THE SIXTH FORM

AT CRANLEIGH ABU DHABI 2017-18

CRANLEIGH
ABU DHABI


CRANLEIGH

A DIFFERENT APPROACH TO THE SIXTH FORM

2017 will see the opening of the Cranleigh Abu Dhabi Sixth Form Centre which will be a modern and inspiring space on the second floor of the Senior School Building.

Our approach will be different to other schools in the UAE. We will be embracing Harkness – the innovative discussion-based teaching and learning method that prepares students for the independent style of academic life required at university. In addition, we have built a very focused A Level programme using career pathways as the starting point.

Avoiding First-Year Drop Out

One of the key issues we are seeking to address through this approach is the university drop-out rate. According to the OECD's Highlights from Education at a Glance 2010, among the 18 OECD countries for which data is available, some 31% of students who enter tertiary education leave without a tertiary qualification.

The pairing of Harkness tutorial-style teaching with carefully chosen subject combinations should mean that Cranleigh alumni will not add to the pool of first-years who drop out because they are not adequately prepared for university life.

It is our intention to help students make careful, smart subject choices with a specific, goal oriented future in mind. We understand what universities are looking for. We know what subjects are required for leading degree courses at the top international institutions and we will guide our students accordingly.

What are A Levels?

A Levels (short for Advanced Level) are the British curriculum qualifications that are offered for students aged between 16 and 19.

A Levels are internationally recognised and respected as academically challenging and weighty qualifications. The range of A Level subjects has diversified in recent years. However, it is the pure – or what The Russell Group[1] terms 'facilitating subjects' that remain the most valued. Not only do they support entry into the traditional professions such as medicine and engineering, but they also give maximum flexibility for those students who have not yet decided on a specific career destination within their chosen pathway.

In the light of this, our programme will concentrate on the highest possible levels of teaching and learning in these facilitating subjects which, in the right combinations, will allow our students to enter the world's leading universities on the course of their choice.

Retaining Balance

A Levels are demanding. Dedication and high levels of academic effort will be required to ensure students achieve the grades they are capable of.

However, the Cranleigh philosophy hinges on the development of the whole child. We set great store by this and work to ensure our students are fully rounded, thinking global citizens by the time they leave us.

This developmental approach will continue into Sixth Form with the provision of timetabled sessions for extra-curricular activities including music and sport as well as lateral academic endeavours like Model UN and The Purvis Society – our senior enrichment programme. Our after school programme will remain extensive and students will have the opportunity to complete the Duke of Edinburgh International Award scheme.

In addition, we will be introducing the Extended Project Qualification (EPQ) which is delivered in one of four ways: dissertation, investigation, performance or artefact. It is equivalent to half an A Level.

Finally, a bespoke Scholarship Programme will be launched to support individual passion and talent both within the sphere of academics but also beyond. The intention is that we attract, recognise and support students with a particular interest and aptitude in anything from piano to rugby.

The rest of this brochure expands on the points made above.

[1] The Russell Group comprises 24 leading UK universities including Oxford & Cambridge. Facilitating subjects are: Maths, Further Maths, Physics, Chemistry, Biology, History, Geography, Languages (Classical or Modern), English Literature.

What I have in mind is [a classroom] where [students] could sit around a table with a teacher who would talk with them and instruct them by a sort of tutorial or conference method, where [each student] would feel encouraged to speak up.

This would be a real revolution in methods.

Edward S. Harkness

EMBRACING A HARKNESS LEARNING CULTURE

At Cranleigh, we are committed to the development of the capacity for independent learning. This commitment is based on a belief that education in which young minds are allowed the space for reflective enquiry is both more effective and more enjoyable, as well as being integral to personal development.

The capacity to learn in this way is not innate. It is acquired through a process of careful facilitation and deliberately planned processes of instruction.

In place of being taught what to think, students are taught how to think, in the expectation that they will increasingly take charge of their own learning processes.

Harkness will Further Evolve Independent Learning

At its heart, our approach involves stimulating students to learn through enquiry. To be alert, engaged and responsive to the questions and challenges that life in a complex, plural, fast-changing world constantly generates, and to learn to respond to these with the courage to formulate their own ideas and put these to the test.

With this style of pedagogy already an intrinsic part of our DNA, the decision to embrace Harkness style teaching for Sixth Form in Abu Dhabi was a very natural next step. Harkness is an approach that allows students to further develop their independent thinking. Indeed, that is one of its most fundamental aims.

The methodology was developed by philanthropist Edward Harkness in the 1930s at Phillips Exeter Academy in Boston, USA. Disillusioned with his own school experience, Harkness sought to evolve and improve the process of education by reversing traditional classroom habits. Instead of the teacher delivering the lecture, Harkness style teaching sees the students lead their lessons in small groups around an oval table. Teachers become facilitators in this scenario, guiding discourse rather than delivering it.

Preparing Students for University

These discussion-led classes depend on students having prepared for the lesson in advance. Not only does this help to improve their abilities in research and analysis, but it also ensures they explore, extend and reinforce understanding as a group through considerate and intelligent dialogue. Confidence, critical thinking, listening and collaboration are some of the key life skills that are developed and honed as a result of this approach.

By the time students reach the Sixth Form, most are able and want to enjoy learning in the kind of tutorial environment Harkness presents. Given this style is much more akin to university than school, it will provide our Sixth Formers with an excellent foundation for the next stage of their academic careers.

Not every lesson will be suited to the Harkness style of teaching. More traditional classroom methods will be used as appropriate, but Harkness will be a core tenet of the Sixth Form experience at Cranleigh Abu Dhabi.

"Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand."

Confucius, 450BC

THE A LEVEL PROGRAMME

Our Sixth Form academic curriculum will be based around A Levels, with the opportunity for students to undertake the Extended Project Qualification (EPQ), a self-motivated, free-standing project that is worth half an A Level. The EPQ is explained in more detail further in subsequent pages.

Career Pathways Provide a Starting Point

Cranleigh Sixth Formers will be able to study A Levels that will facilitate entry into the following career pathways: Biological Sciences; Physical Sciences; Human Sciences; Computer Science; Finance; Business and Humanities. The following table details subject combinations and a number of example professions in each of these pathways.

Note that this is not an exhaustive list by any means and while these are some classic combinations, they are not the only ones. Individual universities and colleges publish their own preferred requirements and this information is usually available on the admissions sections of their websites.

Advice for Students Still Deciding on a Career

For those students who may not yet be totally sure of their preferred professional destination, we recommend choosing from The Russell Group's 'facilitating subjects' to retain maximum flexibility.

