

GETTING INTO YOUR TOP CHOICE UNIVERSITY

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Getting into top universities does not necessarily mean just applying to Oxbridge and the other Russell Group universities. Even between them, these do not offer the full range of subjects available to take as degrees, and some of the best specialist courses may be offered elsewhere. Some of the top-ranked universities at the moment are not actually Russell Group members anyway. If you decide you do want to apply for university and decide what it is you want to do and where, you will put in a UCAS form as your application and on it you can apply for up to five institutions and courses. This conference is designed to help you make those decisions and then give you the best chance to secure a place at whichever is your personal top choice. Is that going to involve lots of extra work? Not necessarily. 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 evidence of:

- Being an independent learner
- An ability to do research
- An ability to write a clear and coherent essay
- An ability to think critically and solve problems
- An ability to contribute ideas to a discussion or debate.

WHY GO

Because your parents want you to? Because all your friends are applying? Because you can't think what else to do?

None of these are valid reasons for going on to higher education. You've got to have sufficient interest in what you aspire to do.

Deciding why you want to go to university, what you want to study and where you want to be can be daunting decisions to make but the earlier you think about them, the easier it will be when applying when you are in Y13.

Write three reasons why you want to go to university, both in the short and the long term.

1.

2.

3.

AT ALL?

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. 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 to see what they do at university. When you come to apply for university, admissions tutors will be very impressed if you can say that you have already looked over some first-year undergraduate work.

Circle the subjects that interest you, cross out the ones that you know you definitely won't be studying and put a question mark by any subject that you're not so sure about yet. If you're stuck, you can start thinking now as it is being discussed.

- Biology	-Anthropology	-Classics
-Geography	-Chemistry	-Politics/PPE
-Medicine	-Computing	-Drama
-Architecture	-English	-Engineering
-Economics	-Mathematics	-Psychology
-Theology	-Physics	-Sociology
-Sports Science	-Modern Languages	-Law
-Business and Marketing	-Food Nutrition	-History
-Graphic Design/Communication		-Music

WHAT TO STUDY

WHAT TO STUDY

What do I want to study?

Websites to help my research

Detailed descriptions and reading lists can be found on page 22

What and Where are two vital elements and it is important that they be considered in this order. You may fancy X because of the beach, Y because they're your favourite football team, or Z because you have friends there. You can very quickly grow to dislike a place, however, if you don't like the course you're doing. It is very important therefore that you make sure you know what a course involves.

If you're a linguist who prefers language to literature, you don't want a course that's primarily the latter. If you're a historian who wants to specialise in just modern history, do be aware that in some courses that means starting in 1789, in others in 1485 and it can even be when the Romans left Britain. Engineering courses can also vary between those that demand you specialise in either civil, mechanical or electronic engineering right from the start and those that postpone any such decision until the third year. Do you want a sandwich course (i.e. one with placement in industry built into it)? Do you want a joint course? All of these options require consideration.

There are plenty of other considerations too. If you're not quite up to a degree or don't want to do three years, there are foundation courses and foundation degrees. For many engineering and finance courses there are possible sponsorship schemes and then there's the whole business of whether to have a gap year (a year off) before going to higher education and what to do with it. All of these need to be thought about in the next months and years. Advisers can only provide you with the information. It's up to you to process it all and make your own decisions. If there are any questions, don't hesitate to ask. As with everything else in life, there's not the time available to hesitate for long.



WHERE TO STUDY

Once you've decided what you want to apply for, you need to compile a list of all the places that offer it. This may be a short list or turn out to be a very long one. You then proceed by a process of elimination. First cross out those places you just wouldn't want to go to, then introduce other criteria.

Would you prefer to go to or to avoid ... a big city? ... a campus site? ... London? ... the North? ... a modern university? .. an olde worlde one? Do look through the prospectuses, watch the online presentations. Above all, don't make assumptions. Warwick University is actually in Coventry; York and Lancaster Universities are not set amid the historical high spots of those two cities but are actually well outside the cities on modern campus sites. Keele University may be near Newcastle but it's near Newcastle-under-Lyme, not Newcastle-upon-Tyne, so don't mistake the area of the country.

All universities advertise open days. It's better to go and see institutions first hand if you can. It may sound expensive but it is an investment in three years of your life so will prove well worth it.

CAMPUS VS CITY UNIVERSITIES

CAMPUS

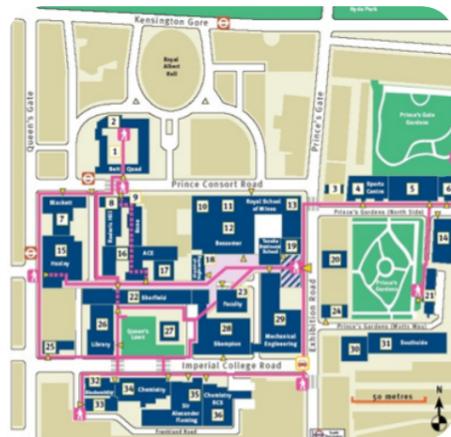
- All of the buildings, facilities, and often students are all on one distinct site
- Student accommodation is often on the same site
- Greater sense of community
- Shorter distance to get to classes



Royal Holloway, University of London map (campus university):

