

## Books about Science in English

These are not textbooks or coursebooks. They are books written for the intelligent general reader, about many different aspects of science. They include explanations of modern scientific theories, overviews of different scientific disciplines, biographies of notable scientists and mathematicians, accounts of the history of different branches of science and of the history of ideas, as well as books that discuss the role of science in the larger world and connections between the sciences and other branches of human endeavour. They form part of a scientific "culture générale" which can give students of science a wider view of their subject – and help them to think about science in English, in the widest sense. And – just as important – they are interesting, amusing, exciting and fascinating.

This list is in no way exhaustive. Many of the authors listed have written other books which are just as interesting as those cited here. The categories are not exclusive – several of these books could easily be put in more than one.

The dates given here are for the original publication. Most of these books are available in paperback (with different dates) and many are also now available as Kindle downloads.

### Physics

Cox, Brian & Jeff Forshaw (2009) *Why Does  $e=mc^2$  ? (And Why Should We Care?)*

Feynman, Richard (1985) *Surely you're joking, Mr Feynman?*

The irreverent autobiography of one of the greatest physicists of the 20th century.

Gribbin, John (2001) *Stardust: The Cosmic Recycling of Stars, Planets and People*

Gleick, James (1988) *Chaos: Making a New Science*

The development and wide applications of chaos theory.

Hawking, Stephen (2nd edition 1996) *A Brief History of Time: From Big Bang to Black Holes*

A classic, well worth the effort.

Jungk, Robert (1970) *Brighter than a Thousand Suns: A Personal History of the Atomic Scientists*

The story of the discoveries that led up to the Manhattan Project and the first atomic bomb, and of the scientists who contributed and of their concerns.

Kaku, Michio (2005) *Parallel Worlds: A Journey through Creation, Higher Dimensions and the Future of the Cosmos*

A theoretical physicist discusses some recent issues in cosmology.

Stewart, Ian & Martin Golubitsky (1992) *Fearful Symmetry: Is God a Geometer?*

How mathematical symmetry crops up in the natural world from the subatomic to the astronomical level, and everything in between.

## Chemistry and Biology

Coyne, Jerry A (2009) *Why Evolution Is True*

"Coyne does not aim to prove creationism wrong. Rather, by using irrefutable evidence, he sets out to prove evolution right."

Hölldobler, Bert & Edward O Wilson (1994) *Journey to the Ants: A Story of Scientific Exploration*

Jones, Steve (2002) *Y: The Descent of Men*

The genetics and biology of men and "the story of the search for the nature of manhood".

Morton, Oliver (2007) *Eating the Sun. How Plants Power the Planet*

Photosynthesis – how it works, how it evolved, why it's so important.

Rose, Steven (1992) *The Making of Memory*

How research is done, from animal experiments to brain chemistry, and how the neurochemistry of memory was gradually unravelled.

Watson, James D (1997 [1968]) *The Double Helix. A Personal Account of the Discovery of the Structure of DNA*

A classic account, now updated, of how one of the greatest discoveries was made.

## Mathematics

Abbott, Edwin A (1884) *Flatland: A Romance of Many Dimensions. With Illustrations by the Author, A Square* .

A classic fantasy on the theme of dimensions in space and in mathematics. Reissued several times in recent years.

Bellos, Alex (2010) *Alex's Adventures in Numberland*

"...the excitement and wonder of mathematical discovery"

Derbyshire, John (2003) *Prime Obsession: Bernhard Riemann and the Greatest Unsolved Problem in Mathematics*

Du Sautoy, Marcus (2003) *The Music of the Primes: Why an Unsolved Problem in Mathematics Still Matters*

Two approaches to one of the most important problems.

Doxiadis, Apostolos & Christos H Papdimitriou (2009) *Logicomix*

Russell, Whitehead, Frege, Cantor, Hilbert, Gödel – the problems and discoveries of 20th Century mathematics in a brilliant graphical novel.

Hoffmann, Paul (1998) *The Man Who Loved Only Numbers. The Story of Paul Erdős and the Search for Mathematical Truth.*

Kanigel, Robert (1991) *The Man Who Knew Infinity: A Life of the Genius Ramanujan*

The story of the largely self-taught Indian mathematician and his collaboration with the Cambridge mathematician G H Hardy.

