



WINCHESTER  
COLLEGE

## Academic Curriculum

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The academic curriculum at Winchester College is designed to provide as broad an education as possible, combined with specialist study in chosen examination subjects. We offer much flexibility in the choice of GCSE/IGCSE subjects and advanced courses (in Years 12 & 13 pupils currently take the Cambridge Pre-U examinations instead of A-levels), as well as a varied programme of non-examined study known as Div (or Division). From September 2020, all Year 12 pupils will be taking linear A-levels alongside the Extended Project Qualification (EPQ).

Div is at the heart of a Winchester education and is taken very seriously. Div throughout the lower part of the school is a general course in History, English, Divinity and PSHEE, taught by a mixture of specialists and non-specialists. For pupils in Years 12 and 13, the purpose of Div is to complement the specialised Pre-U teaching and to give pupils some understanding of British, European and world history and culture.

Pupils take nine GCSEs/IGCSEs. These include English, Mathematics, French or German, Latin and two or three Sciences. To these may be added: Geography, History, additional foreign languages and creative subjects (Music, Art, Design), up to a total of nine subjects. Some pupils take an additional qualification in Mathematics. GCSEs/IGCSEs are taken at the end of Year 11. Pupils then take three, four or five Cambridge Pre-U subjects in the sixth form.

Further information about the curriculum will be provided at annual Parents' Evenings, well in advance of any choices having to be made. There will also be many opportunities to consult Heads of Departments and subject teachers about the content of particular courses in advance of these being chosen. The Director of Studies sends regular communications and keeps parents informed.

Careers advice is available at all stages but formal work with pupils will start with ISCO testing in Year 11, supplemented by further testing and opportunities for more detailed consideration of future career pathways and higher education choices in Years 12 and 13. The Careers and Higher Education Library and staff are resources that pupils are strongly encouraged to make use of, particularly when making exam subject and university choices. The Careers and Higher Education department also keeps full information about work experience and other external opportunities. The school also makes use of BridgeU, an online platform designed to help pupils make informed choices about university courses which also streamlines the application process itself.

Assessment of pupils for special educational needs takes place in the early part of the first term of a pupil's time at the school, and further assessments will take place later on if concerns have been raised, either by parents or teachers. Pupils with Statements of Need/EHCPs are reviewed according to the

circumstances by the Special Educational Needs Coordinator or SENCO, parents/guardians, pupil and relevant outside agency. The SENCO is responsible for ensuring that special provisions contained within the Statement/ECHP are communicated and implemented. Pupils who need additional assistance with EAL will, in Year 9, be placed, as appropriate in the Division of a teacher with specific experience of teaching pupils with EAL issues. There may additionally be one-to-one assistance for pupils in any year group with EAL. Pupils are also prepared separately by the Head of English for IELTS if required for university entrance.

## Year 9

The following subjects are taught to all:

Division (Classical History, English, RS, PSHEE, study skills)	5 x 35 minute lessons
Mathematics	5 x 35 minute lessons
Latin	4 x 35 minute lessons
Foreign Language 1 (see below)	4 x 35 minute lessons
Foreign Language 2 (see below)	4 x 35 minute lessons
Physics	4 x 35 minute lessons
Chemistry	4 x 35 minute lessons
Biology	4 x 35 minute lessons
Geography	4 x 35 minute lessons
2 of Music, Art or Design	4 x 35 minute lessons
Physical Education	2 x 35 minute lessons

Before joining the School, new pupils will be asked to express a preference for each of the two Foreign Language blocks:

- Foreign Language 1: French or German
- Foreign Language 2: French (if not already chosen for FL1), German (as French), Russian, Ancient Greek, Spanish and Chinese.

They will also be asked to select two subjects from Music, Art and Design.

The final decision as to subject is made by the School, but preferences and comments are sought from pupils and their parents and every attempt made to accommodate these.

## Years 10 and 11

Towards the end of Year 9, pupils are given a further opportunity to express their preferences for GCSE study. Pupils take 10 subjects in total (including Division).

The compulsory and optional elements of the Year 9 and 10 curriculum are as follows:

Compulsory:

Division	6 x 35 minute lessons
English	5 x 35 minute lessons
Mathematics	5 x 35 minute lessons (4 in Year 11)
Latin	4 x 35 minute lessons
Foreign Language 1 (French or German)	4 x 35 minute lessons
2 or 3 of Physics Chemistry Biology	4 x 35 minute lessons

Optional:

0, 1 or 2: Foreign Language 2 (see below)	4 x 35 minute lessons each
0, 1 or 2: History, Greek, Music, Geography	4 x 35 minute lessons
0, 1 or 2: Art or Design	4 x 35 minute lessons

- FL2: French (if not chosen for FL1), German (as French), Spanish, Chinese, Russian (0, 1 or 2 to be studied) 4 hours

Pupils and parents are always advised further at the time these allocations and decisions take place.

### 9-1 grading at GCSE & IGCSE

All GCSEs have moved to a numerical grading system, whereby 9 is the new top grade. The rationale behind this is that nine levels of performance rather than eight (A\*-G) will offer greater differentiation of the ablest pupils, with grade 9 introducing a grade above A\*.

The International GCSEs set by Cambridge International Examinations (CIE) account for the majority of subjects taken by our pupils at Winchester. In order to provide comparability with the reformed GCSEs, CIE is now also offering the 9-1 grading system to their UK schools, but without any change in syllabus content. We therefore plan to continue to offer CIE qualifications and have adopted the 9-1 graded exams as soon as they became available.

**9-1 graded syllabuses were adopted as follows:**

First sitting of 9-1 graded exams	Subject	Qualification
2017	English Language	IGCSE
2018	Biology/Chemistry/Physics/Geography	IGCSE
2018	Latin/Greek	GCSE
2019	French/German/Spanish/History/Music/Art	IGCSE
2019	Mathematics/Russian/Chinese/Design & Technology	GCSE

## Conversion chart

<i>New grade</i>	<i>"Old money"</i>
9	A* +
8	A*
7	A
6	B +
5	B
4	C
3	D

## **Sixth form/Years 12 & 13**

Pupils currently in our sixth form ordinarily study three subjects (Cambridge Pre-U Principal Subjects).. Those who are considered suitable to do so may be able to take either Mathematics (Accelerated) at the end of Year 12 or Mathematics/Further Mathematics (combined) and may take an additional optional subject to make four Pre-U classes in total. Those who choose both Latin and Greek may take four subjects. From September 2020, all Year 12 pupils will be taking linear A-levels instead of Cambridge Pre-U Principal Subjects.