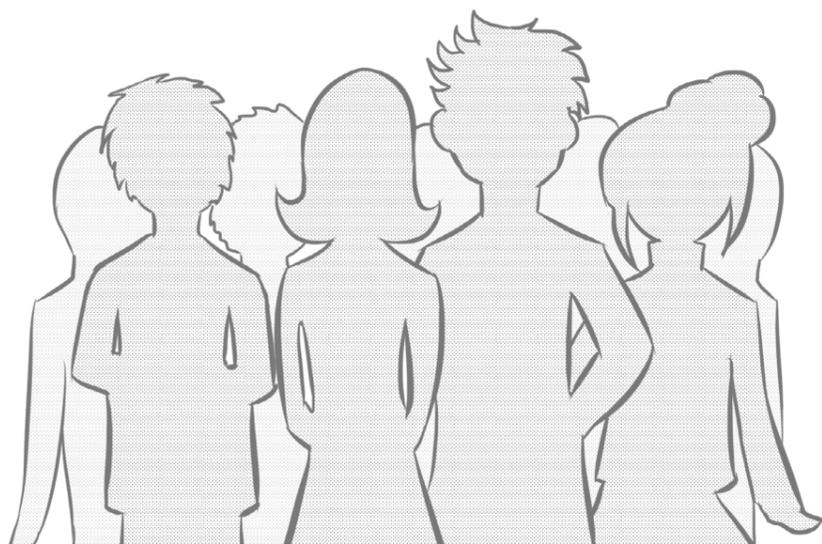
CITY

- Buildings and facilities are dotted around a city
- Student accommodation in different areas in the city – not necessarily near other buildings and facilities
- In the heart of the city
- Good transport links
- May be time consuming get to classes – you may be late to some classes if they're back to back and in different buildings

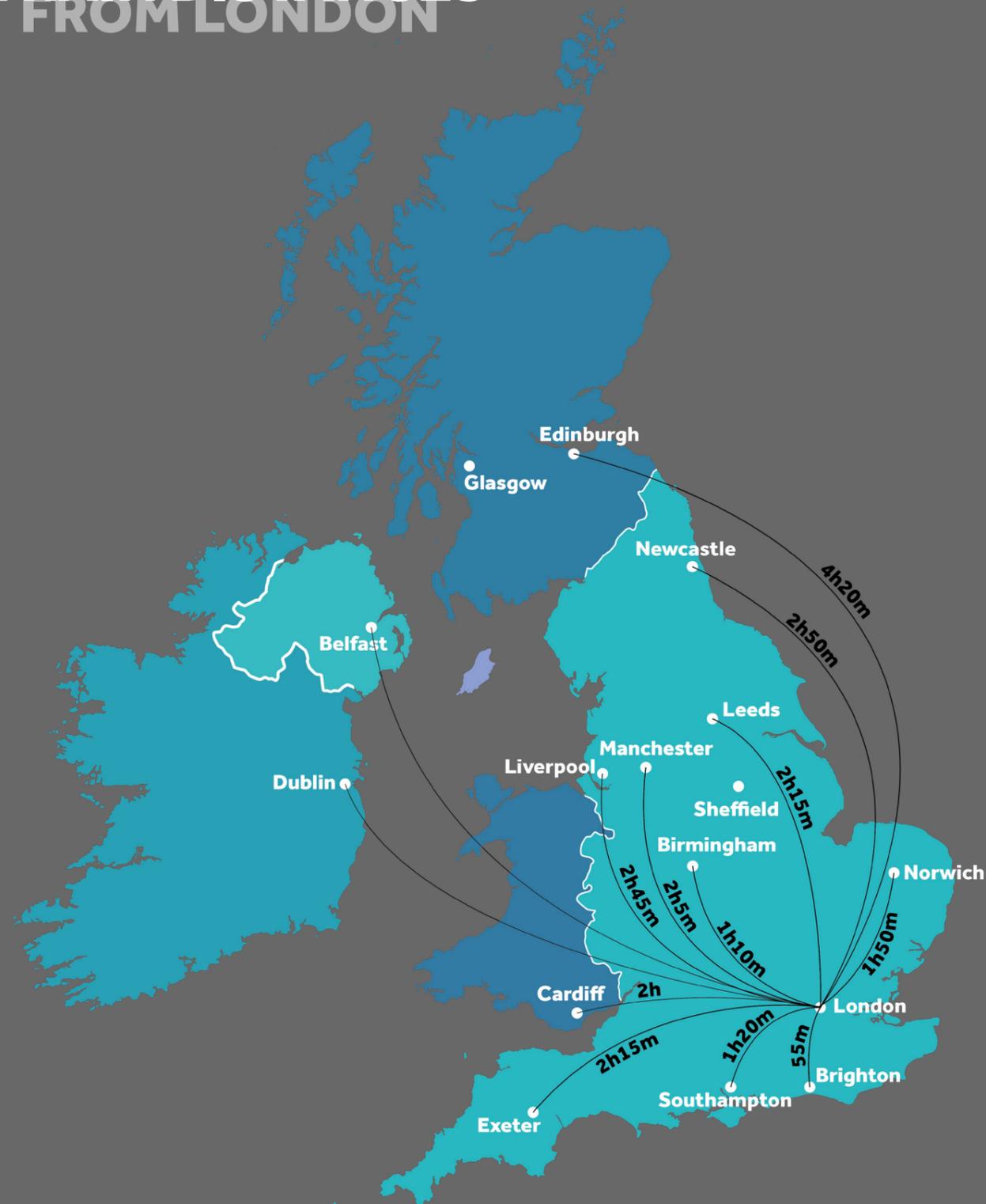


Imperial College London map (city university):

On the right is a map of the UK, marked in white are some of the UK's most popular university towns. Mark where you live now and where you think you want to go.



TRAIN DISTANCES FROM LONDON



QUESTIONS OFTEN ASKED AT INTERVIEWS

GEOGRAPHY

What evidence is there that global warming is no more than seasonal variation written large? "All talk of conservation is pointless until, or unless, we tackle population control". Do you agree? What is of particular geographical interest in your home area?

What is the point of a degree in geography?

PHILOSOPHY, POLITICS OR ECONOMICS

Are 'practical philosophy', 'ethical foreign policy' and 'green economics' contradictions in terms? What is 'free will'?

Philosophically, can it ever be right to kill?

