



**Ysgol Uwchradd  
Prestatyn  
High School**



# **Strategies for Effective Revision**



## Why revise?

There's no mistaking it, exams can be a stressful time! However, if you are proactive and well prepared in your approach to revising for your exams, you will undoubtedly feel better.

Revising is challenging because you need to feel confident about your ability to work effectively on your own; you need to continually monitor your own learning and adapt your study strategies to ensure your own success.

## A helping hand

In recent years, we have learned more and more about how the science of learning can aid and enhance learning. What we now know is that not all revision strategies are equal. In fact, **some strategies are far more effective than others.**

This guide outlines **six of the most effective learning strategies** that will help you to be able to retain more information and, more importantly, recall that information when you need to.

Utilising these **six strategies** for effective studying during the crucial months and weeks leading up to your examinations will not only help to alleviate potential examination stress, but will also help to ensure that you are as prepared as you possibly can be.



## Retrieval practice

### What is it?

Retrieval practice involves bringing information to mind from memory. This happens when you take practice **tests or quizzes**, but it can be done in other ways too. The key to effective retrieval practice is that you try to recall and remember information on your own. So, for example, copying out your notes would not be very helpful, but trying to summarise your notes from your own memory would be very beneficial.

Put simply, retrieval practice is similar to activating prior knowledge. It is an effective revision strategy because it prompts you to actively remember material or information that you have previously learned as opposed to simply re-reading or highlighting it. Retrieval practice increases the likelihood of you being able to retrieve, or recall, the information when it is needed the most; during an exam.

Here are some easy-to-follow retrieval tips:

- Put away your class materials, and **write or sketch** everything you know about a question or topic. Be as thorough as possible. Then, check your class materials for accuracy and important points you missed.
- Take as many **practice tests** as you can get your hands on. If you don't have ready-made tests, try making your own and trading with a friend who has done the same.
- Retrieval practice works best when you go back to check your class materials for **accuracy afterward**.
- Retrieval is hard! If you're struggling, retrieve smaller chunks of material to begin with; identify the things you've missed from your class materials, and work your way up to recalling all necessary information on your own.

Remember, make sure you recall a range of information. You can recall vocabulary / key terms and definitions, but also the main ideas linked with your work, including **how** and **why** things are related or different from one another.



## What does retrieval practice look like?

### A-Z Retrieval Grid

A	B	C	D	E	F
G	H	Topic		I	J
K	L			M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z

### Retrieval Clocks

**The Great Depression**  
The Great Depression was the economic downturn throughout the 1930s caused by the Wall Street crash. It was characterized by mass unemployment and poverty.

### KEYWORD RETRIEVAL

**B** – *Bacillus* is a genus of Gram-positive, rod-shaped bacteria

**A** –

**C** –

**T** –

**E** –

**R** –

**I** –

**A** –

	1	2	3	4	5	6
1	Evolution	The darwin	The Great Depression	The Industrial	Inequality	Mr. Kipling
2	Genet	J.B. Priestley	Five	Monday in Legation	Social responsibility	The politician
3	Relics	Chaos and Effect	World War One and Two	East End	Miscellaneous	Stranger in other generation
4	Iron, Kipling	Love	Isolation	Sexual/Political/Poverty	Edna	Edwardian Britain
5	Madam's engagement ring	Class	Impact of World	Remorse	End's ability	Power
6	Guilt	Altruism/Morality	Conscience	The Titanic	Stella	Time

Think of as many words as possible relating to a topic, place them in a grid and then focus on explaining links between them

## 4 Methods of Retrieval Practice

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Before you start put away all your books & classroom materials.

### RETRIEVAL PRACTICE Examples

- Exit Tickets
- Starter quizzes
- Multiple choice quizzes
- Short answer tests
- Free write
- Think, pair, share
- Ranking & sorting
- Challenge grids

### BRAIN DUMP

Write, draw a picture, create a mind-map on everything you know about a topic.

Give yourself a time limit (say 3 minutes), then have a look at your books & add a few things you forgot.

