

Read any good (maths) books lately?

Ten books accessible to AS and Higher students

1089 and all that: A Journey into Mathematics

David Acheson
Oxford University Press, 2002, ISBN 0198516231, £12.99

A mathematician's account of mathematics that has intrigued and interested him, it is written in a highly accessible and entertaining style, with plenty of puzzles and illustrations. It communicates the buzz the author gets from maths as well as introducing many mathematical ideas. Something to curl up and read or just dip into.

The Code Book: The Secret History of Codes and Code-breaking

Simon Singh
Fourth Estate, 1999, ISBN 1857028899, £8.99

This fascinating book draws the reader into the world of codes by considering how secret messages have been passed between accomplices over the years, and the attempts to intercept and decipher them. The main part of the book focuses on the Enigma code but there is much more than this. There is a useful, short glossary of key terms, opportunities to get involved through challenges and lots of supporting information.

The Penguin Dictionary of Curious and Interesting Numbers

David Wells
Penguin, 1997, ISBN 0140080295, £7.99

This book takes the form of a numerical dictionary starting with -1 and i and ending with Graham's number. Each entry consists of mathematical properties and historical facts about each number. Various concepts, such as Fermat and Catalan numbers, are explained. Also included are tables of common number sequences. This book is ideal for dipping into and is accessible to GCSE as well as A-Level students. Find out why 13 is lucky, why 28 is perfect and about the first uninteresting number.

Fermat's Last Theorem

Simon Singh
Fourth Estate, 2002, ISBN 1857026691, £8.99
Simon Singh's very readable bestseller focuses on Andrew Wiles' recent proof of Fermat's Last Theorem, but manages to touch on most of the puzzles that have occupied mathematicians over the centuries. The *Daily Mail* likened it to a chronicle of an obsessive love affair.

How to Lie With Statistics

Darrell Huff
Penguin Business, 1991, ISBN 0140213007, £7.99

This very readable book shows the ways in which people can mis-use statistics but, at the same time, teaches many of the basic ideas of the subject so that readers can make up their own minds about 'facts' they hear in the media.

How Long is a Piece of String?

Rob Eastaway and Jeremy Wyndham
Robson Books, 2003, ISBN 1861056257, £6.99

A very readable book about the way in which mathematics underlies so much of our daily lives: discover the astonishing '37%' rule for blind dates, find out the best strategy for 'Who wants to be a millionaire?'. Why do epidemics sweep across a nation and then disappear just as quickly? Why does a lift take so long to respond to your call? There is plenty of material relating maths to the real world, something to take to bed to read.

In Code: A Mathematical Journey

Sarah Flannery and David Flannery
Algonquin Books, 2003, ISBN 1565123778, £7.65

Sarah is a teenage mathematician who writes, with her father's help, about her childhood with daily puzzles set by her father, which led to a love of problem solving and also to knowledge of cryptology that won her international recognition. It includes problems set for the reader to solve (with solutions) and an explanation of her work written in a way which is easy to follow.

Murderous Maths Series

Kjartan Poskitt
Scholastic Hippo, £3.99, £4.99 or £5.99

A series of small books about mathematics, some on themes, such as algebra, and others of general interest. The books are very entertaining but could well spark a better understanding of mathematics; they will almost certainly provoke interest. All contain stories of mathematicians and their allies, together with tricks and treats to amuse and astound. Easy reading with sound and sometimes thought-provoking content; they are definitely worth a read.

Uncle Petros and Goldbach's Conjecture

Apostolos Doxiadis
Faber & Faber, 2000, ISBN 0571202039, £9.99

This novel is a delightful story of the search for a solution to a famous problem and of the possible pitfalls in a research project that is too restricted in its outlook. There is a wonderful mix of humour, pathos and mathematics.

Why do Buses Come in Threes?

Rob Eastaway and Jeremy Wyndham
Robson Books, 1999, ISBN 1861052472, £8.99

An entertaining and accessible book to remind us that mathematics is relevant to almost everything we do. Why is it better to buy a lottery ticket on a Friday? Why are showers always too hot or too cold? Discover a wartime technique for saving energy when making toast, and a surprising formula for running in the rain without getting wet. An attractive book with material to brighten any secondary maths lesson.