The Russell Group comprises 24 leading UK universities including Oxford & Cambridge. Facilitating subjects are: Maths, Further Maths, Physics, Chemistry, Biology, History, Geography, Languages (Classical or Modern), English Literature.

"It is so disheartening when young people with huge potential want to apply to a Russell Group university but discover too far down the line that they haven't studied the A Level subjects the university requires for the course."

"Our consistent advice is that taking two facilitating subjects will keep a wide range of degree courses and career options open to you. This is because these are the subjects most commonly required by our universities and hundreds of courses require one or more facilitating subjects."

Dr Wendy Piatt, Director General of the Russell Group

Facilitating subjects are valued not only for their pure academic content, but also for their rigour and the level/type of intellectual skills they require and develop. As a result, some subjects which one might assume would only lead to specific career pathways, can in fact open seemingly unrelated doors. For example, highly respected A Levels such as Maths, Chemistry and Physics are prized by investment banking groups.

Our A Level programme will grow in the years ahead and the grey columns in the table opposite give an indication of how it will evolve to embrace subjects relevant for careers in Design and the Creative/Performing Arts as well as in Languages.

Finally and very importantly, when considering career pathways and associated subject choices, we strongly encourage students to choose subjects that interest them and in which they have ability. This is usually the way to ensure they achieve the best possible grades and end up in a career that will be both challenging and rewarding.

"If the range of options that you have is reasonably sensible, take the subjects you think you will enjoy most."

Oxford Royal Academy

HOW TO CHOOSE YOUR SIXTH FORM SUBJECTS:

Do you already have a career in mind?

Biological Sciences
Example Careers
Environmental Science
Forensic Science
Marine Science
Medicine / Veterinary / Dentistry
Pharmaceuticals
Recommended subjects:
Biology, Chemistry, Physics, Maths

Physical Sciences
Example Careers
Astronomy
Engineering (all types)
Pure Science
Recommended subjects:
Further Maths, Chemistry, Physics, Maths

Human Sciences
Example Careers
Anthropology
Psychology
Sociology
Recommended subjects:
Biology, English Literature, History, Geography, Maths

Computer Science
Example Careers
Information Systems
Programmer
Developer
Network Manager
Recommended subjects:
Further Maths, Computer Science, Physics, Maths

Finance / Business
Example Careers
Accountancy
Actuary / Statistician
Banking
Entrepreneur
Management
Recommended subjects:
Further Maths, Business Studies*, Computer Science, Economics*, Maths

Humanities
Example Careers
Archaeology
Law
Diplomatic Services
Journalism
Government Policy
Recommended subjects:
English Literature, History, Geography

Design
Example Careers
Architecture
Artist
Interior Design
Product Design
Recommended subjects:
Art, DT, Maths, Physics

Creative/Performing Arts
Example Careers
Creative Writing
Fine Art
Photography and Film
Music
Drama/Dance
Recommended subjects:
Art, Dance, Drama, English Literature, Music

Languages
Example Careers
Diplomatic Service
Media
Translation
Travel journalism
Recommended subjects:
Arabic, French, Spanish, Native exam support

AVAILABLE IN YEARS TO COME

Not sure about a career yet?

Russell Group Facilitaitng Subjects

Any combination opens the path at top universities to numerous degrees that require no specific A levels.

- English Literature
- History
- Languages (Classical or Modern)
- Maths and Further Maths
- Physics
- Biology
- Chemistry
- Geography

Choose whether to study three or four A Levels:

A Levels are demanding, and we recommended three A Levels for most students. Only the most able should consider four A Levels.

A Level One - 6h	A Level Two - 6h	A Level Three - 6h	EPQ - 3h	Private Study / Assembly / ECA / Any ADEC Requirements - 13h	Optional ASA's

Weekly hours – Three A Levels

A Level One - 6h	A Level Two - 6h	A Level Three - 6h	A Level Four - 6h	EPQ - 3h	Private Study / Assembly / ECA / Any ADEC Requirements - 7h	Optional ASA's

Weekly hours – Four A Levels

Now choose no more than one subject from each column:

Subject Columns			
Column 1	Column 2	Column 3	Column 4
Biology	Chemistry	Economics*	Arabic
Business Studies*	Computer Science	History	Geography
Further Maths	English Literature	Physics	Maths
Maths			

*We would advise against a combination of Economics and Business Studies. Some universities will not count them as two separate A Levels, and others prefer breadth in place of this combination, even if they allow it.

What if I don't see an A Level that I wish to do?

Regrettably we can only offer a relatively limited, but very carefully selected set of A Levels in our first year. Please remember that many degree courses that you might think require A Levels in the subject do not. Some specific examples are:

- Business Management
- Law
- Philosophy
- Politics
- Pyschology

Sample Titles

- Is it possible to synthesise aspirin in the laboratory?
- Is the pen mightier than the sword? An exploration of three influential novelists.
- Creating a business case for a start-up technology company.
- Is idealism in international relations feasible in the modern world?
- Create an amplifier for an electric guitar.
- An exploration of the power of music to affect mood.
- Who am I? A film exploring personal identity.
- Creating an online advertising campaign for a drinks company.

A number of our students are already well prepared to take on the challenge of the EPQ through our Enrichment Programme and in particular, the Scholars' Showcase which involves extended project work that paves the way to this higher level thinking.

THE EXTENDED PROJECT QUALIFICATION

The Extended Project Qualification (EPQ) is a qualification taken by an increasing number of students in the United Kingdom, where it is equivalent to half an A Level. The EPQ is part of level three of the National Qualifications Framework and is currently graded A* to E.

Dr John Taylor, Cranleigh UK's Director of Learning, Teaching and Innovation, is one of the pioneers responsible for the national development of the EPQ and will be guiding and supporting its delivery at Cranleigh Abu Dhabi.

- There are four different types of project. Students can choose to write a dissertation, carry out an investigation, give a performance or create an artefact.
- It is a free standing qualification offered by four different examination boards of England and Wales (Edexcel, OCR, AQA and Cambridge International Examinations (CIE)) .
- The Extended Project has been widely welcomed by universities since it helps students develop skills in thinking and independent learning.
- It is fast growing in UK schools, with 35,000 entries in 2015.
- EPQ programme runs over both years of the Sixth Form.

Why do an EPQ?

