GETTING INTO YOUR TOP CHOICE UNIVERSITY

READING LISTS

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READING LISTS

The following is meant to be a selection box of ideas to choose from and consult. It is not suggested that you try to read all of them in any subject, but that you select what you think might be interesting. That's the point really – dip in, experiment and see what grabs you. Hopefully some of them will inspire your interest even more. A while ago the Russell Group universities published a list of skills that they wanted to see in students who applied to them. They included –

1. Evidence of being an independent learner
2. Evidence of an ability to do research
3. Evidence of an ability to write a clear and coherent essay
4. Evidence of an ability to think critically and solve problems
5. Evidence of an ability to contribute ideas to a discussion or debate

Following up on the suggestions below will be evidence of independent research and will give you plenty of ideas. Above all, it should show you whether your interest in a particular subject is great enough to want to study it to a much higher level. The lists are by no means definitive. Talk to your teachers at school and get ideas from them. Talk to students who are taking your subjects at a higher level. If there are former students from the school who are up at university doing courses you think you would be interested in, arrange to be put in touch with them. Meet up with them when they come home and look at some of their notes. When you come to apply for university, admissions tutors will be very impressed if you can say that you have already looked over first year undergraduate work.

BIOLOGY

Biology covers all of human biology, zoology and botany. You need to decide whether you want to study all aspects of it or just some of it. You might also want to experiment with finding out about specialist areas such as virology, microbiology, marine biology and genetics to see whether you'd like to specialise from the beginning or study more generally before deciding on any more specialist options.

Books you can look at – *The Chemistry of Life* (Steven Rose), anything by the geneticist Steve Jones or biologist Richard Dawkins, *Genome* (Matt Ridley), *The Wisdom of the Genes* (Wills), *Life on the Edge: Quantum Biology* (Al-Khalili and MacFadden), *Hacking The Code of Life* (Carey), *Life Ascending* (Nick Lane), *The Revenge of Gaia* (Lovelock), *50 Genetic Ideas You Really Need To Know* (Henderson), *Zoobiquity* (Horowitz and Bowers), *Creation: The Origin of Life* (Rutherford), *The Sixth Extermination* (Kolbert), *Great Myths of the Brain* (Jarrett), *The Gene – an Intimate History* (Mukherjee), *How We Live and Why We Die* (Wolpert) *and Honeybee Democracy* (Seeley).

Read journals such as Nature and New Scientist in particular, but all scientific journals will have biological items in them. For biochemistry, a good Handbook of Biochemistry/Principles of Biochemistry textbook is useful for back-up reading as you do topics at A Level. For genetics, familiarise yourself with sex-linked conditions, genetic ratios, gene editing and for population genetics the Hardy-Weinberg equilibrium and find out about case studies. For zoology, look at taxonomy (the science of classification – what do 'species' and 'genus' mean?) and at such things as the place of primates within it. TV programmes by David Attenborough and George McGavin are always of interest. Keep articles from newspapers on medical advances and look at the monthly medical bulletins that PiXL sends on to schools.

For websites try www.arkive.org, www.ted.com, www.thenakedscientists.com
The Complete University Guide suggests that the top five universities for biological sciences after Oxbridge are Imperial, York, Durham, St Andrews and Sheffield, but so much depends on the course, so look carefully. For marine biology it helps to be by the sea!

PHYSICS

Physics can be studied as a general subject, but there are specialist areas such as astrophysics, nuclear physics, astronomy etc. that can be studied straightaway or specialised in during years two and three of some courses.

Books to read – *The Physics of the Impossible and Parallel Worlds* (Kaku), *Hyperspace* (Khan), *Smashing Physics: inside the world's biggest experiment* (Butterworth), *Seven brief lessons on Physics* (Rovelli), *Chaos* (Gleich), *Quantum* (Kumar), *How to teach Quantum Physics to your Dog* (Orzel), *50 Physics Ideas You Really Need To Know* (Baker), *The Ele.g.ant Universe* (Greene), *Just Six Numbers* (Rees), *About Time* (Frank), *The Wonders of the Solar System* (Brian Cox - anything by him is good), *An Astronaut's Guide to Life on Earth* (Hadfield), *A Space Traveller's Guide to the Solar System* (Thompson), *Ripples in Spacetime* (Schilling), *Calculating the Cosmos* (Stewart) *and The Ascent of Gravity* (Chown). *The Infinite Monkey Cage is an excellent radio programme* (on Radio 4 and iPlayer) featuring Brian Cox and Robin Ince and combining theoretical physics with stand up comedy (podcasts are available of all their programmes). Like me, you might find series such as The Planets awe-inspiring and The Big Bang Theory on TV hilarious and good to relax to.

