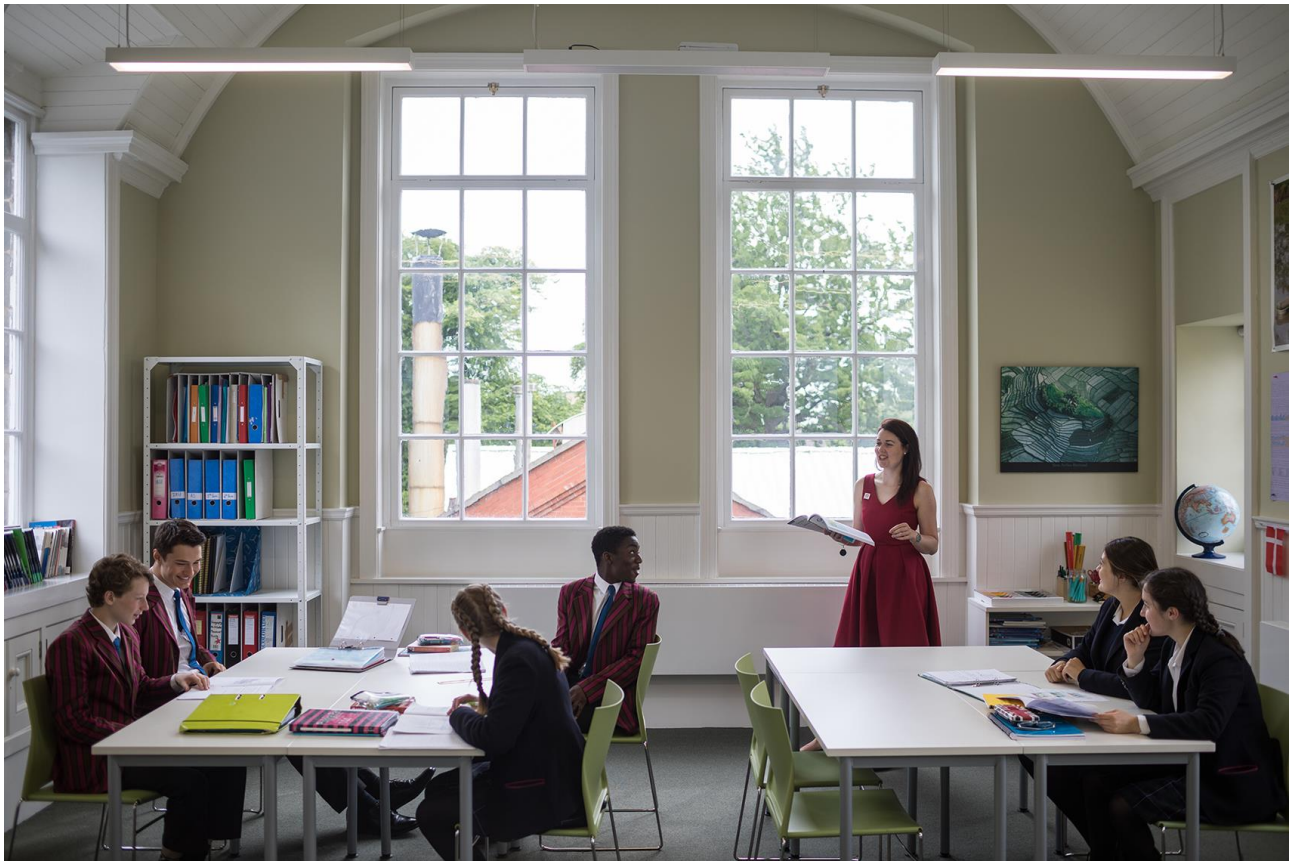
# INTO THE FOURTH AT FETTES COLLEGE



Fettes College

# INTO THE FOURTH AT FETTES COLLEGE

## GCSE CHOICES FOR SEPTEMBER 2019

This account of arrangements and subjects at GCSE is written to inform your decision as you choose courses for the Fourth Form.

