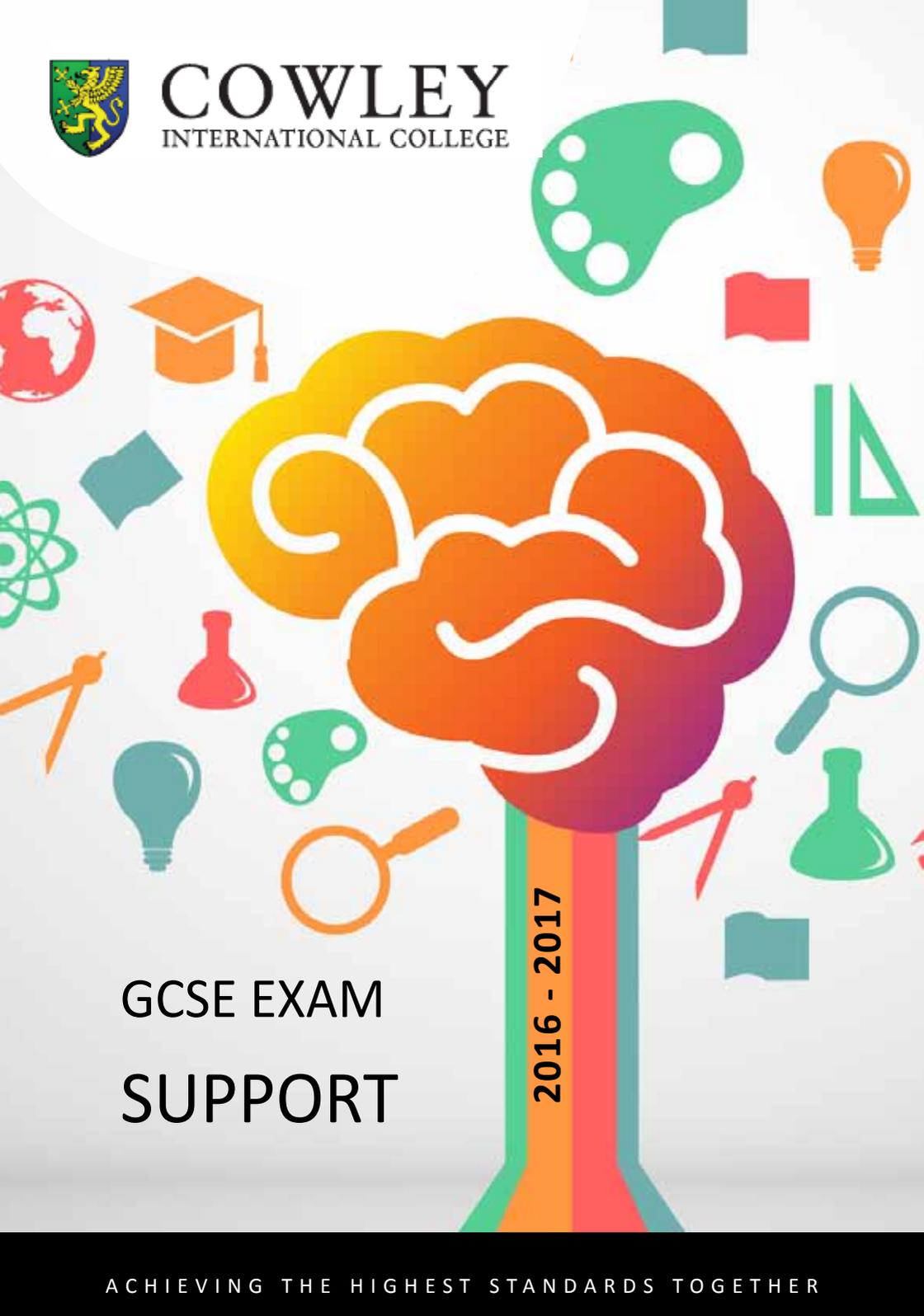




**COWLEY**  
INTERNATIONAL COLLEGE



**GCSE EXAM  
SUPPORT**

**2016 - 2017**



# About this guide

This guide has been created to help you in the run up to your GCSE examinations that take place in the summer.

The guide includes useful information, tips to help you get prepared for your exams and a revision guide, including advice on creating a revision timetable.

Please speak with any member of staff if you are unsure of anything in these busy weeks leading to May.

Star Chasers/students with A\* Challenge Targets, Miss Williams is on hand to assist with any questions you may have.

**Resources are updated frequently and we would advise all students to visit:  
<http://www.cowley.st-helens.sch.uk>  
to access more GCSE resources.**



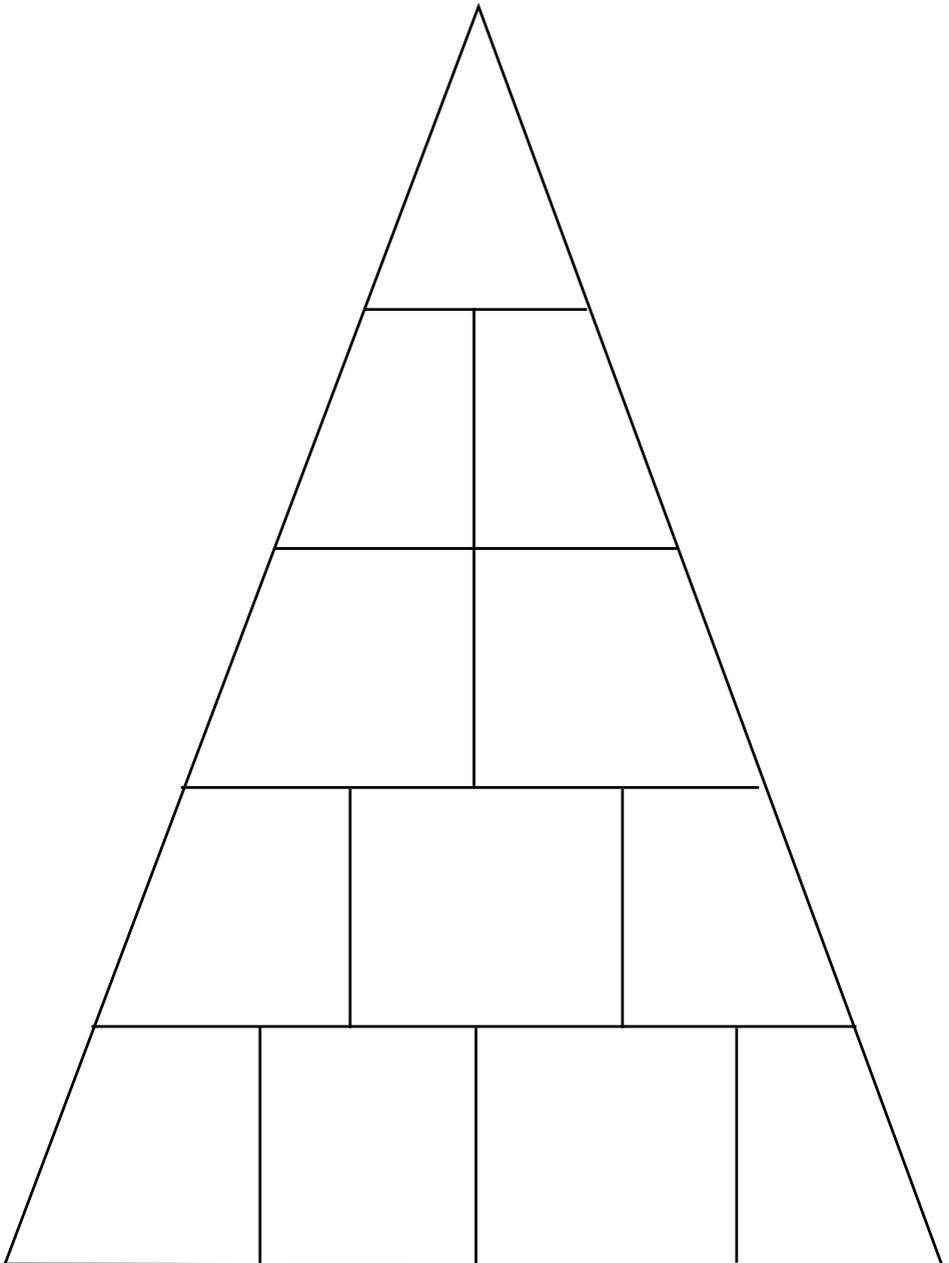






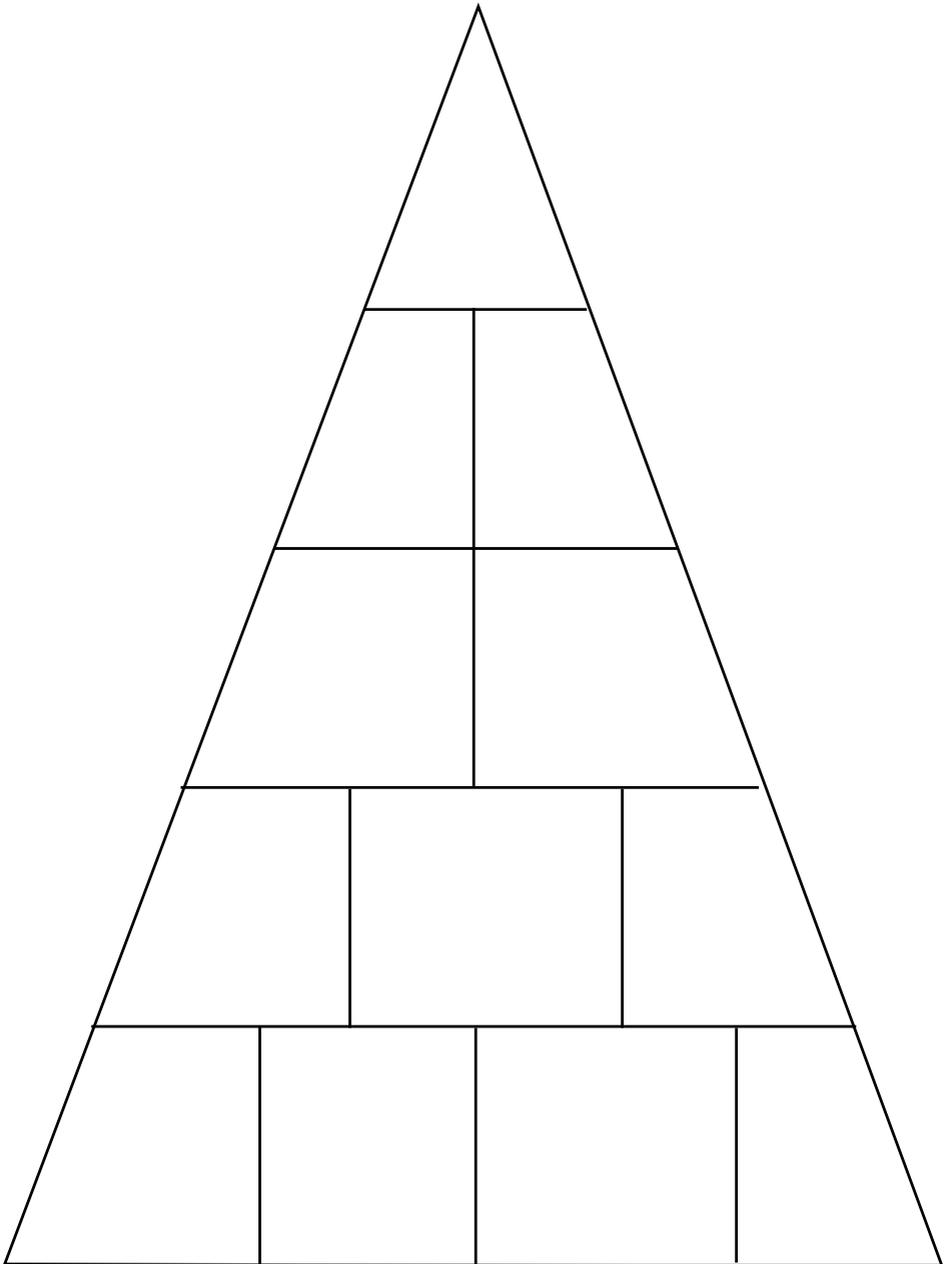
# Activity 1 – Planning Pyramid

Order the subjects you study in rank of EASIEST (to revise/understand) at the top, moving to HARDEST (to revise/understand) along the bottom.



# Activity 2 – Planning Pyramid

Now, order your revision priorities with the **MOST IMPORTANT** (or soonest deadline) at the top and **LEAST IMPORTANT** (or furthest deadline) along the bottom.



# Year 11 team - who can help

## Head of Upper School

Mr Dickinson

## Head of Achievement

Mr Bennett and Mrs Dawber

## Year Co-ordinator

Mrs Lawson

## Your Form Tutor

# Support

## Exam stress

A little bit of stress can be a good thing as it motivates us to work hard, but stress levels can get out of hand, which stops us from performing our best.