Read New Scientist and Scientific American, if you can get hold of it. For websites look at www.ted.com, www.thenakedscientists.com, www.galaxyzoo.com, Google physics websites, including The Physics Classroom, The Student Room etc. and the website of the Institute of Physics www.isaacphysics.org. Keep articles from newspapers on latest space research findings. The Complete University Guide suggests that the top five universities for physics after Oxbridge are Imperial, Durham, Bath, Birmingham and Warwick, but so much depends on the course, so look carefully.

MATHEMATICS

Maths departments seem to be interested only in the maths you've done, so the more you do the better – further maths, further further maths, STEP level papers, etc.

Books of interest however might include – *Fermat's Last Theorem* (Singh), *Does God Play Dice and Nature's Numbers* (Stewart), *Easy as Pi* (Ivanov), *The Music of the Primes* (du Sautoy), *Just Six Numbers* (Rees), *In Code* (Flannery), *Numbers, Sets and Axioms* (Hamilton), *The Universe and the Teacup – the Maths of Truth and Beauty* (K.C. Cole), *Algebra and Geometry* (Beardon), *Hidden Connections, Double Meanings* (Wells), *Elastic Fishponds. The Maths that governs our World* (Elwes), *The Norm Chronicles* (Blastland and Spitgethaltes), *Our Mathematical Universe* (Te.g.mark). *Updates for 2018 are Beyond Infinity* (Cheng), *Weapons of Math Destruction* (O'Neill), *Ian Stewart's 17 equations that changed the world and Thinking in Numbers* (Temmet). *Chemists may be interested in The Periodic Table – a field guide to the elements* (Parsons & Dixon).

HISTORY

What you do by way of wider reading depends on the period(s)/topics you want to study or just want to dip into because they sound interesting. A good idea is to choose a couple of topics from your Year 12 work and go into them in more depth as 'specialist subjects'. Then do the same in Year 13. If both are very 20th century based, read up a few topics on other periods – admissions tutors are fed up with candidates who seem only to know about Hitler and Stalin and are unaware of anything before 1900. *The Time Traveller's Guide to Medieval England* (Mortimer) *and The Winter King – Henry VII* (Penn) are great introductions to their respective periods. The best reviewed history book of the last few years is *Peter Frankopan's Silk Roads,* a brilliant attempt to tell the history of the world. Also recommended are *The Celts by Alice Roberts, Montefiore's The Romanovs, Behemoth: A history of the Factory by Freeman and France from Gaul to de Gaulle* by Norwich.

Arrange with your subject teacher(s) to do one or two term time essays as 'extended essays' in preparation for possibly sending them up to university or to have referred to in your application. Look at political philosophy (Machiavelli, Marx, Mill – the 'Very Short Introduction to... series' is very good) and/or one or two political biographies. Read book reviews – that way you hear what the book says and the views of the reviewer, two for the price of one!

The other key thing, if you are not already, is to become every parent's nightmare – awkward, argumentative and bolshie. It doesn't have to be at home – don't get kicked out! – but get involved in debating and public speaking, take every opportunity in class to argue and express opinions, taking nothing for granted. There is no such thing in History as 'received wisdom'.

There are loads of history websites (just Google 'history websites') and any topics you follow up, no matter how obscure, will have other links. History Today and the BBC history reviews are among a host of general, as well as

specialised, magazines available. Listen to history topics from the radio programme *In Our Time* (available on iPlayer) as they contain good ideas and opinions. *The Complete University Guide* suggests that the top five universities for history after Oxbridge are Durham, St. Andrews, Warwick, Exeter and LSE but so much depends on the course and the different specialist modules offered, so look carefully.

GEOGRAPHY

You need to decide whether you are a 'whole' geographer or interested more in either the physical side of the subject or the human. That will determine what you want to specialise in and read up about. Choose two or three topics from your work in Year 12 and go into greater depth in them. Arrange with your subject teacher(s) to write a couple of your Year 12 essays as 'extended essays' so that they can be sent or referred to in references for university.