There are five *core* subjects: English, Mathematics, Physics, Chemistry and Biology.

In addition FOUR subjects should be chosen from the following list:

| | | |
|---|---|---|
| Art and Design | Economics | Latin |
| Classical Civilisation | French | Mandarin |
| Classical Greek | Geography | Music |
| Computer Science | German | PE |
| Drama | History | Spanish |

- All students must choose at least one modern foreign language, except for those taking English as a Foreign Language or Support for Learning instead of an optional subject.
- French, Spanish, German, Mandarin, Latin and Classical Greek GCSEs are only available to those who are taking these subjects in the Third Form: in the Fourth Form, they are not beginners' courses.

Ability, interest and career ideas should be the main guiding principles in making the choices between these subjects. Interest and commitment are important in providing motivation, as long as subjects are not chosen primarily because of the individuals who happen to teach them. The principle governing career prospects is not to shut too many doors by giving up subjects which might turn out in the end to be needed for a desired career. The curriculum is such that the only major career area that could be ruled out is Architecture if a student did not choose Art and Design. Please feel free at any time to consult the Housemaster/Housemistress or me about these subject choices.

Andrew Shackleton
Director of Studies
December 2018

## ART and DESIGN

Studying Art and Design offers you the opportunity to develop your creative skills and find new ways to explore your ideas. Art touches us all daily in its various forms, even if we are not consciously aware of it. Every time we get dressed, sit on a chair, walk into a building, watch the television, look at a poster, take a trip to the cinema, theatre or gallery, the work of creative, imaginative people affects and involves us. Visual awareness is as important in the development of the individual as literacy and numeracy.

As a GCSE Art student you will develop skills through working with a wide range of materials and across different disciplines, which might include drawing and painting, printmaking, textiles, ceramics, sculpture, photography and animation. You can specialise in any of these disciplines or opt for a combination of at least two. Your knowledge and understanding of Art and Design will be developed through research into the work of other artists. The most important factors for success are your enthusiasm, desire to be creative, and genuine interest in the subject.

The GCSE course is divided into two parts:

Component 1: Portfolio. One complete project plus other supporting work. Worth 60% of the total GCSE marks.

Component 2: Externally set assignment. Several weeks of preparation plus a ten hour exam, worth 40% of the total GCSE marks.

The vast majority of students who study at this level have a great sense of fulfilment and enjoyment as well as a sense of pride in their achievements.

Miss BJ Conway

## CLASSICS

Latin and Greek

If you have enjoyed exploring translations and reading stories in these languages, then you are sure to enjoy these subjects at GCSE level. During class, we will continue to learn new vocabulary and grammar in order to tackle more interesting and challenging stories about myths and also about ancient history. In addition, we will also study two texts, which are *real* pieces of Latin or Greek, written over 2,000 years ago. These are by some of the most famous ancient authors (including Virgil, Herodotus and Homer). The stories can cover a wide range of topics, including epic battles of life and death, superstitions about witches, love stories and violent volcanic eruptions. As well as translating these set texts, we will also analyse how the authors chose their words carefully so that they had the most powerful effective possible on their audience.

Both the Latin and Greek courses follow a similar structure: one language paper and two literature papers – all of which involve a mixture of translation and comprehension questions.

If you like languages and enjoy learning about the ancient world, then you should definitely take either Latin or Greek, or both.

Classical Civilisation

Classical Civilisation is an immensely interesting course, which covers a wide range of different topics about ancient Greece and Rome. Throughout the two years, we study two modules – firstly exploring the world of Homer, reading the story of the *Odyssey*, following Odysseus on his adventures with the Cyclops, into the Underworld and his return homing, ending with a show down between him and the men who are trying to marry his wife. This is done alongside the study of the Mycenaean culture from 1250BC – the palaces, wall paintings and tombs. The second module examines Roman and Greek gods and heroes, looking in detail at mythological stories (like Hercules) and foundation myths for Athens and Rome, as well as temples and sacrifices, exploring ancient burials and the journey to the Underworld. This course is perfect for anyone interested in learning about the ancient world but who either has no Latin or Greek knowledge, or does not wish to continue studying them.