### **DIV IN SIXTH BOOK**

Div is at the heart of the education we offer at Winchester. From September 2020, Year 12 will have four lessons a week dedicated to 'traditional' Div. These lessons will provide an opportunity to:

- examine subjects not covered by A-level syllabuses, for example: scientific ideas, philosophy, politics, European and non-European civilisations, literature, art and music;
- examine the inter-relationship between different branches of knowledge;
- develop essential skills of critical thinking and communication through essays, discussions, debates, role-playing and creative writing;
- explore intellectual ideas and develop acceptance of others' opinions.

The remaining two Div lessons a week will be dedicated time for boys to complete an Extended Project Qualification (EPQ). The EPQ harnesses a number of the skills which are nurtured in Div; an ability to complete independent research and detailed analysis over a prolonged period of time coupled with well-structured and logical writing.

The EPQ is highly valued by universities and boys will have free rein to choose their project topic and supervisor. It should be intellectually stimulating and, if properly grasped, will ensure that boys become expert in their area of interest.

A written task, which will be related to 'traditional' Div or the EPQ will be set weekly.

## A-LEVEL SUBJECTS

Details of the current Pre-U courses studied by pupils in Year 12 and 13 can be found in Appendix 1.

### Art

The programme of study we follow is the Edexcel A-level certificate in Art and Design (Fine Art 9FAO). The course is relevant to those pupils who intend to enter higher education courses in Art, Design and Architecture. It is also suitable for those who are planning careers for which a background in art and design would be useful or for those who simply wish to pursue their interest in art and culture. The nature of the course fosters creativity to give a rounded and balanced educational experience, encouraging visual literacy. There are opportunities to work with an artist in residence, for gallery visits, talks by artists, artists' workshops, student-led shows and trips abroad.

Art School offers a wide range of disciplines to study drawing, painting, multi-media, photography, printmaking, ceramics and sculpture. Initially, pupils are encouraged to experiment with a range of different media and skills, focusing on an appropriate specialism as the course develops. The course encourages an independent and personal approach and is comprised of two components which are marked internally and moderated externally.

- Component 1: Personal study. This comprises a portfolio of supporting studies, personal practical works and a personal written study, completed during the first four terms of the course.
- Component 2: An externally set assignment developed in the final two terms of the course, culminating in a fifteen-hour period of sustained focus under examination conditions.

The course is followed in timetabled hours and involves studio time on Wednesday evenings. It allows students to develop their intellectual, imaginative, problem-solving, creative and intuitive skills. It requires investigative, analytical, experimental, practical, technical and critical judgement, and expressive techniques. It encourages students to reflect on their own work and on the work of other artists and designers.

### Classics

#### Greek and Latin

The A-level examinations in Greek and Latin are identical in structure, so our courses are very similar. In both years of VI Book each set is taught by two dons, one for language and one for literature. We start by reading a variety of ancient literature, both prose and verse, chosen to give a foundation for studying the set texts. Through this reading the boys develop their skills in literary analysis, understand the cultural and historical contexts in which the authors were writing, and appreciate the influence of the classical world on later European culture. They develop the linguistic facility and clarity of thought required for this through continuous work on language, based on translation both from and into Latin and Greek. Towards the end of VI Book 2, work starts on the set texts, half prose and half verse, prescribed for the final examination. That is taken at the end of VI Book 1 and comprises four papers: two on the set texts and two on language. There is no coursework.

Greek and Latin may be studied together, something recommended if a boy is considering studying Classics at university, or singly in combination with other subjects. They are regarded by universities as rigorous academic subjects, and support applications for both humanities and science courses. Several boys each year go on to read Classics (on its own, or in combination with other subjects), the majority at Oxbridge.

## **Design & Technology**

The majority of boys taking Design & Technology in VI Book go on to study Engineering, Industrial Design, Architecture, or another design-related subject at University. Design & Technology neatly complements both science and arts subjects and enables pupils to develop transferable skills relevant to careers involving technology, creativity and entrepreneurship.

Boys enjoy tremendous freedom to experiment with, and utilise, a range of cutting-edge design tools, materials, manufacturing processes and technologies, not limited to their project work. The course enables pupils to pursue topics of personal interest, and encourages pupils to tackle important real-world issues involving technical, human and social parameters, working closely with clients and/or relevant stakeholders.

The Design & Technology: *Product Design* (Edexcel) A-level consists of a written examination covering contemporary industrial and commercial processes, knowledge of materials, an understanding of systems and control (involving applied maths and physics) and the application of technical problem-solving techniques (50%). The remainder of the assessment takes the form of an independent Design and Make Project (50%). The first two terms of the course are devoted to the strengthening of theory and exploring the principles of Design & Technology through a short practical project. Boys will begin their major Design and Make Project in Cloister Time of the VI Book 2 and this is then complemented by regular theory lessons in the lead up to the written examination in the summer of the final year.

The project requires pupils to identify a design need, before undertaking investigative research, experimentation, problem-solving, prototyping and design communication, in order to bring their concept to fruition. All research and design ideation is recorded in an A3 portfolio.

## **Economics**

In the Economics course, we study both microeconomics – the study of markets and government interventions to correct market failure – and macroeconomics – looking at whole economy issues, such as growth, unemployment and inflation and considering the policy options available to governments to improve the standard of living. There is an international slant to the course, looking at how the economy trades and engages with the rest of the world and the economic development of low-income countries. Pupils learn to apply economic theory to the UK economy and to global economic problems, including climate change; there is a strong emphasis on relating economics to the real world. The course is contemporary, fresh and encourages pupils to have an economic perspective on their place in the world.

Economics appeals to pupils who are keen to learn more about how the world works. Those who are strong in History, Science or Mathematics usually do well in the subject. The course requires the ability to write concisely and with insight: a good grade in IGCSE English is a good indicator of suitability for the subject. Equally, a poor pass in GCSE Mathematics may be an indication that a boy will find the theoretical side of the subject difficult.

Economics, while making an important contribution to general education, is also relevant for a wide range of university courses such as Law, Business Studies, History, Politics, Geography, Engineering and International Affairs.

## English

English in VI Book is taught across two years to the OCR English Literature A-level specification. The course introduces students to a wide range of writing from the Renaissance to the contemporary and classes will be taught throughout by paired teachers.