Books that have been particularly recommended are – *Earth, An Intimate History* (Fortey), *Globalism and Regionalism and Capitalism as if the Earth mattered* (Porritt) *Future Shock* (Tofler), *A Blueprint for Survival* (The Ecologist and Penguin books), *Population Geography* (Jones), *The Skeptical Environmentalist* (Lomberg – indeed anything by him), *Jungle: A Harrowing True Story of Survival* (Ghinsberg), *Surviving Extremes* (Middleton – he teaches Geog. at Oxford), *Earth From Space* (Johnston), *Belching Out the Devil: Global Adventures with Coca-Cola* (Thomas), *anything by James Lovelock on Gaia and for the human and cultural side Tribe* (Bruce Parry) or anything by the Prof. of Geog. at UCLA Jared Diamond. *Caesar's Last Breath* – the epic story of the air around us (Kean) and for geologists, *Reading Rocks* (Maddox). *Building Global Resistance* (Pagett) is a searing critique of current development strategies.

Read Geography Review for case studies, become a junior member of the Royal Geographical Society and consult www.mongabay.com for environmental geography. Look at the website of Danny Dorling for lots of excellent statistical material and his book *So You Think You Know About Britain*. You can get other ideas from www.gapminder.org, www.facingthefuture.org, www.ted.com, www.gogeo. ac.uk. Keep up to date with natural disasters and their causes! *The Complete University Guide* suggests that the top five universities for geography after Oxbridge are Durham, Bristol, LSE, St Andrews and Cardiff but so much depends on the course and the different specialist modules offered, so look carefully.

CHEMISTRY

There are specialist variations on the themes from Biochemistry and Chemical Engineering through to very niche specialisms such as Colour Chemistry. Courses will also vary according to the amount of practical work and practical assessment involved.

For wider reading try – *The Chemistry of Life* (Steven Rose), Chemistry (Brock), *Principles of Biochemistry* (White, Handler and Smith) as a backup to all your A Level topics, *Chemistry for Changing Times* (Hill, McCreary and Kolb), Materials Science (Ramsden), *The Periodic Kingdom* (Atkins), *Mendeleyev's Dream – the search for the elements* (Strathern), *Periodic Tables – The Curious Life of the Elements* (Aldersty and Williams), *The Disappearing Spoon* (Kean), *50 Ideas you really need to know about Chemistry* (Birch), *The Periodic Table – a field guide to the elements* (Parsons and Dixon).

Also check out the periodicals New Scientist, Nature, Chemistry World and Education in Chemistry. For websites look at www.ted.com, www.thenakedscientists.com, www.isaacchemistry.org, Google 'chemistry websites' and there are several on different areas of chemistry and from a number of UK and US universities. Link up with other sites to do with biology and material sciences. Keep brushing up those practical skills too. *The Complete University Guide* suggests that the top five universities for chemistry after Oxbridge are Durham, Imperial, Warwick, Edinburgh and St. Andrews but so much depends on the course, so look carefully.

POLITICS/PPE

You don't have to be politically committed but, if you are, use all the contacts you can to get work experience, work shadowing, etc. – of the local council and your local MP. Political autobiographies are interesting, though biased. In more general terms *The Origins of Political Order* (Fukuyama), *The Spectre At the Feast* (Gamble), *The Establishment and how they get away with it* (Owen Jones). *British Politics* (Madgwick), *Mind The Gap* (Mount), *The Politics Book* (Kelly). It hasn't taken long for books to come out on Brexit - *After Europe* (Krastev) is good.

In terms of actual works of philosophy, you need to be careful not to dive in at the deep end and put yourself off the subject for life. Plato's Gorgias is a very good starting point as it's short and examines just two key themes, 'oratory is deceit' and 'might is right'. It does so very clearly and is a good introduction to the 'Socratic method'. You might like to take a

theme such as 'truth' and look at how different philosophers have viewed it – *What is Good?* by A.C. Grayling is a very good starting point. You might be interested in taking a look at such 'isms' as Fascism, Communism, Totalitarianism, etc. – this would particularly link with an interest in History. Peter Cave has produced How to outwit Aristotle. Julian Baggini's *Do you think what you think you think?* is excellent and more recent are *The Philosophical Life* (Miller) and *What do we really know?* (Blackburn)

For websites look at www.ted.com, www.politicsinspires.com, search for philosophy websites and you may be interested in The Philosophers' Magazine or Philosophy Today. There are hundreds of politics sites, depending on your interests. For economics, see the separate section.

