



LOUGHBOROUGH GRAMMAR SCHOOL

A level Option Choices



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CHOOSING YOUR SIXTH FORM COURSES

Deputy Headmaster - Head of Sixth Form: Dr. C. G. Walker

The importance of the Sixth Form years cannot be underestimated since they provide an effective preparation for life after school, and for most of our students this will mean higher education. It is important that within our Sixth Form programme we encourage our students to develop a sense of personal responsibility for their intellectual development, and that they develop a positive attitude towards their own learning. To this end it is important that they make the right subject choices, approach their work and behaviour in a mature and serious fashion and that they enjoy their Sixth Form studies.

This booklet provides information about the academic subjects which are available in the Sixth Form and it also gives some advice about selecting the right subjects so that our students can achieve to the limit of their potential. In addition, we are keen that boys should consider the many extracurricular activities which exist to enable our Sixth Form students to develop the personal qualities needed to move on from LGS with the confidence and the potential for future success (or to put it very baldly – to enrich their UCAS application to ensure entry to the course of their choice). As Sixth Formers they will also be expected to provide strong and positive examples to younger members of the School. There will be many opportunities to lead, organise and manage others with appropriate support and guidance.

All Sixth Formers will be invited to become Prefects as they approach the end of their Lower Sixth year. Some will be elected as Senior Prefects who carry additional responsibilities within their own year group.

THE SIXTH FORM CURRICULUM

Entry into the Sixth Form is conditional upon the achievement of a minimum of 5 B grades at GCSE. We would normally expect an A grade in the subjects to be taken for A level where a GCSE qualification is available in that subject and we would discourage the taking up of more than two new subjects without very persuasive arguments why this should happen.

In Year 12 our students take four AS subjects chosen from the list provided below. At present most AS levels are taught on the basis of ten lessons per week for the four main subjects, except where there are very small numbers opting to do the subject. In addition three lessons are allocated to each of Enrichment activities (including Partnership, VSU & CCF) and Games (which is compulsory). For a small proportion of boys the Extended Project Qualification (EPQ) may be appropriate. The remainder are given to our Lower Sixth as private study periods where they are expected to show initiative in taking charge of their own learning. All AS examinations now take part in June, when there will be a leave of absence given.

During the Spring Term, students are asked to select the three subjects which they wish to continue to A level in Year 13. This is not necessarily a binding decision, but the School requires this information for timetabling purposes and therefore we encourage students to think very carefully about their choices at this time. It might be possible to change in the light of AS results, but it is important that the Deputy Headmaster is consulted and that these decisions are carefully thought through. In some cases boys may be allowed to keep four subjects but this will be at the discretion of the Deputy Headmaster (academic) following consultation with teaching staff and the Deputy Headmaster (Head of Sixth Form). It may also be possible to study AS Critical Thinking in Year 13.

These subjects are studied for the remainder of the course, and again in Year 13. Games are compulsory until the beginning of the Summer Term in Year 13. In Year 13 it is intended that all boys will take part in a Thursday afternoon enrichment programme.

AS/A LEVEL SUBJECTS AVAILABLE TO STUDENTS AT LOUGHBOROUGH GRAMMAR SCHOOL

You will be asked to choose any four subjects to study to AS level.

Art and Design
Biology
Business Studies
Chemistry
Classics
Computing
Design and Technology
Drama and Theatre Studies
Economics
English
French
Geography
German
Greek
History
Latin
Mathematics
Further Mathematics¹
Music
Physics
Psychology (taught at LHS)
Politics
Religion and Philosophy
Spanish

¹Those boys who choose this subject must select Mathematics and Further Mathematics as two of their Advanced Subsidiary subjects. These boys will keep all four subjects at A2 level in the Year 13.

It may be also be possible to study 'Food and Nutrition' at the High School.
Some other subjects are taught jointly with girls at the High School.

It is not desirable to combine the following subjects:

Business Studies and Economics
Latin/Greek and Classical Civilisation

Furthermore it is not advisable to enter for more than two new subjects. Anyone contemplating one of these combinations should speak to the Deputy Headmaster.

SELECTING THE RIGHT COURSES

You need to choose four Advanced Subsidiary (AS) GCE subjects to study in Year 12 for examination over the course of the year. The AS qualification is a stepping stone between GCSE and A level; the academic standard is midway between the two and assumes one year of Sixth Form study. In Year 13 you may drop

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one subject and continue with the other three. Some subjects also offer Advanced Extension Awards (AEA) which enable candidates to show outstanding ability in that subject.

Your AS and A level choices are important because decisions made at this stage will affect your choice of degree and your career. Some of the subjects on offer will be new to you, and at AS others may be different from GCSE.

The School offers guidance in a number of ways. You have taken the ISCO Morrisby tests during the Autumn Term of Year 11. These tests are designed to identify strengths and interests and hence assist you with course and career choices. Following these tests you will have an interview with your tutor to discuss the results. The master in charge of Careers, Mr Lightfoot, is available to offer further advice. After the mock exam period is finished, all Year 11 boys will have an interview with Dr Willmott and Dr Walker regarding their mock exam results, to discuss thoughts regarding possible A level subjects. It is particularly important that you discuss any unusual combination of subjects. Your tutor will guide you through the process of choosing, but you should research for yourself, for example by looking on the University and Colleges Admissions Service (UCAS) website where degree course entry requirements are explained and you should also use the resources in the Careers Room and the Library where Mrs Bunn, the Librarian, is very happy to assist.

When choosing your subjects you should start by considering the subjects you enjoy most. Base your decision on your interest in and aptitude for the subject, rather than who might teach you or what your friends have chosen. If you have a clear career path in mind, ensure your choices will allow it, but beware that you might change your mind. If you do not have a clear idea about your future, you should choose courses that will enable you to make the most of your strengths without reducing your future options.

The rationale for AS is to broaden the opportunities for those in their first year of the Sixth Form and to delay specialisation. There is evidence that some universities prefer candidates with a fourth AS subject which contrasts with, rather than complements, their other three choices. All British universities seem to welcome the opportunity for greater breadth and depth provided by the structure of AS and A levels. Many universities encourage students to offer at least one AS level in addition to three subjects at A level. Most university courses, including Law, do not require specific A levels, but a number of subjects do have specific requirements.

Specific advice:

Dentistry: Those considering Dentistry must take A level Chemistry and two subjects from Biology, Mathematics and Physics. The best combination is Biology, Chemistry and Mathematics. Work experience is also essential to support a university application.

Economics: Those choosing A level Economics need to be good at Mathematics. Potential Oxbridge applicants for this subject should consider Further Mathematics.

Engineering: Those considering Engineering should take Mathematics and Physics. Potential Oxbridge applicants for this subject should consider Further Mathematics.

Mathematics: This is a good A level choice for those considering careers or university courses in Accountancy, Computing, Finance, Business Studies and Management.

Medicine: Those considering Medicine are advised to take A levels in Chemistry and Biology. Work experience is also essential to support a university application.

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Modern Languages: All boys should consider maintaining or developing their modern language skills through the Sixth Form.

Physics: Those intending to take A level Physics are advised to take Mathematics to at least AS level. Potential Oxbridge applicants for this subject should consider Further Mathematics.

Veterinary Medicine: Those considering Veterinary Science or Veterinary Medicine courses are advised to take Biology, Chemistry and Mathematics at A level. Work experience is also essential to support a university application.

PROGRAMME FOR MAKING SIXTH FORM CHOICES

Morrisby Tests:	June 2013 (Tests) September 2013 (Reviews)
Mock Examinations:	January 6 th – 15 th 2014
Interviews with TGW/CGW	20 th January – 14 th February 2014
Year 11 Parents' Evening:	February 6 th 2014
Registering Choices:	February 24 th 2014
GCSE Examinations:	May – June 2014
Post-GCSE work experience:	June - July 2014
GCSE results:	August 21 st 2013

ART AND DESIGN

Head of Department: Miss E. Johnson

Exam Board: OCR HI60/161

Philosophy and Overview

Art and Design, through the opportunities it provides for personal expression, encourages imagination, powers of observation, aesthetic awareness, sensitivity, conceptual thinking, analytical abilities and practical-orientated attitudes.

The GCE Advanced course encourages a broad approach, which allows candidates to develop a sound grounding in a number of areas while still exploring the subject in depth. Students are encouraged to study artists of the past and present and, by doing so they will broaden their understanding of the subject and develop new approaches to it. They will be expected to make more personal decisions about materials to work with, the scale to work to, constructional methods, and become much more flexible using a wide range of ideas and applications. Students are expected to read around the subject of Art History and be aware of current trends in the art world in order to inform and contextualise their artwork.

AS Level

AS Level builds on the skills, knowledge and understanding acquired by candidates taking Art at GCSE. AS accounts for 50% of the assessment weighting of the full GCE Advanced Level. The AS comprises of 2 units: a coursework portfolio and a controlled assignment of 5hrs. AS places greater emphasis on experimentation and development, with the journey and evolution of a concept gaining more marks than the actual outcome. Candidates should be prepared to break boundaries and work outside of their comfort zone; moderators want to see risk-taking and unusual manipulations of materials. The portfolio is based on starting points which need interpreting in unique ways. The current starting point is 'Change.'