The course consists of two exams, one on each module, containing a mixture of comprehension questions, and some longer essay-style answers.

If you like the sound of studying a mixture of myths, ancient history and archaeology, then you should definitely take Classical Civilisation.

Miss C McDonnell

## COMPUTER SCIENCE

Seemingly every aspect of our lives is controlled by computers. The world is increasingly becoming split into those people who simply use these systems and those who understand how they work and have a role in designing them. In Computer Science we aim to produce students who fall into the latter category. IGCSE Computer Science provides an excellent introduction into understanding of the mechanics of computers and how to write the software that runs on them.

Content and Assessment
The course is assessed through two examination papers.

<u>Paper One – Theory (60%):</u>
The content for this paper looks at how computers work, how they store data and how they communicate. Topics include:

- Data representation, binary systems, hexadecimal and data storage.
- Communication and internet technologies, including data transmission, security aspects and the internet.
- Hardware and software, logic gates, computer architecture and the fetch-execute cycle.
- Input, output and storage devices, operating systems, high and low-level languages and their translators.
- Security and ethics.

Paper Two - Problem-solving and Programming (40%)

Students are given a pre-release task in January. Over several months they write a program to solve the given problem. In the second paper students then answer questions on this program along with questions on general programming and databases.

Who should study Computer Science?

Contrary to some popular stereotypes there is no 'typical' computer scientist. Some will work in science and engineering related fields, some in commerce, but equally others in creative industries. Disney Pixar, for example, have teams of programmers who develop the cutting-edge software that produces their lifelike animation. Good computer scientists do tend to have certain traits in common. Firstly, they are curious, constantly keen to know why and how things happen. Secondly, they will have a logical mind, enjoying the problem-solving nature of the subject. Finally, and most importantly, they will be resilient and persistent. Writing programming code isn't easy and you are unlikely to get a perfect answer first time, every time. Those who enjoy wrestling with puzzles and are persistent until they are solved will likely do well. Computer Science is not an easy subject but because of this it is ultimately rewarding both intellectually and, given the skills shortage in the tech industry, in terms of career potential.

Mr JJ Pitt

## DRAMA

A unique course at Fettes

IGCSE Drama is a challenging and dynamic course which is unashamedly practical and produces confident actors and creator of theatre. Drama mixes the technical with the practical, and performance with theory, making it a unique subject at Fettes. In order to gain the highest grades, candidates have to be practically able as well as critically reflective and this combination of the practical and theoretical makes for a rigorous and engaging course, which gives students real-life skills, useful far beyond the confines of school.

Drama for everyone

It must be stressed that the course is not designed with the 'talented few' in mind; we have found that it is often the less confident students who benefit most from the 'life skills' element of the subject, such as movement and voice training. Equally, it is not a soft option for those looking for a 'non-academic' subject. Reflection, analysis and a written examination are integral elements of the course, as are textual studies.

What will I be asked to do?

Assessment for Cambridge IGCSE Drama involves a total of three performances chosen from monologues, group work, devising and scripted work, which are marked at school and moderated by the exam board. There is a final written exam in the Summer Term of the Fifth Form which is based on practical work (including acting, directing, stage management, lighting, sound, make-up, costume etc.) done in response to pre-released material in the Spring Term. Students are expected to see live productions as often as they can. This has a cost implication, with tickets for shows usually £10 or less. Students should also aim to be extensively involved in School productions.