### QUIZZING

Create practice questions on a topic. Swap your questions with a partner & answer.

Question - what is a metaphor?

- ☐ A comparison using 'like' or 'as'
- ☐ A comparison where one thing is another.
- ☐ A comparison with a human attribute.

### FLASHCARDS

Create your own flashcards, question on one side, answer on the other. Can you make links between the cards?

You need to repeat the Q&A process for flashcards you fail on more frequently & less frequently for those you answer correctly.

### KNOWLEDGE ORGANISERS

Complete a knowledge organiser template for key information about a topic.

You can use knowledge organisers to learn new words & make links to known subjects or ideas.

After you have retrieved as much as you can go back to your books & check what you've missed. Next time focus on that missing information

For more useful sketchnotes to aid learning, visit [www.impact.wales](http://www.impact.wales)

## Questioning and Elaborating

### What is it?

The term **elaboration** can be used to mean a lot of different things. However, when we are talking about studying using **questioning** and **elaborating**, it involves explaining and describing ideas with many details. Elaboration also involves making connections among ideas you are trying to learn and connecting the material to your own experiences, memories, and day-to-day life. The most effective thing you can do further develop your learning is to ask questions of what you have already learned and then try to find connections between new ideas and concepts.

So, for example, if you have already learned a lot of information about Adolf Hitler's Rise to Power instead of asking 'when did this happen?', ask yourself 'why did this happen?' You can do this on your own, in pairs, or even in a small group. The more information you have about a topic the better and the richer the conversation will be. Questioning and elaborating will help to deepen your knowledge by making you think harder, and this will also provide you with more detailed responses to your questions.

If you have learned a series of quotations from the text 'Of Mice and Men', for example, you could then ask yourself the following questions:

- **Why** does George and Lennie have to leave Weed?
- **What** does this reveal about the threats and challenges which might face George and Lennie when they resettle?
- **How** does this connect with what I already know about Lennie and George at other stages in the novel?

Asking **how** and **why** things work helps you connect new information with old information. So, make sure that the way you are explaining and describing an idea is accurate.





What does questioning and elaborating look like?

An example from History

*Imagine you're studying World War II, and specifically the attack on Pearl Harbor. **You could ask yourself: how did this attack happen?***

*On December 7, 1941, the Imperial Japanese Navy attacked the United States Naval Base at Pearl Harbor. The attack included Japanese fighter planes, bombers, and torpedo planes. **Why did this happen?***

*The Japanese intended to destroy the United States' Pacific Fleet so that it could not interfere with Japanese operations. **Here you could also ask another type of question: What was the result of this historic event?***

*Well, Japanese casualties were light, while they damaged eight U.S. Navy battleships. The Arizona was among those that the Japanese sunk, and was not raised from the shallow water. U.S. aircrafts were also destroyed, and 2,403 Americans were killed (1,178 were injured). **Why is this event important?***

*The day after the attack, Roosevelt delivered his Infamy Speech, the United States formally declared war on Japan, and Japanese-Americans were then relocated to internment camps. **You could then go on: how did the U.S. enter the war? How did the Pearl Harbor attack lead up to the release of the atomic bomb? How did the war end?***

*And so on.*

*There are so many ways to explain the idea and add details!*

## Switching Between Topics

### What is it?

The difference between cramming and spacing out your study is a keystone for effective revision and learning. Revisiting topics with a gap in between, which could be a day, week or month, has proven to give more successful outcomes than revising without a space or cramming. By breaking up your revision into **30 minute** chunks and spacing out the time between revision, you will consolidate what you have learned and retain the material much more effectively. Little and often is much more effective than all at once.

- Start planning **early** for exams, and set aside a little bit of time every day. Five hours spread out over two weeks is better than the same five hours all at once.
- After you review information from the most recent class, make sure you go **back** and study important older information to keep it fresh in your mind.
- You may forget some information from day to day, but this is actually a good thing! This forces you to retrieve information from memory, which will strengthen your ability to recall it.

