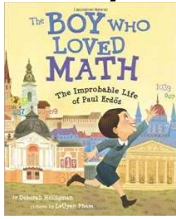


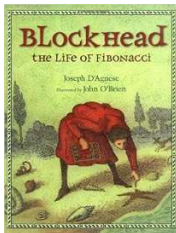
## The Boy Who Loved Math: The Improbable Life of Paul Erdős



Age 7+

Most people think of mathematicians as solitary, working away in isolation. And, it's true, many of them do. But Paul Erdős never followed the usual path. At the age of four, he could ask you when you were born and then calculate the number of seconds you had been alive in his head. But he didn't learn to butter his own bread until he turned twenty. Instead, he traveled around the world, from one mathematician to the next, collaborating on an astonishing number of publications. With a simple, lyrical text and richly layered illustrations, this is a beautiful introduction to the world of math and a fascinating look at the unique character traits that made "Uncle Paul" a great man.

## Blockhead: The Life of Fibonacci

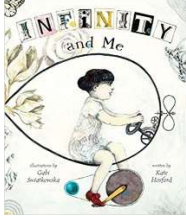


Age 7+

As a young boy in medieval Italy, Leonardo Fibonacci thought about numbers day and night. He was such a daydreamer that people called him a blockhead.

When Leonardo grew up and traveled the world, he was inspired by the numbers used in different countries. Then he realized that many things in nature, from the number of petals on a flower to the spiral of a nautilus shell, seem to follow a certain pattern. The boy who was once teased for being a blockhead had discovered what came to be known as the Fibonacci Sequence!

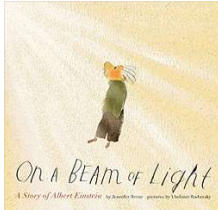
## Infinity and Me



Age 7+

Uma can't help feeling small when she peers up at the night sky. She begins to wonder about infinity. Is infinity a number that grows forever? Is it an endless racetrack? Could infinity be in an ice cream cone? Uma soon finds that the ways to think about this big idea may just be . . . infinite.

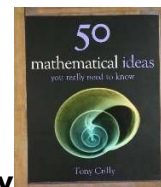
## On a Beam of Light: A Story of Albert Einstein



Age 7+

Travel along with Einstein on a journey full of curiosity, laughter, and scientific discovery. Parents and children alike will appreciate this moving story of the powerful difference imagination can make in any life.

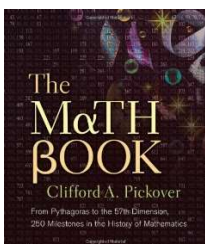
## 50 Mathematical Ideas You Really Need to Know by Tony Crilly



Age 11+

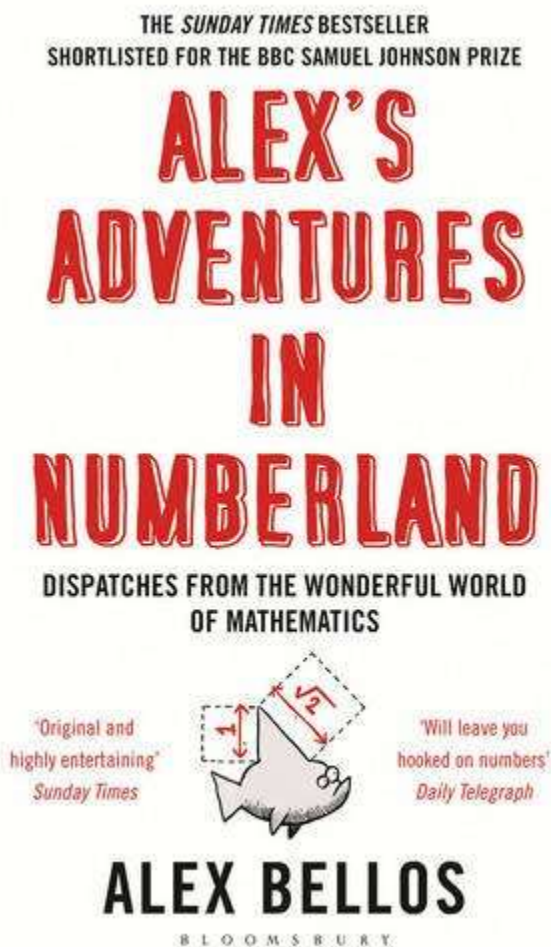
In this book, Professor Tony Crilly explains in 50 clear and concise essays the mathematical concepts - ancient and modern, theoretical and practical, everyday and esoteric - that allow us to understand and shape the world around us. Packed with diagrams, examples and anecdotes, this book is the perfect overview of this often daunting but always essential subject. For once, mathematics couldn't be simpler.

