

Good Books to Read

A compilation of books which will inspire you!

Science Popularisation and Public Outreach Committee
Tata Institute of Fundamental Research

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1 General

1. Carl Sagan, *Cosmos*, Ballantine Books, 1985.

1.1 Horrible Science Series

1. Nick Arnold and Tony De Saulles, *Fatal Forces*, Scholastic, 1999.
2. Nick Arnold, *Ugly Bugs*, Point Signature, 1998.
3. Nick Arnold, Tony Desaulles, and Tony De Saulles, *Nasty Nature*, Scholastic, 1998.
4. Nick Arnold and Tony De Saulles, *Blood, Bones and Body Bits*, Point Signature, 1998.
5. Nick Arnold and Tony De Saulles, *Disgusting Digestion*, Scholastic, 1999.

2 Biographies of Indian Scientists

1. B.C. Berndt and R.A. Rankin, *Ramanujan: Essays and Surveys*, Hindustan Book Agency, 2003.
2. Santimay Chatterjee and Enakshi Chatterjee, *Meghnad Saha: Scientist with a Vision*, National Book Trust, 1984.
3. Subrata Dasgupta, *Jagdish Chandra Bose and the Indian Response to Western Science*, Oxford University Press, 1999.
4. Chintamani Deshmukh, Homi Jehangir Bhabha, National Book Trust, 2003.
5. J.K. Ghosh, S.K. Mitra, K.R. Parthasarathy (ed.), *Glimpses of India's Statistical Heritage*, Wiley Eastern Limited, 1992.
6. G.H. Hardy, *Ramanujan*, Cambridge, 1940.
7. Robert Kanigel, *The Man Who Knew Infinity, A Life of the Genius Ramanujan*, Rupa & Co., 1992.
8. Nalini Krishnankutty, *Putting Chance to Work, A Life in Statistics*, Dialogue, 1996.
9. A. Mahalanobis, *Prasanta Chandra Mahalanobis*, National Book Trust, India, 1989.
10. R. Parthasarathy, *Paths of Innovators, In Science, Engineering and Technology*, EastWest Books (Madras) Pvt. Ltd, 2000.
11. S.R. Ranganathan, *Ramanujan: The Man and the Mathematician*, London, 1967.
12. Ashok Rudra, *Prasanta Chandra Mahalanobis, A Biography*, Oxford University Press, 1996.
13. Jagjit Singh, *Some Eminent Indian Scientists*, Publications Division, Ministry of Information and Broadcasting, Government of India, 1991.

14. G. Venkataraman, *Bhabha and his Magnificent Obsessions*, Universities Press, 1994.
15. G. Venkataraman, *Bose and His Statistics*, Universities Press, 1992.
16. G. Venkataraman, *Chandrasekhar and His Limit*, Universities Press, 1992.
17. G. Venkataraman, *Raman and His Effect*, Universities Press, 1995.
18. G. Venkataraman, *Journey Into Light: Life and Science of C.V. Raman*, Oxford University Press, 1989.
19. G. Venkataraman, *Saha and His Formula*, Universities Press, 1995.
20. Kameshwar C. Wali, *Chandra: A Biography of S. Chandrasekhar*, Viking Penguin India, 1991.

3 Biology

1. Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies*, W. W. Norton & Company, 1999.
2. Stephen Jay Gould, *The Hedgehog, the Fox, and the Magister's Pox: Mending the Gap Between Science and the Humanities*, Three Rivers Press, 2004.
3. Stephen Jay Gould, *The Mismeasure of Man*, W.W. Norton & Co., 1996.
4. Peter Medawar, *Advice to a Young Scientist*, Harpercollins, 1979.
5. Richard Preston, *The Hot Zone: A Terrifying True Story*, Anchor, 1995.
6. J.D. Ratcliffe, *I am Joe's Body*, Berkley Publishing Group, 1982.
7. Matt Ridley, *Genome: The Autobiography of a Species in 23 Chapters*, HarperCollins Publishers, 2000.
8. Matt Ridley, *The Agile Gene: How Nature Turns on Nurture*, Perennial, 2004.
9. Matt Ridley, *Nature Via Nurture: Genes, Experience, and What Makes Us Human*, HarperCollins, 2003.
10. Oliver Sacks, *The Man Who Mistook His Wife For a Hat: And Other Clinical Tales*, Touchstone, 1998.
11. Oliver Sacks, *An Anthropologist on Mars: Seven Paradoxical Tales*, Vintage, 1996.
12. Oliver Sacks, *Uncle Tungsten: Memories of a Chemical Boyhood*, Vintage, 2002.
13. Oliver Sacks, *Awakenings*, Vintage, 1999.
14. Oliver Sacks, *The Island of the Colorblind*, Vintage, 1998.
15. Robert Sapolsky, *Junk Food Monkeys: And Other Essays on the Biology of the Human Predicament*, Headline, 1997.
16. Robert Sapolsky, *Why Zebras Don't Get Ulcers*, Owl Books, 2004.
17. Robert Sapolsky, *Primate Memoirs: A Neuroscientist's Unconventional Life Among the Baboons*, Scribner, 2002.