Get involved in debating and public speaking and, of course, keep up to date with current political issues. Know who the key members of the Cabinet and Opposition are and what they are proposing. For foreign political awareness choose an area such as US or European politics or the politics of another area that really interests you such as Africa, Asia or South America and familiarise yourself with the key issues there. Keep articles from newspapers on items of particular interest. *The Complete University Guide* suggests that the top five universities for politics after Oxbridge are UCL, LSE, St. Andrews, Warwick and Durham but so much depends on the course and the specialist modules that are offered, so look carefully.

MEDICINE

The key thing with medicine is to show that you have the personal qualities they are looking for as well the academic ones. That means getting as much experience as you can of working with others who are in some way or other requiring help. Your school may have a special needs department, in which case offer to help with younger students who may be on the autism/Asperger's spectrum or who have other specific conditions. Use that experience to learn more about how to identify the condition, treat it (if possible) or at least manage it. Help with one to one mentoring work to show you have good inter-personal skills. Apply to your local NHS Trust to get experience at a local hospital, clinic or GP's practice. Ideally get all three and, when you do, milk it for all it's worth in terms of letting people know that you want to learn and experience as much as possible. Keep a portfolio of all your experiences and follow up on all you see by researching the various conditions you come across and learn more about them. If you are finding it difficult to get contacts within the local NHS Trust, contact your local Rotary Club. It will have practising and retired medics among its members, who will have contacts and be willing to help. Check whether you'd prefer the traditional method of teaching or problem-based learning and whether you'd prefer an intercalated course that would give you the chance to do a research degree as part of your course.

For reading you might like to try – *Do No Harm* (Marsh), *When Breath Becomes Air* (Kalanithi), *Fall Down Seven times, Get Up Eight* (Higashida), *A very short introduction to Medical Ethics* (Short intro' series), *The Rise and Fall of Modern Medicine* (Le Fanu), *War Doctor* (Nott), *The Language of Kindness : A Nurse's Story* (Watson), *The Emperor of All Maladies – a biog. of cancer* (Mukherjee), *NHS SOS* (Davis and Tullis), *The Political Economy of Health Care* (Tudor Hart), *Being Mortal* (Gawande), *Causing Death and Saving Lives* (Glover), *How doctors think* (Groopman), *Diagnosis: Dispatches from the Frontlines of Medical Mysteries* (Sanders), *Bad Pharma* (Goldacre), *So you want to be a Doctor* (Dev and Metcalfe). Keep up to date with and follow up any news items on new medical discoveries and break-throughs. Join the junior BMA and read the *BMJ* (British Medical Journal), look at www.ted.com. Check out the GMC's Tomorrow's Doctors.

For veterinary science, get as much experience with animals as you can. Contact local vets, farms, wildlife parks, sanctuaries, zoos, etc. to get experience with more than just domestic pets.

For pharmacy, get experience with at least one pharmacy practice and, if possible, with a pharmaceutical company. Read anything by Ben Goldacre and check out his website as well as www.ted.com.

For dentistry, get experience with a dental practice and, if you can, a hospital department which deals with more complicated surgery. Things that show you have good manual dexterity also help. Running a dental practice also involves business skills so involvement in something like a Young Enterprise company would be useful.

For optometry read *A Very Short Introduction to the Eye* (Lund), *The Eye Book* (Grierson) and *The Ophthobook* (Tim Root).

The Complete University Guide suggests that the top Medical Schools after Oxbridge are Cardiff, UCL, Imperial, QMC, Edinburgh, Glasgow, Newcastle, Keele and the new school at Swansea. It suggests that the top Dental schools are

Glasgow, Cardiff, Newcastle, Manchester and QMC, the top schools for Pharmacy are Cambridge, Cardiff, Belfast and Bath and for Optometry/Ophthalmics are Aston, Cardiff, Glasgow Caledonian and Manchester.
N.B. Check out the monthly medical bulletins that PiXL sends out to all schools.

LAW

You may enjoy dipping into different areas of law but don't try to specialise too early.

Most law books are very intimidating and full of jargon so go easy to start with – The Justice Game by Robertson is an excellent and very readable book by someone who has been involved in some of the leading human rights trials of the last 50 years, *Getting into Law* (ed. Lygo), *The Search for Justice* (Rozenburg), *Understanding Law* (Adams and Brownsword), *Law and Modern Society* (Atiyah), *On Evidence* (Murphy – just dip into this), *The Rule of Law* (Bingham), *Bonfire of the Liberties: New Labour, Human Rights* (Ewing) – look at general introductions to different areas of law such as human rights law, contract law, tort, criminal, land law, etc. and see which areas you find more interesting. Also very good is the Very Short Introduction To... series, e.g. ...to *Human Rights* (Clapham), ... to the *Philosophy of Law* (Wacks) and the New Penguin Guide to the Law. Constitutional Law and Land Law come with a health warning of being particularly technical!

