

M|P|W

GCSE Course Outlines

Cambridge

2025/2026



www.mpw.ac.uk



Dear Student

You are now entering an amazing time in your academic journey. Namely, you get to choose what to study, which can be both exciting and daunting in equal measure. As an individual, you can decide the direction to take and we are here to help and guide you through this process.

The subjects you choose now will form the basis of your academic studies at A level and beyond; this booklet will provide detailed information on each individual subject to help you decide. It is important you choose subjects you enjoy and that you give thought to your future studies.

All students studying GCSEs at MPW follow a bespoke programme whether joining us at the end of Year 9, 10, 11 or some other point. Whether you are joining us at the end of Year 9, 10, 11 or at some other point, we can offer a bespoke programme of studies to suit your individual needs.

Why one-year courses? From our experience, in Year 10, taking four or five subjects on a one-year course will give you an exam focus throughout the year and a sense of achievement before entering Year 11. One-year GCSEs are ideal for students who are looking to transfer school at the end of Year 10, having had an introduction to some subjects already. In addition, they also suit those students who are looking to repeat Year 11, either by retaking a whole range of subjects or a few key subjects in which they encountered difficulties.

In this booklet, there is information on the main subjects offered as one-year GCSE courses. We occasionally offer other subjects that are not listed, so please make further enquires if you cannot find what you are looking for. Our examination boards are carefully chosen by experienced Heads of Department to provide, what we feel are the most dynamic and interesting specifications that will maximise

your experience and chance of success. To offer a complete academic experience, we include skills-based sessions designed to help hone your abilities; skills covered include revision techniques, time management, motivation, stress reduction and note taking. These are all key skills which universities and employers like students to possess and are invaluable to your studies across all subjects. To complement all this academic work we offer the statutory PE sessions in a wide variety of sports (including rock climbing, basketball and self-defence) with an emphasis on fun and exercise rather than competition. However, for those interested in football we have weekly sessions and the chance to represent the college. Finally, one of the highlights is the residential trip for GCSE students, which is a great opportunity to bond as a group and have fun.

I hope this has given you a flavour of life at MPW as an academic college with a relaxed social environment and I look forward to welcoming you to MPW in September.

Mark Leaford
Head of GCSE

CONTENTS

2	Letter from the college	16	Economics	28	History
6	Art and Design	18	English Language	30	Mathematics
8	Biology	20	English Literature	32	Physics
10	Business	22	French	34	Psychology
12	Chemistry	24	Geography	36	Religious Studies
14	Computer Science	26	German	38	Spanish



ART AND DESIGN

The course

Art and Design is a form of communication and a means of expressing ideas and feelings. GCSE Art and Design is a creative and practical course. Students are taught how to improve their technical drawing and painting skills as well as how to explore various techniques to develop ideas. They are also encouraged to research a variety of artists in order to inform their work.

GCSE Art and Design is essential for students wishing to pursue Art as an A level course. It is also vital for any students intending to study Architecture or for any number of careers in the creative industries, such as Illustration, Graphic Design or Fashion.

What skills do I need?

Students must submit 10-20 examples of work to assess their drawing/painting ability. Good technical drawing and painting skills are desirable. A high level of self-motivation and commitment are needed as students will have to spend a considerable amount of time working unsupervised in the Art Studio. Students should also be open-minded and willing to explore a variety of techniques and processes in order to improve their practical artwork.

“Every child is an artist. The problem is how to remain an artist once we grow up.”

Pablo Picasso, artist

How is the course assessed?

Eduqas offer a number of different options for GCSE Art and Design. At MPW Cambridge students follow the Fine Art option, producing practical and contextual work in the following areas of Fine Art: drawing, painting and mixed media.

There are two components. Component 1 is coursework which has to be completed by January. It is marked out of 120 and carries 60% weighting. The portfolio of work is selected from work undertaken during the course and must include **more than one project**. Photography methods are used to support a personal response to an idea, theme or issue. A response to all assessment objectives is required in the portfolio as a whole.

Component 2 is an external assessment set by Eduqas and concludes with a supervised time of 10 hours. It is marked out of 80 and carries 40% weighting. Students respond to their chosen starting point to produce a personal response. Question papers can be issued to students from 1 January in the year of the exam. Students have unlimited preparation time and a 10 hour period of supervised time. A response to all assessment objectives is required. Work presented is marked by the centre and moderated by Eduqas.

Exam Board and Specification Codes

WJEC Eduqas GCSE Art and Design (Fine Art) C651QS



BIOLOGY

The course

The AQA Biology course enables students to: develop scientific knowledge and conceptual understanding of Biology; develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills, both in the laboratory and in other learning environments; develop their ability to evaluate claims based on Biology through critical analysis of the methodology, evidence and conclusions, both qualitatively and quantitatively.

GCSE Biology is well suited to students who wish to study Biology at A level and beyond. A qualification in Biology is ideal for students considering careers in Biomedical Sciences, Medicine, Veterinary Medicine and any type of fundamental scientific research.

“Biology is the most powerful technology ever created. DNA is software, protein are hardware, cells are factories.”

Arvind Gupta, inventor and scientist

What skills do I need?

You will need a curiosity to learn about the natural world, a desire to gain insight into how science works and of its relevance to everyday lives. Investigative, mathematical and English language skills will all be necessary to achieve highly in this subject.

How is the course assessed?

There are two written examinations, each accounting for 50% of your marks and each of 1 hour 45 minutes duration. Both papers consist of multiple choice, structured, closed short answer and open response type questions.

Paper 1 will assess Cell Biology; Organisation; Infection and Response; and Bioenergetics.

Paper 2 will assess Homeostasis and Response; Inheritance, Variation and Evolution; and Ecology.

Course Books (provided by college)

AQA GCSE Biology 3rd Edition

By A. Fullick, A. Coates

Published by OUP, ISBN 9780198359371



Exam Board and Specification Codes

AQA Biology 8461



BUSINESS

The course

Business is a subject that delves into the theory behind how businesses operate and how their various functions respond to changes. The GCSE Business course will help students understand how external factors impact businesses, providing a chance to explore this dynamic and ever-evolving field. This subject pairs well with other areas like Economics, Maths and Geography, allowing students to see the connections between business and the wider world.

The course is taught across the Autumn and Spring terms, with the summer term dedicated to revision and exam preparation.

“If someone offers you an amazing opportunity but you are not sure you can do it, say yes, then learn how to do it later.”

Richard Branson, business magnate

What skills do I need?

1. To understand ratios and income statements.
2. To participate effectively in class discussions.
3. Students are encouraged to read current events and apply business concepts to real-world scenarios.
4. This will be essential for analysis and evaluation, particularly for exam success.
5. Participation in extracurriculars is encouraged to help develop additional skills.