Ten more advanced works

Calculus Gems: Brief Lives and Memorable Mathematics

George F. Simmons

McGraw-Hill, 1992, ISBN 0070575665, £35.99

This delightful book includes brief lives of 33 important mathematicians, from Archimedes to Weierstrass, who they were, what they did, and why. They are followed by 26 notes on significant moments in maths, from Pythagoras' theorem to rocket propulsion. Can be read from beginning to end, but can also be dipped into if you prefer.

Does God Play Dice?

Ian Stewart

Penguin, 1997, ISBN 0140256024, £9.99

A very accessible introduction to the exciting new field of chaos, it gives an insight into the mathematics behind fractals as well as many other situations where you can find chaotic behaviour.

e: The Story of a Number

Eli Maor

Princeton University Press, 1998, ISBN 0691058547, £12.95

A chronological tale of the development of e . It starts with Napier and logarithms, and discusses series, areas and curves. Several chapters are devoted to Newton, Leibniz and the Bernoulli family. Applications are introduced in mechanics, geometry and music. Much of the mathematics is accessible to students at AS or A2 level: functions, inverses, trigonometry, calculus, and Further Mathematics students will find material on hyperbolic functions and complex numbers.

Five Equations that Changed the World

Michael Guillen

Abacus, 1999, ISBN 0349110646, £9.99

The author tells the stories of five of the most important mathematicians and scientists in history and gives the background to their discoveries of 'world changing' equations. An excellent read that puts a human face on mathematical discovery.

From Here to Infinity

Ian Stewart

Oxford Paperbacks, 2002, ISBN 0192832026, £9.99

An easily-readable introduction to how mathematics is developing today, it shows how many ideas, old and new, can be important in answering questions in today's world. There are plenty of mathematical ideas presented in an attractive manner that keeps you reading.

The Man Who Loved Only Numbers: Story of Paul Erdos and the Search for Mathematical Truth

Paul Hoffman

Fourth Estate, 1999, ISBN 1857028295, £8.99

Paul Erdős, the 'Man Who Loved Only Numbers', lived a strange life. A genius, whose only interest was numbers, he thought and wrote mathematics for nineteen hours a day until his death. He was fun, he was eccentric, he had few possessions, but many friends, mostly in the world of mathematics. The book is very accessible and combines the story of an outstanding character with some interesting number theory.

The Mathematical Universe: An Alphabetical Journey Through the Great Proofs, Problems, and Personalities

William Dunham

John Wiley & Sons, 1997, ISBN 0471176613, £14.95

This book offers incisive profiles of the great theorems, conundrums, disputes, and unsolved mysteries that have shaped the fascinating world of mathematics. Dunham, as well as stating theorems, gives their original proofs in an accessible form. The book is full of ingenious insights, including how Archimedes found the surface area of a sphere and how Euler used infinite series in his work on partitions.

Mathematics: A Very Short Introduction

Timothy Gowers

Oxford Paperbacks, 2002, ISBN 0192853619, £6.99

The author captures the essence of mathematics and gives a feel for how mathematics is approached beyond school-level. Many advanced ideas are introduced in a clear and accessible style which relates theoretical concepts to practical applications.

Pi in the Sky: Counting, Thinking and Being

John D. Barrow

Penguin, 1993, ISBN 0140231099, £8.99

What is maths and why is it so effective in explaining the world? Do we discover it or invent it? The author of this book discusses rival views in a stimulating and readable manner.

What is Mathematics?

Richard Courant and Herbert Robbins, revised by Ian Stewart

Oxford University Press, 1996, ISBN 0195105192, £11.99

This is a classic book, covering a broad spectrum of fundamental mathematical ideas, which has been updated to include recent mathematical developments such as the proof of the Four Colour Theorem and Fermat's Last Theorem. This is an excellent book for a student considering taking a degree in mathematics.

