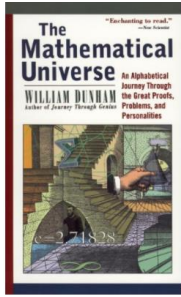


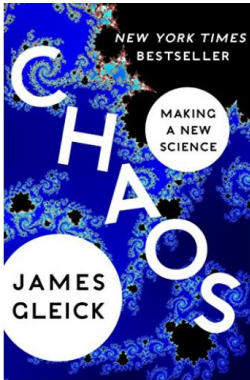


Key Stage 4

	<p>The Monty Hall Problem: Beyond Closed Doors</p> <p>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.</p>
	<p>The Language of Mathematics</p> <p>"The great book of nature," said Galileo, "can be read only by those who know the language in which it was written. And this language is mathematics." In <i>The Language of Mathematics</i>, 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—patterns that exist in the physical, biological, and social worlds without, and the realm of ideas and thoughts within.</p>
	<p>The Music of the Primes</p> <p>Prime numbers are the very atoms of arithmetic. They also embody one of the most tantalising enigmas in the pursuit of human knowledge. 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.</p> <p>In 1859, the brilliant German mathematician Bernard Riemann put forward an idea 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, a hypochondriac, and a troubled perfectionist, never publicly provided a proof for his hypothesis and his housekeeper burnt all his personal papers on his death.</p>
	<p>Journey through Genius</p> <p>Like masterpieces of art, music, and literature, great mathematical theorems are creative milestones, works of genius destined to last forever. Now William Dunham gives them the attention they deserve.</p> <p>Dunham places each theorem within its historical context and explores the very human and often turbulent life of the creator -- from Archimedes, the absentminded theoretician whose absorption in his work often precluded eating or bathing, to Gerolamo Cardano, the sixteenth-century mathematician whose accomplishments flourished despite a bizarre array of misadventures, to the paranoid genius of modern times, 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. A rare combination of the historical, biographical, and mathematical, <i>Journey Through Genius</i> is a fascinating introduction to a neglected field of human creativity.</p>

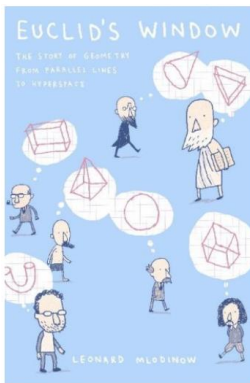


The Mathematical Universe: Alphabetical Journey Through the Great Proofs
Artfully, Dunham conducts a tour of the mathematical universe. . .he believes these ideas to be accessible to the audience he wants to reach, and he writes so that they are.



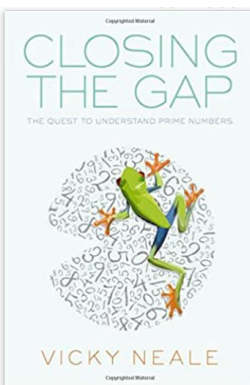
Chaos

For centuries, scientific thought was focused on bringing order to the natural world. But even as relativity and quantum mechanics undermined that rigid certainty in the first half of the twentieth century, the scientific community clung to the idea that any system, no matter how complex, could be reduced to a simple pattern. In the 1960s, a small group of radical thinkers began to take that notion apart, placing new importance on the tiny experimental irregularities that scientists had long learned to ignore. Miniscule differences in data, they said, would eventually produce massive ones—and complex systems like the weather, economics, and human behaviour suddenly became clearer and more beautiful than they had ever been before.



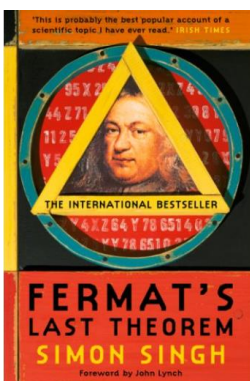
Euclid's Window: The Story of Geometry from Parallel Lines to Hyperspace

Through Euclid's Window, Leonard Mlodinow brilliantly and delightfully leads us on a journey through five revolutions in geometry, from the Greek concept of parallel lines to the latest notions of hyperspace. This new, refreshing, alternative history of maths reveals how simple questions anyone might ask about space in the living room or in some other galaxy have been the hidden engine of science's highest achievements.