## Stress symptoms

In the run up to GCSE season, look out for prolonged or extreme cases of the following:

- Difficulty getting to sleep
- Poor appetite
- Increased anxiety and irritability
- Increased heart rate
- Migraines/headaches
- Blurred vision
- Dizziness

If you've noticed a few of the above symptoms and you've had them for a few weeks, you may need to do something about your stress levels.

## Managing exam stress

- Learn to recognise when you're stressing out. A chat with someone who knows the pressure you're under will get things into perspective.
- Eat right, choose foods such as fresh fruit and veg. Fuel your brain as well as your body.

- Sleep well. Wind down before bed and don't revise under the duvet - your bed is a sanctuary!
- Panic is often triggered by hyperventilating (quick, shallow breaths). So if you feel yourself losing it during the exam, sit back for a moment and control your breathing. Deep breath in and out through the nose, counting to five each way.
- Exercise. Nothing de-stresses the mind faster than physical activity.

There is a timetable of after school study sessions available on the Cowley website.

## Parents - how you can help

Please encourage your daughter/son to spend time each night revising GCSE subjects.

We would recommend around 2-3 hours per night to be spent on homework, coursework and revision. Make sure that short rest breaks are built into this time.

Please encourage your daughter/son to complete a few past papers each week, these and the mark schemes are available on the exam boards websites which are detailed later on in this booklet.

# Practical tips

Make sure that you get all you can from each lesson. It makes sense to ask if you don't understand

Make sure you understand new concepts – if in doubt ask. Never leave something you don't understand in the hope that it will sort itself out. That won't happen!

Discuss new ideas and concepts with a friend. Try to test your own understanding by explaining the idea or concept to someone else.

Go over your day's work at home. You know that homework helps you to learn your class-work – programme the brain – it helps you understand new concepts. Don't let yourself down – do it!

Practise doing questions. This helps to ensure that you understand your work, gives you practice in doing research and helps your memory.

DO develop ways of memorising information. Write notes or read out loud – this helps concentration. Keep doing this until you can remember all the information easily.

DON'T let yourself get tired. Your brain will be 'fuzzy' after a really late night and even easy tasks may seem harder.

DON'T worry if you haven't solved every single problem before you finish your evening's work. The brain is a problem solver and can solve problems while you are asleep – use it!

# Get prepared



## **Prepare your work space at home, make sure you have:**

- A tidy, undisturbed place to work
- A table which gives you enough room for your books
- All the books you need – college notes, revision guides etc
- Pens, pencils, paper
- Scientific Calculator

## **Come to college prepared to learn, make sure you have:**

- Pens, pencils, ruler
- Your planner, exercise book and any necessary text books
- Your homework
- Scientific Calculator

# Exam tips

## Question Command words

### Do you know what the questions are asking you to do?

Most marks in an exam are lost because a pupil is not answering the question that has been asked.

Command words are the words in your exam questions that tell you what the examiner wants you to do. By understanding these command words, you are on your way to understanding your exam questions. Here are just a few examples of command words:

#### Analyse

separate information into components and identify their characteristics

#### Assess

make an informed judgement

#### Consider

review and respond to given information

#### Criticise

assess worth against explicit expectations

#### Comment

present an informed opinion

#### Define

specify meaning

#### Describe

set out characteristics

#### Discuss

present key points

#### Examine

investigate closely

#### Explore

investigate without preconceptions about the outcome

#### Evaluate

judge from available evidence

#### Explain

set out purposes or reasons

#### Outline

set out main characteristics

#### Summarise

present principal points without detail

#### State

express in clear terms

#### Review

survey information

#### Argue

present a reasoned case

#### Justify

support a case with evidence

#### Estimate

assign an approximate value

#### Suggest

present a possible case

#### Prove

demonstrate validity on the basis of evidence

#### Compare

identify similarities

#### Identify

name or otherwise characterise

#### Develop

take forward or build upon given information

When sitting an exam, students can lose precious marks by not adopting a good exam technique. Below are some tips to help you with good exam technique to help you maximise your mark:

**Read the question carefully - identify what information you need to use.**

What is it asking you to do?

Read through information / graphs / data / articles carefully.

**Highlight the command word in the question.**

How do you answer this type of question?

**Highlight the focus / keywords in the question.**

What knowledge / content do you need to include in your answer?

**Look at the number of marks awarded for the question.**

How many points do you need to make?

Be sure to include enough detail to answer the question thoroughly.

**Look carefully at how much time you have.**

How much do you need to write?

## Key to good exam performance

Get a good night's sleep before the exam.

Ensure you have all the right equipment.

Arrive early to the exam.

Underline the important words in the question.

Check you have answered all parts of the question.

If time is short, answer questions in bullet point format.

Read the instructions carefully.

Read through the whole paper – if you have a choice of questions, mark the questions you want to attempt.

Work out the timing for each question – do not spend too long on one question.

Look at the mark allocation – this is an indication of how much detail you should include or how long to spend on it.

Attempt all questions you are asked to.

Plan your answer if appropriate.

Write your answer as fully as you can.

Stick to the point/focus of the question.

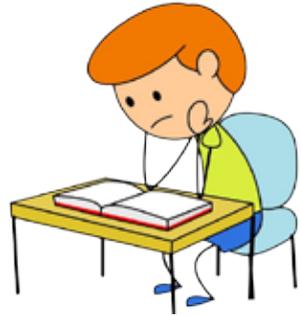
Check your answer against the plan.

Re-read your answers, look out for any mistakes and make any necessary corrections.

To achieve the highest grades in some subjects you must demonstrate a good grasp of grammar, spelling and punctuation.

Use appropriate terminology and subject specific vocabulary (learn keywords).

Organise information clearly (use paragraphs to structure your writing).



## English Language - What & How To Revise

### EDUQAS GCSE ENGLISH LANGUAGE

Component 1	Component 2
<b>Section A: Reading (20%)</b> Analysing one extract of fiction - 1 hour Text is 20 <sup>th</sup> Century Prose Range of structured questions 15 minutes per 10 marks	<b>Section A: Reading (30%)</b> Analysing two extracts of non-fiction - 1 hour One text from C21 <sup>st</sup> , one from C19 <sup>th</sup> Range of structured questions including comparison 3 sections of 20 minutes
<b>Section B: Prose Writing (20%)</b> One creative writing task from a choice of four titles - 45 minutes	<b>Section B: Transactional Writing (30%)</b> Two compulsory transactional/persuasive writing tasks - 1 hour / 30 minutes each

### Revising for Reading

The more you read at home, the better you will do in the two reading sections of this qualification. You should continue to read novels, newspapers and websites throughout your revision. Having said that, the easiest way to revise for this exam is to practise responding to the types of questions you will be asked. They are:

#### **INFORMATION RETRIEVAL (Search and find)**

- List reasons or details/Make a list of....
- Explain what you learn

#### **IMPRESSIONS/IMAGES**

- What impression do you get of the writer or an organisation or people?
- What image does this text create of the writer or an organisation or people?

#### **VIEWPOINT/ATTITUDE**

- What are the writer's attitudes to...?
- What are the writer's opinions of...?
- What are the writer's thoughts and feelings...?
- What do you think and feel about...?

#### **EVALUATION OF TEXT**

- To what extent do you agree that...?
- Evaluate how...

#### **ANALYSIS OF NARRATIVE OR PERSUASIVE TECHNIQUE**

- How does the writer make these lines tense or dramatic or surprising?
- How does the writer make the reader feel sympathy or uncomfortable?
- How does the writer try to encourage or interest or argue?
- How does this text try to persuade or sell or influence?

#### **SYNTHESIS OF INFORMATION**

- Both these texts tell you about a topic. Explain what you find out about that topic.

#### **COMPARISON OF TEXTS**

- Compare and contrast a key topic in these texts.

Remember to work through the paper methodically and try to avoid repeating work:

- Read all the instructions and questions first to preview the work ahead;
- Complete the reading paper in sections - don't read more than you need to;
- Rule off any sections so that you focus on the right part of the text for each question;
- Use colour-coded highlighters to identify relevant details while reading;
- Annotate only if necessary, identifying the key feature(s) you need in single words;
- Use your highlighted/annotated ideas to write quick but detailed responses;
- Manage time wisely so you can respond to all the questions.

## **Revising for Writing**

As above, the more that you read high-quality writing, the better your writing will be. Practising responding to examination-style tasks is key to your success in these sections of the qualification.

### **Prose Writing - Practice Titles:**

- (a) The Broken Promise.
- (b) Write about a time when you couldn't find something, or someone.
- (c) Continue the following:  
*He knew this would be his last chance.*
- (d) Write about an occasion when someone showed unexpected kindness.
- (e) Write a story which ends with the following:  
*...I knew I should have done something but I did not have the courage.*
- (f) The Outsider.
- (g) Write about an occasion when you found yourself in 'big trouble'.
- (h) Continue the following:  
*I knew this was a race I had to win ...*
- (i) Write about a time when you felt very sorry for yourself.
- (j) Write a story which ends with the following:  
*...and now I knew what it was to experience an emotional rollercoaster.*

### **Transactional Writing - Practice Titles:**

1. Write an article for an educational magazine in which you argue for or against compulsory work experience.
2. Write a leaflet for younger children in which you advise them how to play safe around their neighbourhood.
3. Write a magazine article for teenagers which persuades them to improve their health.
4. Write a letter to your Head teacher in which you try to persuade him/ her that school uniform should be abolished.

5. Your school wants to ban Saturday jobs for students. Write a letter to your Head teacher in which you argue for or against the idea of Saturday jobs.
6. Write an article for a careers magazine in which you offer advice to students on what to look out for when applying for a job.
7. Write a letter to the school kitchen where you advise them how to improve school meals.
8. Write a letter to the local council where you try to persuade them to improve local amenities in your area.
9. Write a letter to your local MP in which you argue for or against lowering the driving age to 16.
10. Write an article for your school newspaper in which you advise students how to cope with bullying.
11. Design a webpage in which you advise teenagers how to revise for their GCSEs.
12. Write a leaflet in which you persuade people to be more environmentally friendly in their homes.
13. Write an article in which you argue for or against the use of computer games as an educational tool.
14. Think of something you would like to change at your school. Write a speech to give to students in which you try to persuade them to agree with your opinion.
15. Write a magazine article for teenagers in which you advise them 'how to be cool'.
16. Write a leaflet to advertise a tourist attraction in your area.

Key points to remember for both writing sections:

- Try to develop an original and engaging response to each writing task so you keep the reader interested;
- Make sure you include a plan; this can be a bullet-point list, a spider diagram or a flow chart;
- A precise and methodical plan will ensure that you write in organised, detailed paragraphs;
- You will be assessed on your use of spelling, sentence structure, punctuation and paragraph use. If you forget about all these things you can go back and add paragraphs by marking your text with // to show the examiner you want a new paragraph there;
- Try to use a variety of punctuation (: ;?! ) as this automatically gives you more marks;
- Leave time to check and correct your work at the end.

## English Language - Revision Checklist

### Component 1, Section A: Reading Fiction

Genres of fiction	
Setting & structure	
Narrative hooks: tension, mystery, suspense	
Characterisation & narrative voice	
Literary Techniques	
Responding to literary texts	
<b>Most important: <u>exemplar paper practice</u></b>	

### Component 2, Section A: Reading Non-Fiction

Non-fiction text types	
Identifying Purpose / Audience / Form	
Finding and summarising information	
Explaining explicit & implicit meanings	
Analysing viewpoints & attitudes	
Analysing language choices & techniques	
Comparing & contrasting texts	
<b>Most important: <u>exemplar paper practice</u></b>	

### Component 1, Section B: Prose Writing

Choosing and responding to a title	
Narrative structure using story mountain	
Planning effective narratives	
Developing characters & setting	
Including a variety of descriptions	
Using dialogue to move plot forward	
How to punctuate dialogue	
Examples of opening and closing phrases: which approaches work for me?	
<b>Most important: <u>practise writing in timed conditions</u></b>	

### Component 2, Section B: Transactional Writing

Letters		Leaflets	
Articles		Reports	
Speeches		Reviews	
Identifying Purpose / Audience / Form from the task			
Planning texts to develop detailed paragraphs			
Engaging language features			
How to use complex punctuation			
Spelling strategies			
<b>Most important: <u>practise writing in timed conditions</u></b>			

## English Literature - What & How To Revise

### EDUQAS GCSE ENGLISH LITERATURE

<p><b>Component 1</b></p> <p><b>Section A: Shakespeare (20%)</b> Extract + Essay Questions - 1 hour</p> <p><b>Section B: Poetry Anthology (20%)</b> Analysis + Comparison Questions - 1 hour</p>	<p><b>Component 2</b></p> <p><b>Section A: Post-1914 Prose/Drama (20%)</b> Extract-based Question - 45 minutes</p> <p><b>Section B: 19<sup>th</sup> Century Prose (20%)</b> Extract-based Question - 45 minutes</p> <p><b>Section C: Unseen Poetry (20%)</b> Analysis + Comparison Questions - 1 hour</p>
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- It has never been easier to revise for English Literature. There is just so much information available online to help you access the skills and ideas that you need to be successful.
- Recommended websites include: **BBC Bitesize**, **Spark Notes**, **shmoop**, **Universal Teacher** and **Thug Notes**.
- Download and use the **PiXLit app** to help with remembering key quotations.
- Please see your teacher for additional resources as well.