Spend a morning or day at the local magistrates' court and tell the ushers why you're there – they may be able to arrange for you to meet the magistrates. Spend a day at a nearby Crown Court – if you live near London, visit the Old Bailey where there are 18 courts – you will find the ushers very helpful in telling you what's on and where. Get work experience with a solicitor and/or barrister if you can – get in touch with your local Rotary Club for contacts if neither you nor the school have contacts you can use. Get involved in public speaking and debating and mock trial competitions – if your school only has them for junior students, volunteer to help coach them.

There are two radio programmes that are very good and there are podcasts of them on iPlayer – they are Law in Action and Unreliable Evidence. Useful websites are www.ted.com, www.lawstudent.tv,www.lawcom.gov.uk (for Law Commission reports) and the guardian. com/law/studying-law. Look at campaign groups such as Liberty and the Howard League for penal reform. The Complete University Guide suggests that the top five universities for law after Oxbridge are Durham, LSE, UCL, Nottingham and King's.

MODERN LANGUAGES

Listen to radio broadcasts, use newspapers and get as much feel as you can for the cultures, politics, economics, social issues and dip into the history as well. Films are usually a good and entertaining way of building up vocabulary. For France it would be odd not to be able to appreciate its contribution to world history via such as the French Revolution or in the case of Spain the impact of the Spanish Civil War or Meso-American conquests. Where there has been a significant impact on philosophy as well, an introduction to that would be good, e.g. in French Descartes, Voltaire, Rousseau, Sartre or in German Kant, Hegel, Nietzsche, etc. The Very Short Introduction series is a very good starting point. You might also want to dip into linguistics and see whether that is an option you would like to take up at university. Where to apply to depends very much on which languages you want to specialise in. Go to the Complete University Guide website and check out the options.

ARCHITECTURE

Build up your own portfolio of art work, drawings, etc. and your reading will be dictated by your own tastes. What buildings in the world do most for you and why? Then read around their history and who designed them. There are a number of works comparing English cathedrals for instance – a good place to start because of the design issues that were faced and overcome by builders of a much earlier age. If there are National Trust properties near you, look at their architecture and find out about restoration work and how that is undertaken. Familiarise yourself with different architectural styles and the work of different architects (whose work most inspires you and why?). Read *A History of Architecture in 100 Buildings* (Cruikshank) and *The Future of Architecture in 100 buildings* (Kushner).

Work experience with a couple of different architects would be useful, particularly if they do very different types of work. Contact your local council's planning department and see if you can do some work shadowing there. If your school is having any building work done, ask to be introduced to the architects and site managers and monitor what goes on. You might even want to design a better school or sixth form centre and submit your own ideas. Do some research on materials science too, sustainability projects and some of the latest research on energy saving and even buildings that have self-regulating and self-correcting control mechanisms. Architects are not people who just work at desks by themselves so any evidence of working with a team and

taking a lead role would be useful. The local Rotary Club will have contacts with architects if your school doesn't.

Useful websites are – www.ted.com, the 'best architecture' websites, www.architecture.com (the Royal Institute of British Architects site) and keep abreast of the Stirling awards, the top prize for architecture in the UK. The Complete University Guide suggests that the top schools for architecture are Bath, Cambridge, Edinburgh, Cardiff, Sheffield, UCL, Kent and Newcastle.

ENGLISH

It very much depends on what you are interested in. Ideally choose one or two novelists, one or two poets (admissions tutors are always complaining that too few candidates have much knowledge of poetry), one or two playwrights and literature from more than one period of history (so that it's not all 20th century or all Shakespeare).

Experiment and dip into different genres of literature and find out what really excites you to read more. Reading other works by the authors you have for GCSE or for A Level will give you different perspectives on their work and allow you to make interesting comparisons. If you are interested in creative writing, build up a portfolio of your own work. If you are thinking about journalism as a career, write for your school magazine or newspaper – if there isn't one, why not start one?

Local newspapers are usually very pleased to accept copy about events, sports fixtures and things going on in schools so write reports and send them in. Unsurprisingly for English, the advice is 'read, read, read' but make it for pleasure rather than it become a burden. There are good discussions of literary topics in the archive of the radio programme In Our Time, which is available on iPlayer. *The Complete University Guide* suggests that Durham is ranked top for English, followed by Cambridge, St Andrews, Oxford, UCL, Exeter, York and Newcastle. So much depends on the specialist modules on offer however, so look around carefully.