AS is weighted 60% coursework portfolio : 40% controlled assignment,

A2 Level

A2 comprises of a personal investigation which is one practical body of work and a related 1000-300 word personal study. The boys are responsible for selecting a personal focus which has the potential for a sustained project. Examples of past titles are 'Narrative', 'Voyeurism', 'Exploring the merge of nature and science' and 'The influence of Thai traditions on Western Art.' The personal written study places the chosen topic within a social, cultural and historical context and shows an understanding of the artistic influences concerning this theme. There is greater emphasis on the recording of ideas and presentation of response at this level. The second unit is the controlled assignment of 15hrs duration.

A2 is weighted 60% personal study: 40% controlled assignment.

Throughout the course, commitment is vital as a great deal of work should be produced outside of the timetable and it is essential to achieve a well-balanced portfolio for assessments which will take place at the end of May each year.

A Level Art is desirable and indeed a requirement for some courses requesting creative portfolios for University entry, i.e. Architecture (with Maths and Physics), Art History, Fine Art, Art Foundation Graphic

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Design and Product Design. A Level Art is however still commonly opted for at LGS to gain UCAS points for entry onto other areas of study when it is a boys' particular strength or talent.

BIOLOGY

Head of Department: Mr. R.B. Parish

Exam Board: AQA

We offer the AQA GCE Biology which builds on the knowledge, understanding and skills which have been developed during our GCSE course. Completing the GCSE course is a prerequisite for Sixth Form study of Biology and most students who do well will have achieved a grade A* or A at GCSE. Essentially, students will be encouraged to:

- develop knowledge and understanding of concepts of biology, and the skills needed for the use of these in new and challenging situations;
- develop an understanding of biologically scientific methods relevant to industry;
- recognise the value and responsible use of biology in society;
- sustain and develop their enjoyment of the biological sciences;
- further develop practical skills relevant to the course.

The AS course coherently bridges the gap between GCSE and A2. For those who have enjoyed biology at GCSE but who do not wish to continue to A2, the AS biology option is an attractive choice. The specification provides a detailed amplification of the expected knowledge, understanding and skills required.

The two AS modules are:

- Unit 1 Biology and disease
- Unit 2 The variety of living organisms

The first module might be taken in January while the second in June of the Lower Sixth year. The A2 year covers two modules;

- Unit 4 Population and the environment
- Unit 5 Control in cells and organisms

Coursework forms an important part of both the AS and A2 years contributing 10% to the overall mark. Comprehensive textbooks are provided for each year and helpful student support material is available prior to examinations. We will be taking AS Biologists on a Field Course in the summer months which will cover parts of the A2 course, including work on statistics. The department also has a wide range of extra-curricular activities some, where senior boys run and others they can join, which it recommends students get involved with.

A qualification in Biological Sciences provides applicants to Higher Education with a multiplicity of degrees from which to choose ranging from Applied Genetics to Marine Biology and, in most of these, decisions on final specialisation can be delayed until later in the course.

While the department has a major tradition of preparing candidates for the medical professions, many students have used biology to complement quite different subjects. Recently, applicants choosing Biology related degrees outranked those in other subjects as the most popular degree choice. Many have successfully gained places at Oxbridge for disciplines as diverse as Mathematics, Law and Geography utilising their Biology A level.

BUSINESS STUDIES

Head of Department: Mr. R. J. Lightfoot

Exam Board: AQA 1131/2131

A Level Business Studies was one of the first subjects to embrace the notion of modularity at LGS and since doing so has gone from strength to strength. It appeals to just about anyone with an interest in the Business World and particularly those with a desire to follow a career in either Management or in the City. Nationally it is one of the most popular GCE Advanced subjects. The syllabus followed is geared towards problem solving and encourages students to develop a critical understanding of organisations, the context in which they operate, the markets they serve and the process of adding value. The key skills required in this subject are an ability to analyse written and numerical passages, comment on various sources of evidence and above all demonstrate organisational ability and a willingness to work hard and to meet deadlines.

The subject will consider the role of Government, Trade Unions, Investors and the City and the general Political environment that Business has to work in, as well as look at the basics of Accounting and Finance, Marketing, Human Resource Management and Production. By the end of the year pupils should have acquired a firm grasp of the organisational, legal and economic constraints confronting the modern UK business.

The AS units focus on small to medium-sized businesses operating within national as opposed to international markets. They start by covering the issues involved in a business start-up, such as research and planning, as well as the factors that determine success. They go on to focus on how established businesses might improve their effectiveness by making tactical decisions at a functional level.

The A2 units build on the AS units by considering more complex business scenarios and focusing on strategy, as opposed to tactics. They target larger businesses which may be trading in international markets, and deal with how managers might measure the performance of the business. They consider the functional strategies that larger businesses may adopt to achieve their objectives and assess the external factors that can act as catalysts for change. The A2 concludes by examining the ways in which businesses can manage change successfully when responding to external stimuli.

Students are chiefly examined by applying their understanding of business principles to vocational case studies. Examinations at AS include a mixture of short answer questions, extended response questions and multi-part data response questions. A2 sees the addition of pre-release research tasks and essay questions.

Boys are issued with a core text but are encouraged to read around the subject and to make use of alternative resources such as **The Times 100 Case Studies** and **biz/ed** to augment their studies.

Business Studies is more vocationally specific than Economics and examines in detail the practical applications of organisational undertakings such as Financial Accounting, formation of Management strategies and the planning and implementation of Marketing campaigns. There is overlap with the economic syllabus and for that reason we strongly advise against doing both subjects. It is less theoretical than Economics but no less demanding. It is an ideal preparation for someone who is keen to go into Business or the City after University or for someone who finds the world of Commerce and Business interesting.

CHEMISTRY**Head of Department: Mr. A. J. Haigh****Exam Board: Edexcel**

From GCSE you will already be aware of how important Chemistry is in our modern world. If we understand the properties of the substances we find around us, and in us, we can develop processes for converting natural materials into more useful ones. Chemistry enables us to make fertilisers, pesticides, fuels, plastics, metals, drugs and medicines, preservatives, detergents, dyes, paints, fabrics, etc. These substances have a tremendous impact on our quality of life and their production is a multi-billion pound business vital to this country's economy, and yet we tend to take all these things for granted.

You will naturally choose AS or A-level Chemistry if you need to have a post 16 Chemistry qualification to do a University course in a Chemical, Biological or Medical science, or Engineering or Geology, etc. However, a Chemistry qualification could also be very valuable to you in gaining entry to some less obviously related courses. A good grade in Chemistry shows that you can understand and apply some demanding concepts, that you can work quantitatively, that you can think objectively and that you can base decisions on relevant evidence. These qualities are much sought after in many walks of life and would be an advantage to pursue a career in, say, Law or Computing and Finance, as well as careers which use Chemistry directly.

Chemistry is the central Science linking with Physics and Biology, so a combination including it may offer more scope for choice in higher education and could put back the day when a final decision on future career has to be made. Doing Chemistry with Mathematics, Physics and Biology is an advantage in the way that the subjects link together and are able to help one another, and for those considering a Science course at one of the top Universities these other subjects along with Chemistry are the obvious choices. For other courses, A level subject choices may be much less obvious and if you are good at Chemistry and enjoy it, you should not hesitate to include it in any combination. The course content is divided into units. For AS you take written exams on the first two units and you are also assessed on experimental skills and laboratory Chemistry. The pattern is very similar at A2 with exams including a synoptic element covering the whole course, and again there is an assessment of practical skills.

To do well at A-level you need a strong GCSE foundation and, for example, you will need to be comfortable writing chemical formulae and equations and doing calculations involving moles. You are not expected to be perfect at these to start with and time is spent helping you to get better and more confident with the related ideas, but it is important that anyone thinking of doing AS level realises the greater emphasis on working quantitatively. Many pupils achieve high grades in Chemistry in the Sixth Form. They will generally have gained a good grade A* at GCSE, though pupils with lower grade A* and even A grades at GCSE have also had considerable success in the past. In general you should be guided by your GCSE teacher in deciding whether to continue the subject to AS level.

Working out how and why substances behave and interact in the ways that they do can be quite demanding, but at the same time it is interesting and stimulating. You will have the chance to discuss and ask more questions about ideas covered only fairly superficially at GCSE and you will be expected to think and contribute intelligently during lessons. The subject is also very practical, and you may well find yourself burning magnesium in steam, constructing electrochemical cells and making your very own aspirin.

CLASSICS

[Classical Civilisation, Classical Greek and Latin Languages]

Head of Department: Mr. P.D. Bunting

Classics is a challenging subject, which can lead to a wide range of university courses, both in Classics and other disciplines. It provides a training that is widely respected in the professions and in industry. At its highest level you study a period of human history, as closely as possible integrating language, literature, politics, philosophy and the arts.

You can combine any Classical subject very well with any arts subject or Maths in the Sixth Form; sciences have also been successfully studied along with Classics. Latin and/or Classical Greek, combined with French, Spanish or German support the technicalities of language study; the logical discipline of Maths often suits this analytical approach. The study of literature is common to Classics, Modern Languages, Theatre Studies and English, where there is much cross fertilisation. History, Philosophy or Politics combine well with Classics, as the study of ancient history & society offers a similar but distinct approach to evidence and interpretation; philosophy and political theory in the Western world begin with the Greeks. Pupils interested in Archaeology may combine Classics with science subjects.