The EPQ is fun, challenging and exciting and it is excellent as a preparation for university and working life. Like Harkness, it promotes the development of capacities for independent learning, research and critical thinking. It also gives students an exciting and enjoyable opportunity to work on topics which are related to their personal interests and plans for the future. Students have a free choice of title for their project and are encouraged to pick topics which they find interesting and helpful for their academic/professional future.

What do Universities think?

EPQ gives students a taste of what university life is like whilst they are still in the Sixth Form. They learn to take charge of the direction of their studies and are taught how to carry out a large scale project with support from a supervisor. It is highly valued by many universities as it provides an excellent preparation for life beyond the Sixth Form.

Cambridge: "We welcome the Extended Project and would encourage applicants to undertake one as it will help to develop independent study and research skills valuable for higher education."

Birmingham: "Applicants who offer the EPQ and meet our offer criteria will be made the standard offer for their programme of choice and an alternative offer which will be one grade lower plus a grade A in the EPQ. For example where our standard offer is AAA, the offer would be AAA or AAB plus A in the EPQ."

Oxford: "Where applicants have undertaken the Extended Project (EP), the University will not make this a condition for an offer (as the EP is not a compulsory element of post-16 study) but recognises that the EP will provide an applicant with the opportunity to develop research and academic skills relevant for study at Oxford. Candidates are encouraged to draw upon their experience of undertaking the project when writing their personal statement, particularly if the topic is allied to their chosen degree course."

What do Students say about EPQ?

"I was just writing to let you know how useful the EPQ was in setting me up for any sort of systematic review and extended research… I am sure that I would not have had as good chance of even getting an interview let alone getting the job without the background I had in extended research and I would have not been able to cope anywhere near as well had I not done my project." EPQ student working for Nestle

"My EPQ title was: "How did the Viking invasion affect 8th and 9th Century Britain?" It definitely helped me in terms of my university application. It gave me something to talk about and showed my ability to research and write projects, i.e. my ability to undertake independent, non-curriculum learning." History under-graduate at UK University

PREPARING FOR UNIVERSITY

The vast majority of Cranleighans will go on to study at university after leaving school and support will be available to help each student choose and apply for a place.

Our current academic staff team has experience in the British, North American, Australian, Canadian, South African and European university systems. In addition, we will be hiring an experienced careers specialist who will bring further international expertise, most notably in preparation for SATs and/or ACTs, often required for admission to US universities. This senior professional will join us next academic year to work with Sixth Formers on their choice of university course and institution.

Top-line advice will be available for all stages of the application process including the completion of entry forms and school transcripts, development of personal statements, practice interviews and preparation for entrance tests.

"As a general rule, US universities will expect to see a similar type of qualification and results as British universities of a similar level of prestige and competitiveness... The most competitive universities will expect to see three A Levels or their equivalent."

The Fulbright Commission

For students choosing to progress into a university in the United Kingdom, the expertise already on offer from our Abu Dhabi team will be further enhanced on the ground in the UK, through a close partnership with Cranleigh UK's Head of Careers and Oxbridge Co-ordinator who will be able to provide help with specific UK courses such as Law or Medicine.

Are A Levels Respected Outside the UK?

A Levels are widely recognised by the world's leading universities. One of the UK's principal exam boards – Cambridge International Examinations (CIE) – confirms that more than 450 institutions across the United States formally recognise its qualifications and many more will accept them upon application. US universities with formal recognition policies include all of the Ivy League institutions. A Levels offered through Edexcel, the UK's largest awarding body, are also highly respected internationally and are accepted at 728 universities worldwide including 277 in the United States, 49 in Canada and 41 in Australia and 16 here in the UAE.

In addition, The Lisbon Convention (an international agreement signed by 50 countries and international organisations, including the European Union, USA, Australia, Canada and New Zealand) facilitates the recognition of foreign studies among the signatory countries. Unless a substantial difference is observed, a qualification issued by one of the signatory parties is recognised by the others. In terms of access to higher education studies, the Lisbon Convention guarantees that holders of an upper secondary school or high school qualification that grants access to tertiary education in their home countries will also meet the general requirements to apply for higher education in the rest of the signatory countries.

"We think the Cambridge curriculum is superb preparation for university,"

Christoph Guttentag, Dean of Undergraduate Admissions, Duke University, USA

THE CAREERS NETWORK

We are fortunate to have access to a wide range of individuals who work in a variety of different sectors. To this end we will work with our parents, governors and Old Cranleighans to build a programme of mentoring, careers events and dinners.

Our lecture series, Cranleigh Open Minds, will continue to bring influencers and thought leaders in to speak at school, providing students and their families with insights into various areas of academic, professional and commercial life.

We will also extend the UK school's Cranleigh Network - a 'careers for life' programme that is a joint initiative between the school and the Old Cranleighan Society. The Network is intended as a genuine support organisation for all school leavers, from help with work placements to CV design, through postgraduate employment to potential career change initiatives later in life.

When they leave us, Cranleigh Abu Dhabi Sixth Formers will officially become 'Old Cranleighans' and as such, will have the opportunity to be part of the Cranleigh Network.

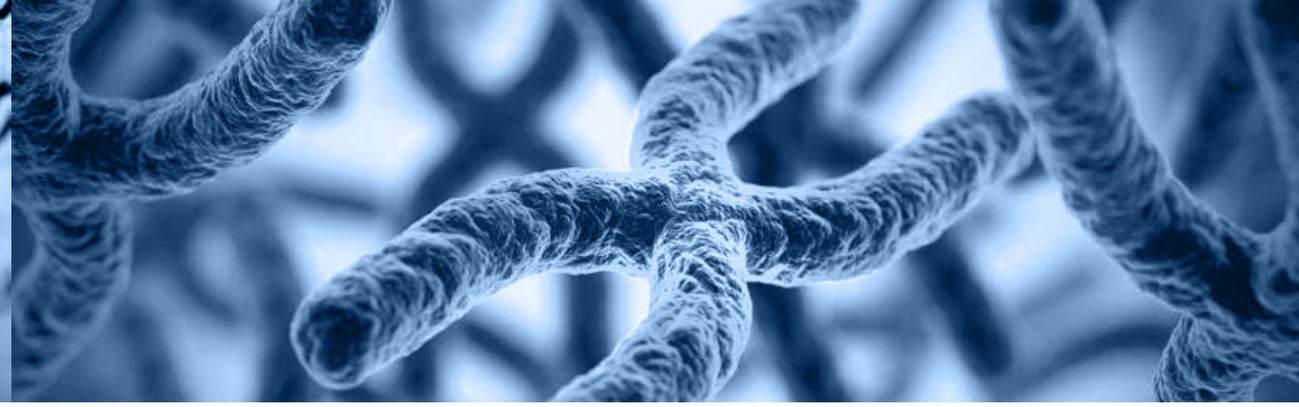
We will also provide guidance on the value of a Gap Year and work to ensure that students who choose this option plan it in a way that adds value to their personal as well as future professional life.