Should we hold more referenda? Should 16 year olds have the vote?

What are the arguments for and against having fixed term parliaments?

What is the point of privatisation?

What are the consequences of charging interest rates?

These are the sorts of question that interviewers at top universities will expect you to be interested in. Apart from a good knowledge of your A Level work they will expect you to have taken an interest in the world around you and in current issues. All of these subjects are ones that require you to argue and form (and justify) your own views. The more experience you can get of that, the better.

Look for arguments and debates, accumulate ideas on both sides and decide with which side you agree and then defend that view. In interviews at university you are likely to be asked for your views and they will then argue the opposite (even if they privately agree with you) just to see how far you can hold your ground. For PPE you do not have to be politically committed but, if you are, that should give you contacts, and you should use them to get as much experience and as many ideas as possible.

QUESTIONS
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QUESTIONS
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QUESTIONS
QUESTIONS

ENGLISH, HISTORY, GEOGRAPHY AND PPE SPECIALISTS

What do you think are the qualities a good English specialist/historian/geographer/philosopher/economist needs to have?

What evidence do you think you have to show you have those qualities?

How do you think you could demonstrate those qualities?

In the specialist area you are interested in, name any four major controversies/differences in interpretation you are aware of and quote two arguments that support each side of the dispute.

ENGLISH

If you had to nominate one Shakespeare play, one other play, two novels, one modern poet, one poet from an earlier age and one foreign author to be studied at A Level, what would you choose and why?

What is the point of a degree in English?

HISTORY

If you had to nominate two historical figures, two historical events and two historical documents (a) in the 20th century (b) from earlier times to study, what would you choose and why?

"The study of history is fruitless. We can learn nothing from it because no two sets of events are ever the same." Is that true? What is the point of a degree in history?

QUALITIES

You need to be a keen reader, analytical and critical, someone who can take in a lot of information, but quickly differentiate between what's important and what isn't, able to spot bias and appreciate the context within which things are said, done or written. Take nothing for granted, don't be a passive acceptor of 'received wisdom', question everything and be very argumentative. The ideal qualification is to be sceptical. You will need to be able to express ideas clearly and concisely, so practise this both in your note-making and essays and in any creative writing. If you write short stories, poems, press articles etc., keep a portfolio and take it with you to any interview. For more ideas as to how to demonstrate these qualities, follow the instructions in the main handout.

Ideas and argument are the life-blood of these subjects so really seek to get into as many debates and discussions as you can.

MEDICS

What do you think are the qualities a good doctor needs to have?

What evidence do you think you have to show that you have those qualities? How do you think you can acquire such evidence?

What are the biggest issues facing the health service at the moment?

What are the biggest issues likely to be facing the health service in the future?

ETHICS

1. You have five organs for transplant but twenty potential recipients. Among them are a drug addict, three who smoke, two who are alcoholics, two who are obese and two who pursue extreme sports. Should any of those factors matter? How would you decide which patients received the organs?

2. There is a proposal to set up a free needle exchange scheme in your local area for injector drug users. Basically, the users would be able to exchange used needles for new, sterile ones on a strictly one for one basis. It would cost £150,000 per year to run such a scheme. What do you think are the arguments for and against such an idea?

3. You are being given £1 million with the instruction to use it to fund a health initiative in your local area. What might you choose to do and why? Think about these before looking at the answers and advice that follow.

QUALITIES

The Dean of Medicine at Cardiff once said he looked for six key things:

- 1 The potential for high academic achievement
- 2 Evidence of a caring and committed attitude
- 3 An understanding of the demands of being a doctor
- 4 An ability to communicate effectively (be approachable and be good at listening and explaining)
- 5 A willingness to accept responsibility
- 6 A broad range of other interests

You might well have chosen other good ones such as dedication, persistence, patience, optimism, the ability to inspire others' trust and confidence etc. Ideas for showing that you have them – help at a local care home, at a special unit for the handicapped, with a local charity such as Mencap.

Some local care teams have young people working with stroke victims, helping recover their mobility or powers of speech, or at school, help out with mentoring or literacy schemes, with special needs etc. If there are young students with speech handicaps or on the autism/Asperger's spectrum, work with them and via that gain insights into their condition and care, how it can be treated etc.

WHAT PROBLEMS ARE FACING, AND WILL FACE, THE HEALTH SERVICE?

There are sweeping reforms in how the NHS is being run (look up The Health and Social Care Act), there's the problem of financial limits on resources (the health budget isn't being cut but it is not rising as fast as it used to) and there are the problems of an ageing population (dementia, Alzheimer's, certain types of cancer etc).

In the future these problems will increase, certain diseases will become more drug resistant, there will be rapidly changing technology (look at the recent advances in prosthetic surgery for instance as a result of the Iraq and Afghan Wars) and there will be an increased expectation of the availability of replacement organs, gene therapy etc.

ANSWERS TO THE ETHICS QUESTIONS...

There isn't a right answer for No 1, but 'I'd put all the names in a hat' probably would be regarded as a wrong one! A 'taxi rank' view, saying that whoever had been waiting the longest also wouldn't go down well. The main factor would be clinical need. The next would be whether the patient would be able to live an independent life (that would be difficult for the addicts). You'd also take wider health and welfare factors into account – e.g. if one of the patients was a single mother with two dependent young children.

No 2 – arguments against are cost, appearing to encourage drug use etc., but if you can stop just six people contracting HIV which becomes full blown AIDS, you will save more than £150,000 a year on treatment costs. You can also offer all who come along the chance to go into rehab and programmes to come off the drugs and, at the same time, be able to monitor local use as to whether it was stable, decreasing or getting worse. That could be important when allocating future financial resources.

No 3 – £1 million is not a lot, but they would like to hear you investing it into a campaign of preventive medicine, e.g. getting expectant and young mothers to eat well so that babies are born healthier and stronger or an education campaign on smoking or drinking or STDs. Tackling obesity and preventing diabetes would make for good campaigns as well.