Mr EMJ Boulter-Comer

# ECONOMICS

Economics is a dynamic social science that is essentially about the concept of scarcity and the problem of resource allocation. It enables students to gain a thorough and rigorous understanding of the theory that underpins the workings of a modern economy; to understand the concepts of causality and interdependence, both on a micro and a macro scale. The subject is far from being purely theoretical and all theory taught is in real world context. At a time when Economic and political engagement among young people is at an all-time high, studying the subject will allow you to have far a better understanding of the issues shaping the world in which we live.

Economics is a broad subject and offers an explanation for many aspects of life that we take for granted, such as why is the price of our food at the supermarket rising, why does it cost a different amount to go on holiday abroad each year and what does Brexit really mean?

The aims of this course are to:

- Develop effective and independent students who are critical and reflective thinkers with enquiring minds;
- use an enquiring, critical approach to distinguish between fact and opinion, build arguments and make informed judgements;
- apply knowledge, understanding and skills to contemporary issues in a range of local, national and global contexts;
- understand the perspectives of a range of different stakeholders in relation to economic activity;
- consider the moral issues that arise as a result of the impact of economic activity on the environment and economic development;
- help understand current events for both IGCSE and the possible further study of economics.

We prepare candidates for the International GCSE Economics course offered by Edexcel.

Assessment: There are two exams for IGCSE Economics:
Paper 1: Microeconomics and Business Economics, 1 hour 30 minutes. Worth 50%
Paper 2: Macroeconomics and the Global Economy, 1 hour 30 minutes. Worth 50%

Each paper consists of four compulsory questions, each worth 20 marks. The sub-questions are a mixture of multiple-choice, short-answer, data response and open-ended questions.

There is no coursework.

There is a great breadth of enrichment activity available in the Department. The student-led society called the Fettes Economics, Finance & Enterprise Society (F.E.F.E) meets most weeks. Here students meet to discuss current affairs, listen to visiting speakers and some students are invited to contribute to the termly society podcast. This year alone students have had the opportunity to attend lectures by leading figures in their fields, notably a lecture on the Chinese One Belt, One Road Initiative at the Royal Society of Edinburgh. Those looking to continue the subject into the Sixth Form can look forward to the opportunity to go on a trip further afield: in October 2017 the students of Economics and Mathematics went to New York! We also strongly encourage students studying Economics to dip their toe into the world of finance. This year sixteen teams of Fettesians took part in the Student Investor Challenge run by The London Institute of Banking & Finance.

Mr SWA Shelley

# ENGLISH

We prepare candidates for the International GCSE English courses offered by Edexcel. These IGCSE courses offer a wide range of opportunities for pupils to hone their English skills. They will study a wide range of literary and non-fiction texts during the two years of their course; this, in turn, will furnish them with skills that will serve them well in the Sixth form and beyond.

International GCSE English Language A (Edexcel)

The IGCSE for English Language consists of a single written exam (60%) plus written coursework (40%). The written exam (Paper one) requires students to study a range of non-fiction passages in advance (including pieces by the likes of Chimamanda Ngozi Adichie, Benjamin Zephaniah and Helen MacDonald). Candidates will be required to respond to one of their prepared non-fiction pieces in the exam and also make comparison between that extract and a previously unseen passage. Their writing skills will also be tested as they will produce a single piece of personal writing for a distinct purpose and audience. Written coursework accounts for 40% and consists of two carefully drafted essays to demonstrate students' skills in literary comparison and in imaginative writing. The literary essay will require them to compare two poetry and prose texts taken from the Edexcel Anthology. The imaginative essay offers loads of creative possibilities.

Students who require the greatest support with their English are taught in a small group with the support of our SFL and ESL Departments. It might be that a small number of candidates in the lowest set are best served by focusing on just IGCSE English Language.

International GCSE English Literature (Edexcel)

IGCSE English Literature consists of one written exam and two pieces of written coursework:

| | |
|---|---|
| Paper One | Poetry and Modern Prose (60%) |
| Coursework | Modern Drama and Literary Heritage texts (40%). |

Pupils will study a wide range of texts closely and explore the contexts in which they were written and have been received.