Statistics for employment of Classics graduates are comparable to those for most arts subjects. A recent study of graduates showed that people who had studied Classics were less likely to be unemployed in the first six months after leaving university than those from any other subjects. This was because Classics develops transferable skills: graduates went into 'almost any jobs from the City to Law to Art and Design.' These skills include logical, analytical thought, use of language, historical awareness, effective written communication and the ability to make reasoned judgements.

LGS pupils who have recently studied classical subjects at GCSE Advanced level have gone on to study Classics at Cambridge, Oxford, Durham, Nottingham, Bristol and UCL, Drama Studies at Royal Holloway, History at Durham, English at Leeds, Law at Cambridge, Bristol and Hull, Modern Languages at Cambridge and Oxford, Chemistry at Cambridge and Oxford, English at Oxford and Sheffield, Geography at Durham, French and Italian at Leeds, Philosophy and Theology at Durham, Medicine at UCL and Birmingham, and Economics and Government at LSE.

Classical Civilization AQA AS 1021, A2 2021

This course does not require any knowledge of either Latin or Classical Greek, nor previous knowledge of Classical Civilisation. It has been successfully studied by pupils who have not studied for any GCSE in Classics, as well as those who have studied Latin, Classical Greek or Classical Civilisation.

There is a choice of topics, and we can, within limits, reflect the interests of those taking the subject.

The AS-level (Advanced Subsidiary) level has TWO MODULES. Both modules are taken in June of Year 12; topics which can be offered include :-

- 1 Homer's Odyssey or Iliad
- 2 Women in Athens and Rome
- 3 Greek Architecture and Sculpture

4 The Age of Cicero

Homer's Iliad tells the story of an episode in the Trojan War and we encounter the great heroes Achilles, Hector and Agamemnon. In the Odyssey we study the story of Odysseus' adventures on his way home from the Trojan War and look at the society, customs and culture of the Mycenaean World.

For Women in Athens and Rome we compare and contrast the life of women in these two great civilizations by studying original sources and also look at the position of women in modern societies.

In Greek Architecture and Sculpture we consider some of the greatest artistic developments of all times looking in detail at individual buildings and sculptures and investigate both their technical skill and visual appeal.

In the Age of Cicero we study the turbulent history of Rome at the end of the Republican era including the civil war between Caesar and Pompey and the role of Cicero, the leading orator and politician of this age.

TOTAL = 50% of GCE

The A2-level is taken in June of Year 13 and has TWO modules; topics which can be offered include:-

- 1 Virgil's Aeneid
- 2 Greek Tragedy
- 3 The Age of Augustus

In Virgil we study the Aeneid, the story of Aeneas' voyage from Troy and his struggle to found a new city for his people in Italy.

For Greek Tragedy, the set texts are Euripides' plays Medea, and Hippolytus, exploring the murderous conflict between the sexes in Greek society, directed by the powerful scheming of the gods, and Sophocles' plays Oedipus and Antigone, exploring the inescapable march of Fate and the corrupting effect of power on rulers.

In the Age of Augustus we study the life and times of the first emperor of Rome including his rise to power and the political machinations by which he survived for so long and laid the foundations of the Roman Empire which has shaped the Western World ever since.

TOTAL = 50% of GCE

Latin/Classical Greek Languages OCR AS HO39/HO40, A2 H439/H440

These courses have exactly the same format

Pupils should have gained high B grades or above throughout Years 10 and 11.

The AS-level (Advanced Subsidiary) level is taken at the end of Year 12 and has TWO modules:-

1 – Latin/Classical Greek Language (1 ½ hours)

- Section A: (35%) a passage of unprepared translation
- Section B: (15%) a passage of unprepared translation or 5 English into Latin sentences.

(There is a specified word list for this paper issued at the beginning of the course.)

2 – Literature – Latin/Classical Greek Verse and Prose (1 ½ hours)

- Section A: (25%) a passage for translation and comment questions on the verse set text studied. In Latin the text to be studied is Ovid's Metamorphoses, a satirical retelling of some Greek myths. In Greek the text to be studied is Homer Iliad XXII, the fight to the death between Achilles and Hector.

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- Section B: (25%) a passage for translation and comment questions on the prose set text studied. In Latin the text to be studied is part of Cicero's speech in support of the great general Pompey. In Greek the text to be studied is Lysias' prosecution speech Against Simon, a rhetorical firework.

TOTAL = 50% of GCE A-level

The A2-level is taken at the end of year 13 and has TWO modules:-

3 – Latin/Classical Greek Verse (1 ½ hours)

- Section A: Prescribed literature – (25%) a passage for comment questions on the verse set text studied. In Latin the texts to be studied are Virgil Aeneid IV, the Trojans in Carthage and Aeneas' love affair with Dido or Propertius' love poetry. In Greek the texts to be studied are Sophocles' Oedipus, tragedy drama as a king slowly realises he has murdered his father and married his mother, or Aristophanes' Clouds, comedy drama satirizing new education methods and 'spin'.
- Section B: Language – Unprepared translation and comprehension: (25%) a passage from a named author (Euripides/Ovid).

4 – Latin/Classical Greek Prose (1 ½ hours)

- Section A: Prescribed literature – (25%) a passage for comment questions on the verse set text studied. In Latin the texts to be studied are Tacitus' Annals XV, the emperor Nero, the great fire of Rome and the persecution of the Christians or Sallust's The War against Catiline, Rome in turmoil as civil war looms. In Greek the texts to be studied are Plato Protagoras, philosophy and metaphysics as the theory of forms develops, or Herodotus VIII, the Persians capture and loot Athens but are defeated at the naval battle of Salamis.
- Section B: Language: (25%) – EITHER Unprepared translation and comprehension on a passage from a named author (Xenophon/Caesar)
OR Prose Composition.

TOTAL = 50% of GCE A-level

COMPUTING

Head of Department: Mr. R. Statham

Exam Board: AQA

Advanced level Computing provides an in-depth study of computing, systems and related disciplines. It should prove of interest and value to students whether or not they progress to further studies in Computing. It provides a good grounding in both theoretical and practical aspects of the subject. It is not necessary to have any formal GCSE Computing experience in order to start this course although the programming experience gained at GCSE will give the student a head start. Aptitude for both Physics and Mathematics, and a capacity for logical thinking is however a good foundation. Obviously, some familiarity with computers in general is a good idea and more importantly an interest in the use of computers (other than for playing games) is essential. The intending candidate will need to maintain a high level of commitment to the course, for some aspects of it are demanding in a technical sense, and this will require time being put in to the subject outside of timetabled lessons to finish projects and gain a familiarisation especially with the programming language software.

The following broad areas are included within the syllabus:- Programming, Data Representation, Communication & Networking, Applications, Files & Databases, Operating Systems, Hardware Devices and Machine operation and architecture .

Assessment consists of four parts. The AS course comprises; one written paper (COMP2) in computer architecture, logic, hardware and software, the Internet and web design as well as a practical examination (COMP1) which covers programming, problem solving and data representation.

The AS level is structured as follows:-

Title	Method	Duration	%
COMP1 Problem Solving, Data Representation and Practical Programming	Practical on-screen exam	2 Hours	60
COMP2 Computer Components, The Stored program concept and the Internet	Written Exam	1 Hour	40

The A2 course builds on AS adding additional topics such as intractable problems, regular expressions, simulations, databases and communication networks.

The practical project allows the student to research, design, program and test a full piece of system software in an area that interests them. The project will be a major undertaking and forms one piece of the assessment for A2 level which is assessed internally and externally moderated.

A2 is structured as follows:-

Title	Method	Duration	% of A level
COMP3 Problem Solving, Programming, Operating Systems, Networking	Written Exam	2 Hours 30 Mins	30
COMP4 The Practical Project	Coursework	1 Hour	20

CRITICAL THINKING (AS)

Head of Department: Rev. D.R. Owen.

Exam Board: OCR H052

‘Everyone is entitled to their own opinion, but not their own facts.’

Daniel Patrick Moynihan (1927-2003)

The AS in Critical Thinking is offered in Year 13, as part of the Enrichment Programme. Anyone who chooses it must be able to invest a greater amount of time and effort than would usually be the case. You will not be accepted on to the course unless you have examined some of the books on the subject in the library, and are sure about what you will be studying.

Critical Thinking deals with the mechanics of argumentation, i.e., what makes a good or bad argument? Topics that are covered in the AS include drawing valid conclusions from evidence and reasons, assumptions and bias, how analogies function, and principles.

There is no required academic route into Critical Thinking, and none are excluded: it complements all A-Level options. This is because all education deals in one way or another with how to think well, how to separate truth from falsity and good arguments from bad. What makes Critical Thinking unique is that it is only concerned with these things, rather than using them as tools to learn more about topics such as, say, the English Civil War, the Higgs particle, or Hegelianism.

The AS is constituted as follows:

Unit Title	Mode of Assessment	Duration	%
Introduction to Critical Thinking	Written Examination	1 hour 30 minutes	50
Assessing and Developing Argument	Written Examination	1 hour 30 minutes	50

Since its introduction, Critical Thinking has quickly become one of the most respected A-Levels available to students. All universities see it as an extremely valuable qualification, particularly Oxford and Cambridge, who have been very taken by its emphasis on thinking skills. It will facilitate all of the different kinds of careers that LGS pupils will follow, but those interested in Law, Medicine, Journalism and Philosophy should particularly consider it.

It is important to realise that Critical Thinking (like General Studies) may not form part of your UCAS offer. However, like playing in a sports team or joining orchestra, this does not mean it will not impress the universities you are applying to – quite the opposite.