In the first term of VI Book 2, students will study Shakespeare's *Measure for Measure*, an exam set text, as well as a complementary Renaissance play of their don's choosing. In Common Time, they move on to their first piece of coursework, writing a critical account of, or re-creative response to, a dramatic or poetic text of their don's choosing, while they study their poetry set text with their other teacher. In Cloister Time, they read a pre-20<sup>th</sup> century novel of their don's choosing while completing their Gillespie Essay Prize submissions, and study their drama set text with their other don.

In VI Book 1, the focus shifts in Short Half to the Women in Literature unit, where students will read either Jane Austen's *Sense and Sensibility* or Virginia Woolf's *Mrs. Dalloway* alongside another novel of their don's choosing by a woman writer. With their other don, they will complete a 2000-word comparative essay on a post-1900 novel and either a play or poetry collection. The teaching of the Women in Literature unit is completed by both dons after Christmas, with revision beginning after the February Leave Out.

At the same time as it is resolutely focussed throughout the two years on the exam curriculum, VI Book English teaching at Winchester goes emphatically beyond the bounds of teaching to the exam. The choice afforded to dons allows them to communicate their knowledge of and enthusiasm for some of their favourite literary texts.

Furthermore, the introduction of weekly Fellows' Library sessions with the Head of Department gives students unprecedented access to some of the rarest and most valuable books in the school's Fellows' Library. In these sessions, students will encounter English literature as something rich and strange, as they read and hold copies of medieval dream poems, Shakespeare's first folio and Jane Austen manuscripts, among many other treasures. These sessions take place throughout Short Half and Common Time in VI Book 2, culminating in the Gillespie Prize, a 2000 word essay submitted in Cloister Time that is written on one or more of the writers they have encountered in the Fellows' Library.

The range and extension of English teaching is further supplemented throughout the course by the Empson Society, which provides talks by guest speakers such as academics and poets, and Spirit Lamp, which caters for creativity and collaboration. The department also runs frequent symposia, theatre trips and reading groups.

## Geography

OCR Geography A-Level grapples with the key global issues faced today.

The course is split into three papers and an independent investigation:

Paper 1 (22%)	Physical Systems	<ul style="list-style-type: none"><li>• Earth's life support systems – the carbon and water cycles.</li><li>• Glaciated landscapes</li></ul>
Paper 2 (22%)	Human Interactions	<ul style="list-style-type: none"><li>• Changing spaces; making places</li><li>• Global migration</li><li>• Power and borders</li></ul>
Paper 3 (36%)	Geographical Debates	Two of the following options will be chosen: <ul style="list-style-type: none"><li>• Climate Change</li><li>• Disease Dilemmas</li><li>• Exploring Oceans</li></ul>

		<ul style="list-style-type: none"> <li>• Future of Food</li> <li>• Hazardous Earth</li> </ul>
Paper 4 (20%)	Independent Investigation	The independent investigation may relate to any aspect of the specification. It is a written report with a recommended length of between 3000 and 4000 words.

Rigorous theoretical analysis gives pupils an intellectual understanding of each topic. Contemporary examples are then explored to discover how the theory relates to the real world. In this way, candidates develop a confident grasp of the global issues studied, appreciating their causes, impacts and potential solutions.

Essay writing is an important part of the course assessment. Pupils are given every opportunity to develop their essay writing throughout the course. Other skills that will be developed include; independent research, numeracy, graphicacy and ICT.

Geography is highly regarded by Russell Group universities and it complements a variety of other subjects, both arts and sciences; as a result, it can pave the way to a wide range of courses at university. A high proportion of our candidates choose to study Geography at university and go on to follow a large variety of careers.

### **History**

In VI Book historians are taught in one of three sets - medieval, early modern and modern - and study papers in British and non-British history, a thematic study over a period of more than 100 years and write a coursework essay of 4,000 words on a subject of their choosing. Anyone who likes to read widely, is reasonably fluent on paper and has an interest in people and the past is a potential student of History at A-level. The material covered by each set is provided in outline below, although remains subject to change.

The medieval set will cover British history from 871-1016, charting the wars between Alfred the Great and the Vikings and the unification of England under Alfred's successors. The non-British paper will explore the creation of the Mongol Empire under Genghis Khan and its subsequent development from 1167-1405, including its impact in Persia, India and China. The thematic paper investigates the role of heresy and the Inquisition in the medieval life of Europe from 1100 to 1400.

The early modern set will study the causes, events and consequences of the English Civil War from 1603-1646, the Protectorate of Oliver Cromwell and the restoration of the British monarchy in 1660. The non-British paper will explore the causes and impact of European exploration in the Americas, Africa and Asia in the 15<sup>th</sup> and 16<sup>th</sup> centuries, while the thematic paper will look at the causes, nature and impact of rebellion and disorder under the Tudors from 1485 to 1603.

The modern set will study British history from 1783-1846 – from Pitt the Younger to Sir Robert Peel – and combine this with a non-British paper on international relations from 1890-1941, including the origins and course of the First World War, and its consequences in Europe and the Far East. The thematic study explores developments in the Middle East from 1908-2011, the origins of the Arab-Israeli conflict and its development up to the present day.

History combines well with most subjects in VI Book and provides a good grounding for a degree in most non-scientific subjects. Pupils who are considering studying the subject at university may like to consider choosing a modern or classical language alongside History, but it is not uncommon to choose History alongside Maths and a Science. More generally, History encourages independent study and

critical thought, and helps to develop literary skills which, valuable in themselves, are also highly appreciated in many careers.

### **Art History**

Art History is an academically rigorous essay-based discipline that demands we first *look* at works of art and architecture, then try to *understand* them.

We study social, political and religious context: we examine the history behind works of art, as well as learning the technical language to describe them.

The Edexcel A-level course ranges across art that is ancient and modern, figurative and non-figurative, Western and non-Western. The list of artists you will study is a wide one, amongst them Jackson Pollock, Michelangelo, da Vinci, Monet, Renoir and van Gogh.

Lessons are visual and academically testing. We are often out of the classroom using the resources of Treasury, the Fellows' Library and the buildings of Winchester College.

Paper 1 is firstly an unseen paper: you will be tested on your ability to analyse painting, sculpture and architecture from 500 BCE to 2,000 ACE.

The two themes we study for the second half of Paper 1 are *War* and *Identity*. In our study of them, we will examine a wide range of works, the buildings of Christopher Wren to the anti-war paintings of Paul Nash.

Paper 2 is composed of historical topics: the *Renaissance 1420-1520*; and *Britain and France, 1848-1898*. Thus the 'heroic age' of Florentine, Roman and Venetian art from 1420-1520 precedes study of the Impressionists, Post-Impressionists and Pre-Raphaelites. Architecture of the period ranges from the Eiffel Tower and the Crystal Palace to the Sistine Chapel and St. Peter's.