Paper One Poetry and Modern Prose

| | |
|---|---|
| Section A | Unseen poetry (20 marks); |
| Section B | Poetry in the Edexcel anthology (30 marks); |
| Section C | Modern prose text (40 marks). |

Modern prose texts for Paper One are taken from the following list:
*To Kill a Mockingbird, Of Mice and Men, The Whale Rider, The Joy Luck Club, Things Fall Apart*

Coursework Modern Drama and Literary Heritage texts

All pupils produce coursework in response to a Modern Drama text and a Literary heritage text:

Modern Drama – texts chosen from: *A View from the Bridge, An Inspector Calls, The Curious Incident of the Dog in the Night-time, Kindertransport, Death and the King's Horseman.*

Literary Heritage – texts chosen from: *Romeo and Juliet, Macbeth, The Merchant of Venice, Pride and Prejudice, Great Expectations, The Scarlet Letter.*

We hope that all boys and girls will enjoy the IGCSE courses: they should provide appropriate challenge to pupils of all abilities.

Mr AJ Speedy

## GEOGRAPHY

Geography is one of the most exciting subjects to study. We live in an interdependent world caught up in chains of events, which span the globe. We depend upon an increasingly fragile physical environment, whose complex interactions require sophisticated analysis and sensitive management. These issues present intellectual and practical challenges for societies of the first importance and they are amongst the central problems of modern Geography.

Geography is unique in bridging the social sciences and natural sciences. Human Geography concerns the understanding of the dynamics of cultures, societies and economies, and Physical Geography concerns the understanding of the dynamics of landscapes and the environment.

Geography puts this understanding of social and physical processes within the context of place - recognising the great differences in cultures, political systems, economies, landscapes and environments across the world, and exploring the links between them. Understanding the causes of differences and inequalities between places and social groups underlie much of the newer developments in Human Geography.

Geography provides an ideal framework for relating other fields of knowledge and complements both the science and humanities subjects offered at GCSE. It is a stimulating but demanding subject, with exciting and engaging content.

Key Skills & Competencies:

Through the study of Geography, you will combine theory and practical fieldwork to develop a set of highly transferable skills, including reasoning, analysis and critical thought.

Studying Geography will enable you to:

- become confident and competent in selecting, using and evaluating a range of quantitative and qualitative skills and approaches, (including observing, collecting and analysing geo-located data) and applying them as an integral part of your studies
- understand the fundamental role of fieldwork as a tool to understand and generate new knowledge about the real world, and become skilled at planning, undertaking and evaluating fieldwork in appropriate situations
- apply geographical knowledge, understanding, skills and approaches in a rigorous way to a range of geographical questions and issues, including those identified in fieldwork, recognising both the contributions and limitations of Geography
- develop as a critical and reflective learner
- articulate opinions, suggest relevant new ideas and provide evidenced argument in a range of situations

The Cambridge IGCSE syllabus is divided into three themes, designed to develop an understanding of natural and human environments:

- Theme 1: Population and Settlement
    - Population Dynamics
    - Migration
    - Urbanisation and settlements

- Theme 2: The Natural Environment
    - Natural Hazards
    - Fluvial and Marine Environments
    - Weather & Climate
    - Ecosystems

- Theme 3: The Economic World
    - Development
    - Food production
    - Industry
    - Tourism
    - Resource scarcity – energy & water
    - Environmental risks of economic development

Assessment:

- Examinations: All candidates sit two papers at the end of 5th Form
    - Paper 1: Geographical Themes (1 hour 45 minutes)
    - Paper 2: Geographical Skills (1 hour 30 minutes)

- Coursework: One, centre-based, assignment of up to 2000 words, completed at the end of Fourth Form, worth 27.5% of the final grade.

Ms HE Cockburn

## HISTORY

Why study history at GCSE?

