

## Books for Math Lovers, Math for Book Lovers

A 'Mathy Bibliography' by Brent A. Ferguson, The Lawrenceville School, [BFerguson@Lawrenceville.org](mailto:BFerguson@Lawrenceville.org)

\* Current (v. 2019, 13<sup>th</sup> Nov) favorite titles are indicated with an asterisk \*

### **Assorted Topics, History, & Biography:**

- \* Bellos, Alex. *Here's Looking at Euclid: A Surprising Excursion through the Astonishing World of Math*. NY: Free Press, 2010.
- \* Bellos, Alex. *The Grapes of Math: How Life Reflects Numbers and Numbers Reflect Life*. New York: Simon and Schuster, 2014.
- Benjamin, Arthur. *The Magic of Math: Solving for X and Figuring Out Why*. New York: Perseus/Basic, 2015.
- Cheng, Eugenia. *How To Bake  $\pi$ : An Edible Exploration of the Mathematics of Mathematics*. New York: Basic Books, 2015.
- Devlin, Keith. *The Language of Mathematics: Making the invisible visible*. (& others written!) New York: W.H. Freeman, 1998.
- Devlin, Keith. *Mathematics: The Science of Patterns*. New York: Freeman, 1994.
- Doxiadis, Apostolos, & Papadimitriou, Christos. *LOGICOMIX: An Epic Search For Truth [B. Russell]*. NY: Bloomsbury, 2009
- \* Ellenberg, Jordan. *How Not To Be Wrong: The Power of Mathematical Thinking*. New York: Penguin, 2014.
- Fernandez, Oscar. *Everyday Calculus: Discovering the Hidden Math All Around Us*. Princeton Univ Press, 2014.
- Feynman, Richard P. *Surely, You Must Be Joking, Mr. Feynman! Adventures of a Curious Character*. New York: Norton, 1985.
- Hoffman, Paul. *Archimedes' Revenge: The Joys and Perils of Mathematics*. New York: Random House, 1988.
- Hull, Thomas. *Project Origami: Activities for Exploring Mathematics, 2ed*. Boca Raton: CRC Press, 2013.
- Kanigel, Robert. *The Man Who Knew Infinity*. New York: Simon & Schuster, 1991.
- \* Mackenzie, Dana. *The Universe in Zero Words: The Story of Mathematics as Told Through Equations*. Princeton Univ Press, 2012.
- \* Maor, Eli & Jost, Eugen. *Beautiful Geometry*. Princeton Univ Press, 2014.
- \*\*\* Orlin, Ben. *Math With Bad Drawings: Illuminating the Ideas That Shape Our Reality*. New York: Hachette, 2018.
- Orlin, Ben. *Change Is The Only Constant: The Wisdom of Calculus in a Madcap World*. New York: Hachette, 2019.
- Pappas, Theoni. *Mathematical Scandals*. San Carlos, CA: Wide World/Tetra, 1997.
- Paulos, John Allen. *Innumeracy: Mathematical Illiteracy and Its Consequences*. New York: Farrar, Straus, Giroux, 2001.
- Paulos, John Allen. *A Mathematician Reads the Newspaper*. New York: Basic Books, 1995.
- \* Pickover, Clifford. *The Math Book... 250 Milestones in the History of Mathematics*. New York: Sterling, 2009.
- Scheinerman, Edward. *The Mathematical Lover's Companion: Masterpieces for Everyone*. New Haven: Yale Univ Press, 2017.
- Schneps, Leila & Colmez, Coralie. *Math On Trial: How Numbers Get Used And Abused in the Courtroom*. NY: Perseus, 2013.
- \* Singh, Simon. *Fermat's Enigma*. New York: Anchor Books, 1997.
- Singh, Simon. *The Simpsons and Their Mathematical Secrets*. New York: Bloomsbury, 2013.
- du Sautoy, Marcus. *The Number Mysteries: A Mathematical Odyssey Through Everyday Life*. NY: St. Martin's Press, 2010.
- Strogatz, Steven. *The Calculus of Friendship: What a Teacher and a Student Learned About Life...* Princeton Univ Press, 2009.
- \* Strogatz, Steven. *Infinite Powers: How Calculus Reveals the Secrets of the Universe*. New York: Houghton-Mifflin, 2019.
- \* Strogatz, Steven. *The Joy of X: A guided Tour of Math from One to Infinity*. New York: Houghton Mifflin, 2012.
- \* Woo, Eddie. *It's A Numberful World: How Math is Hiding Everywhere*. New York: The Experiment, 2018, 2019.