Get familiar with your local NHS Trust – there should be a report on how good it is and whether it has specialist units and services and how good they are. Are there any particular health issues in your area? If so, are the services to treat them adequate?

LAWYERS

What do you think are the qualities a good lawyer needs to have?

What evidence do you think you have to show that you have those qualities? How do you think you can acquire such evidence?

What current legal issues are you aware of?

Is law there to restrict freedom or to protect it?

"Good law reflects the will of the majority." Is that true?

Take a look at the accompanying scenarios and consider the legal issues (i.e. what you think are questions in law – you are not expected to have the knowledge of what the law actually says).

Dip into one or two areas of law to see what you think of them – criminal law, contract law, human rights law, tort and business and consumer law are good starting points. Land law, constitutional, family law etc. are rather heavier going.

LAW SCENARIOS

1 – A and B, living in the topmost flat of a house, wish to commit suicide. They soak all the carpets and furnishings in petrol and set light to them. The floor collapses and debris sets fire to C's flat below and C is killed. Firemen are unable to save the house or B but A is dragged out alive. Two firemen are killed trying to put out the blaze. What legal issues do you think arise here?

2 – Jim and three friends decide to celebrate the end of their GCSE exams by holding a secret party in the school library, which looks out over a main road. Between them they knock back three bottles of wine, which they proceed to throw out of the library windows at passing motorists. One of the motorists phones the police and a squad car arrives.

In the meantime, Jim has accepted a £20 bet that he will run naked around the running track alongside the library building. The police interrupt him in the middle of this and PC Coshem gets hold of Jim saying, "I am arresting you for an act of public nuisance likely to corrupt and deprave old ladies." Jim says, "there's no such charge," and struggles free, in the course of which PC Coshem is kneed in the groin. Jim is arrested for assault and taken back inside the school to collect his clothes. "Whilst we're here we might as well check your locker for drugs", say the police and they march Jim off to his locker in which they find three items of cutlery from the school kitchen.

Jim is immediately accused by them of theft. One of his three friends, Ben, is told to open his locker. He refuses and is arrested. Jim and Ben are then bundled into the squad car, but instead of being taken to the police station directly, they are driven to a nearby lay-by and questioned for an hour before being taken to a station.

There they are left in separate cells for two hours until they are brought out to make statements and then their parents are phoned to come and pick them up. The police say that

they'll probably call them back for a police warning. The two boys say they won't accept one.

What legal issues do you think arise here? (Please don't try to act out this scenario in your school!) Have a go at these before looking at the answers that follow.

These are the sorts of scenario you could get at a university interview. They do not test legal knowledge but your ability to spot what would be a legal issue, e.g. in the first one whether trying to commit suicide is a legal offence. You are not expected to know that in law now it is not an offence, although aiding someone else to commit suicide is. In early Victorian times it was an offence to try to commit suicide – oddly enough an offence that was punishable by death!

1. Whether trying to commit suicide is an offence.
Whether assisting someone else to commit suicide is an offence.

Whether setting fire to your own property can be considered an offence.

If they were renting the flat, clearly there would be an offence against someone else's property. What offence? Are they responsible for the death of C? If so, what offence is it?

Are they responsible for the deaths of the two firemen? If so, what is the offence?

Clearly there would also be legal issues over A's defence and degree of responsibility for his own actions and whether he has any sort of recognised defence.

2. If the party is secret, have they permission or right to be there? If not, is that trespass? If at night, has there been any illegal entry? Is it legal for them to drink alcohol under such circumstances?

Where did the wine come from? If it was bought, is there an issue of selling alcohol under-age? If it was taken without permission from home, does that constitute theft? If passing motorists and their cars are being put at risk of damage and accidents, what offences arise?

Does running naked around the track represent any sort of offence? If so, is the bet an incitement to crime and therefore aiding and abetting it?

Is Jim being arrested legitimately – if not, has he the right to resist? Is the injury to PC Coshem assault or, if he's struggling free, is Jim being assaulted by being

manhandled?

Is the locker search legitimate? What are the criteria for theft? Can it be theft if the cutlery hasn't left the premises? Is the search of Ben's locker legitimate? Is his arrest legal? Are the rules for the treatment and questioning of juveniles being breached in the treatment of the boys after they are taken from the school?

Is it right that they make statements before parents are contacted and there is no suggestion of legal representation?

Can a police warning be given, if the so-called offenders don't admit guilt?

MATHEMATICS AND SCIENTISTS

What do you think are the qualities a good mathematician/scientist/engineer needs to have?

What evidence do you think you have to show that you have those qualities?

How do you think you could develop those qualities?

How many current research projects in maths, science or engineering do you think you could talk about for 3 minutes or more?

TWO PROBLEMS TO HAVE A GO AT...

1 – "Drug use doubling in our schools" screamed the newspaper headline.

This was based on a survey of 9,000 schoolchildren aged 11-15 from 305 different schools. They had all been asked, among a host of other things, whether they had used cocaine during the past year. 2% were recorded as having said "Yes". This was compared to a survey done the previous year, where only 1% had been recorded as saying "Yes". All the other statistics quoted from the survey were quoted in whole numbers. Is the newspaper headline necessarily justified?

2 – Companies selling olive oil used the following in a campaign to promote their product, claiming that olive oil could help prevent skin wrinkling. "An Australian study in 2001 found that olive oil (in combination with fruit, vegetables and pulses) offered measurable protection against skin wrinkling. Eat more olive oil by using it in salad

dressings, or dip bread in it rather than using butter". How valid is the claim?

(Both of these examples come from Ben Goldacre's book *Bad Science* – much to be recommended to all scientists.) Think about these before looking at the answers further on. What follows are typical of the questions you'd be expected to be interested in and to have tried to follow up.