History at IGCSE revolves around the twentieth century. The syllabus features some of the most important historical issues of the period: the rise of Hitler in Germany, the breakdown of relations between the United States and the Soviet Union, wars in Korea and Vietnam and the Cuban Missile Crisis. Over two years you will pick up the key skills of an historian and learn about events that shape our lives today. An IGCSE historian will develop an appreciation and understanding of history as a discipline, including the nature and diversity of its sources, methods and interpretations.

If you have enjoyed studying the First World War, the Holocaust and other events in the Third Form, then you will find that the topics in the Fourth and Fifth Forms are just as interesting and build on your existing knowledge. The CIE IGCSE allows students to examine in depth the rise and fall of Nazism in Germany (1918-45) and 'The 20th Century: International Relations since 1919', encompassing a study of the causes and consequences of the Second World War, a study of the Cold War including US involvement in Asia and USSR control over Eastern Europe. It looks at some of the most interesting and world shattering events of the twentieth century, all of which have an impact on the world in which we live. Some of these features of the past still exist today: negative elements such

as wars, dictatorships, terrorism, and genocide, as well as positive elements such as peace treaties, international co-operation and scientific achievements. The IGCSE course engenders a lasting interest in history for many of our students.

The IGCSE course will allow you to develop your knowledge of twentieth century events and encourage you to consider in more detail the effects of War on International Relations. The course will build on your existing knowledge of history, as well as help to develop your skills of writing, discussion and debate. You will learn how to evaluate and analyse source material and apply your own knowledge to decide between truth and propaganda. The course will help you to understand more clearly the world in which you live.

The History IGCSE Course

Core Content: Paper One and Two: 'The Twentieth Century: international relations from 1919'

Depth Study: Paper One: Germany: 1918-1945

Depth Study: Coursework: Germany: 1918-1945
Coursework consists of one 2000 word assignment and accounts for 27% of the total mark.

Outside the classroom, students are encouraged to attend the Historical Society. A number of topic specific events are held throughout the year and IGCSE students are also encouraged to attend non-related events. In the past Fourth and Fifth Form students have visited Berlin and the First World War Battlefields, further enhancing their study of history.

Ms TJ McDonald

## MATHEMATICS

All students study Mathematics at IGCSE. At IGCSE level, the aim is to continue to stimulate interest, enjoyment and curiosity in mathematics. We promote an understanding of mathematics in its widest context and help pupils to develop transferable skills. Mathematics is concerned with learning rules and skills to deal with numbers, formulae and equations. In the IGCSE course, you will be encouraged to solve problems which arise in real life using mathematical knowledge and techniques you have learned. One of the aims of this course is to improve your ability in problem-solving activities.

The Edexcel Course enables learners to select and apply mathematical techniques in a variety of mathematical and real-life situations. Learners interpret, communicate and manage information in mathematical form. The course is designed to extend student's knowledge by broadening and deepening skills.

The course is split into four sections – Number, Algebra, Geometry and Statistics. The final examination is taken at the end of Fifth Form. It consists of two papers at either Foundation or Higher Tier and both allow the use of a calculator

A top grade at this level should enable successful progression to A Level or IB and beyond. It will also provide a qualification which will be sufficient for non-mathematical careers.

Ms JM Maguire

## MODERN LANGUAGES

If you have ever wished that you could speak, argue, joke, eavesdrop and dream in a foreign language, or if you are interested in the Chinese, French, German or Spanish-speaking worlds, then one or more Modern Language GCSEs is a must. You will build on the skills and language acquired in Third Form, and learn how to tackle translation, understand some simple but authentic literature, get to know the culture of the countries where the language is spoken, and engage with contemporary issues that affect society. The new IGCSE course is an excellent introduction to the different facets of language learning: linguistics, literature, culture and communication.