Admissions

The selection procedure for Cranleigh Abu Dhabi Sixth Form will consist of a strong predicted profile for (I)GCSE and an interview. There will also be one or more subject-specific written papers as well as a standardised assessment to test candidates' skills in reasoning and analysis. A reference will be sought from the Head of the candidate's present school.

Subject to Board of Trustees approval, we will be introducing a bespoke Scholarship Award Scheme designed to attract, recognise and support gifted and academically able students. In addition to these academic awards, we will also be offering scholarships in a broader range of disciplines, to attract and cater for student with particular passion for and talent in a number of disciplines within or beyond their A Level choices, such as the performing arts, music and sport. Scholarships will be available to internal as well as external candidates and will be awarded on merit. Further information on this new programme is available from our Admissions office.

Registration for places in the Sixth Form 2017/18 will open in October 2016. Please email admissions@cranleigh.ae for more information.



Arabic

Arabic is one of the world's great languages. Spoken by more than 400 million people, it has been the vehicle of many significant contributions to the development of science and culture, from the earliest odes of the pre-Islamic poets through to the cutting-edge research of the philosophers and mathematicians of Islam's golden age, to the novels of Nobel laureate Najeeb Mahfouz.

Arabic is also one of the official languages of the United Nations and was recently identified as one of the ten most important languages for the UK's future.

Arabic is accepted by universities and employers as proof of linguistic ability and understanding.

Studying Arabic encourages learners to develop lifelong skills, including:

- The ability to use a foreign language as a means of practical communication.
- Insight into the culture and civilisation of countries where the language is spoken.
- A positive attitude towards language learning, towards the speakers of other languages, and towards other cultures and civilisations.
- Techniques which can be applied to other areas of learning, such as analysis and memory skills.
- A sound foundation for progression to employment or further study.

An Arabic A Level would stand out on a university application form, regardless of the chosen degree course.

The syllabus content is organised around five broad topic areas which provide contexts for the acquisition of vocabulary and the study of grammar and structures. Through the study of these topic areas, candidates gain insight into target language countries and communities. The topic areas are:

- Everyday activities
- Personal and social life
- The world around us
- The world of work
- The international world

"Learn the Arabic language; it will sharpen your wisdom."
Umar ibn Al-Khattab

Biology

Biology is the science of life. Biologists study the morphology, physiology, anatomy, behaviour, origin, and distribution of living organisms from the largest mammals down to our very own microscopic DNA. They work to understand how life evolved and explore the factors that both improve and damage it, using this knowledge to control the spread of disease, manage natural resources, improve public health, animal care and conservation.

Even before sophisticated scientific equipment was developed, humans were exploring the biology of the plants and animals around us. Our fascination for the natural world led to one the founding principles of science – observation. All science and indeed all scientific investigations are based around the principal of explaining observations.

Biology is an essential A Level for anyone who would like to pursue a career path in health and clinical professions such as medicine, dentistry, veterinary science, physiotherapy, optometry, pharmacy, nursing, zoology, biological sciences and marine sciences.

Some of the benefits of studying Biology include:

- Biology helps to build up research, problem solving, organisational and analytical skills. Students learn how to collect and evaluate data, investigate facts and use deduction, put over their point of view effectively and take responsibility for their own learning.
- Biology students are likely to work on group projects which helps to build teamwork and communication skills.
- Rachel Lambert-Forsyth, director of education and training at the Society of Biology, says: "Biology opens up exciting career possibilities. From conservation to cancer research, biologists are tackling important 21st century challenges, and we need skilled young people to be part of this".
- The biological sciences are the most diverse of subjects – from molecular biology to the biosphere. A qualification in Biology equips people with skills in literacy, numeracy and social awareness, fostering an ability to make connections between the natural, social, economic, political and technological fields.

Biology is often combined with one or more of Chemistry, Physics and Maths.

"It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change."
Charles Darwin

"A cell is regarded as the true biological atom."
George Henry Lewes

Business Studies

Branson (Virgin), Dyson (Vacuum Cleaners), Gates (Microsoft) and Roddick (Body Shop): examples of dynamic and rich people with successful firms. All these entrepreneurs have, in their time, followed some of the many principles laid down by a typical Business Studies course. You will study these principles and learn from the examples of these entrepreneurs as well as, importantly, from the failed ventures which have littered the business world too.

Business Studies A Level covers the lifecycle of a business, from start-up to multi-national company. Case-studies of a wide variety of businesses are used, ranging from the smallest business start-up to the largest PLCs, such as Tesco and Microsoft. It involves studying in some detail how today's businesses carry out their various functions, including marketing, finance, operations management (production) and people (human resources).

Ultimately, Business Studies is about decision-making. What price for a can of new fizzy drink, where to sell it, where to make it, how to raise the money to fund its manufacture, how to motivate the staff, how to deal with customer complaints? The course you might embark on in Business Studies offers the opportunity to ask these and similar questions, sometimes by looking through the eyes of a corporate giant like Coca Cola and sometimes from the point of view of a relative minnow like a local cheese shop.

The course also looks at how outside activities affect businesses and, in turn, how businesses react to these; for example, the effect of changes in Government policy (e.g. taxes or interest rates), levels of competition, demand, pressure groups and business ethics. In addition, the A Level studies the objectives and strategies that businesses adopt e.g. recent merger activities and the outsourcing of production to Asia.

Do please note that we strongly advise against studying Business Studies in addition to Economics. Some universities will not count them as separate A Levels, and others that might accept them together still prefer candidates with a greater breadth of study compared with this overlapping combination.

"There is only one boss: the customer. He can fire everybody from the chairman down, simply by spending his money elsewhere."

Sam Walton, Founder of Walmart

"If I had asked people what they wanted, they would have said, 'a faster horse!'."

Henry Ford, Founder of the Ford Motor Company

Chemistry

Everything we interact with is composed of atoms. An understanding of how these particles behave and the properties of the substances they make, is Chemistry. In its simplest sense, Chemistry gives a deep understanding of the materials around us and should be of intrinsic interest to anyone curious about the physical world of which they are a part.