MATHS

Is maths invented or discovered? Is maths a language? "Maths is mostly abstract and irrelevant" – is that true? Some people talk about 'the beauty of maths' – what do they mean?

PHYSICS

Why does 'dark matter' matter? What is 'light'? What is the 'quantum' in 'quantum physics'? Can you explain why we only ever see one side of the moon? Is life possible without gravity? Explain Archimedes' principle.

ENGINEERING

Why does a boomerang come back? Compare the avionics of a jumbo jet and a microlight. How does a helicopter stay up in the air? Show the forces acting on a ladder. How does a microwave work? What is the difference between a petrol and a diesel engine in a car? What do you need to take into account when building a bridge?

CHEMISTRY

Why does the boiling point of water rise as salt is dissolved in it? What makes some chemicals explosive? What makes drugs physiologically active? Sketch the graph of what happens when a strong acid is titrated with a weak base. Explain the shape.

BIOLOGY

Why is carbon so important in living systems? What are the arguments for preserving biodiversity? What effect do you think global warming could have on the evolution of species? How could you test to see if a disease such as schizophrenia is genetic? What are probiotic drinks and how do they work?

...that last question is typical of what interviewers at top universities will expect you to know. Apart from a good knowledge of your A Level work they will expect you to have taken an interest in the world immediately around you and in things that are relevant to what you say you are interested in. Scientists are expected to be CURIOUS, i.e. to want to

know not just that things work but why and how they work. They'd also be interested in whether you can see practical implications and applications from this knowledge and possibly, as a result, be creative and discover or invent new things. Don't worry – you're not expected to be winning Nobel prizes whilst still at school – just obviously keen to push both your own and the subject's boundaries.

QUALITIES

Need to be good analysts, to enjoy the challenge of problem-solving, be determined not to be beaten by things and have a keen desire to know/find out things. Engineers need to be good communicators and most engineers and scientists usually work in teams, therefore they need to be good team members. Chemists in particular need good practical skills. To develop them requires practice (especially true of mathematicians). Do wider reading and research, follow up on ideas and start seeing connections between different fields of research and how they might work together to push the boundaries of science. Interest in current research reflects how keen you are on science.

ANSWERS TO THE PROBLEM

1 – A non-statistical point: the use might not necessarily have been in 'in school'. Statistically: all results were quoted 'in whole numbers' i.e. rounded up or down, which could misrepresent the real figures. In fact, the figure the previous year was 1.4% (rounded down to 1) and the next year was 1.9% (rounded up to 2). The difference therefore was only 0.5%. 0.5% of 900 = 45 students – not statistically significant.

2 – 'Could help' is not the same as any sort of certainty, 'measurable' could be very little indeed and, as it's in combination with other things, it could just as easily be the fruit, veg and pulses that are having that measurable effect. The rest are ideas/questions of the sort to follow up on – not necessarily those same ones but equivalent ones. Note that in each subject there are specialist areas, e.g. chemistry, physics, biology. In engineering especially, there is a need to decide whether you'd prefer to do general engineering or specialise in one of the areas straightaway.

SOME FINAL

Use local universities and their departments, which often have public lectures, go to open days and ask for ideas. Hearing from them what current research is going on will always be useful and good to follow up on and show awareness about in your personal statement and, if you get the chance, at interview. The colleges of London University put on Taster Days and courses each June and July (details are usually published in February/March). They are usually free and will give you really useful insights into what studying certain subjects at university will be like. If your school does the Extended Project Qualification, have a go at it – it is brilliant evidence of being an independent learner, researcher and of being able to write an extended essay. The Sutton Trust offers excellent summer schools at a number of universities and is a non-profit making organisation so keeping the costs down and there are scholarships if the cost is beyond your means. Above all, look at MOOCs – online taster courses from all over the world that give you an insight into what studying a subject at university level will be like. The best provider is FutureLearn and the courses are free.

If you are serious about wanting to aim for your top choice university (and why not?) ...the challenge I am setting you is this: get the best results you can in the courses you are currently taking and, alongside, do three extra things each month that are specific towards reading round and researching what you think you might want to apply for. Over time, that will build up to be a really strong body of evidence to use in your application to show that you should be given a place. Remember it is a competitive business, but with the right preparation and enthusiasm (that's hugely important), you should be in with a very good chance. Hopefully I am only asking you to discover things that you will enjoy doing so it won't seem like much extra work at all!

Enjoy the journey and best of luck.

Peter Rawling



The survey conducted at Russell Group universities across all departments highlighted the skills that it was thought – (a) all undergraduates need to have (b) that applicants increasingly seem to be lacking and therefore (c) applicants ought to try and reflect via both their personal statement and reference.

1. An ability to work independently.
2. An ability to write a clear and coherent essay or report.
3. An ability to think critically.
4. An ability to solve problems.
5. An ability to manage time effectively.
6. An ability to contribute to a discussion.
7. Numeracy.
8. An ability to work in a team.

These are regarded as the core skills, with the ability to work independently as the first and foremost. Any lecture of one hour should, they believe, lead to five to six hours of personal study, so it is essential that students know how to do follow up work, use books and research for themselves. Anything that indicates that they have these skills is bound to win points in any application.

We know studying is hard... it's meant to be! But what do we do when things get tough? How do we make sure we start out on the right foot and move in the right direction? What if things don't quite go as we hope? Can we still pull it round?

Managing our own learning means being resilient, independent and dealing with both success and failure. Below are some points for you to think about. Take a moment to answer the questions and, as you go, keep a record of your answers and revisit some of them throughout the next eighteen months to help keep you on track.

Once you have diagnosed that there is a gap in your knowledge or understanding of something, YOU have to take the responsibility for rectifying that. One suggestion is to follow the PiXL 'Diagnosis, Therapy, Testing' methodology.