ENGINEERING

Maths and physics are the two important subjects here so you need to protect those. You then need to decide whether you want to specialise in one particular area of engineering (civil, mechanical, electrical, aeronautical, etc.) or whether you'd prefer to do 'general engineering' with an introduction to all of them before deciding how to specialise. Visits to university engineering departments should help that decision and in Jan/Feb of Year 12, sign up for one of the Headstart courses that operate each summer and that give you the chance to go to a top engineering department for a whole week in the summer and work on an engineering project. It is a brilliant introduction to what the subject would be like at university. It really tests out whether it's what you want, and it looks really good on an application form.

You may also want to consider the option of a gap year and gaining a placement with a major engineering company for six to nine months between school and college. The Year in Industry scheme helps to organise these and, if they go well, you will probably end up with the offer of a job during college vacations or even a guaranteed job at the end of your course. It's even been known for companies to be so impressed with the work that was done on a placement that they sponsored some students through university altogether.

For further research check out www.ted.com, www.discoverengineering.org, www.raeng.org.uk (the Royal Academy of Engineering site), iwanttostudyengineering.com and aerochallenge.org, and there are lots associated with the different disciplines within engineering. Keep abreast of major engineering projects such as airport expansion, HS2, motorway widening, new bridges, etc.

T*he Complete University Guide* suggests that the top universities for engineering after Cambridge and Imperial are for civil engineering (Bath, Southampton and Bristol), for Electrical Engineering (Southampton, UCL, Glasgow, Strathclyde, Bristol and Surrey), for Mechanical (Bristol, Bath, Southampton, Leeds and Sheffield), for Aeronautical (Bristol, Bath, Southampton and Surrey), for Chemical (Bath, Edinburgh, Heriot-Watt and Birmingham) and for General Engineering after Cambridge come Durham, Dundee, Imperial, Oxford, Southampton, Warwick and Swansea.

ECONOMICS

The Victorian historian, Thomas Carlyle, called economics 'the dismal science' and that leads to the debate as to whether it is a science or a discipline. The further economics is taken, the more mathematical it becomes so you need to protect your maths and not taking it for A Level will probably rule you out of the top universities.

You need to keep up to date with current economic issues and debates – not difficult these days with the emphasis on the problems with the global economy and this will overlap with politics and debates on taxation, welfare, borrowing, public spending, currency crises, etc. If you are taking the subject at A Level, pick two or three topics (a combination of macro- and micro- economics) and study them in depth. Arrange for a couple of essays to be done as 'extended essays' and marked accordingly and get involved in projects such as the Bank of England Challenge on controlling inflation. If you are planning to go into finance or banking, work experience with a bank or finance institution will be important. Give yourself a notional £20,000 each year and see how you would invest it and (hopefully) make a profit – best to make this 'notional' just in case!

Good reads are – *Freakonomics* (Levitt and Dubner), *The Lexus and The Olive Tree – A Study of Globalisation* (Friedman), *Should Rich Nations Help The Poor?* (Hulme), *Crashed: How a decade of financial crises changed the world* (Tooze), *Grave New World – The End of Globalisation.* (King), *Hard Times* (Clark and Heath), *Winner Takes All* (Moyo), *The Ascent of Money* (Ferguson), *The Price of Inequality and The Great Divide* (Stiglitz), *End This Depression Now* (Krugman), *How the West Was Lost* (Mayo), *22 Things They Didn't tell You About Capitalism* (Chang). *The Undercover Economist* (Harford), *The End of Poverty* (Sachs), *What Money Can't Buy: The Moral Limits of the Market*. (Sandel). The Very Short Introduction to Marx is a good study and look at the ideas of current leading thinkers in economics such as Amartya Sen (his theories on foreign aid creating dependency) and of presenters such as Robert Peston (see his book WTF) and Stephanie Flanders.

Look at websites such as www.ted.com, www.economist.com, www.CNNMoney.com, www.econtalk.com, www.ft.com (Financial Times site).

The Complete University Guide suggests that the top five universities for economics after Cambridge are Warwick, LSE, UCL, Bath and Durham but so much depends on the course and the specialist modules on offer, so look carefully.

CLASSICS

Classics can be studied without having done Latin or Greek (or any of the classical languages) beforehand, but you need to think about whether you want to take any of these up at university as part of your course.

