Ian. *How to Cut a Cake and Other Mathematical Cunundrums*. Oxford Press, 2006. QA 20 .G35 S74 2006**

Your half's bigger than my half! -- Repealing the law of averages -- Arithmetic and old lace -- Paradox lost -- Tight tins for round sardines -- The never-ending chess game -- Quods and quasars -- Zero knowledge protocols -- Empires on the moon -- Empires and electronics -- Resurrection shuffle-- Double bubble, toil and trouble -- Crossed lines in the brick factory -- Division without envy -- Furiously flashing fireflies -- Why phone cords get tangled -- Sierpinski's ubiquitous gasket -- Defend the roman empire!-- Triangulation takeaway -- Easter Is a quasicrystal

**Stewart, Ian. *Math Hysteria : Fun and Games with Mathematics*. Oxford University Press, 2004. QA 95 .S7255 2004**

Math Hysteria contains twenty quirky tales of mathematical exploration by one of the world's most popular writers on mathematics. Ian Stewart presents us with a wealth of magical puzzles, each one spun around an amazing tale, including "Counting the Cattle of the Sun," "The Great Drain Robbery," and "Preposterous Piratical Predicaments." Fully illustrated with explanatory diagrams, each tale is told with engaging wit, sure to amuse everyone with an interest in puzzles and mathematics.

**Vorderman, Carol. *How Math Works*. Reader's Digest Assoc., 1996. QA 93 .V65 1996**

Here is a stimulating guide to the wonders of mathematics, packed with enlightening experiments for the whole family. Provides brain-teasing puzzles and tricks as well as educational experiments that are fun to do. For ages 8-14.

## Electronic Books

**Gibilisco, Stan. *Everyday Math Demystified*. McGraw Hill, 2001.**

**[[www.netlibrary.com](http://www.netlibrary.com)]** Now anyone with an interest in the math of daily life can gain a deeper understanding. *Everyday Math Demystified* provides an effective, fun, and totally painless way to improve your understanding and mastery of the math you find in newspapers, on TV, at the bank or store, on vacation, in school -- and just about everywhere. This unique self-teaching guide helps you decipher such topics as numbers and arithmetic, measurements, and fractions and graphs, and puts them into the context of real-life situations you're sure to encounter.

**Stein, Sherman K. *How the Other Half Thinks Adventures in Mathematical Reasoning*. McGraw Hill, 2001.**

**[[www.netlibrary.com](http://www.netlibrary.com)]** With its ingeniously intuitive approach, *How the Other Half Thinks* will appeal to those enthusiasts who are charmed by mathematics and its style of thinking, as well as those more tentative readers who would like to find out why advanced mathematics casts a spell over so many of its followers. At once an entertaining, interactive mathematical exercise and an innovative exploration of mathematical reasoning, it will appeal to the enthusiast and the novice, the scientist and the humanist, and the left-brained and the right-brained.

*Book descriptions are from content notes or library cataloging records.*