## The Math Book by Clifford A. Pickover



Age 12+

Mathematics' infinite mysteries and beauty unfold in this book. Beginning millions of years ago with ancient ant odometers and moving through time to our modern-day quest for new dimensions, prolific polymath Clifford Pickover covers 250 milestones in mathematical history. Among the numerous concepts readers will encounter as they dip into this inviting anthology: cicada-generated prime numbers, magic squares, the discovery of pi and calculus, and the butterfly effect. Each topic is presented in a lavishly illustrated spread, including formulas, fascinating facts about scientists' lives and real-world applications of the theorems.



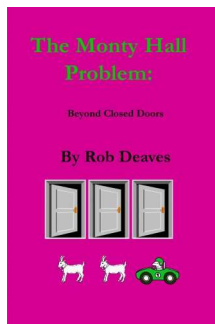
### Alex's Adventures in Numberland

by Alex Bellos

Age 13+

The world of maths can seem mind-boggling, irrelevant and, sometimes, boring. This groundbreaking book reclaims maths from the geeks. Mathematical ideas underpin just about everything in our lives: from the surprising geometry of the 50p piece to how probability can help you win in any casino. In search of weird and wonderful mathematical phenomena, Alex Bellos travels across the globe and meets the world's fastest mental calculators in Germany and a startlingly numerate chimpanzee in Japan. Packed with fascinating, eye-opening anecdotes, Alex's Adventures in Numberland is an exhilarating cocktail of history, reportage and mathematical proofs that will leave you awestruck.

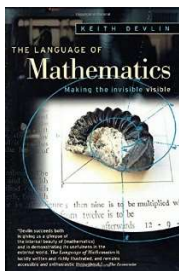
## The Monty Hall Problem: Beyond Closed Doors by Rob Deaves



Age 14+

This short book explores the Monty Hall dilemma, a well known mathematical puzzle. The original problem, the controversy surrounding it and its solution are discussed. Further, the boundaries of the problem are expanded to consider prior knowledge and host intention. This book should be of interest to those who enjoy problem solving.

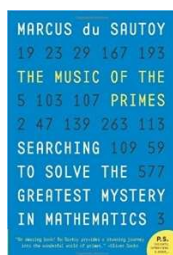
## The Language of Mathematics by Keith Devlin



Age 14+

In *The Language of Mathematics*, award-winning author Keith Devlin reveals the vital role mathematics plays in our eternal quest to understand who we are and the world we live in. More than just the study of numbers, mathematics provides us with the eyes to recognize and describe the hidden patterns of life. Devlin shows us what keeps a jumbo jet in the air, explains how we can see and hear a football game on TV, allows us to predict the weather, the behavior of the stock market, and the outcome of elections. Far from a dry and esoteric subject, mathematics is a rich and living part of our culture. An exploration of an often woefully misunderstood subject, this book celebrates the simplicity, the precision, the purity, and the elegance of mathematics.

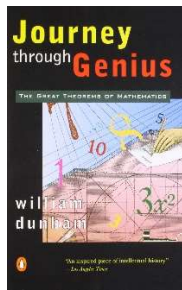
## The Music of the Primes by Marcus Du Sautoy



Age 14+

How can one predict when the next prime number will occur? Is there a formula which could generate primes? These apparently simple questions have confounded mathematicians ever since the Ancient Greeks. In 1859, the brilliant German mathematician Bernhard Riemann put forward a hypothesis which finally seemed to reveal a magical harmony at work in the numerical landscape. The promise that these eternal, unchanging numbers would finally reveal their secret thrilled mathematicians around the world. Yet Riemann never publicly provided a proof for his hypothesis and his housekeeper burned most of his personal papers on his death. Whoever cracks Riemann's hypothesis will go down in history, for it has implications far beyond mathematics. In business, it plays a central role in security and e-commerce. In science, it brings together vastly different areas, with critical ramifications in Quantum Mechanics, Chaos Theory and the future of computing. Pioneers in each of these fields are racing to crack the code and a prize of \$1 million has been offered to the winner. As yet, it remains unsolved.

