



James Allen's Girls' School

# Jags

**GCSE**

**INFORMATION**

**HANDBOOK**

**2009-2011**

## GCSE EXAM BOARDS AND REFERENCE NUMBERS

Art	Art and Design AQA GCSE 4200
Biology	AQA Biology 4411
Chemistry	AQA Chemistry 4421
Class Civilisation	AQA 4020 (full course option 4022)
Design Technology	AQA GCSE Resistant Materials technology: Design and Making Practice (45602)
Drama	Drama 4240
English Language	OCR 1900
English Literature	OCR 1901
French	OCR J730
Geography	Edexcel Geography A
German	OCR J731
Greek	OCR J290
History	AQA GCSE History B Modern World History 4045
ICT	OCR ICT 1994
Italian	Edexcel 2IN01
Japanese	Edexcel 2JA01
Latin	OCR J281
Mathematics	OCR J512
Music	Edexcel 2MU01
Physical Education	AQA Physical Education (Double Award) 4894
Physics	AQA Physics 4451
Religious Studies	AQA Religious Studies specification A 4050
Russian	Edexcel 2RU01
Spanish	OCR J732

## ART

What preparation is there before I start the controlled assessment?	There is no specific preparation, although it would obviously be very helpful to visit as many galleries and museums as possible.
How long do I have to complete the controlled assessment?	<u>Four terms</u> All work made contributes to the Portfolio of work. This was previously known as coursework.
Do I have lesson or homework time to work on it?	All lesson and homework time is for controlled assessment until the end of December in Year 11. Pupils are required to allocate one evening a week to working after school in the studios.
Brief description of all controlled assessment	The Portfolio of work consists of three units: preparatory work leading to major developments. Pupils will work using a variety of disciplines in both two and three dimensions.
Is there an opportunity to discuss my progress with my teacher?	<ul style="list-style-type: none"> <li>• Progress is discussed on an individual basis <u>and</u> during group discussions.</li> <li>• Effort grades and reports.</li> </ul>
How many pieces are set and how many count?	Preparation is unlimited. The Portfolio of work is expected to show breadth as well as depth. Self evaluation and development are important.
What % of the final mark is the controlled assessment?	60 %
Deadlines for Y10	<u>Unit One:</u> by the end of Autumn term 2009 <u>Unit Two:</u> (part I) by the end of Spring term 2010 <u>Unit Two:</u> (part II) by the end of Summer term 2010
Deadlines for Y11	<u>Unit Three:</u> end of Autumn term 2010 <u>Exam Unit:</u> by the beginning of the Summer term 2011

## CLASSICAL CIVILISATION

<p>What preparation is there before I start the controlled assessment?</p>	<p>For full details consult the specification for this subject (4020 Unit 4) at <a href="http://www.aqa.org.uk">www.aqa.org.uk</a></p> <p>Your coursework takes the form of a controlled assessment in the fourth term of the course (i.e. Autumn Term of Year 11). This comprises Unit 4 of the GCSE.</p> <p>The controlled assessment will be based on the text Ovid's <i>Metamorphoses</i>. You will begin reading the book at the end of Year 10 (after the summer exams) and your lessons in the first half of the Autumn Term in Year 11 will be focused on this text. Your teacher will ensure that you have covered the text fully in lessons before you start the controlled assessment.</p>
<p>How long do I have to complete the controlled assessment?</p>	<p>The controlled assessment will take place at the end of the Autumn Term in three to four hours of lesson time. You may either hand-write your piece or produce it using a computer.</p>
<p>Do I have lesson or homework time to work on it?</p>	<p>Once you have had the introductory lessons on the text, your teacher will give you the relevant task(s) for your topic. You will have about ten hours of lesson time to carry out research in the classroom after you have been given the task. During this time you will have access to the relevant primary and secondary sources and may make use of any further resources available in school, including the internet, to inform your research. You must keep a record of all the primary and secondary sources (including websites) you use. You may work with others during this phase - for example, you may discuss your ideas in small groups or share resources found on the internet. However, you must produce an individual response to the task in the analysis and evaluation phase, when you write up your response.</p>
<p>Brief description of all controlled assessment</p>	<p>Your lessons and homework time in the first half of the Autumn term will be spent studying the text and practising your writing skills. You will then be given the tasks available for the controlled assessment.</p> <p>The tasks will be set by AQA. There will be a choice of two on your topic, of which you will have to complete one. Tasks will consist of a single title and a number of bullet points which will help you to focus your answers on the title and on the assessment objectives. It may be a straight evaluative essay or a more creative piece of work such as a diary or script, but all tasks will require candidates to evaluate, analyse or respond to the primary sources. What ever the task, the focus will always be on evaluation, analysis and personal response.</p>
<p>Is there an opportunity to discuss my progress with my teacher?</p>	<p>At the research and planning stage, you will be able to consult your teacher who will discuss your progress with you. However, there will be no further formal teaching after the tasks have been set. While you are writing up your response, you must work independently and complete all the work under formal supervision.</p>
<p>How many pieces are set and how many count?</p>	<p>The controlled assessment consists of <b>one</b> piece of work of about 2000 words. It will be written up in several sessions (regular lesson time) totaling three to four hours.</p>
<p>What % of the final mark is the controlled assessment?</p>	<p>25%</p>
<p>Deadlines for Y11</p>	<p>End of Autumn Term.</p>