If you have any further questions about Critical Thinking, either at the moment or next year, feel free to ask Dr Else.

DESIGN AND TECHNOLOGY

Head of Department: Mr. P.J. Jackson

Exam Board: AQA

Are you thinking of a career in Engineering or Design?

The Product Design course at AS level is an ideal introduction to the practical and design processes that will be required if you intend to study Engineering or Design as a career. It will give a head start at the application process for university, as many are now looking for practical experience. Also you will acquire the basic understanding of the terminology, techniques and experiences for the discipline and show that you are committed to engineering and design as a career. There is a possibility that AS can be taken in Year 13 as well as Year 12. This subject may be taught in association with a group from the High School.

The course specification is designed to enable candidates to study, propose and realise prototype solutions to designing and making opportunities closely linked to the real world of product/system manufacture. A variety of specifications offer candidates opportunities to acquire and demonstrate knowledge and understanding of the world of designing and making and to demonstrate their own technological capabilities through the design and making of quality outcomes. Candidates should be aware of the responsibilities that designers and technologists have to mankind through an understanding of the potentials and hazards inherent in technological advance, change and decision making.

Candidates will be expected to study the following:-

- Identifying opportunities for design and technological activity
- The designing and making of artefacts and products
- Components, as appropriate, within systems - electrical, electronic, mechanical and interfaces.
- Materials technology as appropriate to the production of systems.
- A range of manufacturing methods and their systems of control.
- Social, moral and ethnic dimensions that relate to technological decisions.
- Constraints that economic and ergonomic factors place on designing and making of products and systems.
- Demonstrate knowledge and understanding of technological processes/systems and their implications for designing and making activities.
- Analyse design situations and requirements.
- Propose ideas through a variety of media solutions/prototypes capable of being realised within the coursework framework.
- Design, make, test, evaluate and where appropriate, modify, quality solutions/prototypes to satisfy design needs and examine the implications of industrial production from realised prototypes.
- Demonstrate a sound knowledge of manufacturing technologies and the implications for product/system design and production.
- Demonstrate understanding of those mathematical and scientific concepts that underpin the application of technological design decisions.
- Acquire interest and enthusiasm for the process of meeting design and making challenges by producing quality solutions.
- Provide a sound basis for further study in Design and Technology.

The AS forms 50% of the assessment weighting of the full GCE Advanced. Advanced subsidiary is assessed at a standard between GCSE and GCE Advanced and can be taken as a stand alone specification or as part of the full GCE Advanced course.

Written papers for AS and A2 are divided into two sections:

AS -	section "a"	Generic design based questions
	section "b"	Knowledge and understanding of product materials, system components and their application within products.
A2 -	section "a"	In depth knowledge of products materials, components and systems across the whole specification.
	section "b"	Designing and thinking which will test the ability to solve a design problem

Coursework:-

AS will provide an emphasis on analysis and development of a product.

GCE Advanced will also include the candidate choosing an open-ended task for designing and making.

Exam Board:- AQA Product Design

DRAMA AND THEATRE STUDIES

Head of Department: Mrs L.J. Welsby

Exam Board: Edexcel (8113)

"I am enough of an artist to draw freely upon my imagination. Imagination is more important than knowledge. Knowledge is limited. Imagination encircles the world."

Albert Einstein

Why do we offer Drama and Theatre Studies at LGS?

Not only does Theatre Studies develop a balanced intellect, it is part of an excellent platform for training in life. Taken in collaboration with a range of other subjects, Theatre Studies actively inspires boys to grow into outgoing and confident adults. The course develops their ability to work within a group and, above all, it hones those techniques that allow a chosen few to present themselves confidently to an audience. Significantly, Theatre Studies requires students to intellectualize theatre. This exploration requires a personal commitment to understanding important moral questions. As a subject, therefore, it perfectly balances the study of any Humanity and English, as well as providing a completely unique learning experience.

What is AS Drama and Theatre Studies?

It is a practical course, which aims to introduce students to all aspects of drama and theatre, as performers, directors, designers and critics. This is a skills based course so much of the teaching aims to develop your understanding of drama and performance, seeking ultimately to create a piece of live theatre through practical work. The course aims to develop your interest in drama and theatre as participants and intellectually informed members of an audience. You will also develop knowledge and understanding of major influences in theatre. Ultimately the AS Drama and Theatre Studies course offers a range of opportunities to develop drama and theatre skills creatively and imaginatively, integrating both theory and practice.

What will I do on the course?

In Unit 1 you explore two play texts practically and theoretically; these texts will be from contrasting styles or periods. Practical drama and theatre activities are at the heart of this unit and we explore challenging texts with intelligence, energy and enthusiasm. Both play texts are explored in depth through a range of practical workshops that are tailored to give all students the opportunities to be stimulated and achieve to their highest potential. You will complete Exploration Notes alongside your practical exploration work. These Exploration Notes (written coursework) should reflect the depth of your knowledge and understanding.

As well as your exploration of two play texts, the final component of Unit 1 is an evaluation of a live theatre performance and for this we take the students to see a number of theatre performances throughout the year. The focus of the evaluation is on the performance, not the play. Students enjoy being exposed to a variety of theatrical styles and performances throughout the year as your understanding and appreciation of live theatre develops.

In Unit 2 the focus is on students understanding how play texts are realised and communicated in live performance to an audience. In Section A students work either as individuals or in pairs by offering either a monologue, a duologue or a design skill. In Section B, you will work as part of a performance group on a play text directed by the teacher. Most students do choose to act though it is possible to be assessed in the

areas of Design, Sound and Lighting. Both elements of Unit 2 are performed to an audience that includes an external examiner.

More than any other subject this subject encourages personal ownership and independent learning. You will be required to read plays independently and bring to every lesson new ideas to help with the creative process.

What if I decide to go on to A2?

The A2 course builds on all the strengths you will have developed at AS although the students now have a good deal of the responsibility for shaping the performance work that they do. What is exciting about A2 is the personal journey students embark upon. Having learnt how to evaluate and intellectualize theatre, as well as working closely with a director in creating a performance during the AS year, students at A2 have to use this learning to shape their own performance work.

Unit 3 is an exploration of dramatic performance. At the heart of this unit is the response to and exploration of a stimulus, theme, issue or play, and how that may be shaped and developed into an original piece of live theatre. The assessment focus for this unit is based on process and product (the final performance). We are keen to introduce students to a range of styles completely new to them during this unit, specifically elements of Experimental Theatre.

Unit 4 is the final written exam. In Sections A and B, students are required to have an understanding of the way a director works with a company in preparing a text for performance. The focus of Section C is the requirement to see a live production written and performed in one of the following time periods: 525BC-AD65; 1564-1720; 1828-1914.

Is this the right subject for me?

It is relevant to you. Why is it relevant? The skills it gives you: the ability to rethink, redesign, reconsider, explore, evaluate, play, empathize, understand and create. It is relevant because stylistically and in terms of subject matter it is always changing and questioning everything.

Theatre gives a voice to every generation.

Some people downplay the importance of the creative arts within the academic world of education and the within the 'real' world of work. I couldn't disagree more with this viewpoint. Knowledge stands alone. It is applied knowledge which we call intelligence and it is this which makes the world go round. Applied knowledge and intelligence is creative and leads to progress. It is based on IMAGINATION: what if, how could I, what would it be like if, how could I make that, how could I express that, what would I do if, how would people react if, what would happen if.... This is the intelligence, based on imagination, that leads to great scientific discoveries, new products, innovations in fashion and music, exciting journalism and theatre.

ECONOMICS

Head of Department: Mr. R.J. Lightfoot

Exam Board: OCR H061/H461

Economics as a Sixth Form subject has existed for over 30 years at LGS where its popularity seems to show no sign of decline. Traditionally it attracts a large number of strong Mathematicians who can employ their strengths in analysing economic data. However it is not meant to be a purely mathematical discipline and the subject area shares common ground and skills that are present in other subjects such as Geography, History and English.

The success of the subject at LGS is best demonstrated by the large numbers of boys who go on to study at degree level where their Economics is of direct benefit to them. Accountancy, Management, Finance and virtually any Social Science will contain an element of Economics at degree level and in addition a sizeable number decide to continue studying the subject itself at many of the top Universities including Cambridge and Oxford. The interdisciplinary nature of the subject means that students from all backgrounds whether Science or Arts would be capable of studying the subject but that those without a genuine strength in Mathematics (i.e. expected to gain no greater than a grade B at GCSE) would be advised not to study the subject but to consider Business Studies that adopts a less theoretical approach involving fewer Mathematical models.

The AS year covers the basic principles of the subject. On the Micro side they will be introduced to the basic tools of Supply and Demand and then apply them to various market situations such as the property market or the labour market. Boys will face essay titles in the first term such as 'How can the government use taxes to solve problems of pollution?' In addition students will consider why the free market fails at times and consider the wider role of the government in the economy. On the Macro side a study of the UK economy will consider key topics such as Unemployment, Inflation, Balance of Payments and Economic Growth from a government policy point of view.

In the A2 year an in depth study of Industry, Finance and the Workplace will partner a detailed look at the Global Economy. One side of this final year will principally focus on understanding and analysing labour market concepts and issues. Leisure industries are considered in terms of models of market structure and the way leisure needs can impact on the supply of labour. The other side provides the conceptual framework for the understanding, analysis, and evaluation of macro-economic performance in national, regional and global contexts. The key topics are comparative economic performance indicators and policies, trade & integration, development & sustainability and the economics of globalisation.