The IGCSE examination tests listening, speaking, reading and writing skills equally. However, there are many other skills that you will learn during the course: You will improve the grammar and vocabulary of your native language, understand more about the history and society of different countries, get a taste of foreign film, music and literature, be able to read texts more analytically, and improve your self-confidence.

Many students opt to study two foreign languages at IGCSE as linguists are in high demand. Study of Modern Languages is enhanced by our excellent department of passionate and positive-minded teachers and assistants. You will have one-to-one lessons with a native speaker which will see your spoken language develop quickly and confidently. All year round there are many competitions, film nights, visiting speakers, travelling theatre companies and quizzes taking place. There are also trips abroad for all languages. Fourth Form students also have the opportunity to apply for a place on the Language Leaders programme, where they prepare for a Routes into Languages-sponsored qualification.

Ms KM Hopkinson

## MUSIC

GCSE Music is a broad course which should appeal to anyone with an interest in music. The course is based on the study of eight set works, split into four Areas of Study:

- Area of Study 1: Instrumental Music 1700-1820
- Area of Study 2: Vocal Music
- Area of Study 3: Music for Stage and Screen
- Area of Study 4: Fusions

The course is not specifically aimed at the "specialist" musician but it is expected that those students who hold Music Scholarships and Exhibitions will opt to take Music at GCSE.

We follow the Edexcel course which consists of the following components:

| | |
|---|---|
| Component 1 Performing | 30% |
| Component 2 Composing | 30% |
| Component 3 Listening and Appraising | 40% |

Component 1 requires candidates to record a total of at least 4 minutes of music. This will include one solo performance, on any instrument/voice, and one ensemble performance, in which the candidate plays an independent part. To have the possibility of gaining full marks in this component,

the standard of pieces performed should be equivalent to ABRSM Grade V, although this should not dissuade instrumentalists or vocalists who have not yet reached this level from choosing GCSE Music. This component is internally marked and externally moderated.

Component 2 requires students to produce two compositions; one based on a brief set by Edexcel, and one free composition. Both compositions must reach at least three minutes in duration. This component is internally marked and externally moderated.

Component 3 consists of a listening exam of 1 hour 45 mins. Candidates are expected to respond to six listening questions about six of the eight set works and write an extended answer comparing one of the set works to an unfamiliar piece of music.

Mr BL Watson

## PHYSICAL EDUCATION

PE GCSE is a popular subject choice here at Fettes. It is a course that focuses on the world of sports performance and you will learn about the theory that will allow for you to improve as an athlete and take control of your own health. It takes the cores subjects of Biology, Chemistry, Physics, Sociology, History and Psychology and applies them to us. This allows you to see how the body and brain are influenced and therefore gives you the understanding over how people function both physically and emotionally. This is a subject that you can apply not only to your performance but to many aspects of everyday life.
Physical Education is a subject that combines well with both Science and Art subjects. Its syllabus is divided into seven sections:

- Applied Anatomy and Physiology, Movement Analysis, Physical Training, Use of Data, Sports Psychology, Socio-cultural influences, Health, fitness and well-being.

The complete syllabus can be found here:
http://www.aqa.org.uk/subjects/physical-education/gcse/physical-education-8582/specification-at-a-glance

Assessments

| Paper 1: The human body and movement in physical activity and sport | Paper 2: Socio-cultural influences and well-being in physical activity and sport | Non-exam assessment: Practical performance in physical activity and sport |
|---|---|---|
| What's assessed<br>Applied anatomy and physiology<br>Movement analysis<br>Physical training<br>Use of data | What's assessed<br>Sports psychology<br>Socio-cultural influences<br>Health, fitness and well-being<br>Use of data | What's assessed<br>Practical performance in 3 physical activities (minimum one in a team activity, one in an individual activity).<br>Analysis and evaluation of performance to bring about improvement in one activity. |

| How it's assessed | How it's assessed | How it's assessed |
|---|---|---|
| Written exam: 1 hour 15 minutes | Written exam: 1 hour 15 minutes | Assessed by teachers |
| 78 marks | 78 marks | Moderated by AQA |
| 30% of GCSE | 30% of GCSE | 100 marks |
| | | 40% of GCSE |

Ms M Raeburn

## SCIENCE

Science has become increasingly fundamental in understanding the world we live in. We are bombarded with daily news items which incorporate important scientific ideas and applications and, if students are to understand these, it is important that they all have a sound grounding in the sciences. All students therefore take Science at IGCSE as part of either a Double Award scheme or as three separate GCSEs.