1. You have received some work back that has indicated you have a gap in your knowledge.
2. Make sure you are very clear on what you have NOT understood - your teacher may give you a PLC type document. PLC stands for Personalised Learning Checklist. In other words, it's a specific list of things that highlight where your knowledge/skills gaps are in order for you to be able to address these and master this subject.

"Surround yourself with people who challenge you, teach you and push you to be your best self."

- Bill Gates

3. Create your own 'Personal Currency Plan' that states WHAT you will do, WHEN you will do it and HOW you will be tested to show your progress.
4. Decide what resource will help you – ask your teacher for PiXL Independence booklets, any PiXL subject apps available and/or PiXL Knowledge Know It, Grasp It, Think It mats, there are lots of these, as well as anything else your teacher will direct you to.
5. Now test yourself. Set yourself a quiz, a short answer response or an extended answer response. Use the ones in the PiXL Independence booklets or ask your teacher for a suitable test if you are not sure. KNOW that you have secured what you need to by testing yourself in independent and timed conditions.

The most important thing is to remain positive. Everyone wants the best for you. You will be pushed and challenged but, as the quote at the start states, this is what will make you most successful.

TOP TEN TIPS

Now is the time to begin thinking about what you might wish to do in the future. There are so many opportunities out there that you cannot start early enough to understand them and do any preparation or research. Your school or college will certainly have careers programmes in place to help you with all of this but getting on the front foot, rather than waiting, is the best way of showing initiative – a key skill that employers look for.

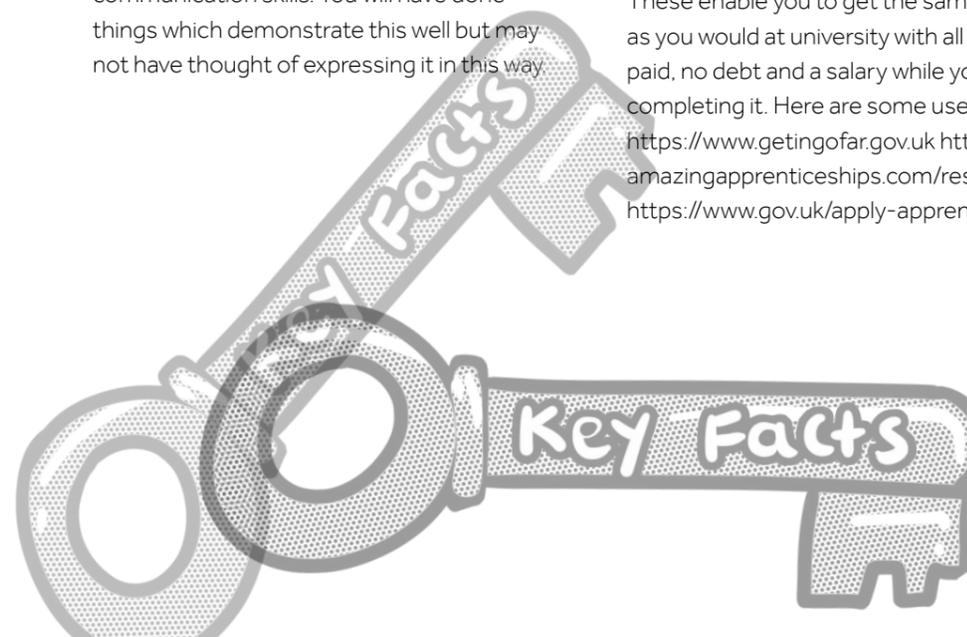
Here are my ten top tips for you to consider in the coming months:

KNOW WHO YOU ARE

1. The first thing is to reflect on what kind of person you are. The following link is to an online tool that will help you to think about this. We all have particular strengths and aptitudes and it is important to play to these. <https://icould.com/buzz/?ref=menu>
2. Interviewers often ask for examples of things you have done and the skills you have developed. Think about examples where you have demonstrated leadership, organisational skills, resilience, initiative and communication skills. You will have done things which demonstrate this well but may not have thought of expressing it in this way.

DO THE RESEARCH

3. When you get to the stage of applying for the next step, some of the options can be very competitive. Show that you have done some research into what the course/ apprenticeship or job entails.
4. You may already have an idea about the kind of career direction you may wish to go in. Don't worry if you haven't. You are already ahead of the game by being here today. Now is the time to find out about what exists. A good starting point is to use this website <https://icould.com> which contains a whole host of short videos of people talking about their jobs, including ones we may have never heard of. It is easy to go for the most familiar careers but there may be others which are in the same field. So for example there are many different roles within the fields of medicine other than doctors, and many different kinds of roles within engineering.
5. University may be the best option for you and this is covered in the next section, but do you know about apprenticeships options such as the new degree apprenticeships? These enable you to get the same degree as you would at university with all fees paid, no debt and a salary while you are completing it. Here are some useful links: <https://www.getingofar.gov.uk> <https://amazingapprenticeships.com/resources/> <https://www.gov.uk/apply-apprenticeship>



6. Investigate the labour market for the routes in which you are interested. Careers advisers can help with this and you can also explore with this useful widget <https://ideas4careers.co.uk/careerometer/>. Avoid the trap of just looking at those jobs that are familiar to you or make assumptions about gender stereotypes. You may be missing out on opportunities. For example, don't fall into the trap of thinking that a field like construction is just about manual labour. Think about all of the technologies, all of the design careers, the administration, finance, marketing and much more, and do some research into what these are and what the entrance requirements might be.
7. Keep your options open. You don't have to decide now and can, for example, apply for university and apprenticeships.