Leaving gaps between study is very effective, but what if you are revising multiple topics within a subject? Interleaving means mixing it up or switching between your topics within the same subject area, so that you are not studying all of the same material at once.

By switching between topics or interleaving what you revise and when, you will remember that material far more effectively. This is due to the fact that you will have to revisit that material multiple times, with more gaps in between.

- During a revision session, go back over your material again, in different orders to strengthen your understanding.
- Don't study one idea for too long.
- Make links between different ideas as you switch between them.



## What does switching between topics look like?

### Spacing your learning

This example shows that by breaking up your revision into **30-minute chunks** and spacing out the time between revision, you will remember the information much more effectively.



### Switching between topics

This example shows that by switching between what you revise and when, you will remember the information more effectively. This is because you will be revisiting the information a number of times, with more gaps in between.







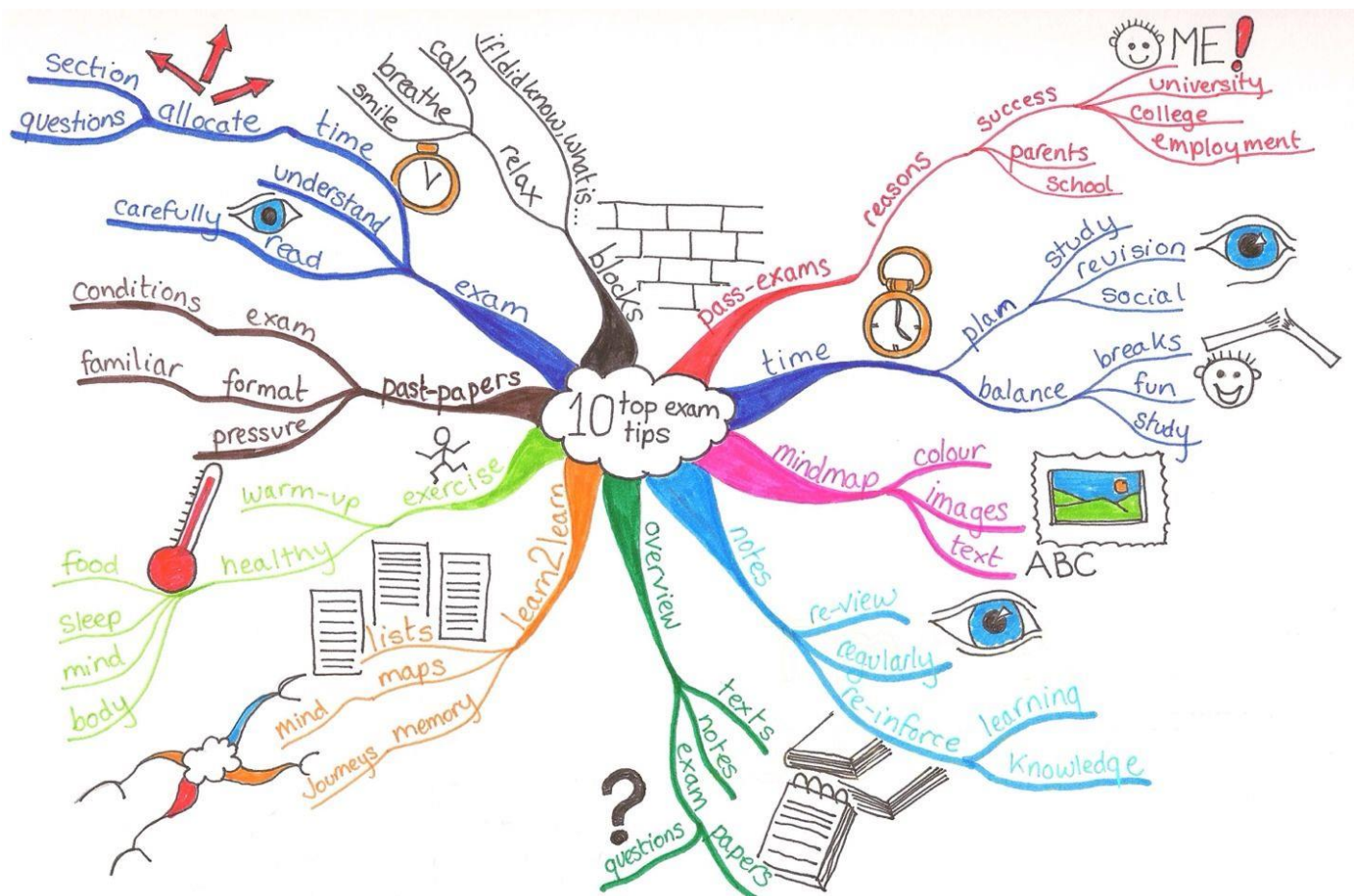
## Dual coding

Dual coding is all about combining verbal representations of information (**words**) with **visual** representations of information (pictures/diagrams).

We all learn best when we have multiple representations of the same idea, so, when you combine verbal and visual representations of information, it is likely that the information will be easier to understand. Crucially, when you have the same information in two formats - words and visuals - it also gives you two ways of remembering and recalling the information later on.

There are many ways to visually represent material, such as with infographics, timelines, cartoon strips, diagrams, charts, graphs, and graphic organisers. Combining these kinds of visuals with words is an effective way to study.

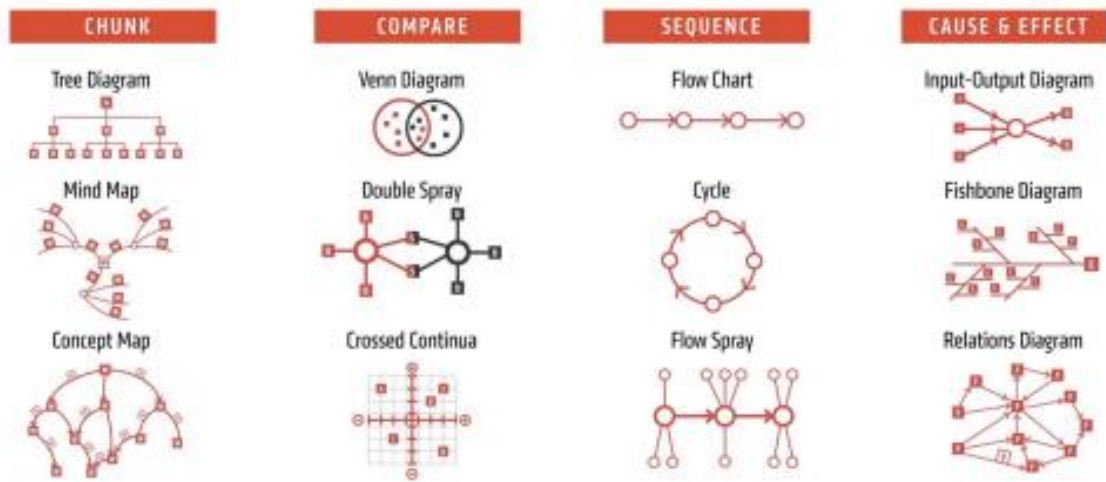
And, one more thing: please don't worry, your drawing / sketching skills do not need to be advanced when dual coding.



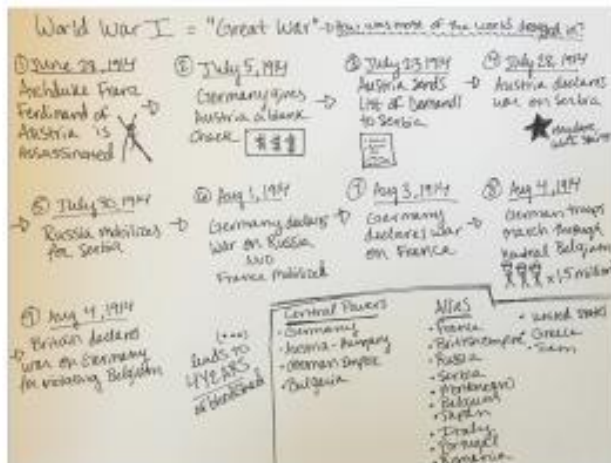


What does dual coding look like?