## English Literature - Revision Checklist

### Component 1

#### **Section A: Shakespeare**

<b>Characters in <i>Macbeth</i></b>			
Macbeth		Lady Macbeth	
Witches		Banquo	
Duncan		Malcolm	
Macduff		Ross	
<b>Themes in <i>Macbeth</i></b>			
Power & Ambition		Supernatural	
Kingship		Masculinity	
Guilt & Insanity		Violence & Blood	
Fate & Tragedy		Heroism	

#### **Section B: Poetry Anthology**

<i>The Manhunt</i> - Simon Armitage			
<i>Sonnet 43</i> - Elizabeth Barrett Browning			
<i>London</i> - William Blake			
<i>The Soldier</i> - Rupert Brooke			
<i>She Walks in Beauty</i> - Lord Byron			
<i>Living Space</i> - Imtiaz Dharker			
<i>As Imperceptibly as Grief</i> - Emily Dickinson			
<i>Cozy Apologia</i> - Rita Dove			
<i>Valentine</i> - Carol Ann Duffy			
<i>A Wife in London</i> - Thomas Hardy			
<i>Death of a Naturalist</i> - Seamus Heaney			
<i>Hawk Roosting</i> - Ted Hughes			
<i>To Autumn</i> - John Keats			
<i>Afternoons</i> - Philip Larkin			
<i>Dulce et Decorum Est</i> - Wilfred Owen			
<i>Ozymandias</i> - Percy Bysshe Shelley			
<i>Mametz Wood</i> - Owen Sheers			
Excerpt from <i>The Prelude</i> - William Wordsworth			
Poetic Techniques			
Analysing poems using BiMLaS			
Comparing poems using BiMLaS			

### Component 2

#### **Section A: Post-1914 Prose/Drama**

<b>Characters in <i>An Inspector Calls</i></b>			
Arthur Birling		Sybil Birling	
Sheila Birling		Eric Birling	
Gerald Croft		Inspector Goole	
Eva Smith		Edna the Maid	
<b>Themes in <i>An Inspector Calls</i></b>			
Class		Responsibility	
Age		Gender	

#### **OR**

<b>Characters in <i>The Woman in Black</i></b>			
Arthur Kipps		The Woman	
Samuel Daily		Mr Jerome	
Mr Bentley		Keckwick	
<b>Themes in <i>The Woman in Black</i></b>			
The Gothic		Fear & Anxiety	
Isolation		Past Traumas	

#### **Section B: 19<sup>th</sup> Century Prose**

<b>Characters in <i>A Christmas Carol</i></b>			
Ebenezer Scrooge		His nephew, Fred	
Bob Cratchit		Tiny Tim	
Jacob Marley		Ghost of Christmas Past	
Ghost of Christmas Present		Ghost of Christmas Yet to Come	
Belle		Fezziwig	
<b>Themes in <i>A Christmas Carol</i></b>			
Christmas		Social Injustice	
Christianity & Spiritualism		Transformation & Redemption	

#### **Section C: Unseen Poetry**

Approaches to Unseen Poetry			
Poetic Techniques			
Analysing poems using BiMLaS			
Comparing poems using BiMLaS			

<p><b><u>Types of Number</u></b></p> <ul style="list-style-type: none"> <li>• Add, subtract, multiply, divide</li> <li>• Order and Round numbers</li> <li>• Factors, multiples and primes</li> <li>• Product of Prime Factors</li> <li>• Squares, square roots, cubes and cube roots</li> <li>• Index notation</li> <li>• BIDMAS</li> <li>• Standard Form</li> </ul> <p><b><u>Fractions, Decimals, Percentages, Ratio, Proportion</u></b></p> <ul style="list-style-type: none"> <li>• Fractions</li> <li>• Decimals</li> <li>• Using fractions, decimals and percentages</li> <li>• Ratio</li> <li>• Percentages</li> <li>• Proportion problems</li> </ul> <p><b><u>Algebra</u></b></p> <ul style="list-style-type: none"> <li>• algebraic expressions</li> <li>• Solve linear equations</li> <li>• Using formulae</li> <li>• Sequences</li> <li>• Factorise</li> <li>• Expand</li> <li>• Simultaneous equations</li> </ul> <p><b><u>Graphs</u></b></p> <ul style="list-style-type: none"> <li>• Coordinates</li> <li>• Straight Line Graphs</li> <li>• Quadratic Graphs</li> <li>• Real life graphs</li> </ul> <p><b><u>Angles</u></b></p> <ul style="list-style-type: none"> <li>• Angles on intersecting lines, in triangles and quadrilaterals, and on parallel lines</li> <li>• Interior and exterior angles of polygons</li> <li>• Reflection and rotation symmetry in 2D shapes</li> <li>• Congruence and similarity</li> </ul> <p><b><u>Pythagoras and Trigonometry</u></b></p> <ul style="list-style-type: none"> <li>• Pythagoras' theorem</li> <li>• Trigonometry</li> </ul> <p><b><u>2D and 3D Shapes</u></b></p> <ul style="list-style-type: none"> <li>• Using 2D diagrams to represent 3D shapes</li> <li>• Transformations</li> <li>• Perimeter and area</li> <li>• Volumes of prisms</li> <li>• Circumference and area of a circle</li> </ul> <p><b><u>Data Collection</u></b></p> <ul style="list-style-type: none"> <li>• Two-way tables</li> <li>• Charts and diagrams</li> <li>• Types of average and range</li> <li>• Scatter Graphs and Lines of best fit</li> </ul> <p><b><u>Probability</u></b></p> <ul style="list-style-type: none"> <li>• Probability language and the probability scale</li> </ul>	<p><b><u>WAYS TO REVISE</u></b></p> <p>Practice, Practice, Practice!</p> <p>Learn what they are! Practice, Practice, Practice! Learn what they are and how to find them! Learn the rules Practice, Practice, Practice!</p> <p>Practice, Practice, Practice!</p> <p>Can you solve problems involving F.D.P ?</p> <p>Practice, Practice, Practice! Practice solving them Can you substitute into a formula? Can you write the Nth term?</p> <p>Practice, Practice, Practice! Can you draw them. Practice! Can you draw them. Practice! Check your revision guide!</p> <p>Learn how to spot Alternate, Corresponding and Opposite Angles</p> <p>Do you know what Rotational Symmetry is? Learn what they mean!</p> <p>Learn what it is and how to use it!</p> <p>Learn the names and how to draw them. What are they? Can you do all 4 of them? Practice, Practice, Practice! Practice, Practice, Practice! Practice, Practice, Practice!</p> <p>Learn the different types and how to draw them. Learn which one is which (MMM) Practice, Practice, Practice!</p> <p>Practice Exam Questions</p>
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# MATHEMATICS - Higher

## Types of Number

- Factors, multiples and primes
- Product of Prime Factors
- Squares, square roots, cubes and cube roots
- Index notation
- Standard Form
- Surds
- BIDMAS

## Fractions, Decimals, Percentages, Ratio, Proportion

- Using fractions, decimals and percentages
- Ratio
- Direct and Inverse Proportion

## Algebra

- algebraic expressions
- Solve linear equations
- Using formulae
- Simultaneous Equations
- Sequences
- Factorising Quadratics
- Completing the Square
- Quadratic Formula

## Graphs

- Coordinates
- Straight Line and Quadratic Graphs
- Real life graphs
- Transforming Graphs
- Functions

## Angles

- Basic Angle Facts
- Interior and exterior angles of polygons
- Congruence and similarity
- Circle Theorems

## Pythagoras and Trigonometry

- Pythagoras' theorem
- Trigonometry

## 2D and 3D Shapes

- Transformations
- Perimeter and area
- Volumes of prisms, Cones, Pyramids, Spheres
- Circumference and area of a circle

## Data Collection

- Types of average and range
- Scatter Graphs and Lines of best fit
- Cumulative Freq. & Box Plots
- Histograms
- Venn diagrams

## Probability

- Probability and Probability Tree Diagrams

## WAYS TO REVISE

Learn what they are!

Practice, Practice, Practice!

Learn what they are and how to find them!

Do you know the Rules of Indices?

Can you +, -, X in standard form

Practice, Practice, Practice!

Can you solve problems involving F.D.P ?

Can you solve problems involving Proportion?

Practice, Practice, Practice!

Practice solving them

Can you substitute into a formula?

Practice

Can you write the Nth term?

Practice, Practice, Practice

Practice, Practice, Practice

Learn to use the Formula

Can you draw them. Practice!

Check your revision guide!

Can you spot Alternate & Corresponding?

Do you know the sum of interior angles in a hexagon?

Learn what they mean!

Learn them and how to spot them!

Learn what it is and how to use it!

Practice, Practice, Practice!

What are they? Can you do all 4 of them?

Practice, Practice, Practice!

Practice, Practice, Practice!

Practice, Practice, Practice!

Learn which one is which (MMM)

Practice, Practice, Practice!

Practice drawing and using them!

Practice drawing and using them!

Practice Exam Questions

## BIOLOGY CHECKLIST (Separate Science)

- B3.1.1 Describe and explain osmosis
- B3.1.1F Describe the importance of water/salt balance
- B3.1.1 Evaluate data on use of sports drinks
- B3.1.1 Explain active transport in terms of the concentration gradient
- B3.1.1 Describe adaptations in animals & plants to maximise exchange
- B3.1. Explain how the villi increase surface area to absorb products of digestion
- B3.1.2 Recall the structures of the respiratory system and describe ventilation
- B3.1.2 Evaluate the use of artificial ventilators
- B3.1.3 Recall where exchange happens in plants
- B3.1.3 Explain how the roots and leaves are adapted for exchange
- B3.1.3 Describe the role of the stomata and guard cells
- B3.1.3 Analyse and evaluate the conditions affecting transpiration
- B3.2.1 Describe the function of the circulatory system and heart
- B3.2.1 Recall and describe the structure and operation of the heart & major vessels
- B3.2.1 Describe structure of arteries and veins
- B3.2.1 f Describe the effects of narrowing arteries & evaluate the use of stents
- B3.2.1 Describe the structure & function of capillaries
- B3.2.2 Describe the structure and function of blood and plasma
- B3.2.2 Describe the structure and function of red blood cells
- B3.2.2 Describe the function of white blood cells
- B3.2.2e Describe the function of platelets
- B3.2.3 Describe the functions of xylem and phloem
- B3.3.1 Recall waste products and method of removal
- B3.3.1 Describe the importance of ion/water balance
- B3.3.1 Describe the functioning of the kidney
- B3.3.1 Describe methods of treating kidney failure
- B3.3.1 Describe and explain rejection of a kidney transplant & how to prevent it
- B3.3.1 Evaluate dialysis & kidney transplants
- B3.3.2 Describe & explain the effect of sweating on water balance
- B3.3.2b Describe how body temperature is monitored & controlled
- HT ONLY B3.3.2 Describe physical responses to being too hot or too cold
- B3.3.3 Explain the role of the pancreas & insulin in controlling blood sugar
- HT ONLY B3.3.3 Explain the role of glucagon in controlling blood sugar
- B3.3.3 Describe the causes and treatment of type 1 diabetes
- B3.3.3 Evaluate the treatment of type 1 diabetes
- B3.4.1 Describe the cause and effect of increased waste
- B3.4.1 Describe the polluting effects of waste
- B3.4.1 Describe the influence of human activity on waste production
- B3.4.2 Describe the causes & impact of deforestation in tropical areas
- B3.4.2 Describe the impact of the destruction of peat bogs
- B3.4.3 Evaluate validity and reliability of environmental data
- B3.4.3 Describe the causes and impact of global warming
- B3.4.3 Describe the sequestering of carbon in water
- B3.4.3 Describe how biogas is made & evaluate the use of biogas generators
- B3.4.4 Explain how the efficiency of food production can be improved
- B3.4.4 Describe methods to preserve fish stocks
- B3.4.4d Describe how mycoprotein is manufactured
- B3.4.4 Evaluate methods of food production