## DESIGN TECHNOLOGY

What preparation is there before I start the controlled assessment?	<p>During the first two terms of Year 10:</p> <p>Problem solving exercises.  Short designing and making exercises.  Drawing and presentation skills.  Demonstrations of skills and techniques.</p>
How long do I have to complete the controlled assessment?	45 hours
Do I have lesson or homework time to work on it?	<p>Research and preparation completed under limited supervision.  All other done under supervision in school.  Homework: 1 hour 15 minutes a week plus an hour for about 8 weeks whilst making.</p>
Brief description of the controlled assessment	<p>Planning, designing and making a fully functioning product from identifying the client to suggesting further modifications to product.</p> <p>This is a very structured and manageable course; planning carefully ensures success.</p>
Is there an opportunity to discuss my progress with my teacher?	<p>We review your work with you and may provide general advice.  We evaluate your progress through tutorials.  We suggest broad approaches for improvement.</p> <p>We guide you but the outcome must remain your own.</p>
How many pieces are set and how many count?	One 20 page folder and a high quality finished product.
What % of the final mark is the controlled assessment?	60% of the total marks.
Deadlines for Y10	<p>End of Year 10: Prototype completed.  Start of Year 11: Start making.</p>
Deadlines for Y11	First Monday back in January.

## DRAMA

What preparation is there before I start the coursework?	Before embarking on the Practical Coursework, productions seen are discussed in detail and ideas explored in workshop sessions. Following class discussion and consultation with individual pupils during the Autumn Term of Year 10 the controlled assessment topic and the nominated skill will be selected for each girl.
How long do I have to complete the coursework?	<b>Year 10:</b> Most of the Spring Term will be devoted to preparations for your 1 <sup>st</sup> Practical Option continuing into the Summer Term for assessment the week before Half Term in May 2010. <b>Year 11:</b> Preparation for the 2 <sup>nd</sup> Practical Option (including the supplementary written Part 1) will begin in November and continue into the Spring term. The externally moderated exam will take place in the week before half term in Feb 2011.
Do I have lesson or homework time to work on it?	<b>Year 10:</b> The focus in the Spring Term in lessons and for home-works will be on preparation for the practical option. Expect at least one after school rehearsal a week for about 8 weeks. Additional time will need to be scheduled after school for technical rehearsals prior to performance. <b>Year 11:</b> The focus from November into the Spring Term in lessons and for homeworks will be on preparation for the practical options. Expect at least one after school rehearsal a week in the initial stages and more towards the final stages for technical and dress rehearsals
Brief description of all coursework	Candidates present practical work for two assessment options, each with an equal weighting of 30%. Practical coursework is internally assessed and externally moderated under controlled assessment conditions. Assessment of each option is divided into two parts: Process and understanding of skills development. 15 marks - (7.5%) Final presentation: either performance or demonstration/artifact(s). 45 marks - (22.5%)
Is there an opportunity to discuss my progress with my teacher?	Of course. At all stages of rehearsal there are ongoing discussions either within lessons or during rehearsals, or individually as arranged. Pupils are made fully aware of the marking criteria so that they are aware of how to maximize their marks.
How many pieces are set and how many count?	We set two pieces of coursework only, one in Y10 and one in Y11. Both will count.
What % of the final mark is the coursework?	60% (each option is worth 30%).
Deadlines for Y10	We will assess and showcase your practical option in the Summer Term - on <b>Wednesday 26 May 2010.</b>
Deadlines for Y11	The Practical Coursework will be of externally moderated in the week just before the February half-term 2011.