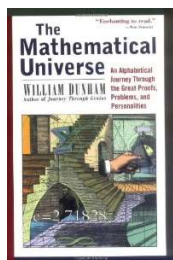
### **Journey Through Genius: The Great Theorems of Mathematics by William Dunham**



*Age 14+*

In this book Dunham treats mathematical theorems as creative works of art. He places each theorem within its historical context and explores the very human and often turbulent life of the creator. He studies such great mathematicians as Archimedes, Gerolamo Cardano and Georg Cantor. He also provides step-by-step proofs for the theorems, each easily accessible to readers with no more than a knowledge of high school mathematics.

### **The Mathematical Universe: Alphabetical Journey Through the Great Proofs, Problems & Personalities by William Dunham**

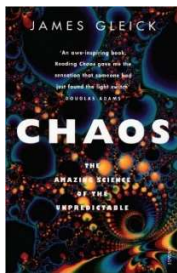


*Age 14+*

In this book, Dunham takes us through a tantalizing selection of the great proofs, notorious disputes, and intriguing unsolved mysteries of the mathematical universe.

Subjects range from the golden age of Greek geometry to the furthest frontier of infinite series. Dunham explores more than five thousand years of mathematical history, digging into the earliest records in Egypt, Babylon, India, and China, and turning up surprising tales and tidbits from modern times. All along the way, Dunham portrays the great masters of mathematics at their work. In colorful anecdotes, the brilliant - often eccentric - luminaries chart the course of mathematical progress. This book is accessible to any reader with a basic knowledge of algebra and geometry. You will come away from this exhilarating book with a keen sense of the power and splendor of the magical mathematical world.

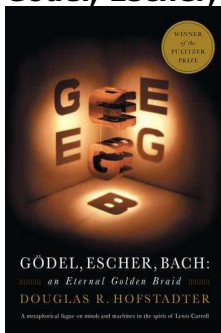
### **Chaos by James Gleick**



Age 14+

Chaos is what happens when the behaviour of a system gets too complicated to predict; the most familiar example is the weather, which apparently cannot be forecast accurately more than five days ahead. This book tells the story so far in the study of this new field of Physics.

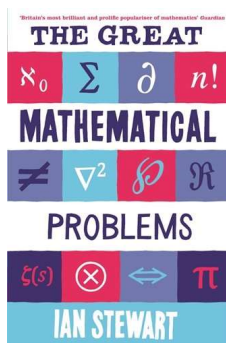
### **Gödel, Escher, Bach: An Eternal Golden Braid by Douglas Hofstadter**



Age 16+

Douglas Hofstadter's book is concerned directly with the nature of maps or links between formal systems. However, according to Hofstadter, the formal system that underlies all mental activity transcends the system that supports it. If life can grow out of the formal chemical substrate of the cell, if consciousness can emerge out of a formal system of firing neurons, then so too will computers attain human intelligence. Gödel, Escher, Bach is a wonderful exploration of fascinating ideas at the heart of cognitive science: meaning, reduction, recursion, and much more.

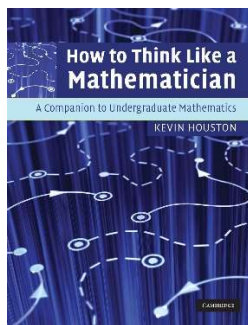
## The Great Mathematical Problems by Ian Stewart



Age 17+

There are some mathematical problems whose significance goes beyond the ordinary - like Fermat's Last Theorem or Goldbach's Conjecture - they are the enigmas which define mathematics. This book explains why these problems exist, why they matter, what drives mathematicians to incredible lengths to solve them and where they stand in the context of mathematics and science as a whole. It contains solved problems - like the Poincaré Conjecture, cracked by the eccentric genius Grigori Perelman, who refused academic honours and a million-dollar prize for his work, and problems which, like the Riemann Hypothesis, remain baffling after centuries. Stewart is the guide to this mysterious and exciting world, showing how modern mathematicians constantly rise to the challenges set by their predecessors, as the great mathematical problems of the past succumb to the new techniques and ideas of the present.

## How to Think Like a Mathematician by Kevin Houston



Age 17+

Looking for a head start in your undergraduate degree in mathematics? This friendly companion will ease your transition to real mathematical thinking. Working through the book you will develop an arsenal of techniques to help you unlock the meaning of definitions, theorems and proofs, solve problems, and write mathematics effectively. All the major methods of proof - direct method, cases, induction, contradiction and contrapositive - are featured. Concrete examples are used throughout, and you'll get plenty of practice on topics common to many courses such as divisors, Euclidean algorithms, modular arithmetic, equivalence relations, and injectivity and surjectivity of functions. With over 300 exercises to help you test your progress, you'll soon learn how to think like a mathematician.