## BIOLOGY CHECKLIST (Additional Science)

- B2.1.1 Describe the structure and function of plant and animal cells
- B2.1.1 Describe the structure and function of microbial cells
- B2.1.2 Describe and explain diffusion
- B2.2.1 Describe the hierarchy of plant and animal structure
- B2.2.1 Describe the structure and function of animal tissues
- B2.2.1 Describe the structure and function of the stomach and the digestive system
- B2.2.2 Describe the structure and function of plant tissues and organs
- B2.3.1 Recall the equation and describe the process of photosynthesis
- B2.3.1 Describe and explain what limiting factors are
- B2.3.1 Describe the use of the products of photosynthesis
- B2.4.1 Describe the physical factors that may affect the distribution of organisms
- B2.4.1 Explain how to use quadrats for sampling along a transect
- B2.4.1 Explain how to use quadrats for random sampling
- B2.5.1 Describe the structure and function of proteins
- B2.5.1 Explain what biological catalysts are
- B2.5.2 Explain how the shape of an enzyme controls its function
- B2.5.2 Describe and explain the affect of pH and temperature on enzyme activity
- B2.5.2 Recall call the sites of production and the function of digestive enzymes
- B2.5.2 Describe how enzymes work in the stomach
- B2.5.2 Describe and explain the role of bile from the liver
- B2.5.2 Describe the use of enzymes in the home and industry
- B2.6.1 Recall that aerobic respiration releases energy & occurs in mitochondria
- B2.6.1 Recall and explain the respiration equation
- B2.6.1 Describe the uses of the energy from respiration
- B2.6.1 Describe and explain the physiological changes in exercise
- B2.6.2 Recall and explain the anaerobic respiration equation
- HT ONLY B2.6.2 Explain what oxygen dept is
- B2.6.2 Explain what muscle fatigue is
- B2.7.1 Describe and explain cell division by mitosis
- HT ONLY B2.7.1 Explain the process of meiosis in forming gametes
- B2.7.1 Describe the process of fertilisation
- B2.7.1 Explain how cells differentiate and discuss the types of stem cells
- B2.7.1 Describe how clones are formed in Asexual reproduction
- B2.7.2 Explain how sexual reproduction leads to variation
- B2.7.2 Define the terms allele, chromosome, gene, DNA, recessive and dominant
- B2.7.2 Interpret genetic diatagrams and family tree diagrams
- B2.7.2 Describe how gender is determined in humans
- HT ONLY B2.7.2 Construct genetic cross diagrams to predict characteristics of offspring
- HT ONLY B2.7.2 Use the terms homozygous, heterozygous, phenotype and genotype
- HT ONLY B2.7.2 Recall that genes codes for amino acids that make proteins
- B2.7.2 Recall that DNA is unique & that DNA fingerprinting can be used to ID a person
- B2.7.3 Describe how genetic disorders like Polydactyly are inherited
- B2.7.3 Describe how genetic disorders like cystic fibrosis are inherited
- B2.7.3 Describe how embryos can be screened for genetic disorders
- B2.8.1 Describe how fossils are formed
- B2.8.1 Explain how fossils provide evidence of earlier life forms
- B2.8.1 Explain the causes of extinction
- B2.8.1 Describe what isolation is
- HT ONLY B2.8.1 Explain new species (genetics, natural selection & speciation)

## CHEMISTRY CHECKLIST (Additional Science)

- C2.1.1 Describe how ions are formed and represent them using square brackets
- C2.1.1 Explain the process of ionic bonding
- HT ONLY C2.1.1 Describe and explain the bonding between group 1 & 7 elements.
- C2.1.1 Describe covalent bonding in simple molecules H<sub>2</sub>, Cl<sub>2</sub>, HCl, H<sub>2</sub>O, NH<sub>3</sub> & CH<sub>4</sub>
- HT ONLY C2.1.1 Explain metallic bonding in terms of delocalised electrons
- C2.2.1 Recall that all simple molecules have low melting and boiling points
- HT ONLY C2.2.1 Explain the role of intermolecular forces when a substance melts/boils
- C2.2.1 Explain why simple molecules do not conduct electricity
- C2.2.2 Explain the structure and properties of ionic compounds (NaCl)
- C2.2.3 Describe covalent bonding in giant structures diamond, graphite & silicon dioxide
- HT ONLY C2.2.3 Explain the conductivity of graphite
- HT ONLY C2.2.2 Describe the structure and use of fullerenes
- C2.2.4 Describe the structure and properties of metals
- HT ONLY C2.2.4 Explain how metals conduct heat
- C2.2.4 Describe why alloys are harder than pure metals
- C2.2.4 Describe what a shape memory alloy is and give an example
- C2.2.5 Explain that the properties of polymer depend on what they are made of
- C2.2.5 Compare the structures and properties of thermosetting and thermosoftening polymers
- C2.2.6 Describe what nanoscience is and how this can lead to new developments
- C2.3.1 Recall what atomic structure is and describe what isotopes are
- HT ONLY C2.3.1 Describe how RAM (Ar) of an element is compared to the C<sup>12</sup> isotope
- C2.3.1 Calculate the RMM (MR) of different compounds & recall what a Mole is
- C2.3.2 Explain why instrumental methods of chemical analysis are useful
- C2.3.2 Describe how paper chromatography can be useful
- C2.3.2 Describe how gas chromatography and mass spectrometry work
- HT ONLY C2.3.2 Explain how the mass spec can give the RMM substances separated
- C2.3.3 Explain how the % of an element in a compound can be calculated
- HT ONLY C2.3.3 Calculate empirical formula
- HT ONLY C2.3.3 Calculate masses of reactants from balanced equations
- C2.3.3 Explain what percentage yield is and explain the limitations of calculating it
- C2.3.3 Describe what reversible reactions are
- C2.4.1 describe how to measure the rate of reaction using a simple equation
- C2.4.1 Explain what collision theory is and how it affects reaction rate
- C2.4.1 Explain how temp, pressure, concentration, surface area & catalysts affect the reaction rate
- C2.5.1 Explain what exothermic reactions are and state some examples.
- C2.5.1 Explain what reversible reactions are and state some examples.
- C2.5.1 Explain what endothermic reactions are and state some examples.
- C2.6.1 Recall what the state symbols are in chemical equations
- C2.6.1 Describe how soluble salts are formed from reacting acids with metals, insoluble bases & alkalis
- C2.6.1 Describe how insoluble salts can be made and how this can be used to remove unwanted ions
- C2.6.2 Recall the difference between alkalis and bases
- C2.6.2 Describe how to use the names of the reactants to name different salts produced
- C2.6.2 Describe how ammonium salts are produced and why they are important
- C2.6.2 Explain how H<sup>+</sup> & OH<sup>-</sup> ions determine the pH of a solution and describe what the pH scale is
- C2.6.2 Explain how neutralisation reactions can be described in terms of reacting H<sup>+</sup> & OH<sup>-</sup> ions
- C2.7.1 Explain the principles of electrolysis
- C2.7.1 Describe the events at the electrodes (half equations)
- C2.7.1 Describe the electrolysis of aluminium
- C2.7.1 Describe the electrolysis of sodium chloride

## CHEMISTRY CHECKLIST (Separate Science)

- C3.1.1 Describe the work of Newlands and Mendeleev
- C3.1.1b Describe how Mendeleev overcame problems with the early tables
- C3.1.2 Describe how the modern Periodic table is set out
- C3.1 Evaluate the work of Newlands and Mendeleev regarding the modern periodic table
- C3.1.3 Describe properties, trends & reactions of Group 1 metals
- C3.1.3 Compare the properties of the transition metals to Group 1 metals
- C3.1.3 Describe the properties of the transition metals & state their use
- C3.1.3 Describe the reactions & trends of Group 7 elements including displacement reactions
- HT ONLY C3.1.3 Explain trends in the reactivity in groups regarding the loss & gain of electrons
- C3.2.1 Describe behaviour of hard and soft water with soap
- C3.2.1 Describe how hardness can be measured by titration with soap solution
- C3.2.1 Distinguish between permanent and temporary hardness of water
- HT ONLY C3.2.1 Explain how bicarbonate ions in temporary water thermally decompose
- C3.2.1 Describe the negative effects of water hardness
- C3.2.1 Describe the potential health benefits of water hardness
- C3.2.1 Describe & evaluate methods of softening water
- C3.2.2 Describe the desirable properties & drinking water it is made safe to drink
- C3.2.2 Describe how water filters & ion exchangers works
- C3.2.2 Compare & evaluate data from different water filters
- C3.2.2 Explain why we add chlorine and fluoride to water
- C3.2.2 Evaluate the arguments/data for/against the use of fluoride
- C3.2.2 Evaluate the cost-benefit of distillation for purification
- C3.3.1 Describe the use of calorimeters to calculate energy using  $Q = mc\Delta T$
- C3.3.1 Describe experiments involving measuring temperature change
- C3.3.1 Interpret energy level diagrams for exothermic & endothermic reactions
- HT ONLY C3.3.1 Explain bond energy for exothermic & endothermic
- C3.3.1 Describe effect of catalysts on activation energy
- C3.3.1 Describe the use of hydrogen as a fuel
- C3.3.1 Compare combusting hydrogen with hydrogen fuel cells from data/information
- C3.4.1 Recall how to use the results of flame tests to identify metal ions
- C3.4.1 Describe precipitation of metal hydroxides, halide ions & sulfate ions
- C3.4.1 Describe the reaction of carbonates and dilute acid and the test for CO<sub>2</sub>
- C3.4.1 Describe titration as a method to measure reacting volumes of acid/alkali
- HT ONLY C3.4.1 Calculate chemical quantities in titrations from experiment
- C3.5.1 Recall the source of the raw materials of the Haber process
- C3.5.1b Describe & explain the Haber process and the conditions used
- HT ONLY C3.5.1 Explain what is meant by equilibrium in reversible reactions
- HT ONLY C3.5.1 Describe the effect of changing conditions on equilibrium and yield
- HT ONLY C3.5.1 Evaluate the conditions used in terms of cost and impact on yield
- C3.6.1 Recall alcohols as containing the -OH group & recall the structure & names of the first 3
- C3.6.1 Describe the reactions of alcohols with air and sodium & state their uses
- C3.6.1 Describe how ethanol is oxidised to form ethanoic acid
- C3.6.2 Recall that carboxylic acids contain the -COOH group
- C3.6.2 Describe the reactions with carbonates and alcohols
- HT ONLY C3.6.2 Explain carboxylic acids as weak acids and the difference from strong acids
- C3.6.3 Recall that esters contain the -COO- group & the formation of ethyl ethanoate
- C3.6.3 Describe the properties and uses of esters

## PHYSICS CHECKLIST (Additional Science)

- P2.1.1 Describe how forces acting upon objects are equal and opposite
- P2.1.1 Explain how resultant forces act upon objects to change the state of rest or motion
- P2.1.2 Use the  $F = m \times a$  to work out force, mass & acceleration
- P2.1.2 Construct distance/time graphs and recall that the gradient represents speed
- HT ONLY P2.1.2 Calculate the speed of an object from distance/time graphs
- P2.1.2 Use the  $a = \frac{v - u}{t}$  to work out acceleration, velocity & time
- P2.1.2 Construct velocity/time graphs and recall that the gradient represents acceleration
- HT ONLY P2.1.2 Calculate the acceleration of an object from the gradient of a velocity/time graph
- HT ONLY P2.1.2 Calculate the distance travelled by an object from a velocity/time graph
- P2.1.3 Describe how to determine braking and stopping distances
- P2.1.3 Explain how reaction times can be affected by the driver and adverse road conditions
- P2.1.4 Describe forces in fluids and the meaning of terminal velocity
- P2.1.4 Draw and interpret velocity-time graphs for objects that reach terminal velocity
- P2.1.4 Calculate the weight of an object using  $W = m \times g$
- P2.1.5 Describe how forces can change the shape of objects and use the equation  $F = k \times e$
- P2.2.1 Calculate work done by using  $W = F \times d$
- P2.2.1 Calculate power by using  $P = E / t$
- P2.2.1 Calculate gravitational potential energy by using  $E_p = m \times g \times h$
- P2.2.1 Calculate Kinetic energy by using  $E_k = \frac{1}{2} \times m \times v^2$
- P2.2.2 Calculate momentum using  $p = m \times v$  & describe the conservation of momentum
- P2.3.1 Describe and explain static electricity
- P2.3.2 Recall what electrical current is and use  $I = Q / t$  to calculate the size of the current
- P2.3.2 Recall what potential difference is and use  $V = W / Q$  to work out work done
- P2.3.2 Interpret and draw circuit diagrams and recall all of circuit symbols
- P2.3.2 Describe what thermistors and LDRs are and state their uses
- P2.3.2 Recognise current/potential difference graphs for a resistor, filament bulb and a diode
- P2.3.2 Describe how to calculate current, potential difference & resistance using resistance  $V = I \times R$
- P2.3.2 Set up and describe current, potential difference and resistance in parallel circuits
- P2.3.2 Set up and describe current, potential difference and resistance in series circuits
- P2.3.2 Describe the resistance in LEDs, LDRs and thermistors
- P2.4.1 Describe and explain the difference between ac and mains electricity
- HT ONLY P2.4.1 Determine the frequency of a supply from oscilloscope traces.
- P2.4.1 Describe the differences between 2 and 3 core wire and explain how to wire a plug
- P2.4.1 Explain how fuses, earth wires, circuit breakers and RCCBs work to make circuits safe
- P2.4.2 Describe energy transfer in different bulbs and appliances
- P2.4.2 Calculate power by using  $P = E / t$  and show how power, potential difference and current are related using  $P = I \times V$
- HT ONLY P2.4.2 Show how energy transferred, potential difference and charge are related using  $E = V \times Q$
- P2.5.1 Recall the atomic structure including relative mass, charges & describe what isotopes
- P2.5.1 Explain how results from scattering experiments led to the 'plum pudding' model being replaced by the nuclear model
- P2.5.2 Describe the structure, relative ionising power, range in air, penetrative power through materials & deflections
- P2.5.2 Describe the origins of background radiation from natural and man-made sources
- HT ONLY P2.5.2 Describe how to balance nuclear equations to show single alpha & beta decay
- HT ONLY P2.5.2 & Explain deflections in magnetic & electrical fields
- P2.5.2 Describe the uses & dangers of each type of radiation
- P2.5.2 Describe what half life is and be able to interpret half life graphs
- P2.6.1 Describe nuclear fission for uranium-235 and plutonium-239
- P2.6.1 Explain what a chain reaction is and be able to complete/sketch a diagram to show them
- P2.6.2 Explain what nuclear fusion is and where this occurs in the universe
- P2.6.2 Describe and explain the life cycle of a star the same size as the sun & a star that is bigger than the sun