With its routes in Alchemy, many important discoveries were made by chance. Henning Brand, for example, boiled dry thousands of litres of urine, thinking he would find gold, on account of its colour. Instead, he discovered accidentally the incendiary element phosphorus, which flared up in his face. Chemistry has only existed as a proper science from around 1700. Since then, its impact on our quality of life has been astonishing, and much of what we take for granted would simply not exist were it not for mankind's mastery of this subject. It is the central science, bridging the laws of physics and life itself.

Students who choose Chemistry at A Level are usually those driven by an intellectual curiosity; the people who look at things and wonder how and why. For the academically-minded, its reward as a lofty pursuit is often enough. However, there are also more practical reasons:

- A Level Chemistry is an essential requirement for degrees such as medicine and veterinary science, and is very highly recommended for most science and engineering-related courses.
- Chemistry is one of the A levels that universities recognise immediately as a "gold standard".
- It is increasingly mooted that many careers in the future do not yet exist, so facilitating skillsets are particularly important, and the study of Chemistry delivers a wide range those (for example logic, the analysis, interpretation and evaluation of data, problem-solving, the use of models to explain phenomena or build theories, clarity of communication and even creativity).
- Whilst many who study Chemistry at university do not pursue a career in it, there is job security for those that do. The world will only ever need more chemists to help solve the global problems of disease, famine, environmental catastrophe and an ever-increasing demand for a high quality of life with diminishing resources.
- Whilst not universally the case, many high flyers in well-paid careers such as finance have a mathematical and/or physical science background.

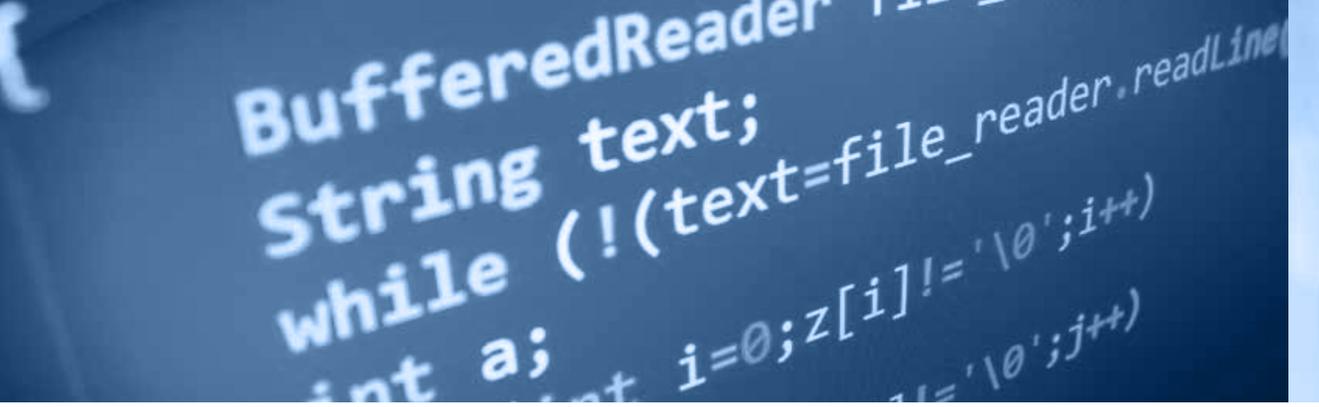
Chemistry is recommended for those likely to get an A or A* at (I)GCSE. It of course sits very well alongside any combination of other sciences and Maths at A Level, but would also stand out on a university application for anyone seeking to study Arts and Humanities. Chemistry will not close any doors; quite the reverse.

"I am among those who think that science has great beauty. A scientist in a laboratory is not only a technician; he is also a child placed before natural phenomena which impress him like a fairy tale."

Marie Curie

"The periodic table was incredibly beautiful, the most beautiful thing I had ever seen."

Oliver Sacks



Computer Science

A Computer Scientist specialises in the theory of computation and the design of computational systems. It can be divided into a variety of theoretical and practical disciplines.

Computer Science fosters innovation through the use of coding and programming skills to deliver new products. It encourages students to extend themselves through open ended projects and requires high-order, critical thinking to arrive at solutions. Coding and programming go hand in hand with 'bugs'. As students gain independence by persevering in finding workable solutions to 'bugs' and problems, they develop much needed 21st century skills such as tenacity and self-confidence.

Computer Science students stand a good chance of being professionally employed within six months of leaving university. Their skills are highly applicable in Business, Finance and Mathematics all of which are highly desirable subjects for routes into Banking, Actuarial Science, Insurance and Research.

Computer Science students enjoy the rare and very real prospect of entrepreneurship. Developing apps, programs and many other computer related services can lead to young people owning their own business at an early age. There are many young entrepreneurs and the founders of iSAMS (the school MIS) Alastair Price and Greg Pakes, are very good examples. As sixth-form pupils attending A Level computing classes at Rugby School, they often saw teachers and staff frustrated by inadequate admin software. An idea formed, and then developed as they both studied Computer Science at university. By 2007 iSAMS had been formed as a commercial company and began marketing the new system to other independent schools. Today iSAMS is used by over 300 schools in the UK and abroad, including Cranleigh.

Students who choose Computer Science at A Level want to find solutions to real problems. They use their knowledge to develop systems that others rely on for their businesses daily.

- Computer Science is considered by many of its practitioners to be a foundational science – one which makes other knowledge and achievements possible. It can be used to access a number of university courses.
- A Level Computer Science offers transferrable and desirable professional skills leading to jobs in coding, support, project management, systems analysis, web development, network management, software development, research and many more.
- Computer Science places students at the cutting edge of technology as new ways and approaches to solve problems evolve. This produces flexible learners who regularly adapt to new situations, a crucial skill and mind-set that will serve them well into their working lives.
- Contrary to public opinion, the subject lends itself to free choice and creativity. Students will find they can unlock their artistic potential and pursue several pathways including developing games, websites and apps. Creating high-quality computing solutions is a creative activity supporting creative work in many other fields.

Computer Science is recommended for those likely to get an A or A* at (I)GCSE. A good knowledge of mathematics is required to study Computer Science at A level, therefore an A* - B in Maths at (I)GCSE is highly desirable. It sits very well alongside any combination of other sciences and Maths at A Level.

"Anyone who has lost track of time when using a computer knows the propensity to dream, the urge to make dreams come true and the tendency to miss lunch."

Tim Berners-Lee Inventor of the internet

"Software is a great combination between artistry and engineering."

Bill Gates Co-Founder Microsoft Corporation

Economics

The study of Economics leads to a thorough grounding in analysing and evaluating the functions of the modern economy.