The Double Award Science is designed as a two-year course of study. It takes approximately two thirds of the subject content from each of the IGCSE single sciences (Biology, Chemistry and Physics) and combines them into an IGCSE Science specification which is worth the equivalent of two GCSEs. It is designed to be an interesting and inspiring modern syllabus, suitable both for those for whom it is a final science qualification and also for those who require a sound foundation for further study. The course allows for a great deal of experimental work in each of the sciences and so prepares students well for both A Level and IB. All students are taught by specialist teachers with six periods per cycle for each Science. They are examined via a theory paper in each subject which is worth 33.3% of the total Double Award IGCSE marks.

The IGCSE separate sciences have a syllabus which extends some of the concepts taken at Dual Award but the specifications follow the same overall plan.

### BIOLOGY

Biology is a subject that combines well with both Science and Arts subjects and is often thought the most accessible of the sciences. It blends skills learnt in Mathematics, Chemistry, Physics and Geography and also incorporates a good understanding of the English language. IGCSE Biology is divided into five sections:

- Nature and the Variety of Living Organisms
- Structure and Function of Living Organisms
- Reproduction and Inheritance
- Ecology and the Environment
- Use of Biological Resources

The course is begun in the Third Form and builds on the recommendations of the National Curriculum and of the Curriculum for Excellence in the pre-GCSE years.

Dr SA Lewis

## CHEMISTRY

IGCSE Chemistry is a continuation of the work covered in the Third Form, building and expanding on the topics of the states of matter, elements and compounds, the periodic table and the chemical reactions of a wide range of substances. It is divided into four sections:

- Principles of Chemistry
- Inorganic Chemistry
- Physical Chemistry
- Organic Chemistry

The course is divided into a number of Chemical Storylines (e.g. The Chemistry of the Atmosphere) based on contemporary issues in Chemistry. The students study the material in a spiral way so that ideas introduced in an early topic are reinforced later.

During the course we look at the atom, the central building block of matter. The first surprise we get is that matter is mostly empty space. An understanding of how atoms combine to form the millions of materials we see on a daily basis is the foundation on which the course is built.

With knowledge of what matter is and how it reacts we look at some industrial processes. How is oil refined to make fuel and innumerable useful products? How is fertiliser made, and what has it to do with Fritz Haber? Are Chemists responsible for destroying the environment or are they trying to save it? How can a chemical engineer save a company millions of pounds in a year by adjusting a few valves?

We explore all of these issues and much more in what is a fascinating insight as to how chemists use the resources around us to make everything you see and touch on a daily basis.

Dr CR Mathison

## PHYSICS

IGCSE Physics enables students to acquire a systematic body of scientific knowledge and the skills needed to apply this in new and changing situations in many domestic, industrial and environmental contexts. There is also a large emphasis placed on the practical nature of Physics, where students are encouraged to acquire experimental and investigative skills based on correct and safe laboratory techniques.

The course is split into eight sections of study:

Section 1: Forces and motion
Section 2: Electricity
Section 3: Waves
Section 4: Energy resources and energy transfer
Section 5: Solids, liquids and gases
Section 6: Magnetism and electromagnetism
Section 7: Radioactivity and particles
Section 8: Astrophysics

Each of these sections has core and extension material, which is used to challenge the more able students throughout the entirety of their IGCSE.

Mr NCR Ward