## PHYSICS CHECKLIST (Separate Science)

- P3.1.1 Describe the properties and uses of X-rays & precautions when using them & CT scanners
- P3.1.2 Describe the properties of & medical uses of ultra-sound
- P3.1.2 Calculate the distance between interphases using  $s = v \times t$
- P3.1.1/2 Compare the medical use of X-rays and ultra-sound
- P3.1.3 Define refraction and relate to image formation by lenses
- P3.1.3 Explain focal length and calculate refractive index (RI)
- P3.1.3 Describe the features of an image using appropriate vocabulary
- P3.1.3 Describe the image produced by converging and diverging lenses
- P3.1.3 Construct and interpret ray diagrams to show image formation by lenses
- P3.1.3 Calculate magnification using  $\text{magnification} = \frac{\text{image height}}{\text{object height}}$
- P3.1.4 Describe the structure and function of the parts of the eye
- P3.1.4 Describe vision & explain how lenses are used to correct long and short sightedness
- P3.1.4 Compare the structure of the eye to that of cameras
- P3.1.4 Calculate the power of a lens using  $P = 1/f$  & describe determining factors
- HT ONLY P3.1.4 Explain how lenses can be made thinner
- P3.1.5 Explain total internal reflection and critical angle
- HT ONLY P3.1.5 Calculate RI using  $RI = 1/\sin c$
- P3.1.5 Describe medical uses of uses of optical fibres & lasers
- P3.2.1 Define centre of mass and describe how to find it for an irregular object
- P3.2.1 Calculate using  $T = 1/f$  for a pendulum
- P3.2.1 Describe the factors affecting the period of a pendulum and applications
- P3.2.2a+b Define and calculate moments using  $M = f \times d$
- P3.2.2 Explain the effect of balanced/unbalanced moments on turning
- HT ONLY P3.2.2 Rearrange  $M = f \times d$  to find the force or distance
- P3.2.2 Describe levers as force multipliers
- HT ONLY P3.2.2 Explain why objects will topple and analyse/evaluate their design
- P3.2.3 Describe how pressure exerted on a liquid is transmitted
- P3.2.3 Describe the use of different cross sectional areas to multiply force
- P3.2.3 Calculate the pressure in a hydraulic system using  $P = F/A$
- P3.2.4 Relate acceleration and direction of an object in circular motion
- P3.2.4 Define centripetal force and relate this to the causative force
- P3.2.4 Describe the effect of mass, speed and radius on centripetal force
- P3.3.1 Describe the electromagnetic effect of current and applications
- P3.3.1 Describe the motor effect and its use and apply in different situations
- P3.3.1 Describe the factors affecting the size of the force in the motor effect
- P3.3.1 Describe how to reverse the direction of the force and apply Fleming's left hand rule
- P3.3.2 Describe electromagnetic induction
- P3.3.2 Describe the structure of a transformer & how step up & step down transformers work
- P3.3.2 Use the equation relating the pd in the primary and secondary coils
- P3.3.2 Calculate using  $V_I$  (primary) =  $V_I$  (secondary)
- P3.3.2 Explain the use and benefits of switch mode transformers

Tourism  
GEOGRAPHY

		
What are the reasons for the growth of tourism?		
What is the economic important of tourism?		
External factors (positive and negative)		
Blackpool – what is a coastal resort and the life cycle model?		
Blackpool: What are the strategies to attract more visitors and the success of these strategies?		
Mass tourism to a tropical area – Kenya: What are the human and physical attractions?		
Mass tourism to a tropical area What are the advantages and disadvantages?		
What are the strategies to solve problems?		
Ecotourism in Kenya – tented camps		
What is an extreme holiday and why are they becoming more popular?		
Why are more people visiting Antarctica (an extreme environment)?		
Extreme environments: Attractions?		
Extreme environments: Impacts?		
Extreme environments: Strategies to solve problems?		

# Population Change

## GEOGRAPHY

		
The exponential rate of world population growth		
The Demographic Transition Model (birth rate, death rate and natural population changes)		
Changing population structure = population pyramids (age and sex)		
The impact of increasing urbanisation, agricultural change, education and the emancipation of women on the rate of population growth		
Youthful population (The Gambia) and the implications.  How The Gambia has reduced its population growth:  Birth control		
How The Gambia has reduced its population growth:  Non birth control		
China's one-child policy  Describe it  Evaluate it		
Ageing population:  What are the problems of an ageing population?		
What are the benefits of an ageing population?		
What are the strategies the government is using to cope with an ageing population		
How The UK is encouraging an increase in the birth rate.		
Economic migration (jobs, money) within the EU.		

## GEOGRAPHY

What are the causes?		
Economic migration within the EU  What are the effects - for country of origin and destination		
Causes of refugees to the EU?		
Effects of refugees to the EU?		

# GEOGRAPHY

## Changing Urban Environments

		
Urbanisation is faster in poorer countries than richer countries		
Urban zones in St Helens		
Housing – attempts to satisfy the increased housing needs of the population in different parts of the city		
The impacts of Government strategies from the 1990s on the inner city Hulme, Manchester		
Traffic –the impacts of increased use of road transport on the environment and solutions aimed at reducing the impact		
Revitalise the image of the CBD by improving the physical environment in St Helens		
Cultural Mix – the factors causing ethnic segregation within urban areas and solutions		
The strategies aimed at supporting the multicultural nature of many urban areas		
Understand how rapid urbanisation has led to the development of squatter settlements		
Understand how rapid urbanisation has led to an informal sector to the economy – Dhavari, Mumbai, India Problems		
Squatter settlements being improved ASH and Site & Service		
The management of the environmental problems caused by rapid: Air pollution Water pollution		
Sustainable urban living - BedZED		
Brownfield site Langtree Park – The importance of conserving the historic and natural environment		
The importance of conserving the historic and natural environment Langtree Park		
Reducing and safely disposing of waste: St Helens		

# GEOGRAPHY

## Ice on the Land

		
The amount of ice on a global scale has shrunk		
The glacial budget Diagram and explanation		
Glacial erosion and what are the landforms created by it		
Glacial transportation		
Glacial deposition and the landforms created by it		
Landscapes that are actively affected by snow and ice attract tourists  Conflicts that this leads to and what the issues over the use of such areas		
Glacial retreat can pose a threat to the economies of areas relying on tourism and result in damage to fragile environments		

# GEOGRAPHY

## Rocks, resources and scenery

		
Simplified geological time scale		
The difference between period and era		
Granite, Carboniferous limestone and chalk and clay found on the time scale		
The characteristics and the formation of igneous, sedimentary and metamorphic rocks		
The location of : Granite Limestone Chalk and clay		
Mechanical weathering <ul style="list-style-type: none"> <li>• Freeze thaw weathering</li> <li>• Exfoliation.</li> </ul>		
Chemical weathering <ul style="list-style-type: none"> <li>• Solution,</li> <li>• Carbonation</li> </ul>		
Biological weathering.		
Granite landforms: Describe and explain formation of a tor		
Limestone landforms Surface features - Describe and explain formation		
Underground features- Describe and explain formation		
Clay and chalk – escarpment and vale  Describe Explain formation		
What are the economic and land use of: <ul style="list-style-type: none"> <li>• Granite</li> <li>• Chalk and clay</li> <li>• Carboniferous limestone</li> </ul>		
A case study of a quarry <ul style="list-style-type: none"> <li>• Where is it?</li> <li>• What are the economic, social and environmental advantages of the quarry?</li> <li>• What are the economic, social and environment and disadvantages? Of the quarry?</li> </ul>		
How is the Quarry managed? Strategies used during extraction and restoration following extraction Use for farming, recreation and tourism once quarrying has finished		

# The Restless Earth

## GEOGRAPHY

		
Describe the difference between continental and oceanic plates		
Destructive, constructive and conservative plate margins		
Location and formation of: fold mountains, ocean trenches, composite volcanoes and shield volcanoes.		
Difference between a composite and shield volcano and how they are formed		
A case study of one range of fold mountains. Ways they are used: Farming Hydroelectric power Tourism How people adapt to limited communications, steep relief, poor soils		
Case study – Montserrat, volcanic eruption  Its cause Primary and secondary effects Positive and negative impacts Immediate and long term responses.		
Monitor and predicting volcanic eruptions		
The characteristics of a supervolcano and the likely effects of an eruption		
Location of earthquakes Features of earthquakes – epicentre, focus, shock waves and the measurement of earthquakes using the Richter and Mercalli Scales		
A case study of an earthquake in a rich part of the world (Japan) and one from a poorer area (Sichuan China)  Causes Primary and secondary effects; Immediate and long-term responses		
The 3 P's - The need to predict, protect and prepare		
The Indian Ocean on Boxing day 2004 A case study of a tsunami Causes Effects Responses		

# MFL STUDENT LEARNING CHECKLIST

## **Reading and Listening**

- Can understand some unfamiliar language
- Can understand some complex language
- Can extract meaning from extended tasks and passages
- Can understand points of view
- Can recognise different tenses
- can recognise meaning changers
- Can recognise frequency markers
- Can recognise time markers
- can recognise false friends
- can recognise negatives
- Can draw simple conclusions

## **Out and About**

- Visitor Information
- Basic Weather
- Local Quantities
- Accommodation
- Public Transport
- Directions

## **Customer Service and Transactions**

- Cafes
- Restaurants
- Shops
- Dealing with Problems

## **Personal Information**

- General Interests
- Leisure Activities
- Family and Friends
- Lifestyle - Healthy Eating
- Lifestyle - Exercise

## **Future Plans, Education and Work**

- Basic Language of the Internet
- Understand a simple telephone message
- Simple Job Advertisements
- Simple Job Applications
- Curriculum Vitae
- School and College
- Work and Work Experience

# PSYCHOLOGY AQA SHORT COURSE

## Memory

Keywords: Eye, Eye Witness Testimony, LTM (Long-Term Memory) Memory, STM (Short-Term Memory), Visual illusion/ Visual perception, Encoding, Retrieval, Displacement, Amnesia

Multi-store Model of Memory- Atkinson & Shiffrin, Murdock

Levels of Processing: Craick and Tulving Study- Practical Application: How can this study be applied in life?

Reconstructive Memory: Bartlett Study: War of the Ghosts What is a schema?

Eyewitness Testimony: Bruce and Young's: Facial recognition, Loftus and Palmer's: Leading questions, Practical Application: How can this study be applied in life?

Forgetting and Brain Damage:

Keywords: Interference, Pro-active, Interference Retroactive, Interference Context, Brain Damage

Godden and Baddeley – Context, Underwood and Postman- Interference, Amnesia HM Case Study and Evaluation

## Non-Verbal Communication

Distinctions between non-verbal communication and verbal communication, including paralinguistics.

Argyle, Alkema and Gilmour et al's (1971), Davitz and Davitz (1961)

Types of non-verbal communication- Argyle (1975)- eye contact and conversation, Hess's (1963)- attractiveness and dilated pupils, Osgood's (1966)- cross-cultural study on facial recognition of emotion, Sackheim's (1978)- study looking at the relationship between facial expressions and hemispheres in the brain.

Body language; posture (including postural echo, open and closed postures), gestures, touch.

McGinley (1975), McGinley, Lefevre and McGinlay (1975), Lyne and Mynier (1993), Fisher, Rytting and Heslin (1976)

Description and evaluation of studies of non-verbal communication and verbal communication: Argyle, Alkema and Gilmore (1971)

Personal space: factors which affect personal space, including cultural norms, sex differences, individual differences and status. Description and evaluation of studies of factors which affect personal space. Contemporary practical implications of studies of nonverbal communication and their benefits and drawbacks- Argyle and Dean (1995) sex differences, Willis (1996) individual differences (age), Summer (1969) cultural differences, Zahn (1991) status

## Development of Personality

Keywords: personality and temperament

Description and evaluation of studies of temperament- Thomas (1977), Buss and Plomin (1984), Kagan (1991).