18. Lewis Thomas, *The Lives of a Cell*, Penguin Books, 1995.
19. Lewis Thomas, *Medusa and the Snail: More Notes of a Biology Watcher*, Penguin Books, 1995.
20. Lewis Thomas, *Late Night Thoughts on Listening to Mahler's Ninth Symphony*, Penguin Books, 1995.
21. Lewis Thomas, *The Fragile Species*, Simon & Schuster, 1996.

4 Mathematics

1. David Acheson, *1089 and All That: A Journey into Mathematics*, Oxford University Press, 2002.
2. Martin Aigner and Gunter M. Ziegler, *Proofs from the Book*, Springer-Verlag, 2003.
3. Ian Anderson, *Combinatorics of Finite Sets*, Corrected reprint of the 1989 edition, Dover Publications, 2002.
4. M.N. Aref, *Problems and Solutions in Euclidean Geometry*, Dover Publications, 1968.
5. Bonnie Averbach and Orin Chein, *Problem Solving Through Recreational Mathematics*, Dover Publications, 2000.
6. Alan Baker, *A Concise Introduction to the Theory of Numbers*, Cambridge University Press, 1984.
7. Edward J. Barbireau, *Polynomials (Problem Books in Mathematics)*, Springer-Verlag, 2003.
8. E.T. Bell, *Men of Mathematics*, Touchstone, 1986.
9. Victor Bryant, *Aspects of Combinatorics: A Wide-ranging Introduction*, Cambridge University Press, Cambridge, 1993.
10. John Horton Conway and Richard K. Guy, *The Book of Numbers*, Copernicus Books, 1996.
11. Courant and Robbins, *What is Mathematics?: An Elementary Approach to Ideas and Methods*, Oxford University Press, 1996.
12. John Derbyshire, *Prime Obsession: Bernhard Riemann and the Greatest Unsolved Problem in Mathematics*, Joseph Henry Press, 2003.
13. Henry E. Dudeney, *Amusements in Mathematics*, Dover Publications, 1958.
14. Arthur Engel, *Problem-Solving Strategies*, Springer, 1998.
15. Martin Gardner, *Entertaining Mathematical Puzzles*, Dover Publications, 1986.
16. Timothy Gowers, *Mathematics: A Very Short Introduction*, Oxford University Press, 2002.

17. Paul Hoffman, *The Man Who Loved Only Numbers: The Story of Paul Erdos and the Search for Mathematical Truth*, Hyperion, 1999.
18. Paul Hoffman, *Archimedes' Revenge: The Joys and Perils of Mathematics*, W.W. Norton & Co Inc., 1988.
19. Roger A. Johnson, *Advanced Euclidean Geometry: An Elementary Treatise on the Geometry of the Triangle and the Circle*, ed. John Wesley Young, Dover Publications, Inc., 1960.
20. K.C. Kole, *The Universe and the Tea Cup, the Mathematics of Truth and Beauty*, Harcourt Brace & Co. 1998.
21. Boris Kordemsky, *The Moscow Puzzles: 359 Mathematical Recreations (Math & Logic Puzzles)*, Dover Publications, 1992.
22. J.H. van Lint and R.M. Wilson, *A Course in Combinatorics*, Cambridge University Press, 2001.
23. William McClelland, *A Treatise on the Geometry of the Circle and some extensions to conic sections by the method of reciprocation: With numerous examples*, Macmillan, 1891.
24. Z. Michalewicz and D.B. Fogel, *How to Solve It: Modern Heuristics*, Springer, 2000.

A kind of sequel to Polya's How to Solve It, presenting modern heuristics, especially for bigger problems (math problems, not 'just' programming problems) requiring computers.
25. Paul J. Nahin, *An Imaginary Tale*, Princeton University Press, 1998.
26. Steve Olson, *Count Down: Six Kids Vie for Glory at the World's Toughest Math Competition*, Houghton Mifflin, 2004.
27. Peter Pesic, *Abel's Proof: An Essay on the Sources and Meaning of Mathematical Unsolvability*, The MIT Press, 2004.
28. Clifford A. Pickover, *Wonders of Numbers: Adventures in Math, Mind, and Meaning*, Oxford University Press, 2000.
29. G. Polya, *How to Solve It: A New Aspect of Mathematical Method*, Second Edition, Princeton University Press, 1957.

The classic book about solving mathematical problems.
30. S. Savchev and T. Andreescu, *Mathematical Miniatures*,
31. Ravi Vakil, *A Mathematical Mosaic: Patterns & Problem-Solving*, Brendan Kelly Publishing Inc., 1996.
32. Peter Winkler, *Mathematical Puzzles: A Connoisseur's Collection*, A.K. Peters Ltd., 2004.