How is the course assessed (Units: J204/01, J204/02):

Paper 1: Business Activity, Marketing, and People

Duration: 90 minutes

Weight: 50% of the final grade (80 marks)

This paper focuses on how internal factors impact businesses, including employee motivation and how it influences efficiency.

Paper 2: Operations, Finance, and Influences on Business

Duration: 90 minutes

Weight: 50% of the final grade (80 marks)

This paper covers topics such as total quality management and how financial management drives business operations. Students will be tested through a mix of short and long-answer questions.

Course Books (provided by college)



OCR GCSE (9–1) Business Student Book

By Mike Schofield and Alan Williams

Published by Hodder Education,

ISBN 9781471899362

Exam Board and Specification Codes

OCR Business (9-1) – J204



CHEMISTRY

The course

The AQA Chemistry course enables students to: develop scientific knowledge and conceptual understanding of Chemistry; develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills, both in the laboratory and in other learning environments; develop their ability to evaluate claims based on Chemistry through critical analysis of the methodology, evidence and conclusions, both qualitatively and quantitatively.

GCSE Chemistry is well suited to students who wish to study Chemistry at A level and beyond. A qualification in Chemistry is ideal for students considering careers in Biomedical Sciences, Medicine, Veterinary Medicine and any type of fundamental scientific research.

“Chemistry, unlike other sciences, sprang originally from delusions and superstitions, and was at its commencement exactly on a par with magic and astrology.”

Thomas Thomson, chemist

What skills do I need?

You will need a curiosity to learn about the natural world, a desire to gain insight into how science works and of its relevance to everyday lives. Investigative, mathematical and English language skills will all be necessary to achieve highly in this subject.

How is the course assessed?

There are two written examinations, each accounting for 50% of your marks and each of 1 hour 45 minutes duration. Both papers consist of multiple choice, structured, closed short answer and open response type questions.

Paper 1 will assess:

Atomic Structure and the Periodic Table, Bonding, Structure, and the Properties of Matter, Quantitative Chemistry, Chemical Changes and Energy Changes.

Paper 2 will assess:

The Rate and Extent of Chemical Change, Organic Chemistry, Chemical Analysis, Chemistry of the Atmosphere and Using Resources.

Course Books (provided by college)

AQA GCSE Chemistry 3rd Edition

By L. Ryan, R. Peacock

Published by OUP, ISBN 9780198359388



Exam Board and Specification Codes

AQA Chemistry 8462



COMPUTER SCIENCE

The course

Computers streamline the management of an organisation. The course will help you understand the impacts of digital technology to the individual and to wider society. Computers are a much-needed tool for every business, banking, government, entertainment, daily life, industry, education, and administration. In this course you will explore fundamentals of algorithms, programming, fundamentals of data representation, computer systems and cyber security. You will also cover structured query language (SQL) and the ethical, legal and environmental impacts of digital technology on wider society, including issues of privacy.

What skills do I need?

You will be required to demonstrate the ability to create programs and analyse problems. You need to showcase aptitude for thinking creatively, innovatively, analytically, logically and critically. You must have the ability to be able to draw together knowledge, understanding and skills from the full course of study in order to be able to answer a

range of differing style of exam questions. There are no pre-requisites to this course and no prior knowledge of programming is required to start, just a passion for the subject.

How is the course assessed?

This course is assessed by 2 exams, paper 1 and paper 2. Students also need to satisfy the practical programming requirements. Paper 1 is on computing concepts. This unit covers data representation, computer systems, fundamentals of computer networks, cyber security, relational databases and the ethical, legal and environmental impacts of digital technology on wider society, including issues of privacy. This is a 1 hour and 30 minutes written exam and is worth 50% of the overall GCSE grade. Paper 2 is on Computational thinking and programming skills. This paper focuses on computational thinking, code tracing, problem-solving, programming concepts including the design of effective algorithms and the designing, writing, testing and refining of code. This is a 1 hour and 30 minutes written exam and it is worth 50% of the overall GCSE. Both Paper 1 and 2 contain a mix of multiple choice, short answer and longer answer questions assessing programming, practical problem-solving and computational thinking skills.

“The computer was born to solve problems that did not exist before.”

Bill Gates Founder of Microsoft

Course Books (provided by college)



OCR GCSE Computer Science, Second Edition

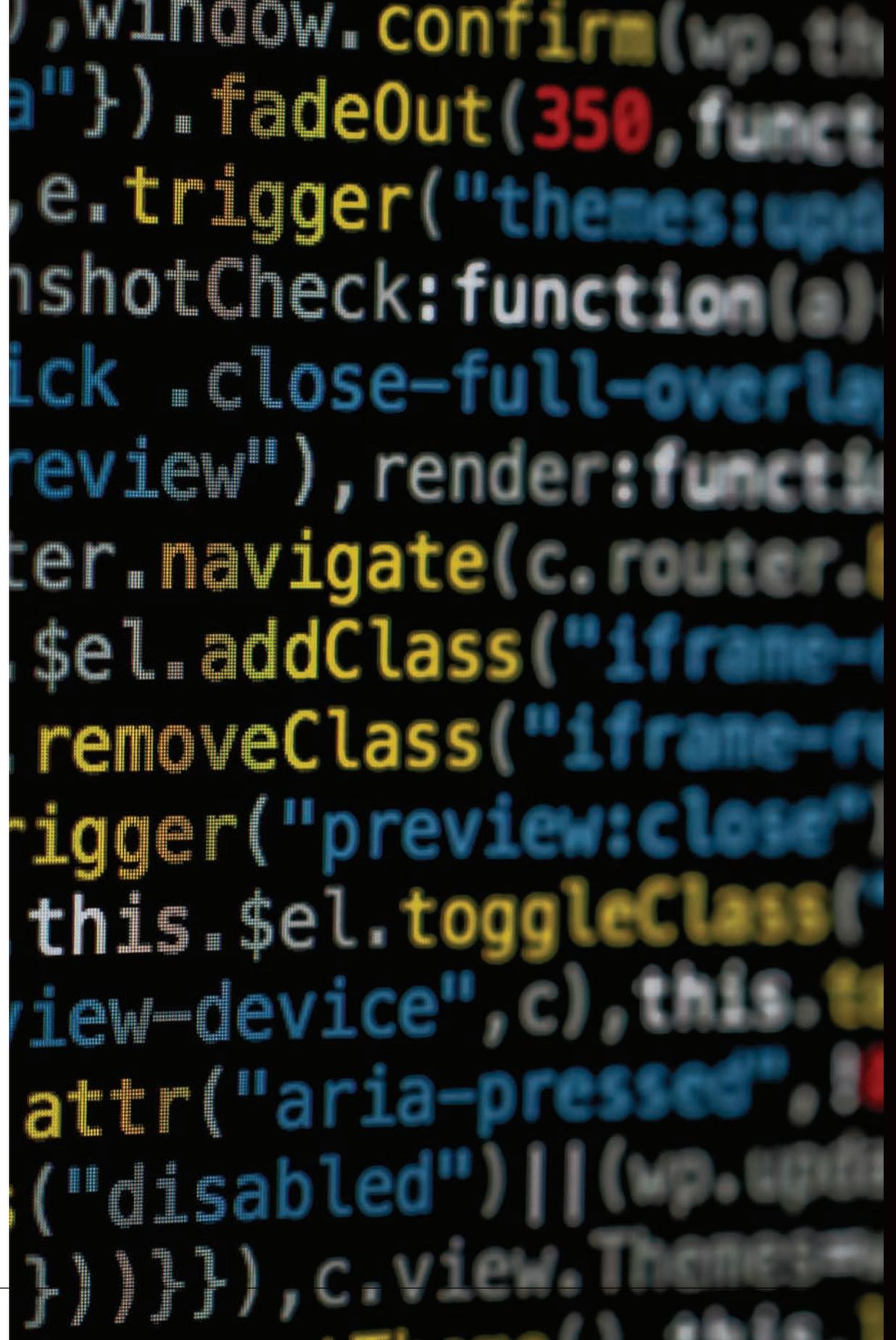
By George Rouse, Lorne Pearcey, Gavin Craddock et al
Published by Hodder,
ISBN: 9781510484313