## ENGLISH Language and ENGLISH Literature

What preparation is there before I start the coursework?	Depends on coursework essay but if on a text, discuss text in detail and then discuss the specific essay in outline. We <u>never</u> set an essay without some guidance.
How long do I have to complete the coursework?	Usually 2 weeks.
Do I have lesson or homework time to work on it?	All homework for 2 weeks is dedicated to essay.
Brief description of all coursework	Final folder contains 4 essays, which fulfill specific requirements: one a pre-C20 poetry comparison; one on a pre-C20 novel; one on Shakespeare; and a creative piece. Each essay should be between 800 and 1500 words, but there is no set limit.
Is there an opportunity to discuss my progress with my teacher?	Yes, since coursework is ongoing, progress can be discussed at any time during the year.
How many pieces are set and how many count?	Up to 10 coursework essays are set over the course; 4 are selected for the folder. (Other essays for examination practice are also set.)
What % of the final mark is the written coursework?	English language - 20% English Literature - 30%
Deadlines for Y10	Coursework is ongoing process.
Deadlines for Y11	All coursework must be completed before the half-term of the Spring term.

## FRENCH, GERMAN AND SPANISH

### **What preparation is there before I start the controlled assessment tasks?**

As part of normal teaching and learning activities, candidates can practise a wide range of speaking/writing tasks, and teachers can discuss task types and comment on performance as appropriate to the range of students that they teach.

When the tasks for the speaking and writing assessment have been determined, candidates are allowed preparation time (this is no longer than **2 hours**).

### **How long do I have to complete the controlled assessment tasks?**

The time limit available to candidates to complete the assessment tasks for **Speaking** is between a minimum of 4 minutes and a maximum of 6 minutes and for **Writing** is between 30 minutes and 1 hour.

### **Do I have lesson or homework time to work on it?**

All your speaking and writing controlled assessment tasks will be prepared and completed during school time.

### **Brief description of all controlled assessment tasks:**

Speaking tasks can be in the form of an interview, conversation, discussion, role-play and presentation, among others.

Written tasks can be in the form of a personal account, presentation, article, letter, among other forms. Candidates aiming at grades C-A\* should produce up to 600 words across the two tasks.

In both areas candidates must complete two tasks in two different topics and with different purposes.

### **Is there an opportunity to discuss my progress with my teacher?**

Yes. Teachers can discuss with you the task type, how to use reference material, how to prepare the notes or the visual stimulus. And also give candidates suggestions of information to be included. However, teachers must not tell candidates words and phrases to be included in French, German or Spanish, comment on or correct the notes, practise the task with candidates or practise recording the task with candidates.

### **How many pieces are set and how many count?**

Students will complete three tasks and the best two will be submitted to the board.

### **What % of the final mark is the controlled assessment tasks?**

60%

### **Deadlines for Yr 10**

First Controlled task for speaking/writing in Summer 2010.

### **Deadlines for Yr 11**

Second Controlled task for speaking/writing in November/December 2010.

Third Controlled task for speaking/writing in February 2011.

# GEOGRAPHY

From September 2009 we will follow **Edexcel Geography A** syllabus.

“The world is always changing. Geography gives you the chance to learn about these changes.”

There are **FOUR** units in this course:

## **Unit 1. Geographical Skills and Challenges**

This unit will build on skills you have learned in years 7, 8 and 9 (including O.S. map skills, graphs etc) as well as new challenges and more advanced skills (such as the use of G.I.S.).

You will also learn about two of the major issues facing the world today: **climate change** and **sustainable development**.

## **Unit 2. The Natural Environment**

This unit is based on physical geography. You will study **Coastal landscapes** and **Tectonic landscapes** as well as ‘**A Watery World**’.

## **Unit 3. The Human Environment**

This unit is based on human geography. You will study **Settlement Change** and ‘**A Moving World**’.

## **Unit 4. Investigating Geography**

This involves practical field work and writing it up. The final writing will be carried out in class time so that you don’t spend hours at home doing coursework.

Each unit is worth 25% of the total mark.