Students are chiefly examined by demonstrating their understanding of economic principles and applying what they have learnt. Analytical and evaluative ability will be the main focus of the testing. Examinations at AS include a mixture of short answer questions and extended response questions based on a data response format. A2 sees the addition of advanced preparation of pre-release material and the introduction of essay questions.

Boys are issued with a core text but are encouraged to read around the subject and to make use of alternative resources such as [tutor2u](http://tutor2u.com) and other internet sites.

The subject has a number of attractions that make it worth considering at AS or the full GCE Advanced. Firstly it may broaden an otherwise narrow Advanced level choice of Arts, Science or Language. Secondly it keeps future options open, giving boys an insight into what a degree and a career in any Social Science

A Level Option Choices

subject would entail. Although GCE Advanced Economics is not vital to study accountancy, politics, management, etc., the first year of any degree course will have a compulsory economics component which basically mirrors the GCE Advanced course. Finally the subject matter is new to the boys and engenders an enthusiasm and interest they all find refreshing. The study of how human beings organise and decide on key issues that affect their everyday lives is a challenging and relevant subject area for any student.

ENGLISH**Head of Department: Mr. B.K. McCabe****Exam Board: AQA**

English at AS and A2 levels is a literature course. It includes the compulsory study of Shakespeare and pre-twentieth century writing in addition to modern works. Both AS and A2 include coursework which accounts for 40% of the available marks in each qualification.

At both levels, English is a hospitable subject. It welcomes those who are looking for a manageable third or fourth option as well as those who wish to follow the subject through to degree level. In recent years a number of boys have gone to a variety of universities, including Oxbridge, to continue their English studies. We include Old Loughburian journalists and broadcasters among our recent graduates from English courses in Higher Education. In career terms, therefore, anyone interested in journalism, or related media occupations, should look seriously at this course but English is an excellent general degree as a preparation for any career.

Homework will usually come in the form of an essay, but its length may vary considerably. There may be a short commentary passage, or a practice examination answer, critical or literary, of forty-five minutes or one hour. The balance of these and other kinds of essay will be arrived at within individual teaching sets, but it is fair to say that students will be required to produce something in writing for each of their teachers once a fortnight.

The goal of this course is to develop an active critical response to ideas and literary techniques and the students who most enjoy it and ultimately achieve best, are those who engage in debate and contribute to discussion. The nature of the texts studied makes immediate demands upon your imagination and opinions. In the first term of the course you will find yourself exploring the concept of tragedy through a play by Shakespeare and another text, modern or classical. The emphasis will be on your analytical ability and independent thought. There are no right answers; vigorous intellectual exchange informs everything we do.

To sum up, the following dos and don'ts may help:

DO consider ENGLISH if you are contemplating a career in journalism or other media.

DO consider ENGLISH if you are interested in words and their most memorable and powerful expression.

DO consider ENGLISH if you welcome lively debate and the freedom to express and defend your interpretations in an atmosphere where the 'right' and 'wrong' answers have not yet been invented.

DON'T consider this subject if you are not prepared to read critically and to defend your ideas.

FOOD, NUTRITION AND HEALTH

Head of Department: Mrs. M. Reilly

“It is good food and not fine words that keep me alive” (Moliere)

Exam Board:

If you choose to study Food, Nutrition and Health

- You will have the opportunity to develop an understanding of a variety of issues including nutrition, food production, food hygiene and social and environmental issues which affect the individual, the family and society
- You will have the opportunity to be creative with food through practical activities

Because the AS/A2 course is so varied in content, it will be an asset to all types of students. It complements and contrasts with many subjects and leads to a wide range of possible career and higher education opportunities. It supports applications for a wide range of university courses which include nutrition and dietetics, sports science, medicine, food science, food marketing, product development and business

Type of work undertaken

- Reading
- Discussion
- Data analysis
- Research, both quantitative and qualitative
- Sensory analysis and comparative work
- Nutritional analysis
- Short answer questions and essays
- Practical work

The Advanced Subsidiary GCE is both a ‘stand-alone’ qualification and also the first half of the corresponding advanced GCE

AS Unit G001: Society and Health

Society and Health is an externally assessed unit and includes health, social and environmental issues, family and society and demography

AS Unit G002: Resource Management

Resource Management is an externally assessed unit and includes food safety and hygiene, food provision and preparation, financial awareness and retailing

The A2 GCE consists of two further units which make up the remaining 50%

These two units are:

A2 Unit G003: Investigative Study

A Level Option Choices

The study is an internally assessed coursework unit and is of an investigative nature. Candidates select their own content and develop their own research to include some practical work

A2 Unit G004: Nutrition and Food Production

Nutrition and Food Production is an externally assessed unit and includes nutrients and energy, properties of food, dietary needs and development and production of food products

You do not have to have studied food and nutrition at GCSE

GEOGRAPHY

Head of Department: Mr. M.D. Butcher

Exam Board: AQA AS (1031) AND A LEVEL (2031)

Is Geography for me?

If you are considering studying Geography at AS/A Level you should have a lively and enquiring mind, an interest in the environment and current affairs, a willingness to explore new concepts and an ability to communicate your ideas effectively. Several topics in the course are developments of work covered at GCSE, but most are new.

The AQA GCE Level Specification covers both Physical and Human Geography. The AS Physical Geography course includes units on Rivers and Flood Management and Glacial and Periglacial Environments, whilst at A2 Tectonic Hazards and Weather, Climate and Associated Hazards are studied. The AS Human Geography topics include Population Change and Health Issues, and World Cities and Globalisation are studied at A2. The course will also cover research skills, ICT skills, statistical and graphical skills together with geographical fieldwork.

There will be a number of fieldwork opportunities during Year 12 including a three day residential field course in the Autumn Term to the Cranedale Centre in North Yorkshire. This is always a great experience for students at a centre we have used many times. You will carry out fieldwork investigations relating to the topics we study gaining firsthand experience of fieldwork techniques. You might also hone your table tennis and table football skills! There is also a fieldwork day during the Summer Term when we visit the London Docklands, to prepare for the A2 World Cities Unit. These courses will be compulsory and involve a charge.

Those students who have studied GCSE Geography will find that the material and the skills they have learned will provide a valuable foundation for further studies at this level, but it is not a requirement that you should have studied Geography at GCSE in order to take an AS Level or A2 Level course in the subject. We have excellent teachers, a relevant and interesting course and first class resources, all ensuring that you should enjoy your AS/A2 Level course and achieve a top grade.

What will you learn on this A Level course?

Geography presents the A Level student with a very broad canvas and during his time in the Sixth Form our students will study a very wide range of topics and acquire a variety of skills that will not only prepare them for their Geography examinations, but also for the years ahead. The subject is well-respected by universities and a good grade in A Level Geography is an accepted, indeed preferred, preparation for almost all university courses.

At the end of your Geography course, you will:

- Understand the physical processes that combine to shape the physical environment in which you live.
- Understand the dynamic nature of environments that change over time and place, including the causes and effects of natural hazards and the way humans respond to them.

A Level Option Choices

- Assimilate the core geographical concepts that govern our understanding of both physical and human environments, as well as environmental impact, management and sustainability.
- Examine the factors that produce the world's diverse pattern of human environments, including contemporary issues of population change, conflict and health explored in depth.
- Consider how people affect the environment in which we live and examine the opportunities and challenges of the future in a changing world, as well as recognising the inevitable constraints placed upon human development?
- Understand the economic forces that drive the world economy and how are they changing.
- Consider the use and management of resources and examine who makes the decisions.
- Know how to plan, carry out and produce a report on a fieldwork investigation based on the collection of primary and secondary evidence.
- Learn how to work as part of a small group in investigating a topic in the field
- Develop the ability to make links and connections across a wide variety of topics within Geography and with other subjects.
- Enhance your ability and understanding in all six key skills: communication, application of number, information technology, problem solving, working with others, and improving your own learning and performance.

This course will appeal to those students who:

- Have an interest in and concern for the environment.
- Are interested in current affairs.
- Enjoy studying a subject that is relevant to their own lives and experiences.
- Want an opportunity to carry out practical work outdoors as well as in the classroom.
- Enjoy researching answers to sometimes complex questions, not just being told the answers.
- Want to broaden their AS or A level studies to cover both 'sciences' and 'humanities'.
- Enjoy travel and finding out about new people, places, landscapes, and events.
- Want to keep their options open. Geography AS or A Level is an appropriate qualification for a very wide range of higher education and career choices. It does not force you to make an early commitment.
- Are keen to make use of ICT, especially making use of our GIS (Geographical Information System), the Aegis3 system and the extensive resources on the Departmental Intranet site.
- Would like to help run the LGS Weather Station.

And beyond A Level?

Students with AS and/or A2 Level Geography have access to a wide range of possible career and higher education opportunities, including Medicine, where Geography, in conjunction with two other sciences, is seen as a valuable A level. You learn and use a variety of transferable skills throughout the course, including collecting, analysing and interpreting data, communicating your findings in different ways, and identifying and developing the links between different parts of the subject.

If you want to know more about what A Level Geography has to offer, ask any member of the Department.