Learning to Program in Python Crash Course in Coding for Python 3.x Beginners Guide in Programming with Examples and Challenges Course textbook

By PM Heathcote
Published by PG Online Limited; Illustrated edition
(23 Jun. 2017), ISBN-13: 978-1910523117

Exam Board and Specification Codes

AQA 8525B (Python)



ECONOMICS

The course

Economics is concerned with the allocation of scarce resources to meet needs and wants, and with the behaviour of consumers, producers and governments. It includes the study of how markets work, and what happens when they fail to allocate resources efficiently; the distribution of incomes and wealth; and national economic objectives and the various policies used by governments to try to achieve them. Economics complements subjects such as Mathematics, History, Geography and Business Studies.

Coverage of the subject material dominates the Autumn and Spring terms; the Summer term focuses on revision and exam technique.

“The main purpose in studying economics is to avoid being fooled by economists.”

Joan Robinson, economist

What skills do I need?

- Student should develop the knowledge for essential economic terms which are used throughout the course
- They need to develop knowledge on diagram drawing for topics such as supply and demand
- Pupils should have clear communication channels so that they can liaise with the teacher, and be involved in class discussions especially for topics such as Economic growth and Globalisation
- Critical thinking plays a huge part in writing the longer answers and weighing up arguments
- Students should be prepared to work in groups and independently

How is the course assessed?

Paper 1 – Introduction to Economics

1 hour 30 minutes exam, 50% weighting

Students will look at economic foundations such as the nature and purpose of economic activity, the factors of production and the importance of making choices. Students will also look at how resources are allocated using a market mechanism.

Paper 2 – National and International Economics

1 hour 30 minutes exam, 50% weighting

Students are introduced to the wider economy from the perspective of the main economic groups: consumers, producers and government. Students explore the significance of interest rates including their impact on saving, borrowing and spending.

Course Books (provided by college)

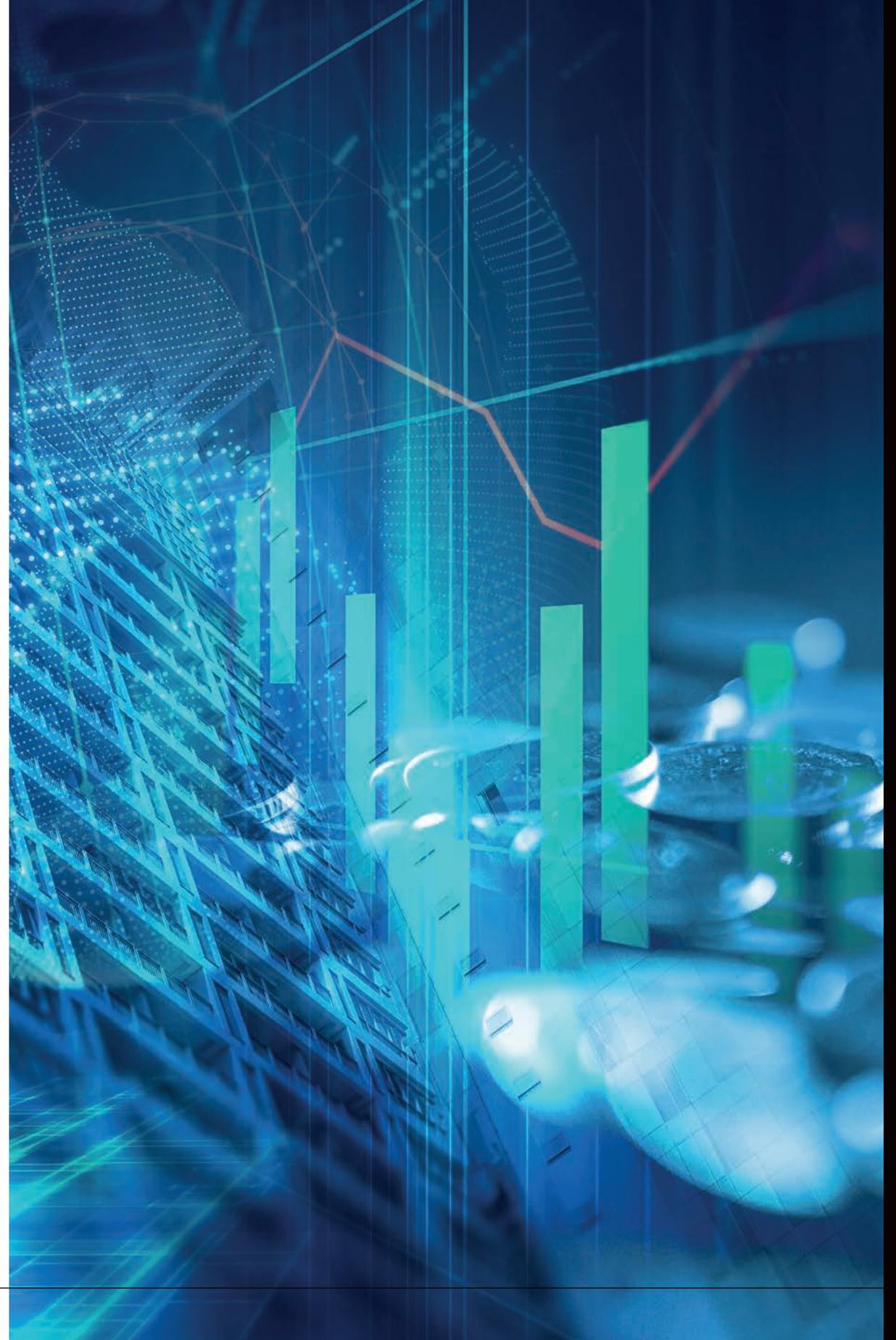


OCR Economics GCSE

By Chris Bancroft and Clive Riches
Published by Hoder Education,
ISBN 9781471888342

Exam Board and Specification Codes

OCR GCSE (9-1) J205



ENGLISH LANGUAGE

The course

English is a compulsory subject at GCSE level and there are very good reasons for this. A command of the English Language will not only gain you a GCSE but is now designed to equip you with skills that you need to be successful in life. If you can express yourself confidently, read and understand a wide range of written material and organise and shape your thoughts in writing, you can participate fully in society. A good level of written English is necessary for almost every subject you choose to study and will improve your results overall. English Language is not a 'subject' but a vital life skill in an age where our ability to communicate has never been more important.