Paulos, John Allen ((1991) *Beyond Numeracy: An Uncommon Dictionary of Mathematics*

Peterson, Ivars (1988) *The Mathematical Tourist: Snapshots of Modern Mathematics*

Singh, Simon (1997) *Fermat's Last Theorem: The story of a riddle that confounded the world's greatest minds for 358 years*

Aczel, Amir D (1996) *Fermat's Last Theorem: Unlocking the Secret of an Ancient Mathematical Problem*

Two accounts of one of the greatest mathematical discoveries of recent years.

Stewart, Ian (3<sup>rd</sup> edition 1996) *From Here to Infinity: A Guide to Today's Mathematics*

Stewart, Ian (2008) *Professor Stewart's Cabinet of Mathematical Curiosities*  
Amusing, enlightening, exciting – all the fascinating things that school mathematics leaves out.

Wilson, Robin (2008) *Lewis Carroll in Numberland: His Fantastical, Mathematical, Logical Life*

The little-known and fascinating mathematical career of the author of *Alice in Wonderland*.

## Medicine

Baldwin, Richard S (1981) *The Fungus Fighters: Two Women Scientists and their Discovery*

The discovery and development of the first drug able to treat fungal infections.

Mukherjee, Siddhartha (2011) *The Emperor of All Maladies: A Biography of Cancer*

A history of our attempts to understand and to cure cancer.

Skloot, Rebecca (2010) *The Immortal Life of Henrietta Lacks*

The story and the ethical issues behind the human cells used in much cancer research.

## History of Science

Cadbury, Deborah (2000) *The Dinosaur Hunters: A Story of Scientific Rivalry and the Discovery of the Prehistoric World*

MacFarlane, Alan & Gerry Martin (2002) *The Glass Bathyscaphe*

How the development of glass (vessels, lenses, etc. ) affected science and culture in the West.

Sobell, Dava (1995) *Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of his time*

Stewart, Ian (2008) *Taming the Infinite: The Story of Mathematics*

Uglow, Jenny (2002) *The Lunar Men: The Friends who made the Future 1730 – 1810*

The story of some of the most important figures in the industrial revolution and their impact on science, philosophy and engineering.

## Geology, Palaeontology

Fortey, Richard (1998) *Life: An Unauthorised Biography. A Natural History of the First Four Thousand Million Years of Life on Earth*

Gould, Steven Jay (1989) *Wonderful Life: The Burgess Shale and the Nature of History*

Discoveries and reinterpretations of fossil evidence and the development of a new view of evolution – and a discussion of the status and importance of the observational sciences.

Sykes, Brian (2001). *The Seven Daughters of Eve*.

Tracing the ancestry of human beings over the millennia using mitochondrial DNA.

Tudge, Colin (1995) *The Day Before Yesterday: Five Million Years of Human History*

## **Scientific Thought, History of Ideas**

Hofstadter, Douglas R (2<sup>nd</sup> edition 1999) *Gödel, Escher, Bach: An Eternal Golden Braid*

Information, patterns, recursivity, meaning, consciousness, artificial intelligence – a brilliant, unclassifiable book, a *tour de force*.

Jardine, Lisa(1999) *Ingenious Pursuits: Building the Scientific Revolution*

The intellectual revolution of the 17th and early 18th centuries, its consequences for modern scientific thought and the people who carried it forward.

Lewin, Roger (1993) *Complexity: Life at the Edge of Chaos*

The application of developments in mathematics to the life sciences.

Medawar, Peter (1990) *The Threat and the Glory: Reflections on Science and Scientists*

Essays by a Nobel prizewinner on important events and issues in science.

Wolpert, Lewis & Alison Richards (1988) *A Passion for Science*

(1997) *Passionate Minds: the Inner World of Scientists*

Conversations with distinguished scientists, about their feelings for their subject and how they work.

## **Anthropology, Social Science**

Diamond, Jared (1997) *Guns, Germs and Steel: the Fates of Human Societies*

The complex effects of geography on the development of different human societies.

Diamond, Jared (1991) *The Rise and Fall of the Third Chimpanzee*

The place of humanity in the natural order, and what we can learn from our close primate cousins.

Gould, Steven Jay (revised edition 1995) *The Mismeasure of Man*

Fallacies about intelligence and heritability, and the misuse of scientific data by racists (among others)