HISTORY

Head of Department: Mr. C.W. Blackman

"We cannot understand what we are until we understand what we have been"
Walter Ullmann

Exam Board: AQA

If, for the pure historian it is sufficient to explore the past because of its intrinsic fascination, there are many other reasons which make the study of History at A-Level thoroughly worthwhile. Professor Ullmann, for example, suggests we can only understand society today if we know how that society has come to be. He is also saying that we understand ourselves, as individuals, better through seeing how others like us have acted in the past.

Practically, the study of History develops skills which can be used in many other contexts. You will learn how to process information, how to take into account different points of view, how to accept ambiguity and, hence, the quality of tolerance. A-Level History students develop the ability to read quickly and effectively, think deeply about a subject, develop cogent arguments and communicate clearly. Perhaps, above all, you will learn how to approach and solve intellectual problems independently, with no need to rely upon others. Historians are well-prepared for employment, with particularly good writing skills, that transfer easily into a variety of career paths.

A degree in History opens the door to a range of jobs in the media, business, politics, law and even espionage. Gordon Brown, Douglas Hurd, Sacha Baron-Cohen, Jonathan Ross, the ex-head of MI6 John Scarlett, Louis Theroux, Michael Mansfield QC, Salman Rushdie, Sir Howard Stringer, chairman of Sony, and the late Sir Roland Smith, director of the Bank of England, are examples of an impressive number of History graduates who have gone on to become leading personalities in modern-day Britain.

History is a subject for the intellectually curious. If you have a lively, questioning mind which prefers to challenge rather than tamely to accept what your teachers say and what you read, then it is the subject for you.

Several options will be offered in the AQA A-Level. You might study the European Reformation, Ferdinand and Isabella of Spain, the American War of Independence, or the Crusades. In addition A2 students carry out an independent investigation on the Wars of the Roses. We have a non-twentieth century policy for A-Level. This may seem daunting at first. However, boys soon realise the benefit of this approach and are soon fully engrossed in the unusual and inspiring courses we offer. Moreover, we have been praised by a great number of university entrance tutors who appreciate the fact that LGS boys applying to Oxbridge and other leading universities do not fill their personal statements with the same old references to Hitler and Stalin, and at interview can impress with medieval evidence. In recent years a number of boys have gained places at Oxford and Cambridge to read History as well as other leading seats of learning such as Durham, Bristol, York and the colleges of the University of London.

If you wish to know anything more about the syllabuses please see Mr. Blackman, or any other member of the History staff.

MATHEMATICS AND FURTHER MATHEMATICS

Head of Department: Dr C.J. Luke

Exam Board: Edexcel (9371 & 9372)

Why study Maths?

There are a number of good answers to this question. First, is the intrinsic pleasure the subject offers: the challenge of solving really knotty problems. The pleasure one derives from recognising the way into a once seemingly intractable problem. See the problem in the right way and the difficulties dissolve. Second, the aesthetic pleasure one can derive from maths should not be underestimated. Whether it is the influence of mathematics on artists or the more refined aesthetic pleasure derived from the perception of order, harmony and truth that the subject uniquely offers, this spiritual aspect of the subject is an important motivating factor. Third, maths offers a “golden road” to the understanding of reality. Galileo said that the language of nature is mathematics, and we could add that it underpins all of the modern technological society we live in – whether it is Google’s *Pagerank* algorithm, understanding the stresses in an aircraft wing, or coding the music we listen to into MP3 files. Many subjects – notably the sciences and computing but also economics and medicine – require a good standard of mathematics in order to properly appreciate them. Mathematics offers support to many other subjects at A-level and beyond. Of course, mathematics at A-level is well recognised by universities and employers as a universal badge of intelligence. People who can do maths are seen by many employers as people in possession of the kind of problem solving skills that are all too rare in the world of employment. This is reflected in the fact that both mathematics and further mathematics have been named by the Russell Group of leading universities as “facilitating subjects” – subjects that admissions tutors like to see among an applicant’s list of A-levels. Even if you choose the subject because of its importance to other subjects, the chances are that you will develop some intrinsic affinity for the subject in time.

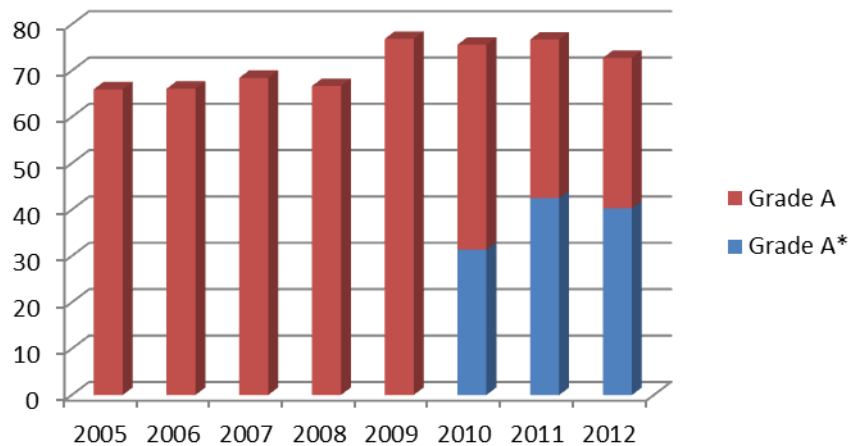
Who studies Maths A-level at LGS?

Each year about 80 boys choose to start AS maths. These are boys who have generally received a good grade A or better at iGCSE – typically they will have scored in excess of 75% in their iGCSE exams. They are boys who will have developed robust algebraic skills, and they will be comfortable with analysing problems logically. Another 25 to 30 boys do further maths. This offers the chance to go much deeper into the subject and broader too, covering many more applied maths topics as well as topics in pure maths. Anyone who is seriously considering applying to Cambridge or Oxford to study maths, natural sciences or physics, engineering or even medicine should be considering doing further maths for A-level. In recent years a growing number of boys who had opted for single maths do extra modules in year 13 to also gain an AS-level qualification in further maths.

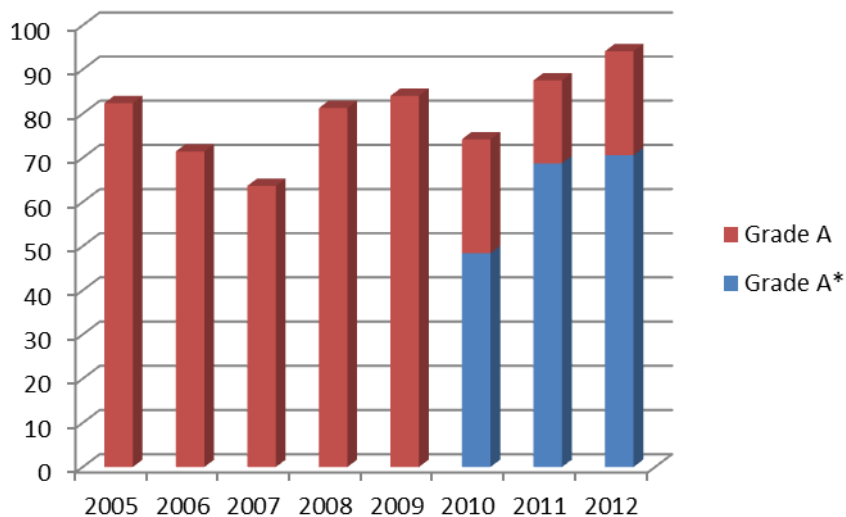
Why are A-level Maths and further Maths increasingly popular at LGS?

The Maths Department is easily the biggest in the school with 14 teachers and two hundred boys studying one of the subjects at A-level. Many boys do well at iGCSE – over 100 gained a grade A* at iGCSE maths in 2012 – and this success continues at A-level, where regularly over 70% of single maths candidates gain either A or A* at A-level. Our success in further maths is, if anything, even further pronounced. Here often over 80% of candidates achieve an A or A*.

Number of A and A* grades at A-level as a percentage of the the total number of candidates



Number of A* and A grades in Further Maths as a percentage of the total number of candidates



What is the structure of the A-level Maths?

Two thirds of A-level mathematics comprises of pure maths, so-called core modules, which everyone must complete. To complement these some areas of applied maths are studied too. First, mechanics is covered in year 12. This is the theoretical underpinning of engineering and of many branches of physics. Probability and statistics are studied in year 13. This will be of interest to those boys who want to study medicine or the social sciences. Three modules are completed in year 12 and another three in year 13, and boys typically receive 10 periods of maths per week from two different teachers.

Because we believe that boys learn maths better when they study with others of comparable ability, we stream mathematicians in sixth-form. Based on exams taken in year 11 and also on earlier exams, we try to match boys of similar ability. This leads to two very broad groups. Most (about 60%) of the students work at a rate so that they can comfortably fit in the six modules they are required to do. The other 40% will generally work at a slightly more accelerated rate, and so cover some topics from more advanced modules or spend time going beyond the syllabus in other ways, perhaps devoting time to tackling harder problems.

A-level further maths leads to a double qualification: not only does one get a further maths A-level, but also one in single maths. Even more pure maths is studied, which is why it is very desirable to do this subject if one wants to pursue a degree in a mathematical sciences subject at university. More applied maths is also studied: more mechanics, more probability and statistics, and also the very interesting area of decision maths – maths which underpins computer science. A further maths candidate will do six modules in year 12 and a further six or seven the following year. He will have 18 periods of maths per week with three different teachers.