## **GCSE Field trips:**

In **Year 10** you will have two, one day trips to **Hastings** (to study coastal processes and landforms) and to **London’s East End** (to see the effects of settlement change).

On both days you will learn new practical field work skills as well as see case studies first hand.

In **Year 11** we will begin the Autumn Term with a day of practical field work for your GCSE coursework and spend much of the rest of term writing it up in class.

# HISTORY

We are now following the AQA GCSE syllabus History B Modern World History 4045.

We will be studying three twentieth century depth studies on Russia 1914-1924, Hitler's Germany 1929-1939 and The USA and Vietnam: Failure Abroad and at Home, 1964 - 1975. We will also be doing an outline paper on International Relations in the 20th century: we will concentrate on the Cold War period from 1945-1989.

In addition, all candidates undertake a historical enquiry under controlled assessment conditions. This will be the British history element of the GCSE and will involve 2 pieces of work, the first on The British People at War and the second on the Changing Role and Status of Women Since 1900.

Units 1 and 2 are both worth 37.5 % of the total marks and Unit 3, the controlled assessment is worth 25%.

## ICT

What preparation is there before I start the coursework?	<p>Sample coursework is reviewed.</p> <p>Similar exercises are done in classwork time.</p> <p>The marking scheme and guidelines are analysed and discussed.</p> <p>A plan of work is posted on the skillspace site.</p> <p>A student guide published by the examboard is given to every pupil.</p>
How long do I have to complete the coursework?	Varies. The work is spread out through both years 10 and 11.
Do I have lesson or homework time to work on it?	Yes, all lesson and homework time for the period allocated for the work. Pointers are given to expected progress by a given time.
Brief description of all coursework	<p>Three pieces of work:</p> <p>Coursework 1a - create a significant piece of multimedia work eg a web site, presentation or piece of desk top publishing</p> <p>Coursework 1b - modelling a given situation using spreadsheet software</p> <p>Coursework 2 - analyse, design and implement a system for a user for data handling using database software</p>
Is there an opportunity to discuss my progress with my teacher?	Yes, it is expected at all stages of the work. At any point in the work, the report can be handed in and feedback will be given on what is lacking. Teachers are always available to offer advice and guidance. Questions may be posted on the skillspace site.
How many pieces are set and how many count?	There is three pieces of coursework, all count (30% for coursework 2, 15% each for 1a and 1b).
What % of the final mark is the coursework?	The coursework is worth 60% of the total marks (the rest is two examination papers).
Deadlines for Y10	Coursework 1 (1a and 1b combined) is completed by the end of year 10.
Deadlines for Y11	Coursework 2 is completed by Easter of year 11.

## ITALIAN

Skills to be assessed in **four** different papers:

Skills & Papers	Assessment	Weightings %
Listening and Understanding - Unit 1	Final exam at the end of Year 11	20%
Speaking - Unit 2	<b>Two</b> controlled tasks at the end of Year 10 and during Year 11. Marked by teacher and externally moderated	30%
Reading and Understanding - Unit 3	Final exam at the end of Year 11	20%
Writing - Unit 4	<b>Two</b> separate controlled writing tasks (200 words in each task) at the end of Year 10 and during Year 11. Externally marked.	30%

<p>What is <b>controlled assessment</b>?</p>	<p>Pupils will be prepared during lessons to deal with a set task before the <b>controlled assessment</b>. The <b>controlled assessment</b> is a time within the normal lesson time in which students will be presented with the task, given guidance on requirements and will have full access to resources in order to prepare it. At the end of a maximum period of two weeks' preparation, they will have to undertake the written or oral task in an <b>assessment session</b>. Pupils will prepare for the task exclusively at school. They will not be allowed to take any material used for the preparation of the task home.</p>
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### Content

Topic areas with related sub-topics are:

#### **Media and Culture**

- Music/film/reading
  - Fashion/celebrities/religion
  - Blogs/internet

#### **Sport and Leisure**

- Hobbies/interests
  - Sporting events
  - Lifestyle choices

#### **Travel and tourism**

- Holidays
  - Accommodation
  - Eating, food, drink

#### **Business, work and employment**

- Work experience/part-time jobs
- Product or service information

# MATHEMATICS

There will be six Mathematics groups and everybody in Years 10 and 11 will study for GCSE Mathematics.