Eysenck's type theory (1952): extraversion, introversion, neuroticism. Personality scales, including EPI (1964) and EPQ (1975).

Antisocial Personality Disorder (APD) - characteristics of APD (DSMIV 2008),

Biological causes- Raine (2000)- the role of the amygdala

Situational causes - Farrington (1995), Elander (2000)

Implications of research into APD.

## Stereotyping, Prejudice and Discrimination

Keywords: stereotyping, prejudice and discrimination.

- Description and evaluation of studies of prejudice and of discrimination: Adorno (authoritarian personality), Tajfel (In-groups and Out-groups) and Sherif (Robbers' Cave) and inter-group conflict.

- Explanations of prejudice and discrimination.

- Ways of reducing prejudice and discrimination and evaluation of studies: Sherif (1961), Aronson (1978), Elliott (1977) and Harwood (2003).

- Contemporary practical implications of research into stereotyping, prejudice and discrimination and their benefits and drawbacks. son (1978), Elliott (1977) and Harwood (2003).

Contemporary practical implications of research into stereotyping, prejudice and discrimination and their benefits and drawbacks.

## Research Methods

### Methods of Investigation

- The use of scientific methods and techniques which aim for objectivity
- Formulation of testable hypotheses to promote enquiry
- Procedures for the experimental method of investigation: Independent and dependent variables. Inc. advantages and disadvantages of this method of investigation (including ecological validity).

### Methods of Control, Data Analysis and Data Presentation

- Experimental designs: independent groups, repeated measures, matched pairs – Inc. advantages and disadvantages of each experimental design
- Target populations, samples and sampling methods: random; opportunity; systematic; stratified Inc. advantages and limitations of each sampling method
- The use of standardised procedures, identification and control of extraneous variables, instructions to participants
- Random allocation, counterbalancing and randomisation
- Calculations: mean, mode, median, range and percentages
- Anomalous results and their possible effects
- Graphical representations e.g. bar charts
- Research in natural and experimental settings, including advantages and limitations of each.

### Ethical Considerations

- Candidates should demonstrate knowledge and understanding of: ethical issues in psychological research as outlined in the British Psychological Society guidelines and ways of dealing with each of these issues.

## **ART AND DESIGN GCSE PREPARATION**

Students are required to participate actively in their course of study, recognising and developing their own strengths in the subject and identifying and sustaining their own lines of enquiry. From the three initial areas of investigation(AO1 - 3), the student must produce a conclusion with the production of a final piece (AO4). All class work and homework is coursework.

The course, based on these specifications, requires students to develop practical and theoretical knowledge and understanding of:

- relevant materials, processes, technologies and resources
- how ideas, feelings and meanings can be conveyed and interpreted in images and artefacts
- how images and artefacts relate to the time and place in which they were made and to their social and cultural contexts
- continuity and change in different genres, styles and traditions
- a working vocabulary and specialist terminology.

Courses based on these specifications must require students to develop the skills to:

- record experiences and observations, in a variety of ways using drawing or other appropriate visual forms; undertake research; and gather, select and organise visual and other appropriate information
- explore relevant resources; analyse, discuss and evaluate images, objects and artefacts; and make and record independent judgements
- use knowledge and understanding of the work of others to develop and extend thinking and inform own work
- generate and explore potential lines of enquiry using appropriate media and techniques
- apply knowledge and understanding in making images and artefacts; review, modify AND improve work; annotation should show your evaluations
- organise, select and communicate own ideas based on artist and/or cultural research.

## TECHNOLOGY

Log on to AQA – Subjects – Design and Technology – GCSE – Click on the Design and Technology subject you are studying and it will take you to info/specification/past papers etc.

Revision website for GCSE Resistant Materials and GCSE Graphics is: [Technologystudent.com](http://Technologystudent.com)

## GCSE Graphic Products

### Key topics to revise

- Materials and components
- Sketching techniques
- Types and properties of paper, card and boards
- Thermoplastics
- Smart and modern techniques
- Key designers
- Process and manufacture
- Techniques and processes
- Presentation
- Pictorial drawings
- Working drawings
- Surface developments or nets
- Information drawings
- Paper engineering and bought in components
- Products and applications
- Evaluation techniques
- Moral, social, cultural, environmental, economic and sustainability issues
- Ict
- Health and safety
- Design and market influences
- Systems, control procedures and industrial practices
- Printing
- Print finishes
- Packaging
- Patents, copyrights, registered designs and trademarks

## GCSE Graphic Products

### Tips on answering questions

- Highlight key words in the question, then ANSWER the QUESTION!
- Provide evidence to support points.
- Answer the questions with facts and the correct terminology.
- Make your point first then explain it using evidence to support your idea.

- Always give an example.
- Monitor time spent on lower mark questions.
- Use colour, add notes to drawings and sizes in mm.
- Proof read your answers carefully. Fill ALL the lines up.
- Write clearly. You don't need to rush or waffle

## GCSE Resistant Materials

### Key topics to revise

- Materials – metals, wood, plastics, composites and smart materials
- Components, adhesives and applied finishes
- Design and market influences
- Inspiration and innovation
- How to be creative
- Design influences
- Sustainability
- The client, designer and manufacturer
- Presenting ideas
- Processes and manufacture
- Health and safety
- Tools and equipment
- Techniques and processes
- Systems and control

## GCSE Resistant Materials

### Tips on answering questions

- Highlight key words in the question, then ANSWER the QUESTION!
- Provide evidence to support points.
- Answer the questions with facts and the correct terminology.
- Make your point first then explain it using evidence to support your idea.
- Always give an example.
- Monitor time spent on lower mark questions.
- Use colour, add notes to drawings and sizes in mm.
- Proof read your answers carefully. Fill ALL the lines up.
- Write clearly. You don't need to rush or waffle

# TECHNOLOGY

## GCSE Textiles Technology

### Key topics to revise

- Materials and components
- Fibres and fabrics
- Fabrics – properties and characteristics
- Fabric blends and mixtures
- Modern and smart fabrics
- Fabric combinations
- Dyeing fabric
- Fabric printing
- Fabric embellishment
- Fabric finishes
- Fabric care
- Components
- CAD/CAM
- Product Analysis
- Ambience and harmony
- Development and evaluation
- Quality assurance and control
- Target market
- Peoples choices
- Consumer rights
- Health and safety issues
- Risk assessment
- Domestic equipment
- Industrial equipment
- Different types of production
- More production processes
- Systems and control
- Setting up your own system
- Batch/mass production
- Use of ICT in your work
- Use of ICT in Industry
- 

## GCSE Textiles Technology

### Tips on answering questions

- Highlight key words in the question, then ANSWER the QUESTION!
- Provide evidence to support points.
- Answer the questions with facts and the correct terminology.
- Make your point first then explain it using evidence to support your idea.
- Always give an example.
- Monitor time spent on lower mark questions.
- Use colour, add notes to drawings and sizes
- Proof read your answers carefully. Fill ALL

the lines up.

- Write clearly. You don't need to rush or waffle

1. Engineering sectors and products

- Aerospace
- Automotive
- Communications
- Electrical/electronic
- Mechanical
- Biomedical
- Chemical

2. Processes including health and safety issues, characteristics, applications and advantages/disadvantages of the following engineering processes:

- Machining - turning, milling, drilling
- Forming - casting, forging
- Fabrication - welding, metal shearing
- Electrical/electronic - PCB manufacture, surface mount technology

3. Characteristics and advantages/disadvantages of the following scales of production used in engineering manufacture:

- One off/jobbing production
- Batch production
- Mass production
- Continuous production

4. Applications and advantages/disadvantages of the following modern production methods for production/assembly lines:

- Robots
- Computer Numerically Controlled Machinery (CNC)

5. Applications, characteristics, properties and advantages/disadvantages of the following modern and smart materials used in engineering:

- Modern composite materials - glass reinforced plastic (GRP), carbon fibre, Kevlar®
- Modern high-performance materials - tungsten, titanium, superalloys (nickel based, cobalt based), ceramics (boron carbide, cubic boron nitride, zirconia)
- Smart materials - shape memory alloys (SMAs), shape memory polymers, electrochromic, piezoelectric actuators and transducers

6. Applications, characteristics, properties and advantages/disadvantages of METALLIC FOAMS as used in the automotive, biomedical and aerospace sectors e.g. aluminium, steel.

7. Process, applications, characteristics and advantages/disadvantages of POWDER METALLURGY: powder mixing/blending, pressing/compacting, sintering

8. Applications, characteristics and advantages/disadvantages of the following new technologies used in engineering sectors:
  - Optical fibres as used in the communications sector
  - Hydrogen fuel cells, surface nanotechnology and telematics as used in the automotive sector
  - Blended wing bodies as used in the aerospace sector
  - Bionics as used in the biomedical sector
  
9. Characteristics, applications and advantages/disadvantages of Life Cycle Assessment (LCA) at the following stages for engineered products:
  - Raw materials extraction
  - Material production
  - Production of parts
  - Assembly
  - Use
  - Disposal/recycling
  
10. Characteristics, applications and advantages/disadvantages of minimising waste production throughout the life cycle of engineered products, using the four Rs:
  - Reduce materials and energy
  - Reuse materials and products where applicable
  - Recover energy from waste
  - Recycle materials and products or use recycled materials
  
11. Characteristics, applications and advantages/disadvantages of minimising waste at the production stage in engineering, using the following lean manufacturing techniques:
  - Just-In-Time (JIT)
  - Kaizen
  - Poka-yoke
  
12. Processes, characteristics, applications and advantages/disadvantages of using the following renewable sources of energy in engineering:
  - Wind energy using turbines and wind farms
  - Solar energy using photovoltaic cells and solar water heaters
  - Hydro energy using dams, barrages and wave power
  - Geothermal energy using heat pumps and exchangers

## PHYSICAL EDUCATION (PE)

Yr 10 work	Revision topics	<b>TIPS ON HOW TO ANSWER QUESTIONS</b>
1	Skeletal system (long term effects, types of movement at a joint, injuries and importance of diet).	Check how many marks the question is worth.
2	Muscular system (immediate and long term effects of exercise, lifestyle and PED's, isometric and isotonic, antagonistic pairs, names of muscle groups).	What is the question asking you to do?
3	Respiratory System ( immediate and long term effects of exercise, tidal volume, vital capacity).	Use the technical language already used in the question to help you.
4	Cardiovascular system (immediate and long term effects of exercise, blood pressure, lifestyle influences).	If the question mentions a sport or activity, always relate your answer to that activity.
5	Physical activity and your healthy mind and body. (body types, optimum weights, PED's, risk assessment and injury prevention).	Make notes of any acronyms associated with question e.g. skill related fitness - ABCPRS).
Yr 11 work		
6	Benefits of a healthy active lifestyle.	
7	Influences on your healthy, active lifestyle.(sports participation pyramid, participation programs).	Answer multiple choice questions first (warm up), then the extended questions (6marks) then the short answer questions last.
8	Exercise and fitness as part of an active, healthy lifestyle. (health related exercise, skill related fitness).	Always RTQ (read the question) and NLB (never leave blanks).
9	Physical activity as part of your healthy, active lifestyle.( fitness testing, principles of training, goal setting, methods of training, comparing and analysing training sessions).	
10	Your personal health and well being. (linking diet, exercise, rest, drugs)	
11	How to answer 6 mark extended questions	Read over all your answers when you have finished.
12	How to relate all answers to questions / use of my_pe_exam	

# PHYSICAL EDUCATION (PE)

## Personal Learning Check

Target Grade:

Fine Levelled, Professionally Predicted Grade:

1.1.1 Healthy, active lifestyles and how they could benefit you	Explain what constitutes a healthy, active lifestyle
	Classify the benefits of a healthy, active lifestyle as social, physical or mental
	Describe the positive effects of physical activity
	Explain how participation in physical activity can stimulate co-operation, competition, physical challenge, aesthetic appreciation and social mixing
1.1.2 Influences on your healthy active lifestyle	Identify key influences on you and others in achieving sustained involvement in physical activity
	Explain the opportunities available and qualities needed to become or remain involved in physical activity in a range of roles
	Explain the sports participation pyramid with regard to the foundation, participation, performance and elite stages
	Describe initiatives developed to provide opportunities to become, or remain, involved in physical activity
1.1.3 Exercise and fitness as part of your healthy, active lifestyle	Explain the terms health, fitness and exercise and know how they relate to a balanced healthy lifestyle and performance in physical activities
	Know about the components of health-related exercise and relate these to physical activity, identifying the relative importance of these to different physical activities
	Know about the components of skill-related fitness and relate these to physical activity, identifying the relative importance of these to different physical activities
1.1.4 Physical activity as part of your healthy, active lifestyle	Assess personal readiness (PAR-Q)
	Assess fitness levels for use in a Personal Exercise Programme
	Describe, explain and apply the principles of progressive overload; specificity; individual differences/needs; rest and recovery
	Explain the components of the FITT principle, noting overlap with other principles of training and how application can lead to improved performance
	Explain the term 'reversibility', why it might occur and its impact on performance
	Explain the value of goal setting in terms of planning, developing and maintaining regular involvement in healthy physical activity
	Describe, explain and apply the principles of setting SMART targets
	Describe a range of methods of training and explain how these can bring about improved health and fitness, and their relationships with the components of fitness
	Link methods of training to specific physical activities based on the associated health-related exercise and skill-related fitness requirements
	Plan and present examples from typical training sessions to match the fitness requirements of selected physical activities or individuals
	Understand the exercise session and the purpose of each component
	Explain the use of the principles of training within a training programme, showing how they may be applied in planning to improve health and skill-related fitness as part of a healthy lifestyle
	Link methods of training to aerobic and anaerobic activity
	Understand what is meant by resting heart rate, working heart rate and recovery rates, plot examples on a graph and evaluate results
Use graphs to demonstrate and explain the use of target zones and training thresholds	
1.1.5 Your personal health and wellbeing	Understand the link between exercise diet, work and rest and their influence on personal health and wellbeing
	Explain the requirements of a balanced diet
	Explain the importance and uses of macro and micro nutrients, carbohydrates, proteins, fats, vitamins, minerals, water and fibre in maintaining a healthy active lifestyle
	Explain the need to consider the timing of dietary intake when performing due to the redistribution of blood flow during exercise

