



Reading and activities list for Physics

Checklist of Actions for Oxbridge preparation

- Complete the course and college research booklet which covers entry requirements for your course (e.g. admissions tests during interviews). Use it to help you make informed choices.
- Respond and maintain email contact with your OMS Mentor and do not hesitate to ask questions which may help your Oxbridge preparation.
- Read British broadsheets such as The Daily Telegraph, The Independent or The Guardian preferably every day (if not feasible, then at weekends). Think critically about what you have read; what issues are raised?; What assumptions are being made? What information is being relied on to draw which conclusions? How would you frame a counter-argument?
- Make note of subject-related terminology to look up definitions with the aim of working them into future academic discussions on your chosen Oxbridge course.
- Keep a "Learning Log". Note down (i) book titles/ articles (ii) author (iii) your thoughts, feelings and observations (iv) context and relevance of the book/article (v) whether you agree with what you have read.
- Visit the Royal Society website, which contains all the important science news. It also lists all forthcoming science programmes and public lectures.
- Start/continue reading science journals i.e. New Scientist or Scientific American, or Physics
- Look at a wide range of science books to familiarise yourself with ideas, problems and terminology. Try to pick two to three books from each list below. The choice should be based on your own interests, but make sure not all are on the same topic.
- Jot down key insights you have gained from these books, but don't take detailed notes. Start with the biology and chemistry books, as they will help you with your AS levels. The medicine ones can wait until the summer holidays.

PHYSICS:

- Any books by Albert Einstein (suggestions below)
 - *The World as I See it*
 - *Relativity: The Special and the General Theory Second Edition*
 - *The Essential Einstein: His Greatest Works*
 - *Einstein's Miraculous Year: Five Papers That Changed the Face of Physics*
 - *Sidelights on Relativity*
 - *The Principle of Relativity*
 - *Einstein's Essays in Science*
- *50 Physics Ideas You Really Should Know* by J. Baker
- *Mad about Physics* by C. Jargodzki
- *New Physics for the 21st Century* by G. Fraser
- *The Character of Physical Law* by R. Feynman
- *QED: The strange theory of light and matter* by R. Feynman
- *The Elegant Universe* by Brian Greene
- *In Search of the Big Bang* by J. Gribbon
- *Genesis Machines: The New Science of Biocomputation* by Martyn Amos
- *Critical Mass: How One Thing Leads to Another* by Philip Ball
- *The Infinite Book: A Short Guide to the Boundless, Timeless and Endless* by John D. Barrow
- *How Long Is a Piece of String?* By Rob Eastaway and Jeremy Wyndham
- *Chaos: Making a New Science* by James Gleick



Reading and activities list for Physics

- *The Elegant Universe: Superstrings, Hidden Dimensions and the Quest for the Ultimate Theory* by Brian Greene
 - *The Equation That Couldn't Be Solved* by Mario Livio
 - *Black Bodies and Quantum Cats: Tales from the Annals of Physics* by Alan Chodos and Jennifer Ouellette
 - *Dr. Riemann's Zeros* by Karl Sabbagh
 - *Zero: The Biography of a Dangerous Idea* by Charles Seife
 - *Fermat's Last Theorem: The story of a riddle that confounded the world's greatest minds for 358 years* by Simon Singh
- Keep your maths skills fresh and teach yourself enough statistics to construct and interpret basic medical charts. You can find interesting maths problems and help with solving them on two Cambridge websites:
- NRICH - <http://rich.maths.org/public/index.php>
 - Plus online magazine - <http://pass.maths.org.uk/>
- Learn to express your own views by referring to what you have read or heard from a reputable source. When researching, use reliable sources and make sure you can explain what makes a source reliable.
- Check that you understand and can define the key concepts you come across in your reading, creating a cumulative list of definitions during your Oxbridge preparation.
- Keep up to date with developments in Physics in the news or newspapers i.e. The Times, Guardian, Observer or Independent.