There are study visits to museums and galleries in the UK each term. Every year there is a trip abroad. Recent destinations have included Florence, Rome, Venice, Barcelona, Paris, Amsterdam and New York. The Kenneth Clark Society organises a variety of events such as lectures and visits to exhibitions.

The subject is inherently interdisciplinary. It complements other humanities, languages and sciences. It is particularly appropriate for those wishing to read Architecture. Former pupils have studied the subject at Cambridge, UCL, the Courtauld Institute, Edinburgh and many other leading universities. Their subsequent careers range from journalism and the law, to interior design and film making.

### **Mathematics**

Mathematics is an essential qualification for university courses in Engineering, Economics, Architecture, the Sciences and, of course, Mathematics itself; and for others (e.g. Law, Linguistics, Medicine) it is strongly valued. Prestigious universities may additionally require Further Mathematics for some courses. Beyond university it is a qualification highly respected by many employers. Although mathematical techniques constitute a central component in the applied sciences, the discipline is above all else aesthetic; boys who successfully negotiate Mathematics in VI Book are those who are broadly sympathetic with this view.

There are four pathways (please see below) of Mathematical study in VI Book:

- 1) a two-year course with 8 lessons per week leading to A-level Mathematics (**Mathematics**);

2) a one-year course with 9 lessons per week leading to A-level Mathematics at the end of VI Book 2 (**accelerated Mathematics**);

3) a two-year course with 14 lessons per week leading to A-level Mathematics and A-level Further Mathematics (**Further Mathematics**);

4) a two-year course with 9 lessons in VI Book 2 and 10 lessons in VI Book 1 leading to A-level Mathematics and A-level Further Mathematics (**accelerated Further Mathematics**).

All pupils take GCSE at the end of V Book. The top three sets will also take OCR Free Standing Maths Qualification (FSMQ). We follow the OCR A (H240) Mathematics and OCR A (H245) Further Mathematics.

For the Mathematics course, we expect at least a grade 7 in GCSE. It is our experience, however, that boys in 3Mf, 3Mg and 3Mh, who achieve a grade 7 in GCSE and embark upon A-level Mathematics, tend to find the course challenging, and rarely achieve a grade higher than a B at A-level.

For accelerated Mathematics and Further Mathematics, we expect a grade 8 or 9 in GCSE and a grade A in OCR FSMQ (the highest grade available in this qualification).

For accelerated Further Mathematics, boys need first to be in one of the two highest sets in V Book and secondly to achieve a grade 8 or 9 in GCSE and a grade A in OCR FSMQ.

### **Modern Languages: French, German, Spanish and Russian**

The study of Modern Languages is a demanding and rewarding academic discipline. Those who choose to study a language in depth will be introduced to the literature, culture and ideas of a foreign country. They will learn to communicate effectively and accurately in writing and in the spoken language.

French, Spanish and German follow the AQA A-level course which consists of three papers. Reading, listening and translation are worth 50%. The remaining 50% are made up of a literature and speaking exam, which comprises an individual research project and a syllabus-specific conversation. Russian follows the Edexcel A-level course which consists of three components: listening, reading and translation (40% of marks), written response to works and translation (30%) and speaking (30%).

Boys are encouraged to use the library and online resources to improve their knowledge of literature and contemporary culture and must attend conversation classes weekly to practise the spoken language. They should also plan to spend at least two weeks in a country in which their language is spoken.

The Head of French runs an annual exchange for boys in VI Book with a school in Bordeaux. The German Department organises a VI Book study trip to Germany to hone pupils' oral proficiency before their oral exams. The Spanish Department runs an annual exchange for boys in VI Book with a school in Seville. There is an annual study visit to Russia for those in VI Book 1 and 2 and an annual exchange with a school in St Petersburg.

Those in VI Book 2 must enter for a prize exam on a set text. They may participate also in a speech competition for recitation in the foreign language. These competitions are held in the first term of the top year.

Every year approximately ten boys go on to read Modern Languages at university. Pupils who may be thinking of studying the subject at a university where the course is likely to have a significant bias

towards literature (as opposed to a joint honours course in, say, Spanish and Business) are strongly advised to take English Literature A-level alongside their language A-levels.

Chinese is not offered for study in VI Book.

## **Music**

Music can fit with almost any combination of subjects, and because many music graduates opt for employment outside the subject, is not seen as an entirely specialised vocational study.

The AQA A-level course in Music is assessed through three components: appraising, performing, and composing. Appraising involves the study of a wide range of music from the Western Classical music from 1650 to the present, including Baroque concertos, the operas of Mozart, Romantic Piano Music, and Jazz. The paper includes listening to both familiar and unfamiliar works, analysing them and putting them into context. For the performing element, boys will give a short recital on their chosen instrument, which must be at a minimum of Grade 7 standard. This can include improvisation, playing or singing as a soloist, as an accompanist, or in a duet or as a member of an ensemble. Composing (which is a coursework element) involves stylistic exercises based on the chorales of J.S. Bach, and a commissioned composition in a style of the candidate's choice.

In addition to studying for an A-level in Music, candidates will have the opportunity to be entered for the Grade 8 Theory examination, which is highly regarded and sought-after by universities, and to take a diploma on their chosen instrument(s). Both of these elements are optional but highly recommended and will add further breadth to their VIth Book studies.

Candidates who wish to obtain a high grade for A-level Music do not need to have studied Music at IGCSE, but must be advanced performers on at least one instrument (Grade 7 minimum) and possess sophisticated listening and writing skills which they can apply across a wide range of Western Classical music. The most successful candidates are those who learn several instruments, and are immersed in a wide range of practical music (through participating in ensembles, orchestras, and choirs), and who demonstrate a passionate curiosity about the subject, attending concerts and listening to a variety of repertoire.

## **Philosophy**

In AQA A-level Philosophy you will learn the critical thinking skills which will be essential to any profession you choose to enter after university. These skills are now part of many critical thinking tests for admission to a wide range of undergraduate degree courses.