Since Economics is based around the choices made by individuals, firms, governments and ultimately society, it is an opportunity for debate. It provides the framework for argument, on such diverse subjects as poverty, healthcare, footballers' wages and the environment. The goal is to use what resources we have to make ourselves better off, and it is no coincidence that people with Economics degrees are among the best-paid graduates.

Economics is split into two areas: microeconomics and macroeconomics. Microeconomics looks at how we should best use our scarce resources, how markets work to determine prices and output, why markets sometimes fail to work efficiently and how government should intervene to solve this market failure.

Macroeconomics involves studying the whole economy and trying to improve overall living standards. It considers how governments should try to achieve objectives, such as raising economic growth and lowering inflation and unemployment, by altering interest rates, taxation and government spending. Macroeconomics also looks at international factors, the importance of imports and exports and the exchange rate.

An A Level in Economics suits pupils who think logically and can use theories to understand how economies, markets and firms operate. It requires a clear mind and an ability to think and analyse logically. Students with a scientific/mathematical mind may benefit, as concepts and theories need to be grasped and applied. It is worth noting that whilst there is very little Maths required at A Level, universities require students applying for Economics at degree level to have a Maths A Level (typically at A grade or above). Students should have a desire to debate issues and a good awareness of current affairs. As a social science, halfway between arts and the sciences, Economics combines well with many other subjects at A Level.

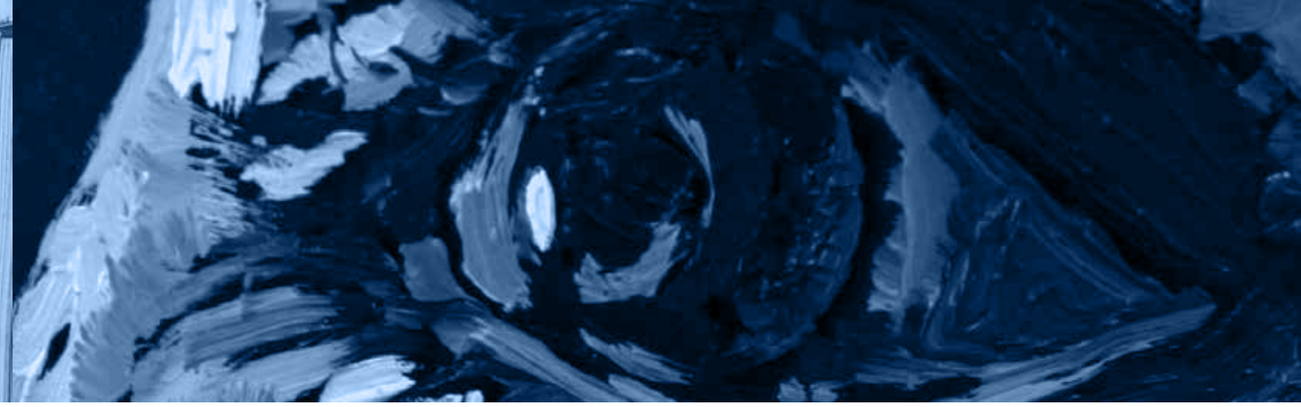
Do please note that we strongly advise against studying Economics in addition to Business Studies. Some universities will not count them as separate A levels, and others that might accept them together, still prefer candidates with a greater breadth of study compared with this overlapping combination.

"The difficulty lies not so much in developing new ideas as in escaping from old ones."

John Maynard Keynes

"Inflation is taxation without legislation."

Milton Friedman



English Literature

Pursuing English Literature as a field of study at A Level allows you to delve further into the richest, most pervasive cultural medium the world has ever known. Springing from roots of past millennia on the rainy shores of a certain “sceptred isle”, the words of Old and Middle English have flourished into the myriad modern veins of world Literature that live through the English tongue. As a result, the experience of an A Level Literature student is wide-ranging, deep-reaching and character building.

An indicator of a well-rounded university applicant, the study of English Literature provides you with:

- An enjoyment and appreciation of Literature, and the confidence to approach and tackle new forms of books and writing.
- A confidence and mastery of extended writing in a critical context, vital to all academic pursuits at university.
- A mastery of the language’s great diversity of specific aesthetic purposes which feed into all future writing.
- A fresh and creative angle with which to approach studies in particular and life in general.
- Developed skills of empathy and understanding which enhance your interpersonal skills at university level and beyond.

Good English A Level candidates read widely, go to the theatre and enjoy discussing poetry, books and plays. They have the patience to read novels of several hundred pages in length and the powers of analysis to spend a whole lesson on one sonnet. Above all, they study conscientiously in their own time; proper preparation for essays can easily occupy a considerable part of the time spent each week on the subject outside the classroom.

If this description applies to you, then this could be a subject for you. You are encouraged to read widely and to develop a deeper, fuller understanding of literary texts drawn from various periods and different genres. As well as providing in-depth knowledge of texts and different types of writing, the course aims to develop your appreciation of context (social, historical, cultural and biographical influences) and changing critical reactions. You are given recommended background reading and are encouraged to pursue the lifelong learning benefits that this course will offer you.

“Literature is the art of discovering something extraordinary about ordinary people, and saying with ordinary words something extraordinary.”

Boris Pasternak

“The very essence of literature is the war between emotion and intellect, between life and death.”

Isaac Bashevis Singer

Fine Art

Studying art is really a journey of self-discovery. Fine Art is one of the only A Levels where creativity is a continuous element. The course has a strong emphasis on drawing skills and the ability to interpret and convey ideas through visual means. Students develop their imaginative/creative powers and their experimental, analytical, and documentary skills. Students are encouraged to reflect on their work and that of other artists using specialist vocabulary and a critical eye. The course follows a structured programme of visual study that encourages depth and breadth in the development of their own visual language skills. Students will be expected to build on and develop their recording skills and demonstrate the skilful use of the formal elements of art using a wide range of media and methods. Within the units of study students will be required to analyse their own work in juxtaposition with the work of other artists, gaining insight into the meaning of art and the context in which it was created.

There are two main areas – Component 1 and 2

Component 1: Personal Investigation includes an essay of 3000 words. This will be linked to the student’s Personal Investigation work. Techniques for this component will include; drawing, painting, mixed-media, sculpture, ceramics, installation, printmaking, moving image, (video, film, animation) and photography.

Component 2: Externally Set Assignment is a set of tasks given to the student from the AQA exam board on February 1st of the second year of study. Students will be required to answer one of the project start points. Practical work should arise from the student’s current interests and experiences in Fine Art, together with knowledge, skills and understanding gained from earlier units.