### **Fiction (suggested grade levels indicated):**

- (10-12) Doxiadis, Apostolos. *Uncle Petros and Goldbach's Conjecture*. New York: Bloomsbury USA, 1992.
- \* (4-8) Enzenberger, Hans Magnus. *The Number Devil: A Mathematical Adventure*. New York: Holt, 1998.
- (10-12) Green, John. *An Abundance of Katherines*. New York: Penguin Group, 2006.
- (K-7) Heiligman & Pham. *The Boy Who Loved Math: The Improbable Life of Paul Erdos*. New York: Roaring Brook, 2013.
- (6-12) Juster, Norton. *The Phantom Tollbooth*. New York: Random House, 1961. (also: *The Dot and the Line*, 1963)
- (9-12) Kuroyanagi, Tetsuko (transl. Dorothy Britton). *Toto-Chan: The Little Girl At the Window*. Tokyo: Kodansha, 1982.
- (5-10) Mohr, Lilac. *Math & Magic in Wonderland*. Lilac Mohr, 2016.
- (9-12) Ogawa, Yoko. *The Housekeeper and the Professor* (English translation by Stephen Snyder). New York: Picador, 2009.
- \* (K-3) Otashi, Kathryn. *Zero* (2010), *One* (2008), *Two* (2014). Novato, CA: KO Kids Books.
- (10-12) Rojstaczer, Stuart. *The Mathematician's Shiva*. New York: Penguin. 2014.
- \* (6-12) Tahan, Malba. *The Man Who Counted*. New York: Norton. 1972 (English translation, 1993)
- (1-4) Tang, Greg. *Math Fables, Math for All Seasons, Math-terpieces, The Grapes of Math, Math Appeal, The Best of Times*.
- \* (11-12+) Yuki, Hiroshi. *Math Girls\*\**. Austin: Bento Books, 2011. (builds to Euler's solution of the Basel Problem)
- (11-12+) Yuki, Hiroshi. *Math Girls2\*\**. Austin: Bento Books, 2012. (Pyth Triples, Infinite Descent, Fermat's Last Theorem)
- (11-12+) Yuki, Hiroshi. *Math Girls3\*\**. Austin: Bento Books, 2012. (Godel's Incompleteness Theorem)
- \* (5-12) Yuki, Hiroshi. *Math Girls talk about integers*. Austin: Bento Books, 2014.
- (7-12) Yuki, Hiroshi. *Math Girls talk about equations and graphs*. Austin: Bento Books, 2014.
- (8-12) Yuki, Hiroshi. *Math Girls talk about trigonometry*. Austin: Bento Books, 2015.

\*\*\* note: there is some very sophisticated math in these books...! They are 80% math, 20% novel (the reverse for many of the others in this list).

## Collections of Problems & Facts:

- Gardner, Martin. *Sphere Packing, Lewis Carroll, and Reversi*. New York: Cambridge, 2009... (This is just one of 15 in the series!)
- Moskovich, Ivan. *The Puzzle Universe: A History of Mathematics in 315 Puzzles*. Buffalo: Firefly Books, 2015.
- \* Phillips, Richard. *Numbers: facts, figures, and fiction*. Cambridge: Cambridge University Press, 1994.
- \* Stewart, Ian. *Professor Stewart's Cabinet of Mathematical Curiosities*. New York: Basic Books, 2009.
- \* Wells, David. *The Penguin Dictionary of Curious and Interesting Numbers*. Penguin, 1986... *Geometry*, 1991... *Mathematics*, 1997.

## Classics:

- Abbott, Edwin A. *Flatland: A Romance of Many Dimensions*. In ebook form by TopPackages (2005) Original © 1884.
- \* Recently updated – *The Annotated Flatland: A Romance of Many Dimensions*. Cambridge, MA: Perseus Publishing, 2002.
- Countryman, Joan. *Writing to Learn Mathematics: Strategies that Work*. Portsmouth, NH: Heineman, 1992.
- Courant, Richard, and Robbins, Herbert. *What Is Mathematics? An Elementary Approach to Ideas and Methods*. New York, NY: Oxford University Press. 1941 (2<sup>nd</sup> ed. with revisions by Ian Stewart, 1996)
- Huff, Darrell. *How to Lie With Statistics*. New York: Norton, 1954.
- Kepler, Johannes. *The Six-Cornered Snowflake: A New Year's Gift*. Philadelphia: Paul Dry Books, 2010.
- Lieber, Lillian. *The Education of T.C. MITS (The Celebrated Man In The Street)*. Philadelphia: Paul Dry Books, 1942.
- Morrison, Philip and Morrison, Phylis. *Powers of Ten: About the Relative Size of Things in the Universe*. New York: Scientific American Library, 1982.
- Polya, George. *How to Solve It*. Princeton: Princeton University Press, 1945.
- \* Whitehead, A. N. *Introduction to Mathematics (Home University Library, No. 15)*. New York: Holt, 1939. London, 1911.