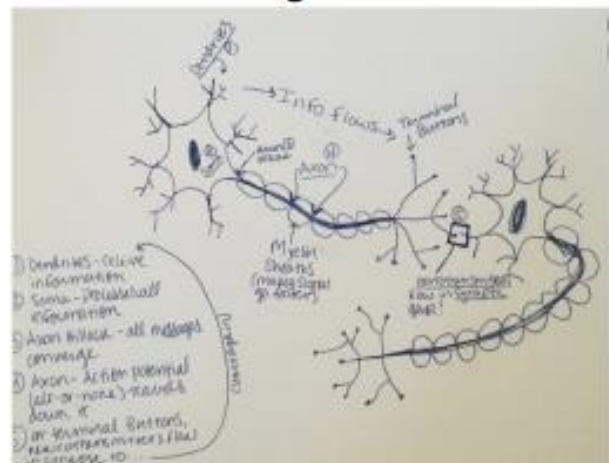
Graphic organisers - examples from <https://www.olicav.com>



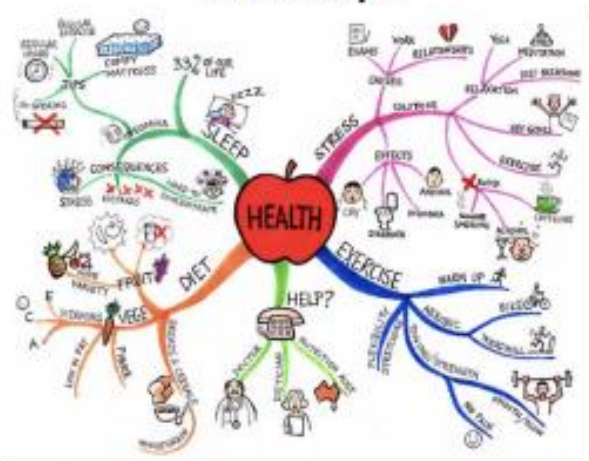
### Timelines



### Diagrams



### Mind-maps



### Comic Strips





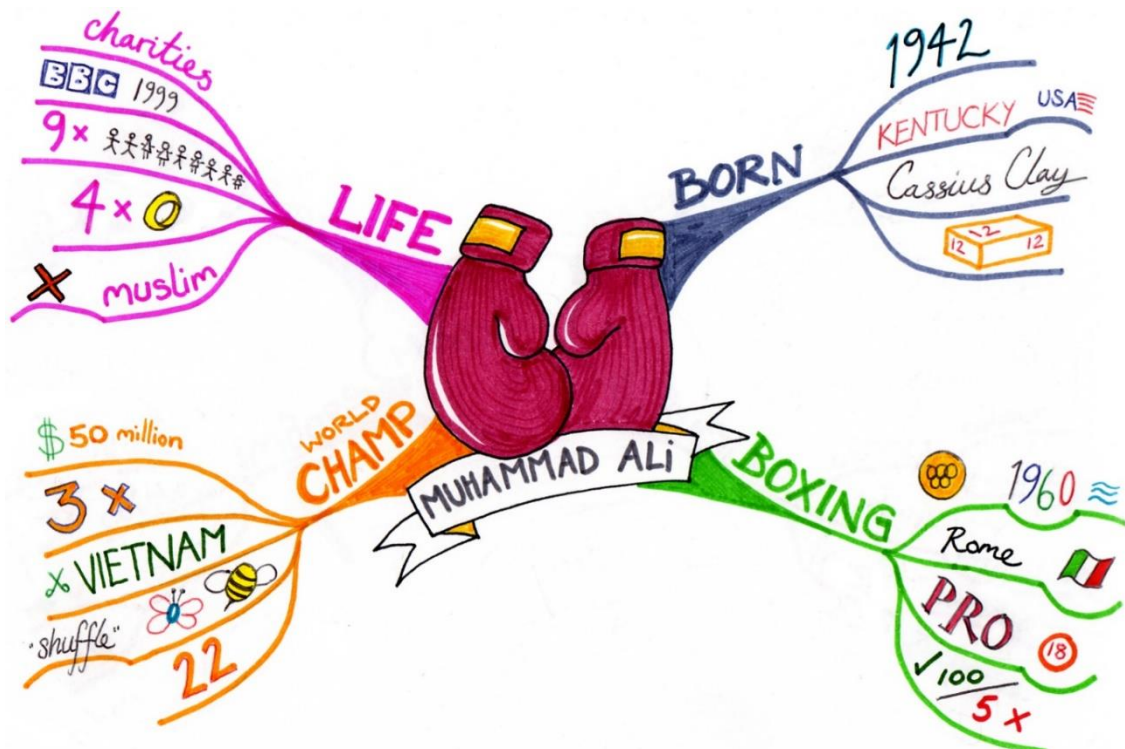
## Mind-map

**As you can see from the example below, highlight key parts of the text and produce a mid-map summarizing the key points.**

Muhammad Ali, arguably the greatest boxer in the history of the sport. He was born in 1942 in Louisville, Kentucky in the US. He was named after his father, Cassius Clay Sr, who was named after the 19<sup>th</sup> century abolitionist politician Cassius Clay. He changed his name to Muhammad Ali in 1964. He became a boxer at the age of 12. As an amateur boxer he won many titles culminating in the Light Heavyweight gold medal in the 1960 Olympics in Rome. When Ali returned home he was so proud he wore his medal wherever he went. After a week he went to a café to order a drink. The waiter said, "I'm sorry we don't serve coloured people". Ali was so cross by this he threw his medal into a river. He turned professional at the age of 18. Ali's record was 100 wins, 5 losses; an impressive record.

Ali became World Champion at the age of 22. Ali was famous for his unorthodox fighting style. Ali brought strategy and tactics into the boxing ring. With his fast moving, he was adept at dodging punches and with his fancy footwork which was known as the "Ali Shuffle". He also used mind games and often out-psyched his opponents before a match. He once famously said he would "float like a butterfly and sting like a bee".

In 1967, Ali refused on religious grounds to be drafted into the army to fight in the Vietnamese war. He was stripped of his title and banned from boxing. He went to the courts and was successful in overturning this judgement. Ali is the only boxer to win the title on three separate occasions. Ali retired from boxing in 1981 at the age of 39. Throughout his career he earned \$50 million. Ali converted to Islam when he was 22 and joined the Nation of Islam inspired by Malcolm X. Ali was married 4 times and had nine children in total. Ali was awarded the Greatest Sportsman of the Century in 1999.