# PHYSICAL EDUCATION (PE)

1.2.1 Physical activity and your healthy mind and body	Describe the different body types and explain the effect of each on participation and performance
	Outline why and how expected and optimum weight varies according to height, gender, bone structure and muscle girth; explain how this may affect participation and performance in physical activity
	Explain the terms anorexic, obese, overfat, overweight, underweight; explain how they may impact on achieving a sustained involvement in physical activity
	Explain the effects of smoking and alcohol on general health and on physical activity
	Know about different categories of drugs and the effects they may have on health, wellbeing and physical performance and why some performers might risk using them
	Identify risks associated with participation physical activities, and explain how to reduce these risks to better maintain wellbeing
1.2.2 A healthy, active lifestyle and your cardiovascular system	Understand the immediate and short-term effects of exercise and physical activity on the cardiovascular system
	Understand the long-term effects of regular exercise and physical activity on the cardiovascular system
	Understand the impact of rest on the cardiovascular system
	Understand the impact of diet on the cardiovascular system
	Understand the impact of recreational drugs on the cardiovascular system
1.2.3 A healthy, active lifestyle and your respiratory system	Understand the immediate and short-term effects on the respiratory system of participation in exercise and physical activity
	Understand the long-term effects of regular exercise and physical activity on the respiratory system
	Understand the impact of recreational drugs on the respiratory system
1.2.4 A healthy, active lifestyle and your muscular system	Understand the role of the muscular system during physical activity and how the major muscle groups benefit from particular types of physical activity
	Understand the role of muscles in movement
	Understand the immediate and short-term effects on the muscular system of participation in exercise and physical activity
	Understand the long-term effects of regular exercise and physical activity on the muscular system
	Understand the potential for muscle injuries through exercise and physical activity and know common techniques for treatment
	Understand the impact of rest on the muscular system
	Understand the impact of diet on the muscular system
	Understand the impact of performance enhancing drugs on the muscular system
1.2.5 A healthy, active lifestyle and your skeletal system	Understand the function of the skeletal system for movement, support or protection during physical activity
	Understand the ranges of movement at joints during physical activity
	Understand the effects of regular exercise and physical activity on the skeletal system
	Understand the importance of weight-bearing exercise to prevent osteoporosis
	Understand the potential for skeletal injuries through exercise and physical activity and know common techniques for treatment
	Understand the impact of diet on the skeletal system

## GCSE Computer Science.

In January you will do your coursework; a set of programs written in Python. It is important that you revise your programming skills. Use Codecademy website to follow the Python course. For the programming section you will need to know :

### Topic 2: Programming

<b>2.1 Develop code</b>
2.1.1 Be able to write programs in a high-level programming language
2.1.2 Understand the benefit of producing programs that are easy to read, and be able to use techniques [comments, descriptive variable names, indentation] to improve readability and to explain how the code works
2.1.3 Be able to differentiate between types of error in programs [logic,syntax, runtime]
2.1.4 Be able to design and use test plans and test data
2.1.5 Be able to interpret error messages and identify, locate and fix errors in a program
2.1.6 Be able to identify what value a variable will hold at a given point in a program [trace table]
2.1.7 Be able to make effective use of tools offered in an integrated development environment [watcher, break points, single-step, stepthroughs]
2.1.8 Be able to evaluate the strengths and weaknesses of a program and suggest improvements
2.1.9 Be able to work safely, respectfully, responsibly and securely when using computers
2.2.1 Be able to identify the structural components of a program [variable and type declarations, initialisations, command sequences, conditionals, repetition, data structures, subprograms]
<b>2.2 Constructs</b>
2.2.2 Be able to use sequencing, selection and repetition constructs in their programs
2.3.1 Understand the need for and be able to select and use data types [integer, real, Boolean, char]
2.3.2 Understand the need for and be able to select and use data structures [one-dimensional arrays, two-dimensional arrays]
2.3.3 Understand the need for and be able to manipulate strings
2.3.4 Understand the need for and be able to use variables and constants
<b>2.3 Data types and structures</b>
2.3.5 Understand the need for and be able to use global and local variables
<b>2.4 Input/output</b>
2.4.1 Be able to write code that accepts and responds appropriately to user input
2.4.2 Understand the need for and be able to implement validation
2.4.3 Be able to write code that outputs information to a screen and understand and use Cartesian x/y coordinates
2.4.4 Be able to design and code a user interface [textual, graphical]
2.4.5 Be able to write code that opens/closes, reads/writes, deletes, inserts, appends from/to a file
<b>2.5 Operators</b>

2.5.1 Understand the purpose of and be able to use arithmetic operators [plus, minus, divide, multiply, modulus, integer division]
2.5.2 Understand the purpose of and be able to use relational operators [equal to, less than, greater than, not equal to, less than or equal to, greater than or equal to]
2.5.3 Understand the purpose of and be able to use Boolean operators [AND, OR, NOT]
2.6.1 Understand the benefits of using subprograms and be able to write code that uses user-written and pre-existing [built-in, library] subprograms
2.6.2 Understand the concept of passing data into and out of subprograms [procedures, functions, return values]
<b>2.6 Subprograms</b>
2.6.3 Be able to create subprograms that perform generalisation

**The exam at the end of Year 11 will cover some of the techniques you have learned for the programming exercise. It will cover the following too. We will be completing exam style questions in the lead up to the exam and I will issue you with the course text book to help your revision.**

### **Topic 1: Problem solving**

<b>1.1 Algorithms</b>
1.1.1 Understand what an algorithm is, what algorithms are used for and be able to interpret algorithms [flowcharts, pseudocode, structured English, written descriptions, program code]
1.1.2 Be able to create an algorithm to solve a particular problem, making use of programming constructs [sequence, selection, repetition] and using an appropriate notation [flowchart, written description, program code]
1.1.3 Be able to describe the purpose of a given algorithm and explain how a simple algorithm works
1.1.4 Be able to identify the correct output of an algorithm for a given set of data
1.1.5 Be able to identify and correct errors in algorithms
1.1.6 Be able to code an algorithm into a high-level language
1.1.7 Understand how the choice of algorithm is influenced by the data structure and data values that need to be manipulated
1.1.8 Understand how standard algorithms [quick sort, bubble sort, selection sort, linear search, binary search, breadth first search, depth first search, maximum/minimum, mean, count] work
1.1.9 Understand factors that affect the efficiency of an algorithm
<b>1.2 Decomposition</b>
1.2.1 Be able to analyse a problem, investigate requirements [inputs, outputs, processing, initialisation] and design solutions
1.2.2 Be able to decompose a problem into smaller sub-problems

## Topic 3: Data

<b>3.1 Binary</b>
3.1.1 Understand that computers use binary to represent data and instructions
3.1.2 Understand how computers represent and manipulate numbers [unsigned integers, signed integers (sign and magnitude, Two's complement) real numbers]
3.1.3 Be able to convert between binary and denary whole numbers (0- 255) and vice versa
3.1.4 Be able to perform binary arithmetic [add, subtract, multiply] and understand the concept of overflow
3.1.5 Understand why hexadecimal notation is used and be able to convert between hexadecimal and binary and vice versa
3.2.1 Understand how computers encode characters [ASCII, Unicode]
3.2.2 Understand how bitmap images are represented in binary [pixels, resolution, colour depth]
3.2.3 Understand how analogue data [sound, temperature, light intensity] is represented in binary
<b>3.2 Data representation</b>
3.2.4 Understand the limitations of binary representation of data [quantisation, sampling frequency] and how bit length constrains the range of values that can be represented
<b>3.3 Data storage and Compression</b>
3.3.1 Understand and be able to convert between the terms 'bit, nibble, byte, kilobyte (KB), megabyte (MB), gigabyte (GB), terabyte (TB)'
3.3.2 Understand the need for data compression and methods of compressing data [lossless, lossy] and that JPEG and MP3 are examples of lossy algorithms
3.3.3 Understand how a lossless, run-length encoding [RLE] algorithm works
3.3.4 Understand that file storage is measured in bytes and that data transmission is measured in bits per seconds, and be able to calculate the time required to transmit a file and storage requirements for files
<b>3.4 Encryption</b>
3.4.1 Understand the need for data encryption
3.4.2 Understand how a Caesar cipher algorithm works
3.5.1 Understand the characteristics of structured and unstructured data
3.5.2 Understand that data can be decomposed and organised in a structured database [tables, records, fields, relationships, keys]
<b>3.5 Databases</b>
3.5.3 Understand the need for and be able to use SQL statements

## Topic 4: Computers

<b>4.1 Machines and computational models</b>
4.1.1 Understand the concept of a computer as a hardware machine or as a virtual machine
4.1.2 Understand that there is a range of computational models [sequential, parallel, multi-agent]
4.1.3 Understand the input-process-output model
<b>4.2 Hardware</b>

4.2.1 Understand the function of hardware components of a computer system [processor (CPU), memory, secondary storage, input devices, output devices] and how they work together
4.2.2 Understand the concept of a stored program and the role of components of the processor [control unit (CU), arithmetic/logic unit (ALU), registers, clock, address bus, data bus] in the fetch-decode execute cycle
4.2.3 Understand the function of assembly code and be able to interpret a block of assembly code using a given set of commands
4.2.4 Understand how data is stored on physical devices [magnetic,optical, solid state]
4.2.5 Understand how microcontrollers can be programmed to control actuators and take input from sensors
<b>4.3 Logic</b>
4.3.1 Be able to construct truth tables for a given logic statement [AND,OR, NOT]
4.3.2 Be able to produce logic statements for a given problem
<b>4.4 Software</b>
4.4.1 Understand what an operating system is and the functions of an operating system [file management, input/output, resource allocation, process management, network management, user management]
4.4.2 Understand that application software such as a web browser, word processor, spreadsheet or apps are computer programs
4.4.3 Understand how software can be used to simulate and model aspects of the real world and be able to create software models
<b>4.5 Programming languages</b>
4.5.1 Understand what is meant by high-level and low-level programming languages and assess their suitability for a particular task
4.5.2 Understand what is meant by a compiler and an interpreter

## Topic 5: Communication and the internet

<b>5.1 Networks</b>
5.1.1 Understand why computers are connected in a network
5.1.2 Understand the different types of networks [LAN, WAN, PAN,VPN]
5.1.3 Understand the network media [copper cable, fibre optic cable, wireless]
5.1.4 Understand that network data speeds are measured in bits per second [Mbps, Gbps]
5.1.5 Understand the role of and need for network protocols
5.1.6 Understand that data can be transmitted over networks using packets [TCP/IP]
5.1.7 Understand the need to detect and correct errors in data transmission [check sums]
5.1.8 Understand the concept of and need for network addressing and host names [MAC addresses]
5.1.9 Understand characteristics of network topologies [bus, ring, star,mesh]
<b>5.2 The internet and the world wide web</b>
5.2.1 Understand what is meant by the internet and how the internet is structured [IP addressing, routers, connecting backbone, domain names]
5.2.2 Understand what is meant by the world wide web (WWW) and components of the WWW [web server URLs, ISP, HTTP, HTTPS, HTML]

5.2.3 Be able to use HTML and CSS to construct web pages [formatting, links, images, media, layout, styles, lists]

5.2.4 Understand the client-server model, the difference between client-side and server-side processing and the role of cookies

## **Topic 6: The bigger picture**

### **6.1 Emerging trends, issues and impact**

6.1.1 Be aware of current and emerging trends in computing technology [quantum computing, DNA computing, artificial intelligence (AI), nano technology]

6.1.2 Be aware of the impact of computing on individuals, society and the environment

6.1.3 Be aware of ethical and legal issues arising from the use of computers

6.1.4 Be aware of ownership issues relating to computing [intellectual property, patents, licensing, open source and proprietary software]