The Mathematics Syllabus builds on the skills you have learnt so far and aims to enable you to:

1. Develop a positive attitude to Mathematics
2. Consolidate basic skills and meet appropriately challenging work
3. Apply your mathematical knowledge and understanding to solve problems
4. Think and communicate mathematically - precisely, logically and creatively
5. Appreciate the place and use of Mathematics in society
6. Apply mathematical concepts to real life situations
7. Work co-operatively and in an independent, practical and investigative way
8. Acquire a firm foundation for further study.

As well as being taught to solve numerical, algebraic and spatial problems and how to look critically at collecting, processing and interpreting data and you will learn how to estimate and calculate probabilities of events. Using a calculator efficiently for calculation and graph plotting are two important skills that are both built into the course.

There is no coursework for GCSE Mathematics. Your final grade will be dependent on how well you perform in the two examination papers at the end of Year 11. Each paper is worth 50% of the final mark. You are only allowed to use a calculator for the second examination paper.

As well as studying for GCSE Mathematics, girls in the top set will also study for the first module of AS Mathematics and take the C1 (Introduction to Advanced Mathematics) examination at the end of Year 11. Girls in other sets who perform very well in the Mock examination in Year 11 will also have the opportunity to study for this examination by attending an 'after-school' class.

## MUSIC

There are three parts to GCSE Music: Performing and Composing which are internally assessed (coursework), and a Listening and Appraising exam which is assessed externally.

What preparation is there before I start the coursework?	In Year 10 we first introduce techniques of composition and related elements of music theory, including use of <i>Sibelius</i> software. After this we explore the different Areas of Study with short projects in conjunction with listening work. Students must be having lessons on their chosen instrument (or voice).
How long do I have to complete the coursework?	All submissions are done in Year 11. Research for compositions is done over the first half of the Autumn and Spring Terms, followed by writing up under controlled conditions (10 hours per composition). Regular practice on your chosen instrument (or voice) is necessary to prepare for performances in the Spring and Summer Terms. Students need to be practising regularly with a small group or ensemble from the start of Year 11 as well as preparing solo performances.
Do I have lesson or homework time to work on it?	Yes, both. Research for compositions is done in lessons and homework times. Students are encouraged to use the studio outside lesson times, but homework can also be done at home on <i>Sibelius</i> software or using pencil and paper. Practice on your chosen instrument (or voice) is ongoing.
Brief description of all coursework	Both composition and performance coursework is submitted in Year 11, with short preparatory projects in Year 10. The two main pieces of composition or arrangement need to be related to different areas of study. Solo performances and ensembles are recorded during the Spring Term, and students are expected to take part in a concert such as the Chamber Music Concert or a Jazz lunchtime with their ensemble.
Is there an opportunity to discuss my progress with my teacher?	Of course, either weekly in lessons or individually as arranged.
How many pieces are set and how many count?	In Year 11 two compositions/arrangements are set and submitted in the Autumn and Spring Terms with two assessed performances as below. Students may choose to submit the mock performance from the start of the Spring Term if a satisfactory mark has been achieved, or may record a solo later in the term.
What % of the final mark is the coursework?	60% (30% composition and 30% performance).
Deadlines for Y10	No formal deadlines beyond classwork and homework. Solo performance forms part of the end of year exam.
Deadlines for Y11	Composition 1: Half-term Autumn Term. Composition 2: Towards the end of the Spring Term.  Solo and Ensemble Performance Studio Session: Spring Term.

# PHYSICAL EDUCATION

## The course

GCSE Physical Education is an extension of the core curriculum aimed at those pupils who wish to advance their practical and theoretical understanding of this subject.

There are four units in the course and the GCSE is a double award thus the pupils gain two GCSE's.

### **Unit 1 Knowledge and Understanding for The Active Participant**

Students will develop their knowledge and understanding of the following roles that the active participant can adopt: player/performer, organiser, leader/coach, choreographer and official. They will also learn the reasons how a variety of factors such as disability, gender and age can play a part in physical development. There is a strong link with biological effects that also affect performance and the concept that different areas of fitness training can affect performance.

**Assessment is by external examination and this is 20% of the award.**

### **Unit 2 The Active Participant**

Students will have the opportunity to participate in two of the above named roles with at least two performances being as a player or participant from the following areas of activity: games, gymnastics, dance, athletics, life saving and outdoor activities and fitness and health activities.