## Flashcards

**Flashcards** have become a very popular way to create your own revision resources. There are various ways to use them for all of your subjects.

Using flashcards to self-test helps you learn information, and also helps you to identify any weak spots you may have with the material. It is better to discover weaknesses while you are studying, when you can still improve on them, instead of when you are in the middle of a high-stakes test.

When you create your own flashcards, make sure that you really use them to practice retrieval (bringing to mind what you think is on the other side!) rather than looking too soon. There are also many apps, such as Quizlet, for making flashcards, if you would prefer to use technology. For an added benefit, try retrieving more than just the simple concept definitions you write on your flashcards. Try linking concepts, or try to remember how two concepts are similar or different.

A key to implementing this strategy is to make one stack of **concept** or **word** cards, and a second stack of **instruction** cards.

- Use your notes in your book to identify **key concepts**. On one side of a flashcard, write the name of the concept or a short question. On the back of the flashcard, write the answer/definition. These are quick recall flashcards.
- Now make a stack of **instruction** flashcards that will help you to elaborate on the concept cards. You can use a different colour to easily keep them separate from your **concept** cards.
- On your **instruction** cards, you will need to deepen your knowledge of a concept, you could ask yourself: 'Why....', 'How...', 'Describe...', 'Explain...', 'Discuss...' and 'Draw...' style questions.
- Put your cards in order, start with a **concept** card, test yourself and follow with an **instruction** card, test yourself.
- Flashcards are a great way to test yourself, to work with a peer or a family member.