## HISTORY

### Personalised Learning Checklist (PLC)

Question	Yes	No
What is the message of the cartoon (June 2010)		
Explain why the USA was hostile towards the Soviet Union in the Years 1945-49.		
Describe the USAs response to Castro's seizure of power in Cuba.		
Explain why the Bay of Pigs invasion caused problems for the USA.		
"The Cuban missile crisis was a victory for the Soviet Union"		
What was the domino theory?		
Explain why the Vietnam war became unpopular in the USA.		
"The tactics of the USA were the main reason for its failure in the Vietnam war?"		
Explain why Kennedy could claim victory in the Cuban missile crisis.		
What was decided at the Yalta conference in February 1945?		
Explain why there was a breakdown in relations between the USSR and the west from 1945-46.		
What involvement did America have in Vietnam between 1954 and 1962?		
Explain why the Communists used guerrilla tactics in the Vietnam war.		
"The main reason for American withdrawal from Vietnam was the Tet offensive of 1968."		
Why was this source produced in America in the 1920s?		
How far does this source explain why there was an economic boom in the 1920s?		
Describe the American cinema and movie industry in the 1920s.		
Explain why the lifestyle of some women changed in the 1920s.		
What actions did Roosevelt take in his first hundred days in office?		
Explain why some people opposed the New Deal.		
"The New Deal was a success"		

# Advice for Parents

Year 11 is very demanding years so here are some tips for you as parents to help:

- Please make sure you daughter/son attends school and is punctual to all lessons. There is a clear link between attendance at lessons and examination success.
- All Year 10 and Year 11 students should be studying most nights of the week. This might be completing homework, revising for tests, completing coursework preparation or many other tasks
- Draw up a study timetable, building in free time
- Get the balance between school work and social life right. Flexibility is really important. If home study is missed because of an outside event, the work missed needs to be completed as soon as possible
- Rewards are good! We all respond to incentives in work so students are no different. These can be anything you think might work but again, get the balance right. The reward must be linked to the scale of the achievement.
- If you are worried about your child becoming stressed about school work, ask them to talk to you, their teachers, Head of year or another trusted adult.

## KNOWING THE STUDY SKILLS THAT YOUR CHILD REQUIRES TO ACHIEVE EXAM SUCCESS

In addition to the inspiration and support that you can help to provide for your child, it is important to recognise that the bread and butter of exam success centres on your child's capacity to revise a wide range of subject areas. It is therefore worth trying to improve your knowledge and understanding of the study skills that they will need to practice and apply when studying and revising for his exam.

Here are some key concepts and techniques underpinning three core study skills:

- time management;
- note-taking; and
- group-study.

## Time Management

One of the main reasons why many young people fail to achieve a good set of grades relates less to their lack of ability or ambition and more to the fact that they seriously underestimate the amounts of time that they need to set aside for revision. Many students now take 10 or more exams and are therefore required to revise over 200 topics. On the basis of 1 hour of revision per topic, this means that your child may need to complete a total of over 200 hours of revision. Assuming that they revise for 1-2 hours a day, they will therefore need to start revising at least 3-6 months before their first exam.

A few secrets of effective time management:

- Like money, time is a limited resource that should ideally be distributed according to what we value and therefore according to our values. If your child values his exam grades then he needs to ensure that, at times, his revision takes priority over other interests and activities.
- Due to the fact that our lives tend to be structured around our routines, one of the most direct and effective ways that your child can release more time for revision is by changing his daily routine. For example, at weekends he could get-up an hour earlier so that he can use this 'extra' time for revision.
- In order to provide a clear revision plan and reduce stress levels, it is helpful for your child to create a revision timetable that clarifies what, on any given day, he needs to revise and for how long.

### Note-taking

Students need to find ways of taking notes that require them to analyse and actively think about topics that they are revising. There are very few hard and fast rules about effective note-taking. The key is to encourage your child to develop a repertoire of note-taking techniques through experimenting with the different options available. Some general principles for your child to bear in mind when taking revision notes:

- There is no need for students to take notes by using sentences. Encourage the use of key words from the text that they are studying and to enhance revision notes by recording information as symbols (e.g. a crown to represent the king or a mask to represent the theatre etc) and by using several colours (highlighter-pens and a pack of good quality fine-point coloured pens come-in very handy here)
- Encourage the taking of revision notes on plain paper and to experiment with different ways of organising information on the page. For example, if in a particular topic there are eight key points that need to be remembered and understood then they could: draw a large circle on the page; divide-up this circle into eight parts; and then write in each of the eight parts of the circle key words or symbols that remind them of each of the eight points that they are trying to revise.

### Group-Study

People tend to associate revision with stark images of pale-faced students sitting silently at desks in giant libraries surrounded by stacks of books. In reality, some of the most effective approaches to revising are centred on providing students with opportunities to interact and, in particular, to talk about the topics that they are learn-

ing. To this extent, your child's capacity to prepare for his exams partly depends on the extent to which he can manipulate and master various social spaces.

### Study support classes

Try to encourage your child to make use of study support lessons. Teachers are valuable resources during the run-up to exams and the most effective revisers take-up opportunities in class and study support classes to ask teachers questions about things that they have found it difficult to revise. If your child is shy or feels too intimidated to ask questions in class then you can always suggest that he quizzes his teachers before class begins, at the end of lessons or during breaks.

## Sociology

<http://www.educationforum.co.uk/>  
And any news websites: BBC, Guardian, Independent etc... Keep on top of current affairs.  
[http://www.educationforum.co.uk/sociology\\_2/onlinesochome.htm](http://www.educationforum.co.uk/sociology_2/onlinesochome.htm)  
<http://www.trinity.edu/~mkearl/>  
<http://www.sociologyonline.co.uk/>  
[http://www.educationforum.co.uk/sociology\\_2/a1a2.htm](http://www.educationforum.co.uk/sociology_2/a1a2.htm)  
<http://www.sociology.org.uk/>  
<http://www.s-cool.co.uk/a-level/sociology>

## Health and Social

<http://www.nhs.uk/Pages/HomePage.aspx>  
Current affairs websites,  
BBC News  
The Guardian  
[www.nhs.uk](http://www.nhs.uk)  
[www.nhs.direct.nhs.uk](http://www.nhs.direct.nhs.uk)  
[www.nhscareers.nhs.uk](http://www.nhscareers.nhs.uk)  
[www.patient.co.uk](http://www.patient.co.uk)  
anatomy.TV  
British Standards online  
Evidence search- Health and social care  
IBSS- International Bibliography of the Social Sciences  
OT seeker  
Sociological abstracts  
[www.bbc.co.uk/health/health\\_over\\_50](http://www.bbc.co.uk/health/health_over_50)  
[www.bbc.co.uk/parenting](http://www.bbc.co.uk/parenting)  
[www.bbc.co.uk/health/healthy\\_living/your\\_weight](http://www.bbc.co.uk/health/healthy_living/your_weight)  
[www.educationforum.co.uk](http://www.educationforum.co.uk)  
<http://getrevising.co.uk>  
[www.bbc.co.uk/health](http://www.bbc.co.uk/health)

## Hospitality

[www.food.gov.uk](http://www.food.gov.uk)  
All PowerPoint and worksheets are on the common drive.  
Current affairs sites, including; news on the issues with the food industry

## Travel and Tourism

[www.bized.co.uk](http://www.bized.co.uk)  
<http://www.lonelyplanet.com/?lpaffil=lp-affiliates>

## Public Services

<https://www.gov.uk/public-services-network>

## Criminology and Law.

<http://britsoccrim.org/new/index.php>  
Her Majesty's court and tribunal service  
National offenders management service (NOMS)  
Gloucestershire's constabulary  
National Public improvement Agency (NPIA)

## UK National Statistics: Crime and Justice

Ministry of Justice  
Crown Prosecution Service (CPS)  
Youth Justice Board for England and Wales  
Welsh Assembly Government publication catalogue  
Public Bodies: Equality and Human Right commission  
The Home Office: Equalities/research and statistics  
Serious fraud office  
BUBL: Criminology  
INTUTE: centre for crime and justice (CCJS)  
Home Office  
The American Society of Criminology  
The British Society of Criminology  
Forensic Science society

## Engineering

<http://www.engineerstudent.co.uk/>

## General sites

[www.s-cool.co.uk](http://www.s-cool.co.uk)  
[www.bbc.co.uk/education](http://www.bbc.co.uk/education)  
[www.revisionaid.co.uk](http://www.revisionaid.co.uk)  
[www.biology-online.org](http://www.biology-online.org)  
[www.englishresources.co.uk](http://www.englishresources.co.uk)  
[www.revisionworld.com](http://www.revisionworld.com)  
<http://orwelldiaries.wordpress.com/>  
<http://www.howstuffworks.com/>  
<http://www.nationalgeographic.com/>  
<http://www.si.edu/encyclopedia>  
<http://academicearth.org/>  
<http://mentalfloss.com/>  
<http://www.thestudentroom.co.uk/>  
<http://www.youtube.com/user/HayLevels>

## IPhone Apps

S-cool exam secrets, Memory secrets, Avoid exam slip ups, Win over the examiner, Get in the zone, Beat stress  
The Chemical Touch, Essentials by Accelastudy, Evernote Peek, Frog dissection, Graphing Calculator, Maths Formulas, Shakespeare, Studious, World Atlas, Android

## Apps

S-cool, exam secrets, Memory secrets

# Useful websites

## Games Design

[www.vgcharts.com](http://www.vgcharts.com)  
<http://www.thegamecreators.com>  
<http://www.gamespot.com>  
<http://www.rpgmakerweb.com>  
[www.youtube.com](http://www.youtube.com) (tutorials in designing a game)

## Sciences

[www.antonine-education.co.uk](http://www.antonine-education.co.uk) (Physics)  
Kerboodle (Biology)  
<http://www.a-levelchemistry.co.uk/> (Chemistry)  
Every student has an exam question booklet and they can find mark schemes at AQA Chemistry website.  
<http://www.youtube.com/user/richthornley>  
<http://www.a-levelchemistry.co.uk> (OCR Chemistry)  
[www.mrothery.co.uk](http://www.mrothery.co.uk) Biology site  
[www.chemguide.co.uk](http://www.chemguide.co.uk)  
[www.biology4all.com](http://www.biology4all.com)

## Technology

[www.technologystudent.com](http://www.technologystudent.com)

## Geography

BBC News / Guardian News

## English Literature

<http://www.sparknotes.com/>  
<http://www.shmoop.com/>

## Maths

<http://www.mymaths.co.uk/>  
<http://www.mathswatch.co.uk/>  
<https://www.mangahigh.com/en-gb/>  
most pupils have logins- but as year progresses, all will have them  
<http://www.sumdog.com/>  
Mr Howarth can provide logins – Ideal for lower abilities.  
<http://www.mathsrevision.net/alevel/> (A Level Maths)  
<http://www.revisionworld.com/quick-revise/5025>  
- This is a great site for GCSE and A level.

## Art and design

[@cowley\\_art](http://www.pinterest.com/cowleyart) (Twitter)  
Tate – modern, Britain, Liverpool and St. Ives  
National Gallery  
National Portrait Gallery  
Royal Academy of Arts  
Walker

## PE

<https://www.youtube.com/channel/UCtQWDngwhYgmMjKyzZy2dUQ/playlists>

## Leisure and sport

[www.bized.co.uk](http://www.bized.co.uk)

## Spanish AS & A2

[www.languagesonline.org.uk](http://www.languagesonline.org.uk) - good for grammar  
RTVE - Listen to the news in Spanish  
Yahoo News - Listen to the news in Spanish  
Kerboodle.com – for interactive activities  
Elmedioambiente – this terms topic- the environment (Autumn 2014)

## French

French Newspapers  
<https://www.liberation.fr/>  
<https://lemonde.fr/>  
<https://www.leparisien.fr/>  
French magazines  
<https://www.telerama.fr/>  
<https://www.lle.fr/>  
<https://www.lexpress.fr/>  
<https://www.letudiant.fr/>  
<https://lequipe.fr/>  
To work on grammar use  
<https://mdlsoft.co.uk/freeTMhome.htm>  
[www.quizlet.com](http://www.quizlet.com)

## History

[spartacus.co.uk](http://spartacus.co.uk) [historynet.co.uk](http://historynet.co.uk)

## Business Studies –

[www.bized.co.uk](http://www.bized.co.uk)

## Psychology

[psychotron.co.uk](http://psychotron.co.uk)  
[psychxchange.co.uk](http://psychxchange.co.uk)  
[simplypsychology.co.uk](http://simplypsychology.co.uk)

## History

[spartacus.co.uk](http://spartacus.co.uk)  
[historynet.co.uk](http://historynet.co.uk)

## Childcare

NHS Choices,  
EYFS websites  
You tube videos on related topics.  
We also have lots of Super nanny and Panorama videos stored on Estream for students to watch if they need extra information.