“The ability to read awoke inside of me some long dormant craving to be mentally alive.”

Malcolm X,

minister and human rights activist

What skills do I need?

You need the capacity to engage with reading a wide variety of texts from the 19th to 21st centuries, including literature, non-fiction, reviews and journalism. An ability to dissect and analyse individual words and phrases and consider texts according to mode, function, style and audience will all be necessary to achieve highly in this subject.

How is the course assessed?

There are two written examinations, each accounting for 50% of your marks and each of 1 hour 45 minutes duration. Unit 1 consists of reading a variety of texts and answering shorter questions, followed by an extended question in which you will produce your own descriptive or narrative writing.

Unit 2 will consist of reading, and writing about, one non-fiction text and one literary non-fiction text, followed by your own writing to 'present a viewpoint'.

Each paper will require you to read and evaluate texts critically, make comparisons about the ways in which language is used, summarise information, and then use the knowledge you have gained to inform and improve your own writing.

Course Books (provided by college)



GCSE English Language for AQA

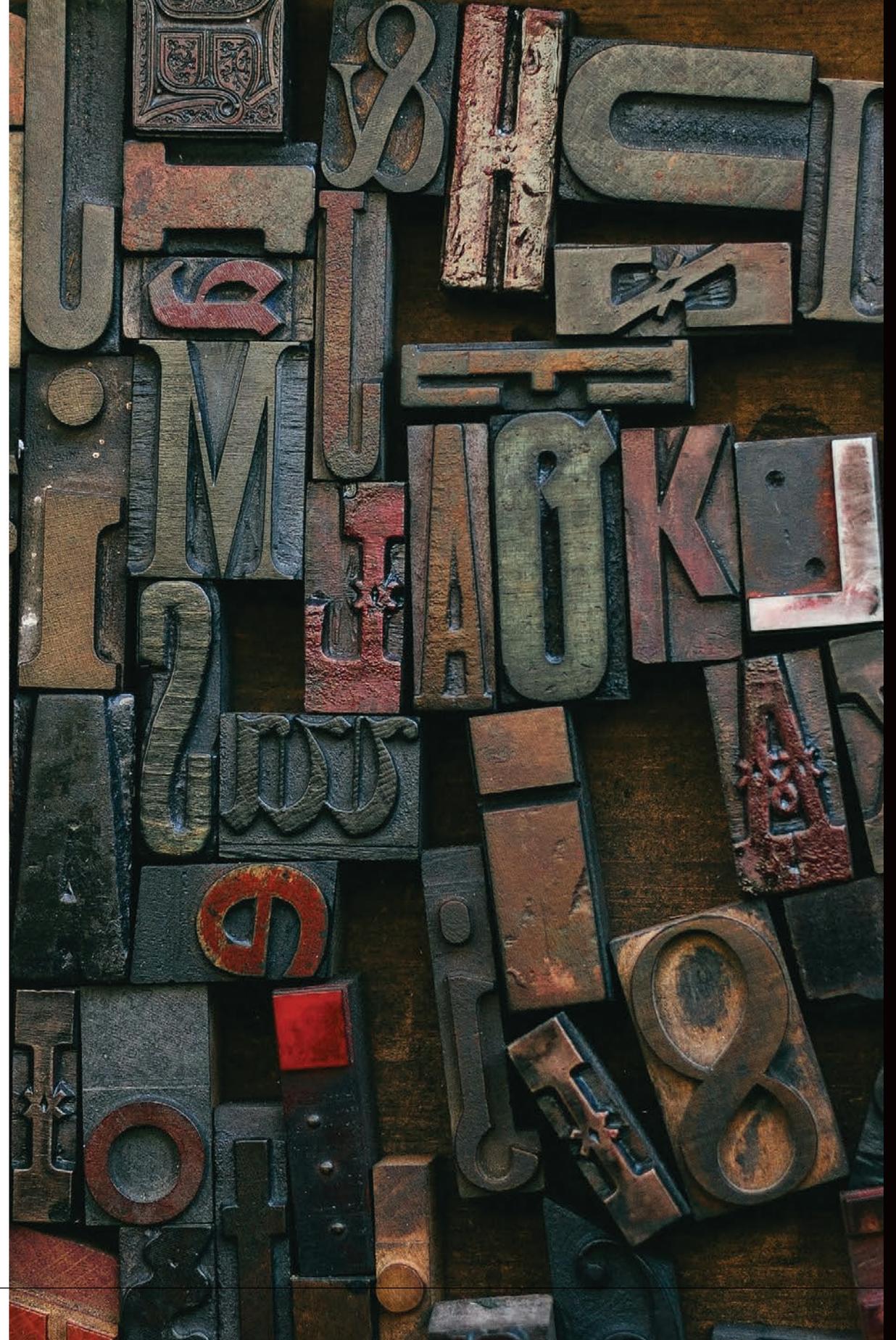
Progress Plus Student Book

By L. McNab, I. Pilgrim, M. Slee

Published by CUP, ISBN 9781107452978

Exam Board and Specification Codes

AQA English Language 8700



ENGLISH LITERATURE

The course

GCSE English Literature is often studied in addition to GCSE English Language. The literature course is designed to provide exposure to all genres of literature of high quality, ranging from English literary icons including Shakespeare and Dickens to an engaging mixture of classic and contemporary poetry. In reading and writing about literature, students develop highly transferable analytical and technical skills. Far from simply being a 'subject', the study of English Literature draws together and develops broad cultural, historical and linguistic awareness. The course provides an excellent foundation for the study of English Literature at A level.

“But in reading great literature, I become a thousand men and yet remain myself.”

C.S. Lewis, writer

What skills do I need?

You should hold a passion and enthusiasm for reading a range of literary texts of different styles and genres, have well-developed writing skills, a good level of vocabulary and, most importantly, an analytical mind and ear for how language shapes meaning. Your ability to carry out extra critical reading outside school, expressing opinion and taking an independent standpoint will all be necessary to achieve highly in this subject.

How is the course assessed?