### Concept flashcards

Front of card	Back of card
<i>Word or concept</i>	<i>The definition, or a formula, or a diagram</i>

### Instruction flashcards

Front of card	Back of card
<i>How? or Why?</i>	<i>The answer/ explanation</i>
<i>When? or What?</i>	
<i>Drawing</i>	

Front of card	Back of card
<b><i>Osmosis</i></b>	<i>Osmosis is the movement of molecules through a selectively permeable membrane into a region of higher solute concentration.</i>

Front of card	Back of card
<b><i>What is an example of osmosis?</i></b>	<i>An example of osmosis is when red blood cells, which have a high concentration of protein and salt, are placed in a lower concentration fluid like water, the water will rush into the red blood cells.</i>





## Practice makes perfect

### What is it?

Surname	Centre Number	Candidate Number
Other Names		0

GCSE  
WJEC CBAC  
0241/02  
ADDITIONAL SCIENCE  
HIGHER TIER  
PHYSICS 2  
P.M. MONDAY, 30 January 2012  
45 minutes

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	9	
2.	4	
3.	9	
4.	7	
5.	12	
6.	9	
Total	50	

**ADDITIONAL MATERIALS**  
In addition to this paper you may require a calculator.

**INSTRUCTIONS TO CANDIDATES**  
Use black ink or black ball-point pen.  
Write your name, centre number and candidate number in the spaces at the top of this page.  
Answer all questions.  
Write your answers in the spaces provided in this booklet.

**INFORMATION FOR CANDIDATES**  
The number of marks is given in brackets at the end of each question or part-question.  
You are reminded of the necessity for good English and orderly presentation in your answers.  
A list of equations is printed on page 2 of the examination paper. In calculations you should show all your working.

JAN 1 2 0 2 4 1 0 2 0 1

To learn how to do anything well, you need lots and lots of **practice**. There isn't much debate about that. Scientific research, however, shows that the quality of your practice is just as important as the quantity.

Practice that is purposeful will be more powerful. While regular practice might include repeating the same task over and over again, more purposeful practice requires focused attention and is conducted with the specific goal of improving performance.

So, what makes practice more purposeful? Purposeful practice is goal-oriented; it requires you to reflect on your performance with the ultimate aim of improving when you try it again.

### What does it look like?

Before you complete a past paper, decide upon a goal. This goal can be related to the time in which it takes you to complete a past paper or it can be related to the overall mark you hope to achieve. Either way, ensure that you set yourself a goal. Then, review and reflect upon your performance. Where did you go wrong? Which question slowed you down? Did you answer a question incorrectly? If so, why?

Identify a weak spot and spend time focusing on improving upon this. You can go back to your study materials and go over this section of the paper/question again and again. You could even jot down a few additional goals at the stage.

The next time you sit the whole paper, your aim should be to improve upon your overall performance.



## Free resources and support



### **BBC Bitesize**

BBC Bitesize is a free online study resource. There are lots of interactive resources on BBC Bitesize, including mock tests to aid revision.



### **Quizlet**

Quizlet is a popular free website providing learning tools for students, including flashcards and games.



### **WJEC Past Papers**

Access a range of past papers and marking schemes on official examination board websites, such as the WJEC.



### **Seneca Learning**

Seneca Learning is a homework and revision platform for KS4 and KS5 students; it is designed to make learning more efficient and enjoyable.



### **YouTube**

Check YouTube for videos that have been uploaded by educators that may aid your revision. For example, Sean Donnelley's free science lessons are excellent.



## Revision myth busting

### Picture this

It's the day before her chemistry exam, and a hopeful Year 11 student has just begun to revise. She takes out her trusty highlighter and re-reads her hefty textbook, marking it up as she goes along. She re-reads sentences that seem the most important and stays up most of that night, just hoping to get a good enough grasp of the material to do well the following day. This scenario is all-too-common.