You will learn how to:

- identify the structure of an argument: its premises, assumptions, reasons, conclusions and inferences
- identify different forms of argument: deduction, induction, abduction - and be able to analyse and evaluate arguments in ways appropriate to their form: validity/invalidity, soundness/unsoundness, certainty/probability
- recognise and deal appropriately with flaws in an argument, including circularity, contradictions, question-begging and other fallacies
- use examples and counter-examples
- generate arguments, objections and counter-arguments

The knowledge content of the syllabus covers questions arising in the core areas of the Western philosophical tradition and looks at the work of key historical and contemporary contributors to these debates:

1. **Epistemology:** How do we acquire knowledge about ourselves and the world? Are we born hardwired with some knowledge already or is everything acquired via our sense experience? What counts as 'knowledge'? What is a 'proof'?
2. **Moral philosophy:** What makes an action right or wrong? Is it our intentions? The consequences? Our laws? Our conscience? What do we mean by living a 'good life'? Are we free? Are we always responsible for our actions?
3. **The question of God:** Does the problem of evil decisively rule out God's existence? What do we mean by 'causation'? Are faith and reason compatible or are they always in opposition?
4. **Philosophy of Mind:** Are Mind and Brain identical, distinct or separate? What is consciousness? Can computers think? Can chimpanzees? What about a hive of bees?

Philosophy A-level will be examined at the end of the course in two three-hour papers. There is no Personal Investigation nor project work. Paper 1 covers the first two core areas and Paper 2 covers the second two core areas.

The examinations will test your ability to define key terms correctly, give accurate short answers to specific topics and finally assess your ability to construct and assess a philosophical argument in a longer essay. The essay will be on questions drawn from each of the four core areas.

Philosophers should bring an insatiable curiosity to their studies. They should enjoy asking questions which advance their understanding and, crucially, should enjoy having their own questions and responses cross-examined in turn. Philosophy is an excellent complement to a wide range of other subjects. In recent years boys have gone to university to study Physics and Philosophy, Modern Languages and Philosophy, Theology and Philosophy, Psychology and Philosophy and PPE. Others have found the study of Philosophy useful in progressing to Law, Linguistics, Mathematics, Natural Sciences, Economics and Medicine.

## Sciences

All three sciences will pursue national A-level courses, given the announced demise of the Cambridge Pre-U qualification. However, extension work that is Pre-U in character will still be available for sufficiently able sets. It is difficult to study science at this level without mathematics and, at university, pure science (but not always medicine) will require it.

Studying the sciences need not lead to subject specialisation at university. Many university science and engineering degree courses are now very broad and contain a wide variety of options studied in combination with the main subject. Science and engineering degrees are more vocational than arts subjects but science graduates are not locked into research or industrial careers: many end up transferring to law or entering the financial world.

Most universities adopt a flexible entry policy for science courses, many of which are undersubscribed. Certain combinations are required for some subjects, for instance Chemistry and, often, Biology for Medicine; and Physics and Mathematics for engineering. Boys who are thinking of studying Engineering at university are strongly encouraged to take A-level Design & Technology as one of their course options. Pupils interested in Medicine must bear in mind that more than 3 A-levels may be demanded, and so they will need to check carefully the course requirements. Many university courses cross the traditional school subject divides: Materials Science (Physics and Chemistry), Biophysics, and Biochemistry.

## **Biology**

The unlocking of DNA's structure by Watson and Crick was the catalyst for an explosion of biological exploration that has fundamentally altered the scientific landscape. Biology is unquestionably a subject that affects us all, whether socially, ethically or economically.

The Edexcel (Pearson) Biology B A-level course extends the interesting components of the IGCSE syllabus to satisfy more fully the intellectual curiosity of our pupils. For those looking to supplement their humanities education with a challenging alternative, Biology is highly regarded when offered in support of university applications to non-science courses. The syllabus contains sufficient diversity to interest all. The core components of molecular biology, biochemistry, genetics and biotechnology will appeal to the technically minded pupil, whilst at the same time supplementing the interest of a natural historian. There is lots of practical application with the requirement to complete 12-16 core practicals throughout the course. Those considering this option will need to gain a grade 7-9 at IGCSE.

The A-level course is well supported outside the classroom, with a wide range of activities available, including: Biological Society which encompasses Journal Club, Dissection Club, Medic Society, the British Biology Olympiad and field studies trips.

## **Chemistry**

Boys in V Book who continue with Chemistry will pursue the OCR A course for A-level. The course contains some high-level material and so boys electing to pursue Chemistry will need to have a good grounding in the subject—ideally an 8 or 9 at IGCSE, although a 7 grade will also be acceptable. It is not necessary for VI book Chemistry to take Mathematics at A-level.

One of the most flexible disciplines, Chemistry is a useful partner to Mathematics, Physics, Biology, Economics or History and is a requirement for Medicine and useful for Engineering. Chemistry is also highly valued in research, insurance, consultancy, law and many other careers because of its training of analytical and problem-solving skills.

About a quarter of the course is dedicated to laboratory work, developing the practical skills that a chemist needs. There is a series of assessed practical tasks over the two-year course, in which certain skills must be demonstrated by pupils and recorded.

There will be many opportunities for extension work beyond the syllabus, and good results in the Cambridge Chemistry Challenge for Lower Sixth or the UK Chemistry Olympiad are useful indicators for university admissions tutors.

## **Physics**

Many are inspired by the "big science" of the Big Bang or the Higgs boson, but Physics is involved in understanding the universe at every scale, from the flame of a candle to the nuclear fires of a star. The careful, precise thought and mathematical competence demanded by the subject make it a highly respected qualification for any university course; it is essential for the study of Physics and Engineering at university and is very useful for any course involving Maths or Science.

A degree in Physics or Engineering is obviously necessary for a specialist career in these fields, but leaves options open to take any path after graduation. In particular, the physicist's habit of developing mathematical models of the world has provided a fine grounding to many pursuing careers in computing or finance.

All pupils will be following national A-levels, with a single set of exams at the end of a two-year course. The course will retain its mathematical rigour: we would expect those taking Physics to be studying Maths in VI Book and to have at least an 8 in Physics IGCSE. The practical element of the qualification will involve continuous assessment of laboratory work over the two-year course: typically the amount of experimental work we do would be well in excess of the minimum requirements of the exam board.

**TNT April 2020**

## **Appendix 1 – Current Pre-U Subject Descriptions**

### **Art**

The programme of study we follow is the Cambridge Pre-U certificate in Art and Design. The course is relevant to those pupils who intend to enter higher education courses in Art, Design and Architecture. It is also suitable for those who are planning careers for which a background in art and design would be useful or for those who simply wish to pursue their interest in art and culture. The nature of the course fosters creativity to give a rounded and balanced educational experience, encouraging visual literacy. There are opportunities to work with an artist in residence, for gallery visits, talks by artists, artists' workshops, student-led shows and trips abroad.