There are two exams. Exam 1 assesses Shakespeare plays and the 19th-century novel. You will answer one question on each, firstly writing in detail on an extract from the text and then moving on to write about the text as a whole. You will first study Shakespeare's *Tempest* before promptly moving onto a choice of two Dickensian classics (*Great Expectations* or *Christmas Carol*). Exam 1 is 1 hour 45 minutes and accounts for 40% of your Literature GCSE.

Exam 2 assesses your understanding of poetry and of a modern play or novel. You will answer three questions, one essay question on your studied play or novel, one comparative question on poems from the AQA anthology and one question on an unseen poem, going on to compare it with another unseen poem. Exam 2 is 2 hours 15 minutes and accounts for 60% of your Literature GCSE.

Course Books (provided by college)

Great Expectations / Christmas Carol

By Charles Dickens

Published by OUP, ISBN-13: 9780199219766

An Inspector Calls

By J.B. Priestley

Published by Penguin Classics, ISBN 9780141185354

The Tempest

By W. Shakespeare

Published by OUP, ISBN-13: 9781408133477

AQA Anthology of Poetry: Poems Past and Present

Available via Exam Board



FRENCH

The course

French is an interesting and challenging subject that equips students with the skills to communicate confidently in French in a range of everyday situations. The five main themes of the course are the following: identity and culture, local area with holiday and travel, school, future aspirations with study and work, and finally international and global dimension. Students will develop an awareness and understanding of the culture and identity of the countries and communities where French is spoken. The course provides an excellent foundation for the study of French at A level.

The six main themes of the course are the following:

- My personal world
- Lifestyle and wellbeing
- My neighbourhood
- Media and technology
- Studying and my future
- Travel and tourism

“To have another language
is to possess a second soul.”

Charlemagne

Course Books (provided by college)

Studio – Edexcel GCSE (9-1) French Higher
By Clive Bell, Anneli McLachlan & Gill Ramage
Published by Pearson Education Ltd.,
ISBN 9781292117836

*French/English dictionary is not provided
but is essential. Please note that dictionaries
are not allowed in any of the exams.*



What skills do I need?

You need willingness to work hard at your grammar on a regular basis. You will also have to learn and relearn the vocabulary for each topic. The aim is to acquire the sufficient tools to be able to produce spoken or written responses in different contexts.

How is the course assessed?

There are four exams sat at the end of the course, in Listening, Speaking, Reading and Writing. Each exam is worth 25% of your overall grade. You are entered for the same tier, Foundation (F) or Higher (H), for all four papers.

Listening: (2 tasks) listening comprehension (questions and answers in English), dictation (French into French).

Speaking: (3 tasks) reading aloud and answer two questions, role-play, picture task with conversation.

Reading: (2 tasks) reading comprehension (questions and answers in English), translation from French to English.

Writing Foundation: (4 tasks) picture-based task, formal writing (40-50 words, informal writing (80-90 words), translation (English into French).

Writing Higher: (3 tasks) informal writing (80-90 words, formal writing (130-150 words), translation (English into French).



GEOGRAPHY

The course

Geography at GCSE aims to give you an understanding of the interactions between people and their environments, investigating case studies from the UK and the wider world in social, political and cultural contexts. You will gain an appreciation of your role in society by considering different viewpoints, values and attitudes in order to be able to assess the need for a sustainable approach to managing geographical issues. In addition, you will develop a range of skills including those used in fieldwork, maps, and geographical enquiry. Topics of study include tectonics, climate change, poverty, deprivation, global shifts in economic power and the challenge of sustainable resource use.

What skills do I need?

You will be required to develop and demonstrate a range of geographical skills, including cartographic, graphical, numerical, statistical, and literacy skills. You must have the ability to be able to draw together knowledge, understanding and skills from the full course of study in order to be able to answer a range of differing style exam questions: multiple-choice, short answer, and extended prose.

“Geography is an earthly subject, but a heavenly science.”

Edmund Burke, statesman
and philosopher

Course Books (provided by college)

GCSE Geography for AQA Student Book
By D. Payne, A. Rae, J. Rutter, H. Young,
R. Kitchen, E. Rawlings-Smith
Published by CUP, ISBN 9781316604632



Exam Board and Specification Codes
AQA Geography 8035

How is the course assessed?

This course consists of three written exam papers:

Paper 1: Living with the physical environment consists of the topics: The challenge of natural hazards; The living world; Physical landscapes in the UK. This course is assessed by a written paper which lasts for 1 hour 30 minutes in duration. This paper is worth 35% of the total marks for this course.

Paper 2: Challenges in the human environment comprises the topics: Urban issues and challenges; The changing economic world; The challenge of resource management. This course is assessed by a written paper which lasts for 1 hour 30 minutes in duration. This paper is worth 35% of the total marks for this course.

Paper 3: Geographical applications; Issue evaluation; Fieldwork; Geographical skills. Part of the assessment will be based around a pre-release resources booklet, which is made available 12 weeks before the examination. This course is assessed by a written paper which lasts for 1 hour 15 minutes in duration. This paper is worth 30% of the total marks for this course.



GERMAN

The course

Besides being fun and having multiple real life implications, the knowledge of a foreign language is ever more valuable in an increasingly connected world. Many employers look for knowledge of at least one other language across a wide range of jobs. Understanding the German language is a first step to understanding the people and culture of the countries where German is spoken.

The six main themes of the course are the following:

- My personal world
- Lifestyle and wellbeing
- My neighbourhood
- Media and technology
- Studying and my future
- Travel and tourism

What skills do I need?

The aim is to acquire the sufficient tools to be able to produce spoken or written responses in different contexts. In order to achieve this goal, you will need an interest in other cultures and a willingness to learn and revise vocabulary regularly for each topic. A logical mind will also help to cope with the grammar.

“A different language is a different vision of life.”

Federico Fellini, filmmaker

Course Books (provided by college)

Stimmt! Edexcel GCSE (9-1) German Higher
By Harriette Lanzer, Michael Spencer, Carolyn Batstone & Lisa Probert
Published by Pearson Education Ltd.,
ISBN 9781292118192

German/English dictionary is not provided but is essential. Please note that dictionaries are not allowed in any of the exams.



Exam Board and Specification Codes

Pearson Edexcel GCSE (9-1) in German (1GN1)

How is the course assessed?

There are four exams sat at the end of the course, in Listening, Speaking, Reading and Writing. Each exam is worth 25% of your overall grade. You are entered for the same tier, Foundation (F) or Higher (H), for all four papers.

Listening: (2 tasks) listening comprehension (questions and answers in English), dictation (German into German).

Speaking: (3 tasks) reading aloud and answer two questions, role-play, picture task with conversation.

Reading: (2 tasks) reading comprehension (questions and answers in English), translation from German to English.

Writing Foundation: (4 tasks) picture-based task, formal writing (40-50 words, informal writing (80-90 words), translation (English into German).

Writing Higher: (3 tasks) informal writing (80-90 words, formal writing (130-150 words), translation (English into German).