During both years of the course, students receive information from which they must research and resource their ideas in response to the set theme which aim to build on previous experience to produce their own creative outcomes.

Why study A Level Fine Art? To follow a career, or further study in any aspect of art and design the student will need a portfolio of work. This is required when applying for the foundation courses necessary of most art based higher education qualifications. Students applying for dentistry, aviation and surgery can use their Fine Art portfolio as evidence of fine motor skills. Those applying directly for employment in any of the creative industries use their portfolio to enhance job applications.

Fine Art in reccomended for those likely to get B or above at GCSE. For students who have not studied art before, a portfolio of an equivalent standard is required. Contact the school for more details. Grade B or above in GCSE English Literature/Language is desirable.

Fine Art is a late addition to our A Level offering, and at present it is in no particular subject column. We are gauging interest and will place it where it suits the majority.

“The artist is a receptacle for emotions that come from all over the place: from the sky, from the earth, from a scrap of paper, from a passing shape, from a spider’s web.”

Pablo Picasso

“They always say time changes things, but you actually have to change them yourself.”

Andy Warhol

Geography

Does your place of birth determine your destiny? Are borders disappearing or becoming more rigid? How can humans manage increasingly fragile physical environments? Geographers address the profound problems of a global society.

A Level Geography examines food and energy security, climate change, the degradation of land and soils from over-use and misuse, the spread of disease, the causes and consequences of migration, and the impacts of economic change on places and communities. These are just some of the challenges facing the next generation, which geographers must help solve.

The etymology of geography is Greek, meaning "writing about earth." To write about a place is to acknowledge that land's ecology, exploitation and exploration.

The subject is a fundamental concern for how humans impose political and economic boundaries, while also modifying their physical environment. Diplomats, journalists, government policy makers, climatologists, activists and criterial thinkers use geographic analysis every day.

Pupils who study Geography tend to be idealists. These students value human rights, saving species from extinction, preserving biodiversity and finding common ground in conflict. Being in a geography classroom is to be amongst revolutionary thinkers who confront social justice issues with equanimity.

- A Level Geography is a subject that contains other subjects. It has roots in biology, geology, sociology, economics, cultural studies and political science. It gives pupils the opportunity to explore a broad syllabus.
- Geography is about the current world. It is what makes an intelligent and active citizen. A Level Geography prepares pupils for engaging debate and dialogue.
- Geography is the most employable university degree according to The Guardian's 2009 employment figures, which cite that the degree "helps develop a whole range of employability skills" and "cultivates a world view."

Geography is recommended for those likely to get an A or A* at (I)GCSE. It compliments Economics, History and Biology at A Level. Geography is not only for those who wish to understand the world, but for those who wish to change it.

"Geography is a living, breathing subject, constantly adapting itself to change. It is dynamic and relevant. For me geography is a great adventure with a purpose."
Michael Palin, Past President of the Royal Geographical Society

"All I ever wanted was a world without maps."
Michael Ondaatje

History

"History is bunk" or at least according to Henry Ford, when asked for his opinion in the 1920s. If you subscribe to that view, then you probably aren't interested in pursuing an A Level in the subject. Perhaps a more convincing assessment of the importance of History has been provided by His Highness Sheikh Zayed bin Sultan Al Nahyan, who said "He who does not know his past cannot make the best of his present or future, for it is from the past that we learn". The world's political leaders certainly understand the relevance of trying to learn the lessons from history, even if they are not always able to apply them successfully.

In a world that is increasingly global in nature, it has never been more vital to develop an understanding of where we have come from in order to shape where we are going. By choosing History at A Level, students can expect to grapple with the interaction of political, economic and social causes and consequences of major turning points in history and hopefully gain a better understanding of the events that are prominent in the news today.

Those that enjoy stories will love the opportunity to pursue a study of the subject in greater depth and breadth than at (I)GCSE level, whilst having the confidence that the skills they have learnt thus far will stand them in good stead for the more challenging nature of their studies in the Sixth Form. History is recognised as a strong discipline to have studied no matter what university course is being applied for as it teaches vital skills that are indeed universal. Researching, presenting, writing, listening and debating are all key features of an A Level History student. Indeed, it is no coincidence that students who have thrived in arenas such as the World Scholars Cup and Model United Nations are often successful in History.

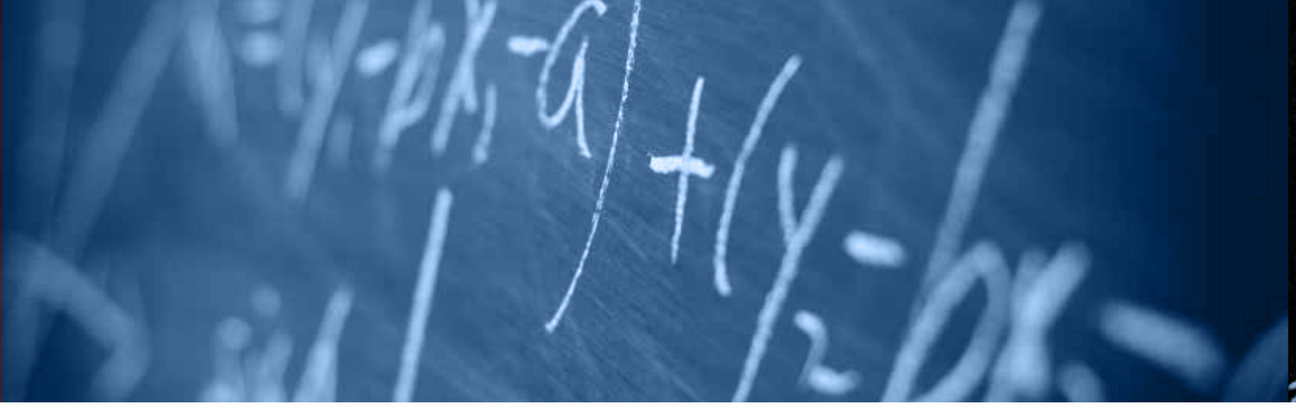
Studying History at an advanced level also lends itself to the 'Harkness model' of small class discussion as students develop their ability to reach conclusions for themselves and to improve their independent learning skills.