## Special/recommended online sources for learning:

- \*\*\* 3Blue1Brown: [https://www.youtube.com/channel/UCYO\\_jab\\_esuFRV4b17AJtAw](https://www.youtube.com/channel/UCYO_jab_esuFRV4b17AJtAw) (scripted videos of math, animated)
- \* Numberphile: <https://www.youtube.com/user/numberphile> (and many other channels by Brady Haran...)
- Vi Hart's YouTube channels: <https://www.youtube.com/user/Vihart> and <https://www.youtube.com/user/vihartvihart>
- Strogatz, Steven. *Me, Myself, and Math*. New York Times Opinionator Blog series, Sept 10<sup>th</sup>, 2012 – Oct 15<sup>th</sup>, 2012. <http://opinionator.blogs.nytimes.com/category/me-myself-and-math/>
- Strogatz, Steven. *The Elements of Math*. New York Times Opinionator Blog series, Jan 31<sup>st</sup> 2010 – May 9<sup>th</sup>, 2010. [http://topics.nytimes.com/top/opinion/series/steven\\_strogatz\\_on\\_the\\_elements\\_of\\_math/index.html](http://topics.nytimes.com/top/opinion/series/steven_strogatz_on_the_elements_of_math/index.html)
- \* Wallace, David Foster. *This is Water: Some Thoughts... about Living a Compassionate Life*. New York: Little, Brown & Co, 2009. (Delivered live in Gambier, OH: May 21<sup>st</sup>, 2005.)

## Books for Educators: Cognitive Science, Pedagogy, Relationships, Identity, & Effectiveness

- Banaji & Greenwald. *Blind Spot: Hidden Biases of Good People*. New York: Bantam, 2016.
- Brooks, David. *The Road To Character*. New York: Random House, 2015 (see also: *The Social Animal* by Brooks)
- \* Brown, Peter; Roediger III, Henry L.; & McDaniel. Mark A. *Make It Stick: The Science of Successful Learning*. 2014.
- Cary, Lorene. *Black Ice*. New York: Alfred Knopf, 1991.
- Delpit, Lisa. *Multiplication Is For White People: Raising Expectations For Other People's Children*. New York: The New Press, 2012.
- Delpit, Lisa. *Other People's Children: Cultural Conflict in the Classroom*. New York: Norton, 1995.
- \* Dweck, Carol. *Mindset: The New Psychology of Success*. New York: Ballantine Books (Random House), 2006.
- Gladwell, Malcolm. *Outliers: The Story of Success*. New York: Little, Brown, and Co. 2008.
- Heischman, Daniel. *Good Influence: Teaching the Wisdom of Adulthood*. New York: Morehouse Publishing, 2009.
- Keirse, David & Bates, Marilyn. *Please Understand Me: Character and Temperament Types*. Del Mar, CA: Prometheus Nemesi, 1984.
- Mali, Taylor. *What Teachers Make: In Praise of the Greatest Job In The World*. NY: Putnam, 2012.
- Palmer, Parker. *The Courage To Teach: Exploring the Inner Landscape of a Teacher's Life*. San Francisco: Jossey-Bass, 1998.
- Pink, Daniel. *Drive: The Surprising Truth About What Motivates Us*. New York: Penguin Books, 2009.
- \* Sizer, Theodore & Sizer, Nancy. *The Students Are Watching: Schools and the Moral Contract*. Boston: Beacon Press, 1999.
- Steele, Claude. *Whistling Vivaldi: how stereotypes affect us and what we can do*. New York: Norton, 2010.
- Tatum, Beverly. *Why Are All The Black Kids Sitting Together In The Cafeteria? & Other Conversations About Race*. NY: Basic, 1997.
- Walker, Matthew. *Why We Sleep: Unlocking the Power of Sleep and Dreams*. NY: Scribner, 2017.
- \* Willingham, Daniel. *Why Don't Students Like School? A Cognitive Scientist Answers Questions About How the Mind Works and What It Means for the Classroom*. San Francisco: Jossey-Bass/Wiley, 2009.

**Apps:** Desmos, MathLands, Bubble Ball, Cut the Rope, Jason Fox Math Quizzer, 2048

**Games:** Prime Climb, \*\*\*Quarto, Ultimate Tic-Tac-Toe, all FoxMind games (Architecto, Equilibrio, Meta-Forms)

**Puzzles:** 15 Puzzle (get a metal version, not the cheapo plastic ones)