HISTORY

The course

GCSE History is a course divided into two parts. Paper 1 deals with aspects of the making of the modern world. Paper 2 looks at topics that have helped to shape the nation of Great Britain. Students will cover topics such as the impact of the American West on the development of the United States, the impact and causes of the First World War, the development of Medicine in Britain and the impact of the Norman Conquest on England. The course will require students to provide in depth written answers and the ability to analyse historical sources correctly. GCSE History students will learn to provide balanced and reasoned arguments that are supported with factual evidence. They will look at different historical perspectives and make judgements about them based on their content and provenance. Students will also be encouraged to contribute to class discussions, so that a range of perspectives can be established in the classroom.

“Those who fail to learn from History are doomed to repeat it.”

Winston Churchill

Course Books (provided by college)

AQA GCSE History:

Understanding the Modern World

By D.Ferriby, D.Martin, B.Walsh, 2016

(Covers topics in Paper 1)

ISBN-10: 1471862941

AQA GCSE History:

Health and the People

By A.Wilkinson, 2016

ISBN-10: 9781471864216

What skills do I need?

Students who choose this course will have an intellectual curiosity in History and the ability to write in depth and detail. It is important that History students are also able to appreciate differing perspectives from their own.

How is the course assessed?

The course is divided into two parts:

Paper 1: Understanding the Modern World - looks at:

- America, 1840–1895: Expansion and consolidation
- Conflict and tension: The First World War, 1894–1918

Paper 2: Shaping the Nation - looks at:

- Britain: Health and the people: c1000 to the present day
- Norman England, c1066–c1100

The course is examined by two written exam papers. Each paper lasts 1 hour and 45 minutes. Both papers are worth 50% of the total marks for this course.



AQA GCSE History:

Norman England, 1066-1100

By H.Clarke, 2016

ISBN-10: 9781471863424

Exam Board and Specification Codes

AQA History 8145



MATHEMATICS

The course

Mathematics can be described, at this level, as the formulation and application of both numerical and abstract concepts. The student of Mathematics has to be creative and imaginative, must have a sense of flair and most importantly should be curious about the world around them. Mathematics touches on many areas and requires intellectual flexibility and a methodical approach.

Mathematics has a clear influence on Accountancy, Engineering, Finance, Physics and many other areas. At the same time it is an active field of research in its own right.

“The pleasure we obtain from music comes from counting, but counting unconsciously. Music is nothing but unconscious arithmetic.”

Gottfried Wilhelm von Leibnitz,
philosopher and mathematician

The course is divided into three components or assessment objectives:

- Demonstrate knowledge, understanding and skill in number and algebra
- Demonstrate knowledge, understanding and skill in geometry, trigonometry and vectors
- Demonstrate knowledge, understanding and skill in statistics and probability.

What skills do I need?

You need to be able to make deductions from mathematical information, construct chains of reasoning, present arguments and proofs and interpret and communicate information accurately.

How is the course assessed?

The course is assessed through two papers of equal weighting. Each paper is two hours long and has 100 marks in total. In higher tier the target grades span the range 4-9, while in foundation tier they span the range 1-5. In both papers students may use a calculator.



Course Books (provided by college)

Teacher's choice of one book from these:

Pearson Edexcel International GCSE (9-1) Mathematics A Student Book 1
published by Pearson, ISBN 9780435181444

Pearson Edexcel International GCSE (9-1) Mathematics A Student Book 2
published by Pearson, ISBN 9780435183059

Edexcel International GCSE Maths Student Book
Published by Collins
ISBN 978-0008205874

181. To find the relations between the mean, the true, and the eccentric anomalies.

Let m , v , and u be the three angles.

Since the mean angular velocity in the ellipse is 2π divided by the periodic time, or $\frac{\mu^{\frac{1}{2}}}{AC^{\frac{3}{2}}}$,

$$m = u - e \sin u, \text{ Art. 179,}$$

and if a , e be the semi major axis and eccentricity

$$SP \cos v = a \cos u - ae;$$

$$\therefore \cos u = \frac{(1 - e^2) \cos v}{1 + e \cos v} + e = \frac{e + \cos v}{1 + e \cos v};$$

$$\therefore \frac{1 - \cos u}{1 + \cos u} = \frac{1 - e}{1 + e} \frac{1 - \cos v}{1 + \cos v};$$

$$\therefore \tan \frac{u}{2} = \sqrt{\frac{1 - e}{1 + e}} \tan \frac{v}{2}.$$

$$\text{Also } SP = AC + e \cdot CM \\ = a(1 - e \cos u).$$

182. To find the time of describing any angle from the vertex, in a parabolic orbit.

Let P be any point in a parabolic orbit whose axis is ASM , S being the center of force; draw PM an ordinate to ASM . Then $\sqrt{2\mu \cdot AS}$ is twice the area described in an unit of time.

$$\text{Therefore time in } AP = \frac{2 \text{ area } ASP}{(2\mu \cdot AS)^{\frac{1}{2}}}$$

$$\frac{1}{(2\mu \cdot AS)^{\frac{1}{2}}} \left(\frac{4}{3} AM \cdot MP - SM \cdot MP \right).$$

$$\text{Let } \angle ASP = \theta \text{ and } AS = a;$$

$$\therefore SP \cos^2 \frac{\theta}{2} = SY \cos \frac{\theta}{2} = AS;$$

$$\therefore AM = SP - AS = a \tan^2 \frac{\theta}{2},$$

$$PM = 2(a \cdot AM)^{\frac{1}{2}} = 2a \tan \frac{\theta}{2};$$

PHYSICS

The course

The AQA Physics course enables students to: develop scientific knowledge and conceptual understanding of Physics; develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills, both in the laboratory and in other learning environments; develop their ability to evaluate claims based on Physics through critical analysis of the methodology, evidence and conclusions, both qualitatively and quantitatively.

GCSE Physics is well suited to students who wish to study Physics at A level and beyond. A qualification in Physics is ideal for students considering careers in Engineering, Medical Physics and any type of fundamental scientific research.

“Look up at the stars and not down at your feet. Try to make sense of what you see, and wonder about what makes the universe exist. Be curious.”

Stephen Hawking

What skills do I need?

You will need a curiosity to learn about the natural world and a desire to gain insight into how science works and of its relevance to everyday lives. Investigative, mathematical and English language skills will all be necessary to achieve highly in this subject.

How is the course assessed?

There are two written examinations, each accounting for 50% of your marks and each of 1 hour 45 minutes duration. Both papers consist of multiple choice, structured, closed short answer and open response type questions.

Paper 1 will assess: Energy; Electricity; Particle model of matter; and Atomic structure.

Paper 2 will assess: Forces; Waves; Magnetism and Electromagnetism; and Space Physics. Questions in Paper 2 may draw on an understanding of energy changes and transfers due to heating, mechanical and electrical work and the concept of energy conservation from Energy and Electricity.