Art School offers a wide range of disciplines to study: drawing, painting, multi-media, photography, printmaking, ceramics and sculpture. Initially, pupils are encouraged to experiment with a range of different media and skills, focusing on a particular discipline as the course develops. The course encourages an independent and personal approach and comprises of three components, the first two are marked internally and moderated externally and the last is externally examined.

- Component 1: A practical portfolio completed in the first year.
- Component 2: Critical and contextual study, a written submission that examines the themes and ideas introduced in Component 1.
- Component 3: A practical project that is completed in the second year and assimilates all the ideas investigated in Components 1 & 2.

The course is followed in timetabled hours and involves studio time on Wednesday evenings. It allows students to develop their intellectual, imaginative, problem-solving, creative and intuitive skills. It requires investigative, analytical, experimental, practical, technical and critical judgement, and expressive techniques. It encourages students to reflect on their own work and on the work of other artists and designers.

### **Classics: Greek and Latin**

The Pre-U examinations in Greek and Latin are identical in structure, so our courses are very similar. In both years of VI Book each set is taught by two dons, one for language and one for literature. Small sets enable us to give attention to individual boys. We start by reading a variety of ancient literature, both prose and verse, chosen to give a foundation for studying the set texts. Through this reading the boys develop their skills in literary analysis, understand the cultural and historical contexts in which the authors were writing, and appreciate the influence of the classical world on later European culture. They develop the linguistic facility and clarity of thought required for this through continuous work on language, based on translation both from and into Latin and Greek. Towards the end of VI Book 2, work starts on the set texts, one prose and one verse, prescribed for the final examination. That is taken at the end of VI Book 1 and comprises four papers: two on the set texts and two on language. There is no coursework.

Greek and Latin may be studied together for university entrance, or singly in combination with other subjects. They are regarded by universities as rigorous academic subjects, and support applications for both humanities and science courses. Several boys each year go on to read Classics (on its own, or in combination with other subjects), the majority at Oxbridge.

## **Design**

The majority of boys taking Design in VI Book go on to study Engineering, Computer Science, Architecture, or another design-related subject at University. Design neatly complements both science and arts subjects and enables pupils to develop transferable skills relevant to careers involving technology, creativity and entrepreneurship.

Boys enjoy tremendous freedom to experiment with, and utilise, a range of cutting-edge design tools, materials, manufacturing processes and technologies relevant to their interests in one or more of the following: engineering, architecture, vehicle design, robotics, furniture and product design. It is an outward-looking course that encourages all pupils to tackle important real-world issues involving technical, human and social parameters.

Working individually and in teams, boys undertake investigative research, experimentation, problem solving, prototyping and design communication. The course fosters a collaborative approach, taking advantage of the department's strong links with industry academia, including the Dyson School of Design Engineering at Imperial College and the Royal College of Art. Trips, guest lectures and museum visits are key components of the course and expose candidates to a breadth of creative and technical influences.

The first two terms of the course are devoted to the creation of a portfolio of short projects, after which boys choose between a Pre-U or A-level route. Those taking Pre-U (Art & DESIGN) will complete a critical and contextual study (Unit 2), and a major project (Unit 3) in addition to the portfolio (Unit 1), all ultimately examined in the form of a multimedia exhibition. Those opting for the A-level (OCR DT: Design Engineering) will complete a major project (50% of the final assessment) and sit two written examinations involving applied maths, physics and technical problem solving techniques (50%).

For boys wishing to develop a portfolio of both design and fine art, possibly out of an interest in architecture, there is scope to work in both Mill and Art School whilst studying for the Pre-U.

## **Economics**

The course covers the main areas of the subject: consumers, firms, government, banks, finance, labour markets and foreign trade. It includes the study of markets, government intervention in the economy and analysis of policies related to a wide range of practical issues. We develop the theoretical side of the subject: boys learn to apply economic theory to the UK economy and to global economic problems. This is particularly true in Paper 3 where our specialist topic is currently China and the Global Economy. The course is contemporary, fresh and encourages boys to have an economic perspective on their place in the world.

Economics appeals to boys who are keen to learn more about how the world works. Those who are strong in History, Science or Mathematics usually do well in the subject. The course requires the ability to write concisely and with insight: a good grade in IGCSE English is a good indicator of suitability for the subject. Equally, a poor pass in GCSE Mathematics may be an indication that a boy will find the theoretical side of the subject difficult.

Economics, while making an important contribution to general education, is also relevant for a wide range of university courses such as Law, Business Studies, History, Politics, Geography, Engineering and International Affairs.

## English

"While thought exists, words are alive and literature becomes an escape, not from, but into living." - Cyril Connolly

English at Pre-U is Literature in English. We study a range of genres: prose, drama and poetry, exploring narratives, social context, and critical opinions. Boys will need to enjoy engaging with ideas and exploring culture. This is a subject that will stand them in good stead considering the importance we place on academic acumen, sophisticated discussion, and fluent writing skills.

Boys will need to like reading, not just the main texts, but also wider critical and contextual works that will illuminate their understanding. We encourage independence of thought and wish to foster creativity as well as close analytical skills.

The linear nature of the Pre-U assessment allows us to spend a year reading as widely as possible, without the pressure of external assessment. Part of the year is devoted to teaching academic research, leading to a practice Personal Investigation.

In VI Book 1 we tackle the examination texts: a twentieth-century novel and a pre-twentieth-century poet; Shakespeare and Pinter are studied for the drama component. There are three papers at the end of the year, of which one involves close analysis of unseen passages and poems. Boys will also complete their Personal Investigation (a coursework essay of about 3,500 words) on a topic or author of their own choice.

Throughout the course, the Empson Society provides talks by guest speakers such as academics and poets; and Spirit Lamp caters for creativity and collaboration. There are also Symposia, theatre trips and reading groups.

## Geography

Geography at Pre-U grapples with the key global issues faced today.

The course is split into four papers:

Paper 1	Global Environments	Glacial and Atmospheric Environments.
Paper 2	Global Themes	Migration and The Provision of Food
Paper 3	Geographical Issues	Tectonic and Atmospheric Hazards, Health Issues and, Inequality and Poverty.
Paper 4	Research Topic	Microclimates (this includes a three-day field trip to South Wales).

Rigorous theoretical analysis gives pupils an intellectual understanding of each topic. Contemporary examples are then explored to discover how the theory relates to the real world. In this way, candidates develop a confident grasp of the global issues studied, appreciating their causes, impacts and potential solutions.