33. Paul Zeitz, *The Art and Craft of Problem Solving*, John Wiley & Sons, 1999.

4.1 Collections of Mathematical Olympiad Problems

Indian

1. V. Krishnamurthy, C.R. Pranesachar, K.N. Ranganathan and B.J. Venkatachala, *Mathematics Olympiad Primer*, Interline Publishing Pvt. Ltd., Bangalore.
2. V. Krishnamurthy, C.R. Pranesachar, K.N. Ranganathan and B.J. Venkatachala, *Challenge and Thrill of Pre-College Mathematics*, New Age International Publishers, 1996.
3. C.R. Pranesachar, B.J. Venkatachala and C.S. Yogananda, *Problem Primer for the Olympiad*, Interline Publishing Pvt. Ltd., Bangalore.
4. Regional Mathematical Olympiads Committee (Maharashtra and Goa), *An Excursion in Mathematics*,

Others

1. Titu Andreescu and Zuming Feng, *102 Combinatorial Problems: From the Training of the USA IMO Team*, Birkhäuser, 2003.
2. Titu Andreescu and Zuming Feng, *101 Problems in Algebra: From the Training of the USA IMO Team*, Australian Mathematics Trust, 2001.
3. Edward J. Barbeau, Murray S. Klamkin and William O.J. Moser, *Five Hundred Mathematical Challenges*, Mathematical Association of America, 1995.
4. J.C. Burns, *Seeking Solutions: Discussion and Solutions of the Problems from the International Mathematical Olympiads 1988-1990*, Australian Mathematics Trust, 2000.
5. Michael Doob, *The Canadian Mathematical Olympiad 1969-1993*, Canadian Mathematical Society, 1993.
6. Dmitry Fomin and Alexey Kirichenko, *Leningrad Mathematical Olympiads 1987-1991*, MathPro Press, 1994.
7. Anthony David Gardiner, *The Mathematical Olympiad Handbook: An Introduction to Problem Solving Based on the First 32 British Mathematical Olympiads: 1965-1996*, Oxford University Press, 1997.
8. Samuel L. Greitzer (ed.), *International Mathematical Olympiads, 1955-1977*, Mathematical Association of America, 1979.
9. Ross Honsberger, *From Erdos to Kiev: Problems of Olympiad Caliber*, Mathematical Association of America, 1996.

10. Ross Honsberger, *In Pölya's Footsteps: Miscellaneous Problems and Essays*, Mathematical Association of America, 1997.
11. Murray S. Klamkin (ed.), *Problems, International Mathematical Olympiads, 1978-1985 and Forty Supplementary Problems*, Mathematical Association of America, 1986.
12. Murray S. Klamkin (ed.), *USA Mathematical Olympiads 1972-1986: Problems and Solutions*, Mathematical Association of America, 1989.
13. George Lenchner, *Math Olympiad Contest Problems for Elementary and Middle Schools*, Glenwood, 1996.
14. D.O. Shklarsky, N.N. Chentzov, and I.M. Yaglom (I. Sussman, ed.), *The USSR Olympiad Problem Book: Selected Problems and Theorems of Elementary Mathematics*, 3rd ed., Freeman, 1962.
15. Svetoslav Savchev and Titu Andreescu, *Mathematical Miniatures*, Mathematical Association of America, 2003.

5 Physics

1. Terry Cash, *101 Physics Tricks: Fun Experiments With Everyday Materials*, Sterling Pub. Co. Inc, 1993.
2. Robert Ehrlich, Jearl Walker, *Turning the World Inside Out and 174 Other Simple Physics Demonstrations* Princeton University Press, 1990.
Key concepts of physics demonstrations using everyday objects.
3. Robert Ehrlich, *Why Toast Lands Jelly-Side Down: Zen and the Art of Physics Demonstrations*, Princeton Univ Press, 1997.
More physics demonstrations using everyday objects.
4. Martinus J G Veltman, *Facts and Mysteries in Elementary Particle Physics*, World Scientific, 2004.
5. Jeal Walker, *The Flying Circus of Physics with Answers*, John Wiley & Sons (Asia) Pvt. Ltd., 2004.
6. Michael Faraday, *On the Various Forces of Nature*, Vigyan Prasar, 2003.
7. G. Venkataraman, *The Many Phases of Matter*, Universities Press, 1991.
8. G. Venkataraman, *Why Are Things The Way They Are?*, Universities Press, 1992.
9. G. Venkataraman, *A Hot Story*, Universities Press, 1992.
10. G. Venkataraman, *At the Speed of Light*, Sangam Books Ltd.

11. G. Venkataraman, *The Quantum Revolution, Vol. 1: The Breakthrough*, Universities Press, 1993.
12. G. Venkataraman, *The Quantum Revolution, Vol. 2: QED: The Jewel of Physics*, Universities Press, 1993.
13. G. Venkataraman, *The Quantum Revolution, Vol. 3: What is Reality?*, Universities Press, 1993.

6 Science Journals to Subscribe To

1. *Bona Mathematica*, published by Bhaskaracharya Prathistana, Pune.
2. *Samasya*, journal devoted to problem solving, published by Leelavati Trust, Bangalore.
3. *Resonance*, The Circulation Department, Indian Academy of Sciences, C.V. Raman Avenue, Post Box No. 8005, Sadashivanagar Post, Bangalore 560 080.

7 Ordering Information for Universities Press/Vigyan Prasar/NBT

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