Recent histories such as Mary Beard's SPQR are good (indeed anything by her), Tom Holland's Rubicon, but best is to go back to some of the translated originals – histories such as *The Histories* (Tacitus) or *The 12 Caesars* (Suetonius), any of the Greek plays of Sophocles, Euripides, Aeschylus and Aristophanes, Virgil's Aeneid (the translation of Book VI by Seamus Heaney is particularly fine) and Lucretius De Rerum Natura, which is an astonishing early treatise on the natural world.

PSYCHOLOGY

There are lots of specialist areas within psychology, but do not specialise too soon. Use your friends, school and local community as sources of study.

Books to read – *The Gendered Brain* (Rippon), *Understand Psychology* (Hayes), *Games People Play* (Berne), *I'm OK, You're OK* (Thomas Harris), *The Serial Killers: the psychology of violence* (Wilson), *50 Psychology Ideas you really need to know* (Furnham), *Tricks of the Mind* (Derren brown), anything by Oliver Sacks, *Mindsight* (Siegel), *The Skeleton Cupboard- the making of a clinical psychologis* (Byron), *Psy-Q* (Ambridge), *Predictably Irrational* (Anely), *Bounce* (Syed) and *The Element* (Ken Robinson), these last two focusing on motivation.

For websites, google The Encyclopedia of Psychology. Look at experimental work, such as Milgram, and find out what research is being done at nearby universities and whether you can get involved in it in any way.

How do phobias arise? Why are people 'cruel'? Is there such a thing as a criminal mind?
The Complete University Guide suggests that the top universities for Psychology after Oxbridge are Bath, UCL, Glasgow, Durham and St. Andrews but so much depends on the course and the specialist modules on offer so look carefully.

THEOLOGY

Books to read – *Secularism* (Copson), *A Very Short Introduction to Theology* (Ford), *The God Delusion* (Dawkins), *A History of God* (Armstrong), *The Case for God: what religion really means* (Armstrong), *50 Key Concepts in Theology* (Rayment-Pickard), *Islam and the future of tolerance* (Harris).

Can theology and science work together or are they fundamentally at odds? (interesting here is the work of John Polkinghorne, who is a theologian and an astro-physicist). Does theology have a practical value? For theology, The Complete University Guide suggests that St Andrews is ranked top with Durham second, then Oxbridge, Exeter, Sheffield, Bristol and Edinburgh but so much depends on the course and the specialist modules on offer, so look carefully.

ANTHROPOLOGY

Books to read – *Who We Are and How We Got Here* (Reich), *The Third Chimpanzee* (Diamond), *Tribe* (Bruce Parry), *A Beginner's Guide to Anthropology* (Hendy), *The Book of Peoples* (National Geographic), *The Innocent Anthropologist* (Nigel Barley), *The Naked Ape* (Morris), *Sapiens: A brief history of Humankind* (Harari).

Anthropology is divided between social or cultural anthropology and physical or biological anthropology. There are courses specifically in the former and some overlap with human geography. The latter overlaps with human biology and genetics. Do a study of the primates – what are prosimians, simians and apes? What makes man different and why/ how did he develop physical differences? Why are witchcraft and magic important in many tribal cultures? Voodoo makes for an interesting study – just don't start sacrificing chickens at home – it can upset your parents!
For those of you who are interested in archaeology alongside, follow up on those areas you are interested in, whether that be British Roman and Anglo-Saxon, Egyptian, Central American or wherever. It would be a good idea to get in touch with a local archaeological society (or Dept. of Archaeology at a nearby university if it has one) and arrange to spend some time on a dig. There is more science to it than you might think and it would be very useful to familiarise yourself with it.

The Complete University Guide suggests that the top universities for Anthropology after Oxbridge are UCL, S. Andrews, LSE, Exeter and Southampton but so much depends on the course and the specialist modules on offer, so look carefully.

MUSIC

It very much depends what type of music you are interested in, but it would be a good idea to dip into the music of at least a couple of different time periods. Consider such questions as – is it valid to talk of 'good' music?, Why do composers go in and out of fashion?, can jazz be properly explained?, can musical appreciation be taught?, is 'electronic music' a contradiction in terms? For music, the top universities depends entirely on what type of music you want to specialise in and whether you are interested purely in performance or want to do such as composing or music theory alongside. Consult the Complete University Guide and look carefully at the different options.