Essay writing is an important part of the course assessment. Pupils are given every opportunity to develop their essay writing throughout the course and particularly in VI Book 2. Other skills that will be developed include; independent research, numeracy, graphicacy and ICT.

Geography is highly regarded by Russell Group universities and it complements a variety of other subjects, both arts and sciences; as a result, it can pave the way to a wide range of courses at university.

A high proportion of our candidates choose to study Geography at university and go on to follow a large variety of careers.

### **History**

Pre-U candidates will study medieval, early modern or modern history, both British and European, and will specialise in one area in the document-based special subject. They will also write a 3-4,000 word coursework essay (Personal Investigation) on a topic arising from their historical studies.

Any pupil who likes to read widely, is reasonably fluent on paper and has an interest in people and the past is a potential student of History at Pre-U level. There are no minimum entrance requirements for History Pre-U but it does require a willingness to read and write extensively: hard work outside the classroom will be essential to success.

History combines well with most subjects in VI Book. An advanced qualification in History is a good grounding for a degree in most non-scientific subjects. Pupils who are considering to study the subject at university may like to consider choosing a modern language, or Latin, alongside History. Moreover, History encourages regular and independent work habits and critical thought, and helps to develop literary skills which, valuable in themselves, are also highly appreciated in many careers.

### **Art History**

Art History is an academically rigorous essay-based discipline that teaches visual literacy for life. The Cambridge Pre-U syllabus provides opportunities for candidates to learn about the development of both Western Art and non-Western Art. Paper 1 is the study of a canon of 40 works of four kinds: painting, sculpture, architecture, and works on paper. Through these case studies, a grounding in art history is established. Paper 2 is composed of historical topics spanning medieval, Renaissance and 17<sup>th</sup> century art. Paper 3 is a thematic topic in which we study landscape painting. Paper 4, the Personal Investigation, is an independent study on a topic chosen by the candidate. This is one of the most academically challenging parts of the course. Uniquely in Pre-U, it has a viva voce exam with an external examiner.

There are study visits to museums and galleries in the UK each term. Every year there is a trip abroad. Recent destinations have included Florence, Rome, Venice, Barcelona, Paris, Amsterdam and New York. The Kenneth Clark Society organises a variety of events such as lectures and visits to exhibitions.

The subject is inherently interdisciplinary. It complements other humanities, languages and sciences. It is particularly appropriate for those wishing to read Architecture. Former pupils have studied the subject at Cambridge, UCL, the Courtauld Institute, Edinburgh and many other leading universities.

### **Mathematics**

Mathematics is an essential qualification for university courses in Engineering, Economics, Architecture, the Sciences and, of course, Mathematics itself; and for others (e.g. Law, Linguistics, Medicine) it is strongly valued. Prestigious universities may additionally require Further Mathematics for some courses. Beyond university it is a qualification highly respected by many employers. Although mathematical techniques constitute a central component in the applied sciences, the discipline is above all else aesthetic; boys who successfully negotiate Mathematics in VI Book are those who are broadly sympathetic with this view.

There are four pathways (please see below) of Mathematical study in VI Book.

1) a two-year course with 8 lessons per week leading to Pre-U Mathematics (**Mathematics**);

2) a one-year course with 9 lessons per week leading to Pre-U Mathematics at the end of VI Book 2 (**accelerated Mathematics**);

3) a two-year course with 12 lessons per week leading to Pre-U Mathematics and Pre-U Further Mathematics (**Further Mathematics**);

4) a two-year course with 9 lessons in VI Book 2 and 10 lessons in VI Book 1 leading to Pre-U Mathematics and Pre-U Further Mathematics (**accelerated Further Mathematics**).

All pupils take GCSE at the end of V Book. The top three sets will take as well the OCR FSMQ.

For the Mathematics course, we expect at least a grade 7 in GCSE. It is our experience, however, that boys in 3Mf, 3Mg and 3Mh, who achieve a grade 7 in GCSE and embark upon Pre-U Mathematics, tend to find the course challenging, and rarely achieve a grade higher than M1 (B) at Pre-U.

For accelerated Mathematics and Further Mathematics, we expect a grade 8 or 9 in GCSE and a grade A in OCR FSMQ (the highest grade available in this qualification).

For accelerated Further Mathematics, boys need first to be in one of the two highest sets in V Book and secondly to achieve a grade 8 or 9 in GCSE and a grade A in OCR FSMQ.

### **Modern Languages: French, German, Spanish and Russian**

The study of Modern Languages is a demanding and rewarding academic discipline. Those who choose to study a language in depth will be introduced to the literature, culture and ideas of a foreign country. They will learn to communicate effectively and accurately in writing and in the spoken language.

The Pre-U course consists of four units. Reading, writing, listening and grammar are tested in two units, and the spoken language and culture/literature in the other two.

Boys are encouraged to use the library and online resources to improve their knowledge of literature and contemporary culture, and must attend conversation classes weekly to practise the spoken language. They should also plan to spend at least two weeks in a country in which their language is spoken.

The Head of French runs an annual exchange for boys in VI Book with a school in Bordeaux. There is an annual study visit to Russia for those in VI Book 1 and 2 and an annual exchange with a school in St Petersburg. The German Department organises a VI Book exchange to Vienna in December with the prestigious Vienna Business School to hone pupils' oral proficiency before their oral exams.

Those in VI Book 2 must enter for a prize exam on a set text. They may participate also in a speech competition for recitation in the foreign language. These competitions are held in the first term of the top year.

Every year approximately ten boys go on to read Modern Languages at university. Pupils who may be thinking of studying the subject at a university where the course is likely to have a significant bias towards literature (as opposed to a joint honours course in, say, Spanish and Business) are strongly advised to take English Literature Pre-U alongside their language Pre-U.

Chinese is not offered for study in VI Book.

## **Music**

Music can fit with almost any combination of subjects, and because many music graduates opt for employment outside the subject, Music is not seen as an entirely specialised vocational study.

The Cambridge Pre-U course in Music is assessed through four components. A special feature of the Pre-U is that while it covers the three key activities of composing, listening and performing, it also enables candidates to specialise in the areas which particularly interest them. The compulsory components consist of (1) Listening, Analysis and Historical Study (including a study of historically informed performance practice through the comparison of different performances of the same work), (2) Performing (coursework and recital), and (3) Composing (stylistic exercises based on Bach chorales and Haydn or Mozart quartets, and a commissioned composition in a style of the candidate's choice). The fourth component gives boys the opportunity to explore one of these areas in greater depth, writing a dissertation, a free composition, creating two music technology projects or giving an advanced recital. There is also flexibility in the nature of the performances assessed for the recital and coursework, which can include improvisation, playing or singing as a soloist, as an accompanist, or in a duet or as a member of an ensemble.