**Assessment is internal and moderated by an examiner. It is 30% of the award.**

### **Unit 3 Knowledge and Understanding for The Involved Participant**

This unit covers topics such as administration of sport, fitness testing, training and the effect on performance, diet and first aid.

**Assessment is by external examination and this is 20% of the award.**

### **Unit 4 The Active Participant**

This is an extension of unit 2 and the students will have four internal assessment again from the roles mentioned in unit 1.

**Assessment is internal and moderated by an external examiner. It is 30% of the award.**

# RELIGIOUS STUDIES

From September 2009 we will follow AQA Religious Studies, specification A:

*'Religious Beliefs and Lifestyles'*

There are TWO units in this course:

1. Judaism
2. Christian Ethics

Each of these two units is worth 50% of the GCSE full course.

Within both of the units, you will learn to

- a) develop your knowledge and understanding of religion
- b) express your personal responses, informed insights and views on fundamental questions and issues

These are known as the two 'assessment objectives' and each assessment objective is worth 50% of each of the two units of study.

The course will be assessed by two examination papers, one for each unit. The duration of each examination paper will be 1½ hours.

There is no coursework for this GCSE.

# RUSSIAN

Skills to be assessed in **four** different papers:

Skills & Papers	Assessment	Weightings %
Listening and Understanding - Unit 1	Final exam at the end of Year 11	23%
Speaking - Unit 2	Two tasks together on <b>chosen</b> themes at the end of Year 11. 1. Presentation and discussion 2. General conversation	27%
Reading and Understanding - Unit 3	Final exam at the end of Year 11	23%
Writing - Unit 4	Final exam at the end of Year 11	27%

**THERE IS NO COURSEWORK FOR THIS SUBJECT**

## Content

Common topic areas (for reading and listening papers) with related sub-topics are:

<p><b><i>Out and about</i></b></p> <ul style="list-style-type: none"> <li>• Visitor information</li> <li>• Basic weather</li> <li>• Local amenities</li> <li>• Accommodation</li> <li>• Public transport</li> <li>• Directions</li> </ul>	<p><b><i>Customer service and transactions</i></b></p> <ul style="list-style-type: none"> <li>• Cafes and restaurants</li> <li>• Shops</li> <li>• Dealing with problems</li> </ul>
<p><b><i>Personal information</i></b></p> <ul style="list-style-type: none"> <li>• General interests</li> <li>• Leisure activities</li> <li>• Family and friends</li> <li>• Lifestyle (healthy eating and exercise)</li> </ul>	<p><b><i>Future plans, education and work</i></b></p> <ul style="list-style-type: none"> <li>• Basic language of the internet</li> <li>• Simple job advertisements</li> <li>• Simple job applications and CV</li> <li>• School and college</li> <li>• Work and work experience</li> </ul>

For speaking and writing units, contents will relate to the following broad themes

<p><b><i>Media travel and culture</i></b></p> <ul style="list-style-type: none"> <li>• Music/film/reading</li> <li>• Fashion/celebrities</li> <li>• Blogs/internet</li> <li>• Holidays</li> <li>• Accommodation</li> <li>• Eating, food and drink</li> </ul>	<p><b><i>Sport leisure and work</i></b></p> <ul style="list-style-type: none"> <li>• Hobbies/interests</li> <li>• Sporting events</li> <li>• Lifestyle choices</li> <li>• Work experience/part-time jobs</li> <li>• Product or service information</li> </ul>
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# SCIENCE

In your three Science GCSEs coursework has been replaced by 'Investigative Skills Assignments' (ISAs) and 'Practical Skills Assessments' (PSAs).

ISAs take the form of a piece of practical work, which will be set by the Examination Board. After carrying out the practical work you will be expected to tabulate your results and draw a graph, under test conditions, before sitting the ISA paper. The table and graph are marked out of 6 and the ISA out of 28. All girls will have to do at least one ISA in each of Biology, Chemistry and Physics. They can do more but only the best mark, in each subject, will be submitted. The topics for the ISAs are not yet known so the timing is not set. We will plan to do the ISAs when the subject matter involved is being taught or has just been covered. Subject departments also have sample ISAs and will ensure that everyone is familiar with the process. You may even do an early practice ISA at the end of year 9.

PSAs marks (out of 6) are also awarded for each subject according to the individual girl's practical performance over the whole course and relate to their powers of organisation, ability to work with others, practical skills and awareness of safety aspects.