BUILD UP A PORTFOLIO

8. Prepare a CV that demonstrates how proactive you have been and the opportunities you have sought out in order to prepare for the future and update it regularly.
9. Get on the front foot about gaining some work experience opportunities. Use your school/college holidays to spend some time in workplaces. Your school/college might be able to help you with this but if you make the approach directly and ask yourself, the answer is often positive and employers are impressed at your initiative.
10. Get involved in voluntary or community activities which demonstrate what kinds of employability skills you have developed. This organisation is a great source of volunteering opportunities: <https://vinspired.com>.

Above all, remember that you have the power to shape your own future. I wish you the best of luck with that journey.

- Brian Lightman

THE UCAS

PROCESS PROCESS PROCESS PROCESS PROCESS PROCESS PROCESS

QUALIFYING

What must not be forgotten in all of this is that you do have to qualify for places. There may well be ten or more students competing for each place: you have to be competitive enough to win one of them. Some universities are more demanding than others in terms of the grades they expect you to get. It is pointless to apply to universities that all demand three As at A Level, when realistically you are going to get B-B-C.

One of the reasons for addressing the issue of higher education so early is to give you maximum time to decide what you want to do so that you can then work to get the grades you'll need to qualify for it.

APPLYING CHECK DATES/YEARS

You apply to university through UCAS, the Universities and Colleges Application Service and you apply online, using a buzzword that is allocated to the school each year.

You can apply for up to five universities, so you can afford to apply to one or two for whom the grades needed are going to stretch you, two others that may be more realistic and then one that can act as an insurance choice. **DO NOT APPLY TO ANYWHERE YOU DON'T WANT TO GO** – that just wastes time.

You do not put your choices in any order of priority. If you are applying to Oxford or Cambridge or for medicine, veterinary medicine or dentistry, you have to get your application in by October 15th in Year 13.

The UCAS deadline for all other applications is officially January 15th, but in these competitive times you should aim to get your application in no later than November 15th.

All potential applicants should make sure that they know about these and attend these.

There will be a lot of information in your school library and the sixth form area. Do look at all of this and take advantage of higher education conferences, university open days (particularly local ones) and links can be established with students who are doing/have done courses you are interested in. Personal meetings can be key. Websites with student feedback on them are also useful.

All the work on this needs TIME. Don't leave working on this until the end of the year or, even worse, until next year. The time to be doing it is NOW in Year 12, especially if you want to compete for top places. Getting them is a marathon, not a sprint but the rewards are well worth it. Not much beats the satisfaction of getting the outcome you want from the two years you've invested in the sixth form and feeling that it's all been hugely worth it ... so go for it.

THE UCAS FORM

Your UCAS application form is filled out online and, for the most part, is pretty straightforward. However, it is important to get it right as any mistakes may be hard to correct later on.

It is also important to fill in the form and send it off **EARLY**.

The official deadline for applications to Oxford, Cambridge, medical, dental and vet schools is October 15th. There is no particular advantage to be gained by getting the form in much earlier, but equally you do not want to be rushing at the last minute and risk making mistakes.

The official deadline for other applications is January 15th but there is potentially a very big advantage in getting forms in **MUCH EARLIER**. Universities are looking to recruit good candidates and, if a strong application comes to them early, they are quite likely to want to influence that applicant to go to them by making a generous offer. Such offers may be less generous later on when they find they have many more applicants than they have places left. It has also been known for university departments to hear only in November that due to cuts their number of places is being reduced and they suddenly find themselves with only a few places left to offer. In order to be ready to get the form in early, you really have to do a lot of research and planning at the end of Year 12, particularly in the period after exams.

THE PERSONAL STATEMENT

There are whole books of advice on this and a lot of students get very hung up about it and produce loads of drafts to try to get it "just right". There is no perfect statement.

Allow it to be PERSONAL, i.e. a proper reflection of you, a portrait that your teachers and best friends would recognise, not simply adapting someone else's statement or downloading one from the internet or other online service. Don't try to make it sound too formal or over-intellectual, using lots of long words, philosophical quotes, etc. Keeping it relatively simple will help make it clear. Tutors tend to read them through quite quickly, so a statement that is incoherent and hard to follow is likely to be rejected quite quickly too.

It should be about 80% academic*, 20% personal.**

*Why do you want to read that subject/course at university? Don't claim that you leapt from the womb with a burning desire to read your subject – (a) because you didn't and (b) because it sounds ridiculous. Admissions tutors do not make this easy for you. I've heard plenty of them say that they'd like to ban the "P" word – "passion" – from all personal statements yet a strong level of interest (and evidence of it) is what they are looking for. The best way to show that is to let it become obvious from the things that you've done and what you have picked up from them.

Clearly you wouldn't have done a lot of wider reading unless you were keen on something, so you can quote what you've read and say that it "led you to read" or "inspired you to read" more and then mention what that was. Similarly, if you've done something like appropriate work experience, work shadowing, attended a special course, etc. don't just

mention it, but reflect on what you got out of it and on any follow up you've done or will be doing. If there are areas of the subject you particularly look forward to developing, mention them and say why. Be careful though that you don't direct what you say at just one university in particular, unless that one is the only place you are applying to. I have known students make their application so slanted towards Oxford or Cambridge that other universities have rejected them on the grounds that they didn't think they really wanted to go to anywhere else.

Get other people to read over your statement to see whether they (a) can follow it and (b) feel impressed by it. If both are true, it clearly reads well.

** The idea that you can get into university just because you can offer a lot to their sport or musical life went out a long time ago. They do want you to do other things and they do want to enrich their own environment but these are factors alongside and "as well as" your academic ability not "instead of" it. Interests that are relevant to what you want to study should obviously be emphasised e.g. outdoor pursuits, Duke of Edinburgh Award if you are applying for adventure education, charity work and work with other people if you are applying for medicine, etc.