Course Books (provided by college)

AQA GCSE Physics 3rd Edition

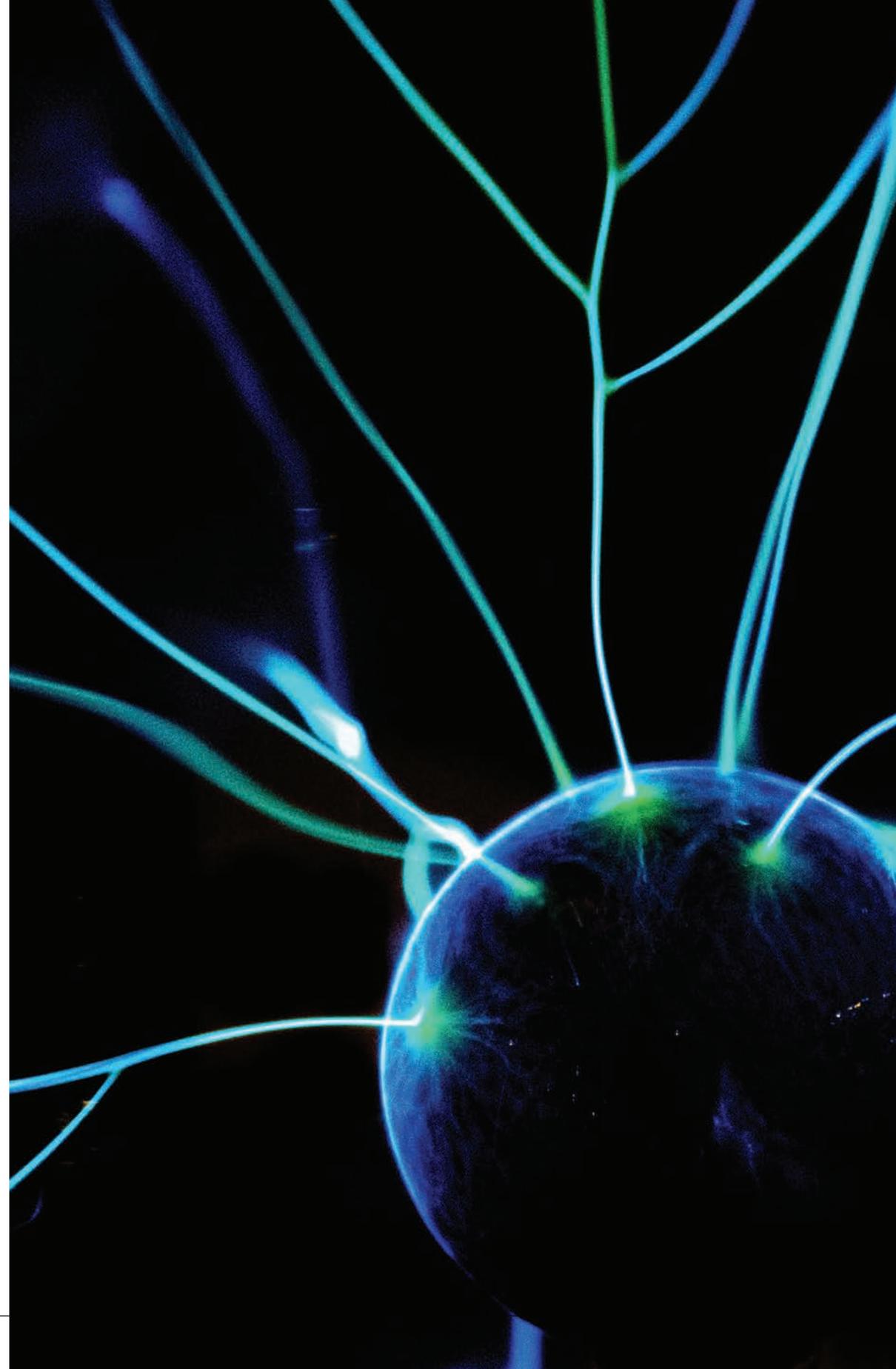
By J. Breithaupt with L. Ryan

Published by OUP, ISBN 9780198359395



Exam Board and Specification Codes

AQA Physics 8463



PSYCHOLOGY

The course

Psychology is the study of mind, brain and behaviour. This course will appeal to students who enjoy exploring issues with regard to how and why people behave the way they do, and who enjoy planning and carrying out investigations. Prospective students should be aware that Psychology is an interesting option but not an easy one. At GCSE level an introduction to core theories, concepts and research studies is provided, together with an understanding and appreciation of the scientific nature of Psychology, and of the relationship between the subject and its application to contemporary society.

Students receive 3 hours of tuition per week. The subject material is taught across all three terms. The summer term, though, focuses more on revision and examination techniques. Regular timed assignments and homework mean that students consolidate their knowledge and understanding.

“The postmortem room has become the temple of truth.”

Donald Calne, neurologist

Course Books (provided by college)

AQA Psychology for GCSE: Student Book
By Cara Flanagan (Author), Dave Berry (Author),
Mark Jones (Author)
Published by Illuminate Publishing
ISBN 9781911208044



Exam Board and Specification Codes

AQA Psychology 8182

How is the course assessed?

The course is divided into two parts:

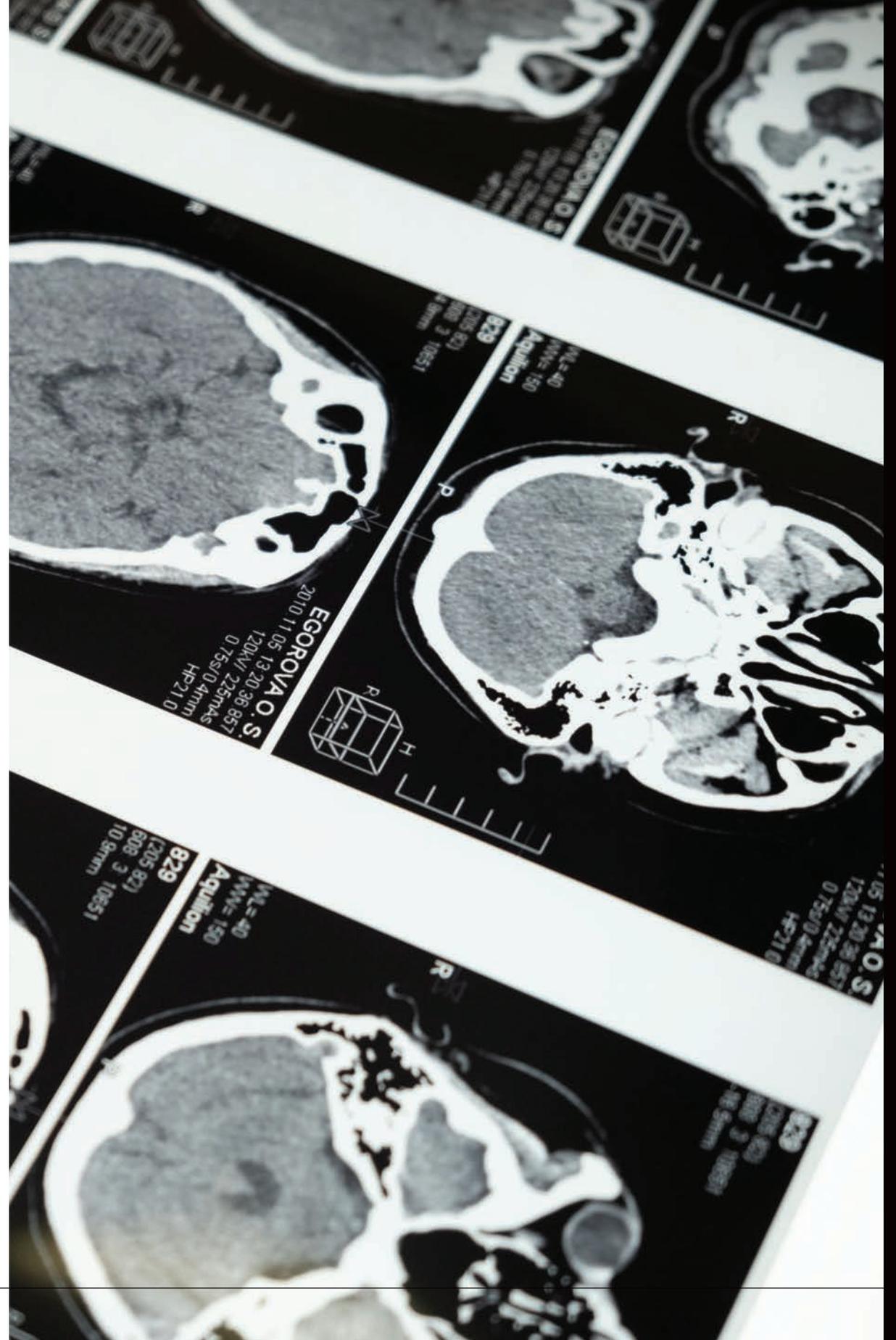
Paper 1: Cognition and Behaviour - looks at:

- Memory
- Perception
- Development
- Research methods

Paper 2: Social Context and Behaviour - looks at:

- Social influence
- Language, thought and communication
- Brain and neuropsychology
- Psychological problems

The course is examined by two written papers. Each paper lasts 1 hour 45 minutes. Both papers are worth 50% of the total marks for this course.



RELIGIOUS STUDIES

The course

Religious Studies deals with issues that are relevant to all aspects of life in the 21st century. Students look at the beliefs, teachings and practices of two religions. The course covers relationships and families, equality, gender issues and prejudice and discrimination. Philosophical perspectives on the existence of God are also discussed. The contribution of religion to war and conflicts is explored and whether peace can ever be achieved. We also study the relationship between religions and non-religious beliefs. You do not need to have a particular faith to explore answers to these questions in GCSE Religious Studies. Equally you do not have to be a non-believer. The student of Religious Studies has to have intellectual curiosity and the ability to empathise with and understand the views of others.

The course is divided into two components.

Component one looks at:

Beliefs and teachings and Practices. Students will study two of the following: Buddhism, Christianity, Catholic Christianity, Hinduism, Islam, Judaism, Sikhism. (Christianity and Catholic Christianity is a prohibited combination).

Component two looks at:

Religious, philosophical and ethical studies.

Students will study four themes from the following:

- A: Relationship and families.
- B: Religion and life.
- C: The existence of God and revelation.
- D: Religion, peace and conflict.
- E: Religion, crime and punishment.
- F: Religion, human rights and social justice.

What skills do I need?

You need to be interested in the world around you and keen to discuss thorny issues.

How is the course assessed?

Component 1:

Written paper, 1 hour 45 minutes - 50% weighting.

Component 2:

Written paper, 1 hour 45 minutes - 50% weighting.

“Every religion is true one way or another. It is true when understood metaphorically...”

Joseph Campbell, writer

Course Books (provided by college)

AQA Religious Studies A Buddhism

By Kevin James, Nagapriya
ISBN 9780198370321

AQA Religious Studies A Christianity

By Marianne Fleming, Peter Smith & David Worden
ISBN 9780198370338



Exam Board and Specification Codes

AQA Religious Studies Specification A 8062



SPANISH

The course

Spanish is an interesting and challenging subject that equips students with the skills to communicate confidently in Spanish in a range of everyday situations. The five main themes of the course are the following: identity and culture, local area with holiday and travel, school, future aspirations with study and work, and finally international and global dimension. Students will develop an awareness and understanding of the culture and identity of the countries and communities where Spanish is spoken. The course provides an excellent foundation for the study of Spanish at A level.

The six main themes of the course are the following:

- My personal world
- Lifestyle and wellbeing
- My neighbourhood
- Media and technology
- Studying and my future
- Travel and tourism

“ Knowledge of languages is the doorway to wisdom. ”

Roger Bacon, philosopher

Course Books (provided by college)

Viva! Edexcel GCSE (9-1) Spanish Higher
By Rachel Hawkes & Christopher Lillington
Published by Pearson Education Ltd.,
ISBN 9781292118987



Spanish/English dictionary is not provided but is essential. Please note that dictionaries are not allowed in any of the exams.

What skills do I need?

The aim is to acquire the sufficient tools to be able to produce spoken or written responses in different contexts. In order to achieve this goal, you will need an interest in other cultures and a willingness to learn and revise vocabulary regularly for each topic. A logical mind will also help to cope with the grammar.

How is the course assessed?

There are four exams sat at the end of the course, in Listening, Speaking, Reading and Writing. Each exam is worth 25% of your overall grade. You are entered for the same tier, Foundation (F) or Higher (H), for all four papers.

Listening: (2 tasks) listening comprehension (questions and answers in English), dictation (Spanish into Spanish).

Speaking: (3 tasks) reading aloud and answer two questions, role-play, picture task with conversation.

Reading: (2 tasks) reading comprehension (questions and answers in English), translation from Spanish to English.

Writing Foundation: (4 tasks) picture-based task, formal writing (40-50 words), informal writing (80-90 words), translation (English into Spanish).

Writing Higher: (3 tasks) informal writing (80-90 words), formal writing (130-150 words), translation (English into Spanish).



M | P | W

CAMBRIDGE **01223 350158**

3-4 Brookside
Cambridge CB2 1JE

cambridge@mpw.ac.uk

LONDON **020 7835 1355**

90-92 Queen's Gate
London SW7 5AB

london@mpw.ac.uk

BIRMINGHAM **0121 454 9637**

16-18 Greenfield Crescent
Birmingham B15 3AU

birmingham@mpw.ac.uk

www.mpw.ac.uk