In the Listening, Analysis and Historical Study paper candidates study two compulsory areas – the Symphony in the Classical Period (c.1740–c. 1802), and Orchestral Music in the Nineteenth Century (c. 1803–1900) – and a third topic chosen from various options which change from year to year. These last components include the study of a set work as well as placing the topics within a broader cultural history. The paper also gives candidates the opportunity to write in greater depth about general musical matters and to form connecting links between any of the music studied for the examination as a whole.

Candidates who wish to obtain a high grade for Pre-U Music do not need to have studied Music at IGCSE, but must be advanced performers on at least one instrument (Grade 7 minimum) and possess sophisticated listening and writing skills which they can apply across a wide range of Western Classical music. The most successful candidates are those who learn several instruments, and are immersed in a wide range of practical music (through participating in ensembles, orchestras, and choirs), and who demonstrate a passionate curiosity about the subject, attending concerts and listening to a variety of repertoire.

## **Philosophy and Theology**

What can I know? How should I live? What can I hope? These are the three fundamental questions of life asked by the great German philosopher Immanuel Kant. If these kinds of questions interest you, you might consider studying Pre-U Philosophy and Theology. The subject asks students to think rigorously about fundamental questions of truth and understanding, and is intended to introduce students to the academic study of the shared heritage of philosophy and theology. The course begins with a good foundation in the Western philosophical tradition and a primer in Ethics. It then develops to include questions concerning the nature and existence of God; psychological and sociological interpretations of religion; the problem of evil; the relationship between science and religion; the free will debate; existentialism; normative ethical theories and their application to such issues as abortion, euthanasia, war, and the environment.

The Pre-U specification encourages the critical examination and evaluation of evidence and arguments, and aims to develop the ability to construct, develop and maintain a clear and coherent argument through discussion, debate, essay writing and textual analysis. For this reason it is a very valuable subject for a variety of university degree courses including Theology, Philosophy, Law, History, English, Politics, Economics, Psychology and even Medicine. The weight of material on the relationship

between science, religion, and ethics makes it an interesting foil if you are considering other science subjects.

## **Sciences**

All three sciences pursue the Cambridge Pre-U course, which is designed to be a more rigorous preparation for university study in these subjects than the A-level courses. However, this is not to disadvantage those who intend to combine one or more sciences with non-science subjects. It is difficult to study science at this level without mathematics and, at university, pure science (but not always medicine) will require it.

Studying the sciences need not lead to subject specialisation at university. Many university science and engineering degree courses are now very broad and contain a wide variety of options studied in combination with the main subject. Science and engineering degrees are more vocational than arts subjects but science graduates are not locked into research or industrial careers: many end up transferring to law or entering the financial world.

Most universities adopt a flexible entry policy for science courses, many of which are undersubscribed. Certain combinations are required for some subjects, for instance Chemistry and, often, Biology for medicine; and Physics and Mathematics for engineering. Boys who are thinking of studying Engineering at university are strongly encouraged to take Pre-U Design or A-level Design Engineering (see pp 5-6) as one of their course options. Pupils interested in Medicine must bear in mind that more than 3 Pre-U's may be demanded, and so they will need to check carefully the course requirements. Many university courses cross the traditional school subject divides: Materials Science (Physics and Chemistry), Biophysics, and Biochemistry.

## **Biology**

The unlocking of DNA's structure by Watson and Crick was the catalyst for an explosion of biological exploration that has fundamentally altered the scientific landscape. Biology is unquestionably a subject that affects us all, whether socially, ethically or economically.

The Biology Pre-U course extends the interesting components of the IGCSE syllabus to satisfy more fully the intellectual curiosity of our pupils. For those looking to supplement their Humanities education with a challenging alternative, Biology is highly regarded when offered in support of university applications to non-Science courses. The syllabus contains sufficient diversity to interest all. The core components of molecular biology, biochemistry, genetics and biotechnology will appeal to the technically minded pupil, whilst at the same time supplementing the interest of a natural historian. Those considering Medicine or Veterinary Science at university will also benefit enormously by learning physiology and histology far beyond that offered by other Biology qualifications.

The Pre-U course is well supported outside the classroom, with a wide range of activities available, including: Biological Society which encompasses Journal Club, Dissection Club, Medic Society, the British Biology Olympiad and field studies trips.

## **Chemistry**

Boys in V Book who continue with Chemistry will pursue the Cambridge Pre-U course. The course contains some higher level material than the A-Level and so boys electing to pursue Chemistry will need to have a good grounding in the subject—ideally an 8 or 9 at (I)GCSE, although a 7 grade will also be acceptable.

Chemistry is a useful partner to Mathematics, Physics or Biology and is a requirement for Medicine and useful for Engineering. Chemistry is also highly valued in research, insurance, consultancy and many other careers because of its training of analytical and problem-solving skills.

About a quarter of the course is dedicated to laboratory work, developing the practical skills that a chemist needs. At the end of the second year there will be a laboratory practical exam. Boys will need to be comfortable with equations in physical chemistry, and so will be at an advantage if they are also pursuing a maths course, although post-GCSE Maths is not a requirement.

The synthesis, structure and symmetry of organic molecules are studied in detail, and skills to understand novel contexts are developed. The three-dimensional nature of molecules and lattices is pursued in detail in both the organic and inorganic fields.

### **Physics**

Many are inspired by the “big science” of the Big Bang or the Higgs boson, but Physics is involved in understanding the universe at every scale, from the flame of a candle to the nuclear fires of a star. The careful, precise thought and mathematical competence demanded by the subject make it a highly respected qualification for any university course; it is essential for the study of Physics and Engineering at university and is very useful for any course involving Maths or Science.

A degree in Physics or Engineering is obviously necessary for a specialist career in these fields, but leaves options open to take any path after graduation. In particular, the physicist’s habit of developing mathematical models of the world has provided a fine grounding to many pursuing careers in computing or finance.

All pupils follow the Cambridge Pre-U course, with a single set of exams at the end of a two-year course. The course is mathematically rigorous: we would expect those taking Physics to be studying Maths in VI Book and to have at least an 8 in Physics IGCSE. It also involves a considerable amount of experimental work culminating in a 4-week Personal Investigation (externally moderated) worth 15% of the marks available.