MODERN LANGUAGES

Head of Department: Mr. M.M. Jackson

Exam Board: AQA and OCR

The syllabus is a wide and challenging one, and therefore will appeal to those who have already demonstrated an aptitude for, and a deep interest in, language study at GCSE level. In Languages A level work, as in many A level courses, research and preparation is carried out in your own time. Although some 'bridging' work will be carried out in the first term, it will be assumed that you can handle verbs in all the tenses required for GCSE and that your grammar is accurately known. However, success at GCSE is not enough to guarantee a high grade at AS/A level and therefore you will need to have a real thirst for knowledge and a voracious appetite for learning. Please discuss your language options with your teacher or the Head of Department.

Apart from formal classes, you will be expected to work with the language assistant once a week and to do independent research whenever you can. There will be classes in the language laboratories, and you will have the excellent opportunity of accessing Kerboodle, the on-line component of the course, in the digital language laboratory and in C10, the new classroom in Cope. The courses we are following in French and Spanish – AQA new specification – and their new text books, have an on-line component which demands much work in class and at home. German is continuing to use the OCR Board.

At AS level, pupils will be required to deepen their skills in speaking, listening, reading and writing. The AS examination takes place at the end of the Lower Sixth year. There is therefore a relatively short time in which to acquire a great deal of knowledge about the French, German and Spanish speaking worlds, their institutions, traditions and present-day position in Europe and the wider world. Some exercises and tests will require knowledge of the contemporary society you are studying, hence the need for a certain amount of reading on your part. Naturally, detailed advice will be given on study skills and where to look for the information you will need.

The AS examination is as follows:

Unit 1: Listening/Reading/Writing – 70% of AS and 35% of A level –
 this paper includes an essay on one of the set topics.

Unit 2: Speaking test – 30% of AS and 15% of A level

At A2 level, Year 13 in French and Spanish continue with the AQA syllabus. Different topics will be studied (environment, the multicultural society and contemporary social issues), including the Cultural component, which includes the study of a film or a geographical region and is tested in Unit 3 of the exam.

The A2 examination is as follows:

Unit 3: Listening/Reading/Writing – 35% of A level

Unit 4: Speaking test – 15% of A level

A Level Option Choices

For those of you thinking about Modern Languages at Oxford or Cambridge, a series of extra classes may be arranged in Terms 3 and 4 of your Sixth Form course, so that wider reading can be undertaken, as entry is extremely competitive. We have a good record of Oxbridge success in the department, but we recommend close discussion with your teachers if you are considering this option.

You will find that the relationship with Sixth Form teachers will be a close professional one, and you will be invited to use the Cope Building and Library as your learning headquarters. While we can 'teach' you the course, as it were, it will be up to you to acquire all the lexical and grammatical items you will need for linguistic and examination success. No dictionaries will be allowed in external examinations throughout your course, but may be needed in lessons.

Our main text books will be the Nelson-Thornes books for AQA AS and A2 level, but a copious range of other resources will also be made available. We organise trips abroad and A level conferences closer to home, and we provide newspapers, magazines and DVDs in the target languages.

The recently built Modern Languages building provides unrivalled facilities for teaching and learning. There is also a new, extra classroom in the Cope Building, C 10, which is equipped with computers to provide facilities for you to access Kerboodle, the on-line component of the new courses. We have plans to update the existing analogue Language Laboratory in C3 and replace it with a digitised version and it is anticipated that this outstanding provision will be ready for the start of the next academic year.

MUSIC

Head of Senior Curriculum Music: Dr P.J. Underwood

Exam. board: OCR (H542 – GCE; H142 – AS)

The value of a Music as a qualification at the end of a sixth-form course of study is recognised by universities and employers as evidence of training that encourages individual students to communicate effectively, to express themselves accurately and individually in a variety of ways, and to develop the degree of self-discipline necessary to achieve a high standard of instrumental performing ability. Employers in today's world need people who can transfer these creative skills to the complex and inventive world of work. As with any sixth-form course, study of Music will sharpen intellect, deepen knowledge and practical skills, and encourage a serious and independent approach to study.

SPECIFICATION STRUCTURE

The Music syllabus offers six assessments units. Candidates for AS Music take units 1, 2 and 3; candidates for A2 Music take units 4, 5 and 6.

AS units

1. Performing Music 1 (20%)
2. Composing 1 (15%)
3. Introduction to Historical Study in Music (15%)

A2 units

4. Performing Music 2: Interpretation (20%)
5. Composing 2 (15%)
6. Historical and Analytical Studies in Music (15%)

Pupils who already take part in school music groups and have reached approximately Grade 5 standard by the end of GCSE course will be able to gain good marks in the AS and A2 Performing units. The AS unit involves a solo recital (12 minutes' maximum length) and a brief discussion about the performance with the Examiner, while at A2 the recital is 12-15 minutes long and pupils are required to demonstrate their understanding of aspects of interpretation in relation to the pieces performed as part of a supplementary extended discussion with the Examiner immediately after the recital. Performing is assessed by a visiting Examiner in March.

Composing units at both AS and A2 levels allow pupils to submit individual original compositions at the end of the course, together with exercises worked over the course to set time limits (e.g. tasks such as adding a bass part to a given melody at AS level, or adding a piano accompaniment to a song melody at A2 level). Composing is assessed internally by A-level tutors and moderated by the examining board.

The units relating to historical study are based on prepared listening papers and examined by means of a listening paper at the end of each course. Prescribed orchestral and jazz repertoire (three short works from each) is studied at AS level, and two broader historical music topics at A2 level. Both papers are marked externally and candidates have control of individual CD recordings, allowing them to replay music as many times as they wish during the examination session.

Numbers taking Music at both GCSE and Advanced-level have increased significantly in recent years as many students have recognised the potential value of a qualification in the subject. A recent survey undertaken by leading accountants KPMG* confirmed the music industry as the country's third largest export earner, contributing around £3.2 billion to the UK economy in 1997 and generating around 130,000 full-time jobs.

A Level Option Choices

The A-level Music specification aims to build upon the work of GCSE courses while maintaining an appropriately high standard of achievement. The qualification (validated by OCR) is accepted by all universities and the courses are intended to appeal to all pupils who wish to pursue musical studies in the sixth form. They are equally suitable for pupils who intend to continue music studies at university or college, and for those who wish to extend their understanding and appreciation of music for its intrinsic value and interest or for the pleasure they derive from it.

* *A Sound Performance: The economic value of music to the United Kingdom* (KPMG & National Music Council, London, July 1999)

PHYSICS

Head of Department: Mr. G.J. Kerr

Exam Board: AQA 2450

Physics investigates the world around us, from the smallest particles within the atom to the limits of the cosmos, and aims to develop a coherent understanding of the whole universe. Engineers use this knowledge to build the structures and devices that have revolutionised our lives. Both of these approaches to the subject feature in the AS and A2 courses of the AQA Examination Board.

The study of Physics develops many valuable skills: you will learn how to observe and describe situations and events precisely, collect reliable data, construct models to explain the observations, draw logical conclusions and make sound recommendations based upon the evidence. These transferable skills will be vital in your subsequent career, whatever the field.

Physics opens up a wide range of careers. If you wish to use the subject at the highest level then, in combination with Mathematics, you will find opportunities in pure scientific research and in Engineering, where each branch offers its own challenges in research, development and production. Physics, along with Chemistry and Mathematics, is often chosen by an intending Physicist/Engineer. For those of you with managerial ambitions, foreign languages, Economics or Business Studies are ideal choices to accompany Physics. With Chemistry, Physics is a sound foundation for medical, dental and veterinary studies. For many Arts students, it serves to broaden your analytical skills.

The AS course follows on seamlessly from your GCSE studies, consolidating your existing knowledge by adding simple equations and calculations. Sound backgrounds in both GCSE Physics and Mathematics are essential. If you intend to study Physics or Engineering at university, you should include Mathematics amongst your A2 choices, adding Further Mathematics if you are aiming for the most prestigious institutions.

The subject is intellectually stimulating and challenging as you discover new concepts to explain the world around you, but this should be no hurdle if you tackle your work with steady determination and good study skills. The regular tasks include reading, making notes and solving problems. The practical work in the laboratory is chosen to illustrate the topics that you are studying and to develop your proficiency as an experimental scientist. More sophisticated apparatus, high quality dataloggers and software for computer analysis of results have been acquired recently for use in the Sixth Form.

In the Lower Sixth, the three Units for the AS award are examined by two written papers and a practical assessment. Your A2 examination in the Upper Sixth has the same requirement, though the structure of each paper is changed slightly.

POLITICS

Head of Department: Mr. M. I. Dawkins

Exam Board: Edexcel - AS 8GPOI A2 9GPOI

Politics is an exciting subject. It can be of no surprise therefore to read that we, the teachers that teach it, are biased in thinking it offers students very special attractions. It is a subject that has significance for all our lives. Each morning its complex canvas unfolds with daily papers and broadcast news; by evening new details are painted in and the scene is subtly, sometimes dramatically changed. Politics is unpredictable, dynamic, it affects us, it is about us. In one sense the canvas is us; a projection of ourselves and our aspirations, a measure of our ability to live together. Politics is arguably the most important focus of study on the human condition.

It is from this context that the subject is taught at A-level here at LGS; providing its students with a simulating course of study in a successful, challenging and co-educationally (with LHS) mature environment that will equip students for their examinations and the demands of university.