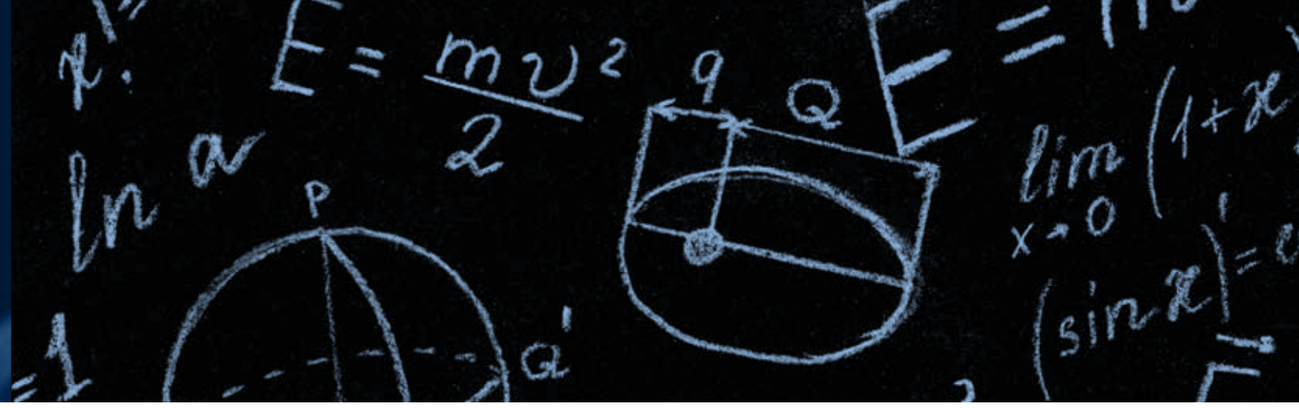
Whilst History may not seem to have a single obvious career path (other than teaching, which is highly recommended by the author of this overview) it undoubtedly opens far more doors than it closes as a route into the workplace. History does not just combine well with obviously related subjects such as English and Geography, but also the Sciences. As a precise subject that has a search for the truth at its heart, it can be the perfect vehicle for someone set on a mathematical or scientific pathway to help make them stand out from the crowd.

It is recommended that those wishing to study History at A Level gain a 'B' grade or above at (I)GCSE. However, it is one of the few traditional subjects where it is possible to study at A Level without having taken it at (I)GCSE.

If nothing else, History can also help you win big prizes. Just ask the first winner of the popular game show 'Who wants to be a millionaire?', who hit the jackpot by knowing which English King was married to Eleanor of Aquitaine (Henry II – in case you were wondering).

"Study the past if you would divine the future."
Confucius





Mathematics

This subject is both challenging and rewarding. During the course you will develop an awareness of the relevance of Mathematics to other fields of study, to the world of work and to society in general. You will extend your range of mathematical skills and techniques to enable you to reason logically and to recognise how a situation may be represented mathematically in order to solve 'real world' problems. Whilst you are obviously expected to possess a certain degree of mathematical ability, a willingness to work hard and a determination to succeed are just as important.

- Mathematics is an important subject and it is used in many different contexts such as commerce, computing, engineering, social sciences, science and technology. Studying Mathematics helps you to develop the problem solving and logical thinking skills that many university courses and employers require. It is known as a 'facilitating' subject by the top universities and studying Mathematics at A Level does improve your career prospects.
- A Level Mathematics is an essential requirement for degrees such as Accountancy and Economics, and is very highly recommended for most STEM (Science, Technology, Engineering and Mathematics) courses.
- Mathematics is one of the A Levels that universities recognise immediately as a "gold standard".
- Mathematics is an innovative subject and technology is advancing all the time. Studying Mathematics at A Level may open doors to a myriad careers that do not yet exist.
- Whilst not universally the case, many high flyers in well-paid careers such as finance have a mathematical and/or physical science background.

Mathematics is recommended for those likely to get an A or A* at (I)GCSE. You should do Mathematics A Level if you enjoy solving problems, having to think logically and you like working with others. It is useful alongside all other A Levels as it shows that you are numerate, but it will particularly help in the subjects where you need to use mathematical skills. The most obvious example is Physics, but actually you need mathematical skills in Geography, Biology, Chemistry, Economics and many other subjects.

Further Maths is for outstanding mathematicians who will easily get an A or A* at A level Maths. It is usually chosen as a fourth A level, and only by the most able. It is looked upon very favourably for courses in Physical Sciences, Engineering, Economics and, of course, Maths at the top universities.

"Mathematics makes you better at things. Understanding Mathematics is like wearing a pair of X-ray specs that reveal hidden structures underneath the messy and chaotic surface of the world. Mathematics is the science of not being wrong about things."

Jordan Ellenberg

Physics

Newton, Hawking, Kepler, Bohr, Schrodinger, Galileo, Rutherford and Einstein all had one thing in common; they looked at the world around them and asked "why?" This type of curiosity is the cornerstone of Physics. Physics is having the courage to ask a question coupled with the tenacity and resilience to find an answer.

Physicists look for all the hidden laws that explain why all matter (that's every physical thing) and energy in the known universe exists, where it comes from and how it behaves the way it does. Physicists use the laws they uncover to develop new materials, machinery, and technology to improve our lives and help us explore the universe further, from computers to telescopes and spacecraft. Physicists ask some big questions, but they specialise in different areas and their work can be varied. For example, nuclear physicists study the tiniest particles of matter to discover what the universe is made of, whereas astrophysicists study some of the largest things – stars, planets and celestial bodies. Many physicists also combine their work with the other sciences (Chemistry and Biology) to study things like meteorology (the atmosphere) and geophysics (the structure of the earth).

Students who choose Physics at A Level usually enjoy the practical nature of the subject and the opportunity to test laws and theories first hand. There are many benefits to studying Physics other than the love of the subject;

- Physics will help you to build up your problem solving, research, and analytical skills. With these skills you'll be able to test out new ideas plus question and investigate other people's theories, which is useful for any kind of job that involves research or debate.
- Physics is one of the A Levels that universities recognise immediately as a "gold standard".
- Physics is especially helpful for jobs that involve building things and developing new technologies, including: engineering (flight, buildings, space, you name it…), astronomy, robotics, renewable energies, computer science, communications, space exploration, science writing, sports and games technology, research and nanotechnology (that's engineering on a seriously tiny molecular scale).

Physics will support your study of other science and tech subjects, including Chemistry, Biology, Geography and Computer Science. Physics is especially closely linked to Maths, so studying the two together can improve your skills in both.

"The significant problems we have cannot be solved at the same level of thinking with which we created them."

Albert Einstein

"Even if it turns out that time travel is impossible, it is important that we understand why it is impossible."

Stephen Hawking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