Quite often, students rely on strategies such as highlighting, re-reading and cramming the day or night before an examination. Quite often, students believe that these relatively ineffective strategies are actually the most effective. But, they're not.

### Re-reading

Despite its popularity, re-reading has inconsistent effects on learning. Re-reading does not always help to enhance your understanding of material and the benefits of re-reading - such as the ability to recall material from memory shortly after - will probably be short lived. So, re-reading may be relatively easy for you to do, but you should use other strategies (such as retrieval practice, dual coding, and practice testing) when you revisit your text materials and notes.

### Highlighting

The use of highlighters as a revision tool seems equally universal. However, similarly to simply reading a text, highlighting has been shown to have failed to help students.

Basically, by focusing on individual concepts while highlighting, you may spend less time thinking about more important aspects of the material, such as connections across topics and concepts.

Still, that's not to say that you have to ditch your revision security blanket. You can still highlight material, you just need to remember that highlighting is only the beginning of the journey.

## wellbeing

In addition to revising, there are other strategies you can use to look after your mental and physical health.

### EAT



Diet is important so don't neglect it during the exam period. Don't skip meals, stay consistent with a healthy balance of meals and drink plenty of water.

### SLEEP



Staying up late to revise is a bad idea! Sleep deprivation can have a very negative impact on concentration, performance and memory.

### EXERCISE



Take regular breaks from revision with exercise. Take part in sport you enjoy, or simply go for a walk.

### RELAX



Take time to switch off and have a break during the revision period. Do something that will help you to relax, and spend time with friends or family.

### SUPPORT



Remember, there are lots of people available to offer you additional support and guidance. Speak to your teacher or year team for support.



## 10 TOP TIPS FOR GCSE SUCCESS

YEAR 11

### 1. KNOW YOUR COURSE

Make a topic checklist by going through your GCSE specification or by asking your teacher

### 2. MAKE A REVISION TIMETABLE

Draw up a plan covering all topics and set a realistic number of hours for revision each week. Note the dates of your exams and leave a week or two before each exam for final revision

### 3. REVISE EFFECTIVELY

Short bursts of about 30 minutes followed by a break work best. Make your revision active – summarise your notes, highlight key points, draw diagrams, use post-it notes, record yourself on cassette, ask someone to test you

### 4. BOOST YOUR MEMORY

Find the way of learning that suits you best. Try breaking down the topics into chunks and using key words, images, mnemonics, rhymes and colour-coding to trigger your memory

### 5. PRACTISE QUESTIONS

Get used to the style of questions used in the exams. Highlight the key words in the question, plan your response and ensure that your answer is relevant

### 6. THINK POSITIVE

Look back at your original plan from time to time, and realise the progress you have made. If there are areas that you find particularly difficult, ask your teacher for help

### 7. HANDLING STRESS

Start preparing for the exams early. Take breaks from revising, exercise regularly, eat and sleep well.

### 8. THE WEEK BEFORE

Allow time for final revision where you can go over essential or difficult points

### 9. THE NIGHT BEFORE

Look over a few points but don't try to cram lots of new information. Get all your equipment ready – pens, pencils, calculator, ruler etc. Have an early night!

### 10. IN THE EXAM

Follow all instructions in the exam paper. Read the questions carefully and ensure you answer the question asked. Check the number of marks available for each question and answer accordingly. Keep an eye on the time – make sure you answer the correct number of questions and leave time to read through your answers







## References and useful websites:

<https://www.wjec.co.uk/home/student-support/revision-tips>

<https://gov.wales/power-up-wales>

<https://hwb.gov.wales/search?query=gcse%20revision&sort=relevance&strict=1>

<https://www.youngminds.org.uk/young-person/coping-with-life/exam-stress/>

<https://www.studentminds.org.uk/examstress.html>

<https://www.bbc.co.uk/bitesize>

<https://www.wjec.co.uk/home/student-support/revision-resources/>

<https://www.learningscientists.org>

<https://www.mymaths.co.uk/>

<https://careerswales.gov.wales/>