GRAPHIC DESIGN/COMMUNICATION

Books to read – *100 Ideas that Changed Graphic Design* (Heller and Vienne), *Know Your Onions* (De Soto), *How to be a Graphic Designer Without Losing Your Soul* (Shaughnessy), *Graphic Design Rules* (Bucher), *How to Create a Portfolio* (Fig Taylor), *Contemporary Graphic Design* (Fiell).

Obviously build up your own portfolio and try to get work experience in a couple of very different companies/ environments.

SPORTS SCIENCE

Please note that this is very much 'science' based in sport rather than the chance to enhance enhance your own sporting performance. There are other, very good courses too such as sports coaching, sports psychology, sports management etc.

Books to read – *Complete Guide to Sports Nutrition* (Bean), *Periodisation Training for Sports* (Bompa and Carrera) and *Sport and Exercise Science: An Introduction* (Griffin and Watkins).
Get as much practical experience as you can working alongside coaches for at least a couple of different sports and working with different age groups. If there is a local Sports for the Disabled group, this can give extraordinary insights as well as their benefitting from your help. *The Complete University Guide* suggests that the top universities for Sport are Loughborough, Exeter and Bath but so much depends on whether you want Sports Science, Sports Studies..... Management, Psychology, Therapy or even, as Bucks New and some others offer, courses linked with specific sports.

BUSINESS AND MARKETING

Books to read – *Brilliant Marketing* (Hall), *The Advertising Concept Book* (Barry), *Guerilla Marketing* (Levinson), *The Strategy Book* (McKeown), *Strategy* (Harvard Business Essentials), *Adventures of a Global Entrepreneur* (Branson), *Anyone Can Do It* (Bannatyne).
Get involved in Young Enterprise, get at least a couple of different work experience placements, advertise events at school, offer ideas of how to improve the school prospectus, get advertisers for the school magazine etc., offer your help to a local charity or volunteer bureau. *The Complete University Guide* suggests that the top universities for Business are Bath, St Andrews, LSE, Warwick and Loughborough. For Marketing specifically, the top ones are Leeds, Lancaster, Strathclyde, Newcastle, Bath, Aston and Royal Holloway.

FOOD AND NUTRITION

Books to read – *Food and Nutrition* (Tull), *Understanding Food and Nutrition* (Webster-Gandy), *Deep Nutrition* (Shanahan).

Look at sport and nutrition and contact your local NHS Trust, who should have one or two specialists to work shadow. Look at particular topics such as nutrition during pregnancy or nutrition for the elderly (great projects for an extended project). *The Complete University Guide* suggests that the top universities for Food Science are Surrey, King's London, Leeds, Nottingham and Coventry.

DRAMA

This is a really difficult one to advise on as it depends whether you are more interested in an academic course, which is like English Literature but focused on plays, or want one that is hands-on. For example, courses range from traditional acting to musical theatre, or there are ones which give experience of theatre management, technical work, or indeed work on camera.

Books to read – *So You Want To Go To Drama School* (Freeman) is very helpful. Obviously read a wide range of playwrights, experiment with different types of theatre and keep a portfolio of all you go to see, watch on TV, DVD etc. Be ready for questions on what you prefer and why, what plays you'd like to act in/direct and why and, if you are a creative writer, have synopses of your work ready to show at interview/audition.

COMPUTING

A lot depends on whether your interest is in Computer Science or in Computer Studies or, within that, in specialist areas such as Web Design, Networking, Computer Animation etc. Computer Science is more about designing the next generation of computer hardware, quantum computing etc so the emphasis is very much upon prowess in Physics and Maths (and preferably Further Maths). Where software is more relevant the emphasis is a little less directly scientific but you will still be expected to have a lot of computer experience. Look at T*he Complete University Guide* for advice on individual courses. *The Complete University Guide* suggests that the top universities for Computer Science are Imperial, St. Andrews, Bristol, Warwick, Durham and Southampton.

A good book to read is Life 3.0 (Tegmark) which discusses what being human will be like in the age of AI. Look at websites such as Webopaedia and the IEEE.

SOCIOLOGY

Aspects of sociology have been covered elsewhere. But *Homo Deus* (Harari) and anything by Gladwell, Pinker and Jared Diamond are recommended.

IN GENERAL

Episodes of the radio programme In Our Time (available on iPlayer) cover a wide range of science, history, philosophy and English topics and iTunes has lots of lessons, ideas and answers to basic questions. JStor is a digital library of academic journals on all sorts of subject. There are lots on Netflix too but don't get too distracted!

If any subject has been overlooked, feel very welcome to ask!