ISAs and PSAs will together account for 25% of the final GCSE mark in Biology, Chemistry or Physics. The remainder of the marks (75%) for each separate science are awarded by three 45-minute examination papers containing structured questions on the units you study, coded B1,B2,B3; C1,C2,C3; and P1,P2,P3. You will already have started to cover some of this material in Year 9.

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## Biology 1 [B1]

- \_ How do human bodies respond to changes inside them and to their environment?
- \_ What can we do to keep our bodies healthy?
- \_ How do we use/abuse medical and recreational drugs?
- \_ What causes infectious disease and how can our bodies defend themselves against them?
- \_ What determines where particular species live and how many of them there are?
- \_ Why are individuals of the same species different from each other?
- \_ What new methods do we have for producing plants and animals with the characteristics we prefer?

## Biology 2 [B2]

- \_ What are animals and plants built from?
- \_ How do dissolved substances get into and out of cells?
- \_ How do plants obtain the food they need to live and grow?
- \_ What happens to energy and biomass at each stage in a food chain?
- \_ What happens to the waste material produced by plants and animals?
- \_ What are enzymes and what are some of their functions?
- \_ How do our bodies keep internal conditions constant?
- \_ Which human characteristics show a simple pattern of inheritance?

## Biology 3 [B3]

- \_ How do dissolved substances get into and out of animals and plants?
  - \_ How are dissolved materials transported around the body?
  - \_ How does exercise affect the exchanges taking place within the body?
  - \_ How do exchanges in the kidney help us to maintain the internal environment in mammals and how has biology helped us to treat kidney disease?
  - \_ How are microorganisms used to make food and drink?
  - \_ What other useful substances can we make using microorganisms?
  - \_ How can we be sure we are using microorganisms safely?
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### Chemistry 1 [C1]

- \_ How do rocks provide building materials?
- \_ How do rocks provide metals and how are metals used?
- \_ How do we get fuels from crude oil?
- \_ How are polymers and ethanol made from oil?
- \_ How can plant oils be used?
- \_ What are the changes in the Earth and its atmosphere?
- \_ Why have some species of plants and animals died out?
- \_ How do new species of plants and animals develop?
- \_ How do humans affect the environment?

### Chemistry 2 [C2]

- \_ How do sub-atomic particles help us to understand the structure of substances?
- \_ How do structures influence the properties and uses of substances?
- \_ How much can we make and how much do we need to use?
- \_ How can we control the rates of chemical reactions?
- \_ Do chemical reactions always release energy?
- \_ How can we use ions in solutions?

### Chemistry 3 [C3]

- \_ How was the periodic table developed and how can it help us understand the reactions of elements?
- \_ What are strong and weak acids and alkalis?
- \_ How can we find the amounts of acids and alkalis in solutions?
- \_ What is in the water we drink?
- \_ How much energy is involved in chemical reactions?
- \_ How do we identify and analyse substances?

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### Physics 1 [P1]

- \_ How is heat (thermal energy) transferred and what factors affect the rate at which heat is transferred?
- \_ What is meant by the efficient use of energy?
- \_ Why are electrical devices so useful?
- \_ How should we generate the electricity we need?
- \_ What are the uses and hazards of the waves that form the electromagnetic spectrum?
- \_ What are the uses and dangers of emissions from radioactive substances?
- \_ What do we know about the universe and how it continues to change?

### Physics 2 [P2]

- \_ How can we describe the way things move?
- \_ How do we make things speed up or slow down?
- \_ What happens to the movement energy when things speed up or slow down?
- \_ What is momentum?
- \_ What is static electricity, how can it be used and what is the connection between static electricity and electric currents?
- \_ What does the current through an electrical circuit depend on?
- \_ What is mains electricity and how can it be used safely?
- \_ Why do we need to know the power of electrical appliances?
- \_ What happens to radioactive substances when they decay?
- \_ What are nuclear fission and nuclear fusion?

### Physics 3 [P3]

- \_ How do forces have a turning effect?
  - \_ What keeps bodies moving in a circle?
  - \_ What provides the centripetal force for planets and satellites?
  - \_ What do mirrors and lenses do to light?
  - \_ What is sound?
  - \_ What is ultrasound and how can it be used?
  - \_ How can electricity be used to make things move?
  - \_ How do generators work?
  - \_ How do transformers work?
  - \_ What is the life history of stars?
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