By studying AS Government and Politics the key institutions of Britain's government and the workings of our democratic process will be critically examined. For example, most of us assume we live in a democracy and that our government is chosen *by us*, the people, to govern *for us*, the people, on the basis of winning a majority of the popular vote. However, did you know that only 36.5% of the electorate actually voted for the party currently in power; which in effect means that we are governed (quite legally) by a party that only 23% of those eligible to vote actually voted for? Yes, the Conservatives maybe in power thanks to a coalition, but from this perspective the fact that the Liberal Democrats themselves only got a mere 16% may be a further challenge to your understandings of the electoral process in this country – let alone the concept of majoritarianism (So much for representative government!!). On this course such insights are not uncommon as we explore how (and why) we are governed in Britain the way we are. This subject is therefore not only beneficial to any curriculum of study at A-level (and later university aspirations), but for wider understandings of the country almost all of us will inhabit for the rest of our lives.

Politics appeals to the intellectually curious and is a valued A-level to have for Oxbridge and Russell Group applications alike. It also involves a process of evaluation and re-evaluation of one's own political perceptions. There are no preconditions for studying Politics at A-level but students need to be aware that they will be expected to read widely and have an interest in current affairs. Politics is methodologically akin to subjects like History, therefore good analytical and prose-based skills are necessary for what is a complex, challenging but ultimately very rewarding course. A strong performance in humanities-based subjects at GCSE is an advantage.

At A2 level focus shifts from the confines of British Government and Politics to a study of the American political system. From whichever norms of international categorisation one cares to adopt (be it economic, cultural, social, or naked military power) we live in an era that the political historian Walter Lafeber correctly describes as *'The American Age'*. Consequently an understanding of US government and politics is increasingly relevant given the links between domestic US policies, UK politics and current world events.

Course structure

Unit 1 People & Politics (6GP01)	Examines the links between the government and the people
Unit 2 Governing the UK (6GP02)	Analyses the workings and structure of our government
Unit 4 Representation in the USA (6GP03)	Explores the depth and range of American democracy
Unit 5 Governing the USA (6GP04)	Examines the role & relationship between the President, Congress & Judiciary

For further details & full course content see: <http://www.edexcel.com/migrationdocuments/GCE%20New%20GCE/spec-gce-gov-pol.pdf>

As students of Politics you will automatically become members of the *Politics Society*, which has one founding aim – to enrich our knowledge and passion for this subject. The *Society* currently meets fortnightly and is organised by the students themselves. Thus far it has organised: a series of debates reflecting current affairs, the *Alternative* General Election of May 2010 and various trips to the Cinema to see subject related films. The *Society* is also responsible for inviting numerous visitors (MPs, a US Congressman, academics etc.) into school. In addition to which the Department also organises an annual trip to London for a Politics students' national conference, a bi-annual tour of the Houses of Parliament, and a bi-annual trip to Washington and New York in support of the A2 course.

This is a lively and dynamic A-level course with a proven record for contributing to UCAS success.

For further information about this subject, feel free to contact Mr Dawkins (Reading Room or at m.dawkins@lesgrammar.org).

RELIGION AND PHILOSOPHY

Head of Department: Rev. D. Owen

'One repays one's teacher poorly if one remains a pupil.'
Friedrich Nietzsche (1844-1900)

Exam Board: AQA 2060

Are any truths objective, or are they all simply expressions of the point of view of a person and their society? Is it possible to act 'disinterestedly' for the welfare of others, or are we the playthings of selfish instincts? Is there any discernible reason why existence is, as Thomas Hobbes put it, 'nasty, brutish and short'? Are the mental concepts we use representative in any way of how reality is? Attempts to answer these and other similar questions encompass the A-Level in Religion and Philosophy.

The course is divided into two equal parts: Ethics and the Philosophy of Religion. We follow the AQA version, one of the advantages of which is a more manageable workload.

Unit	Level	Length of Exam	Date
1	AS	1 hour 15 minutes	June
2	AS	1 hour 15 minutes	June
3	A2	1 hour 30 minutes	June
4	A2	1 hour 30 minutes	June

Religion and Philosophy encourages freedom of thought (hence the above quote from Nietzsche), but not without rigour and discipline; the questioning of assumptions; and a respect for the ideas of great thinkers. After being taught how to cope with philosophical language you should approach all of your future studies, in this subject or beyond, with confidence and understanding. As well as providing you with a much sought-after qualification, it will challenge you in ways that no other subject can.

You need not have taken the GCSE in order to choose the A-Level, or in order to excel. Some of our strongest pupils of recent years realised too late for GCSE their interest in the subject, and joined us in Year 12.

The AS builds on the skills, knowledge and understanding acquired by candidates in Years 7 to 11, and even if you do not wish to carry on to A2, there is a great deal that will be useful. Some topics will be covered in greater depth than at GCSE, whilst others are new.

A Level Option Choices

Philosophy of Religion	Ethics
Cosmological argument Religious experience Psychology of religion Critiques of religious belief Religious authority	Utilitarianism Situation ethics Nature and value of life Euthanasia Abortion The free-will debate Virtue ethics Science and technology Sexual ethics

Many students in past years have used the A-Level in Religion and Philosophy to complement quite different subjects and for different career paths, which means that you will be able to keep your options open. They have gone on to study English at Durham, Business Management at Warwick, History at St. Andrews, Journalism at Preston, and Psychology at Bristol. Pupils around the country have used this subject for a career in medicine, supported by the study of ethics, and law, because of the emphasis on the close reading of texts and thinking critically.

Of course, this A-Level prepares pupils equally well for undergraduate study in Philosophy, Theology and Religious Studies. Pupils in recent years have taken these options at Oxford, Cambridge, St. Andrews, Nottingham, and elsewhere.

If you have any further questions about this course, feel free to ask any member of the RP Department.

ENGINEERING

Engineering Opportunities

If you are interested in a career in Engineering, whether Electrical & Electronic, Mechanical or Civil - then you can gain hands-on experience in the Sixth Form. Clearly, to pursue a career in Engineering you would need to take both Physics and Mathematics at A-level and might even benefit from taking Further Maths if you intend to apply to the most competitive university Engineering degrees. The following opportunities are available:

- (i) The Engineering Education Scheme: here a team of four Lower Sixth formers, selected by interview, work on a real engineering project with an industrial partner on a project from October to March.
- (ii) The Engineering Education Scheme HEADSTART programme: at the end of your Lower Sixth year, you can apply to visit a university engineering department for four days in June or July to experience life as an engineering student.

Appendix

A2 Results 2013

Subject	A*	A	B	C	D	E	U	Total	%A*	%A* A	%A* B	%A* C	%A* E
Biology	11	17	19	9	1	1	0	58	19.0	48.3	81.0	96.6	100.0
Business Studies	0	1	2	0	1	0	0	4	0.0	25.0	75.0	75.0	100.0
Chemistry	6	12	13	5	0	1	0	37	16.2	48.6	83.8	97.3	100.0
Chinese	0	4	1	0	0	0	0	5	0.0	80.0	100.0	100.0	100.0
Classical Civilisation	0	0	2	0	0	0	0	2	0.0	0.0	100.0	100.0	100.0
Computer Studies	1	1	0	1	0	0	0	3	33.3	66.7	66.7	100.0	100.0
D&T Product Design	0	1	0	1	0	0	0	2	0.0	50.0	50.0	100.0	100.0
Drama	1	2	0	0	0	0	0	3	33.3	100.0	100.0	100.0	100.0
Economics	3	7	9	10	1	1	0	31	9.7	32.3	61.3	93.5	100.0
English Literature	5	9	12	5	0	0	0	31	16.1	45.2	83.9	100.0	100.0
Fine Art	2	0	7	2	0	0	0	11	18.2	18.2	81.8	100.0	100.0
French	0	4	2	2	1	0	0	9	0.0	44.4	66.7	88.9	100.0
Geography	0	8	11	3	0	0	0	22	0.0	36.4	86.4	100.0	100.0
German	0	0	1	1	0	0	0	2	0.0	0.0	50.0	100.0	100.0
Greek	0	2	0	0	0	0	0	2	0.0	100.0	100.0	100.0	100.0
History	7	9	3	1	1	0	0	21	33.3	76.2	90.5	95.2	100.0
Home Economics	0	0	0	1	0	0	0	1	0.0	0.0	0.0	100.0	100.0
Latin	1	3	0	0	0	0	0	4	25.0	100.0	100.0	100.0	100.0
Mathematics Further	11	2	3	0	0	0	0	16	68.8	81.3	100.0	100.0	100.0
Mathematics	20	26	17	6	1	0	1	71	28.2	64.8	88.7	97.2	98.6
Physics	12	13	5	3	2	1	0	36	33.3	69.4	83.3	91.7	100.0
Politics	0	7	8	1	2	0	0	18	0.0	38.9	83.3	88.9	100.0
Psychology	0	0	1	2	0	0	0	3	0.0	0.0	33.3	100.0	100.0
Religious Studies	0	5	6	2	2	0	0	15	0.0	33.3	73.3	86.7	100.0
Russian (2011)	1	0	0	0	0	0	0	1	100.0	100.0	100.0	100.0	100.0
Spanish	0	1	4	1	1	0	0	7	0.0	14.3	71.43	85.7	100.0

Totals	81	134	126	56	13	4	1	415	19.5	51.8	82.2	95.7	99.8
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