Don't get too desperate for things to say – exercise book monitor back in primary school probably doesn't sound too relevant now and putting in "reading, listening to music and socialising with my mates" can pretty much be taken for granted. If you do put in things like "music" or "reading", be more specific and say what it is you like to listen to or read. One warning, however: don't lie. I did have a student who thought he'd impress by saying he liked to read Dostoyevsky. He may have meant to read Russian literature, but hadn't by the time his interview came up and looked a complete idiot when then asked to have a conversation about what he liked best about Dostoyevsky's works by

an interviewer, who it turned out was a big fan of them. Remember that if you are applying for a course where you are likely to be interviewed, what you write in the personal statement is likely to get picked up on so make sure you can back up and expand on what you say there.

If you do not have enough room to put in all that you would like in your statement, have a word with whomever is going to write your reference. He or she may be able to mention things that you don't or can't and sometimes things are better said about you than by you. Clearly it will be more convincing if your referee says that you're brilliant at something than you trying to say that and sounding boastful.

N.B. Make sure you get on well with your referee!

Before you hand in your final version of the personal statement or type it up, check all your use of words, punctuation and grammar. Sometimes we are blind to our own mistakes, so get someone else to check for you. I did once have someone applying for psychology who'd written that he was "arranging work experience with a psychopath in London". It was only on the third check that he saw what he'd said!

Offers

It would be great if you received offers from all of the places you apply to. These may come through quite quickly or over quite a long period. Some medical schools are quite notorious for not making decisions until late March or even April. It is quite possible that you may get a very seductive offer from a university, which is clearly very keen to recruit you. For instance, a university may say that it will give you an "Unconditional" offer, if you make it your first choice. When all of your offers are in, you have to make a FIRM and INSURANCE choice, i.e. where you will definitely go if you meet the Firm choice's conditions with your results but, if you don't, where you'll go as an alternative, subject to qualifying there.

These choices need careful thought. Don't just accept an unconditional offer to take the pressure off and make life easy for yourself, especially if it's from somewhere that wouldn't have been one of your top choices. Even if your top choice gives you an unconditional, still aim to get the best grades you can. If your potential is to get 3 As, don't stop studying and just accept lower grades as an alternative. Your A Level results stay with you for the rest of your life so you

don't want to be looking back forever feeling that you could, and should, have done better. It is also true that later on, when it comes to applying for research grants or jobs, you will often be asked what your A Level grades were so they can haunt you for a long time.

After 13 years in education, you want the very best return on that time so give it your very best shot – you'll never regret doing that.

General guidelines for writing personal statements on UCAS forms

Don't get over anxious about writing a perfect personal statement. The amount of time spent reading it at university will be far less than the time you take to write it so some basic rules:

1. Do not copy anyone else's or download examples from websites.
2. Keep it personal so that friends and teachers can recognise you from it.
3. Keep it 80% focused on what you are applying to study and the evidence that you have of the skills needed to do it.
4. Keep the language simple so that your evidence comes across clearly.
5. Don't just list things... talk in terms of what you've done to follow up on anything you've read, heard in a lecture, seen in work experience, etc. (i.e. that you have done as an independent learner).
6. If you have too much to fit into the 4,000 characters, have a conversation with your referee to have that extra stuff quoted in your reference.

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), *Mendeleev'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 Ophthalmobook* (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.

The 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 psychologist* (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 *The 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!

What do I want to study?

Websites to help my research

USEFUL WEBSITES

Each of the following should prove of value:

- www.ukcoursefinder.com
- www.bestcourse4me.com
- www.purepotential.org
- www.push.co.uk
- www.thestudentroom.co.uk
- www.fasttomato.co.uk
- www.opendays.com
- www.thebigchoice.com
- www.studentfinancedirect.co.uk
- www.gapyear.com
- www.guardian.co.uk/education/universityguide
- <http://unistats.direct.gov.uk>
- www.uniaid.org.uk
- www.prospects.ac.uk
- www.hero.ac.uk
- www.yougoofurther.co.uk
- www.ted.com
- www.futurelearn.com

STUDENT FINANCE INFORMATION

Finance may be a worry for some students with extensive media coverage about vast amounts of 'debt'. Whilst there is no denying that debt will be incurred, it is not all doom and gloom. It certainly isn't a case of needing thousands of pounds and the need to be from a financially affluent background before you go – not at all!

1. You can apply for a **tuition fee loan**: this money goes straight to your university and will cover all of your tuition fees (this is currently capped at £9,250 for the 19/20 academic year).
2. You can also apply for a **maintenance loan** which helps you with your living costs such as accommodation, utility bills, course resources, food etc.

*****You do not need to start paying these loans back until you earn £25,725 per annum (as of 6 April 2019)! *****

So, if you are earning £30,000 you would repay £385 per year, that's just £32 per month – often this is a lot less than a monthly mobile phone contract! After 30 years, any outstanding debt you owe will be written off. It is estimated by the Institute of Fiscal Studies that only 17% of students will pay their loan off in full during their working life.

There are also a plethora of **scholarships, bursaries and grants** which are available from universities, local authorities and charities – **this is free money which does not need to be paid back!** Some of these are awarded on academic achievement, others on extra-curricular participation and others simply by living in a certain area. All universities offer a hardship fund too. When you are attending your open days, ask the universities what extra funding is available to you, you'll be surprised what is out there.

Try not to think of the impending debt but how much of this you will actually pay back; those who earn a lot will pay back a lot, those who don't earn a lot will repay little or nothing.

FURTHER INFORMATION CAN BE FOUND AT:

<https://www.gov.uk/repaying-your-student-loan/when-you-start-and-finish-repaying>

<https://universitywhich.co.uk/advice/student-finance/quick-guide-to-fees-and-finance-if-youre-studying-in-england>

<https://www.moneysupermarket.com/money-made-easy/student-loans-how-do-they-work/>

Best of luck from the PiXL Futures team!