Closing the Gap: The Quest to Understand Prime Numbers

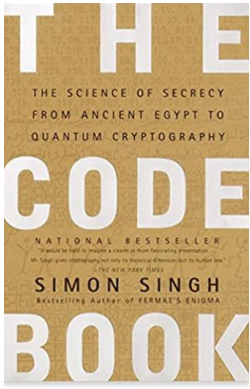
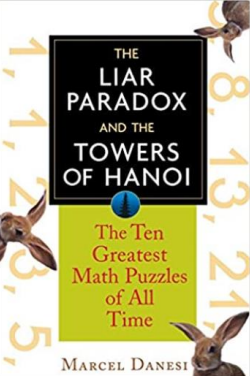
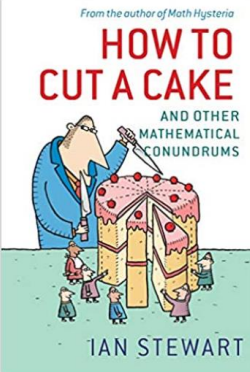
Prime numbers have intrigued, inspired, and infuriated mathematicians for millennia. Every school student studies prime numbers and can appreciate their beauty, and yet mathematicians' difficulty with answering some seemingly simple questions about them reveals the depth and subtlety of prime numbers. Vicky Neale charts the recent progress towards proving the famous Twin Primes Conjecture, and the very different ways in which the breakthroughs have been made: a solo mathematician working in isolation and obscurity, and a large collaboration that is more public than any previous collaborative effort in mathematics and that reveals much about how mathematicians go about their work. Interleaved with this story are highlights from a significantly older tale, going back two thousand years and more, of mathematicians' efforts to comprehend the beauty and unlock the mysteries of the prime numbers.



Fermat's Last Theorem

'I have a truly marvellous demonstration of this proposition which this margin is too narrow to contain.'

It was with these words, written in the 1630s, that Pierre de Fermat intrigued and infuriated the mathematics community. For over 350 years, proving Fermat's Last Theorem was the most notorious unsolved mathematical problem, a puzzle whose basics most children could grasp but whose solution eluded the greatest minds in the world. In 1993, after years of secret toil, Englishman Andrew Wiles announced to an astounded audience that he had cracked Fermat's Last Theorem. He had no idea of the nightmare that lay ahead.

	<p>In 'Fermat's Last Theorem' Simon Singh has crafted a remarkable tale of intellectual endeavour spanning three centuries, and a moving testament to the obsession, sacrifice, and extraordinary determination of Andrew Wiles: one man against all the odds.</p>
	<p>The Code Book Simon Singh offers the first sweeping history of encryption, tracing its evolution and revealing the dramatic effects codes have had on wars, nations, and individual lives. From Mary, Queen of Scots, trapped by her own code, to the Navajo Code Talkers who helped the Allies win World War II, to the incredible (and incredibly simple) logistical breakthrough that made Internet commerce secure, <i>The Code Book</i> tells the story of the most powerful intellectual weapon ever known: secrecy.</p> <p>Throughout the text are clear technical and mathematical explanations, and portraits of the remarkable personalities who wrote and broke the world's most difficult codes. Accessible, compelling, and remarkably far-reaching, this book will forever alter your view of history and what drives it. It will also make you wonder how private that e-mail you just sent really is.</p>
	<p>The Penguin Dictionary of Curious and Interesting Numbers Why was the number of Hardy's taxi significant? Why does Graham's number need its own notation? How many grains of sand would fill the universe? What is the connection between the Golden Ratio and sunflowers? Why is 999 more than a distress call? All these questions and a host more are answered in this fascinating book, which has now been newly revised, with nearly 200 extra entries and some 250 additions to the original entries. From minus one and its square root, via cyclic, weird, amicable, perfect, untouchable, and lucky numbers, aliquot sequences, the Cattle problem, Pascal's triangle and the Syracuse algorithm, music, magic and maps, pancakes, polyhedra and palindromes, to numbers so large that they boggle the imagination, all you ever wanted to know about numbers is here. There is even a comprehensive index for those annoying occasions when you remember the name but can't recall the number.</p>
	<p>The Liar Paradox and the Towers of Hanoi Ever since the Sphinx asked his legendary riddle of Oedipus, riddles, conundrums, and puzzles of all sizes have kept humankind perplexed and amused. <i>The Liar Paradox and the Towers of Hanoi</i> takes die-hard puzzle mavens on a tour of the world's most enduringly intriguing braintwisters, from Königsberg's Bridges and the Hanoi Towers to Fibonacci's Rabbits, the Four Colour Problem, and the Magic Square. Each chapter introduces the basic puzzle, discusses the mathematics behind it, and includes exercises and answers plus additional puzzles similar to the one under discussion. Here is a veritable kaleidoscope of puzzling labyrinths, maps, bridges, and optical illusions that will keep aficionados entertained for hours.</p>
	<p>How to Cut a Cake Welcome back to Ian Stewart's magical world of mathematics! Here are twenty more curious puzzles and fantastical mathematical stories from one of the world's most popular and accessible writers on mathematics. This is a strange world of never-ending chess games, empires on the moon, furious fireflies, and, of course, disputes over how best to cut a cake. Each chapter—with titles such as, "How to Play Poker by Post" and "Repealing the Law of Averages"—presents a fascinating mathematical puzzle that is challenging, fun, and introduces the reader to a significant mathematical problem in an engaging and witty way. Illustrated with clever and quirky cartoons, each tale will delight those who love puzzles and mathematical conundrums.</p>