

How to Study Effectively

‘Plenty of time if we don’t waste time!’

Time to do things differently?

An opportunity to think about how you use your time.

Learning to Learn *(Overview)*

Learning scientists – student guide links

Session 1 - *Learning scientist student guide* – introduction video (8 min):
<https://www.youtube.com/watch?v=CPxSzyIRCI>

Session 2 – *How to study with pictures* – student guide:
<http://www.learningscientists.org/blog/2016/5/12-1>

Session 3 - *How to improve focus* – student guide:
<https://www.jonathanfirth.co.uk/blog/2016/5/22/improve-your-focus-the-pomodoro-technique>

Session 4 - *How to make flashcards* – student guide:
<http://www.learningscientists.org/blog/2016/2/20-1>

Session 5 - *Cornell Note Taking* – <https://www.learningscientists.org/blog/2018/3/29-1?rq=cornell%20note>

Session 6 - *How to study a text book* – student guide:
<http://www.learningscientists.org/blog/2016/2/12-1>

Session 7 - *Reflect and Review* – What will I do differently?



This PPT has been uploaded to the 'Class of 2021 Pastoral' GC!

Session 1

- *'It's not that you're doing it wrong but could you be doing it better?'*
- **Write down some ideas;**
- You have a classroom test/assessment coming up, how do you revise for the test?



Now listen to the experts...

<https://www.youtube.com/watch?v=CPxSzxyIRCI>



How many of these have you been using?

Reflect

- These methods are **scientifically proven to work**
- This is not a criticism of how anyone prepares but in order to be successful this year we need to consider how to get the best out of ourselves.
- It is the **little things we do differently** that may be the difference between grade boundaries!

How could you do things differently?

- **A**sk, Explain and Connect - **ELABORATION**
- **N**o Cramming – **SPACED PRACTICE**
- **S**witch - **INTERLEAVING**
- **W**ords and Visuals – **DUAL CODING**
- **E**xamples – **CONCRETE EXAMPLES**
- **R**ecall What YOU Know – **RETRIEVAL PRACTICE**

'Don't panic..... You are already doing lot's of these in lessons!'

But are you using them?

Your Teachers



Reflect

- Compare the strategies from the video link to the results to the notes you made from slide 3
 1. Have you been doing enough revision?
 2. Have you been using any of these methods before?
- This is not a criticism of how anyone prepares but just a chance to reflect on how we might **do things differently with greater accuracy and effectiveness**
- Staff are already doing these things, even the smallest of SMHW quizzes can make a difference to what progress you make and directly impacts on how lessons are organised to work on gaps/area's of weakness

Session 2

- **Dual Coding**

- **Think;**
- What do you remember about **'Dual Coding'** from the previous session?

'Dual coding' refers to the idea that we create separate memory traces for pictures and words. This creates an additional mental pathway to the information, helping you remember it later'.

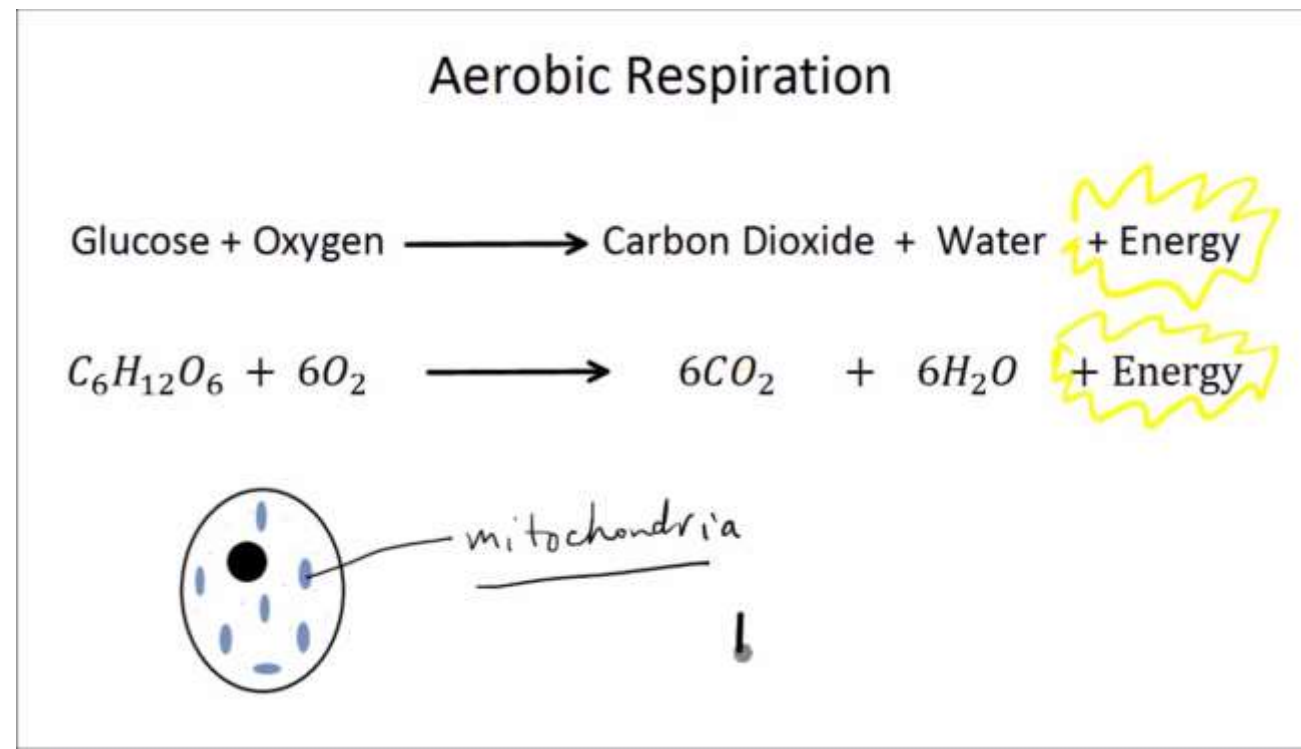
The Learning Scientists



Dual Coding

- Respiration using oxygen to break down food molecules is called aerobic respiration . Glucose is the molecule normally used for respiration – it is the main respiratory substrate . Glucose is oxidised to release its energy along with water and Carbon Dioxide.

- Or...

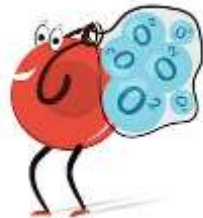


Or...

You don't need to be good at art to use dual coding, it's about doodles and interpretation. Whatever works best for the individual. It may not work for every person or across every subject but it's a little something we could do differently that may have a huge impact!



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Try this one?

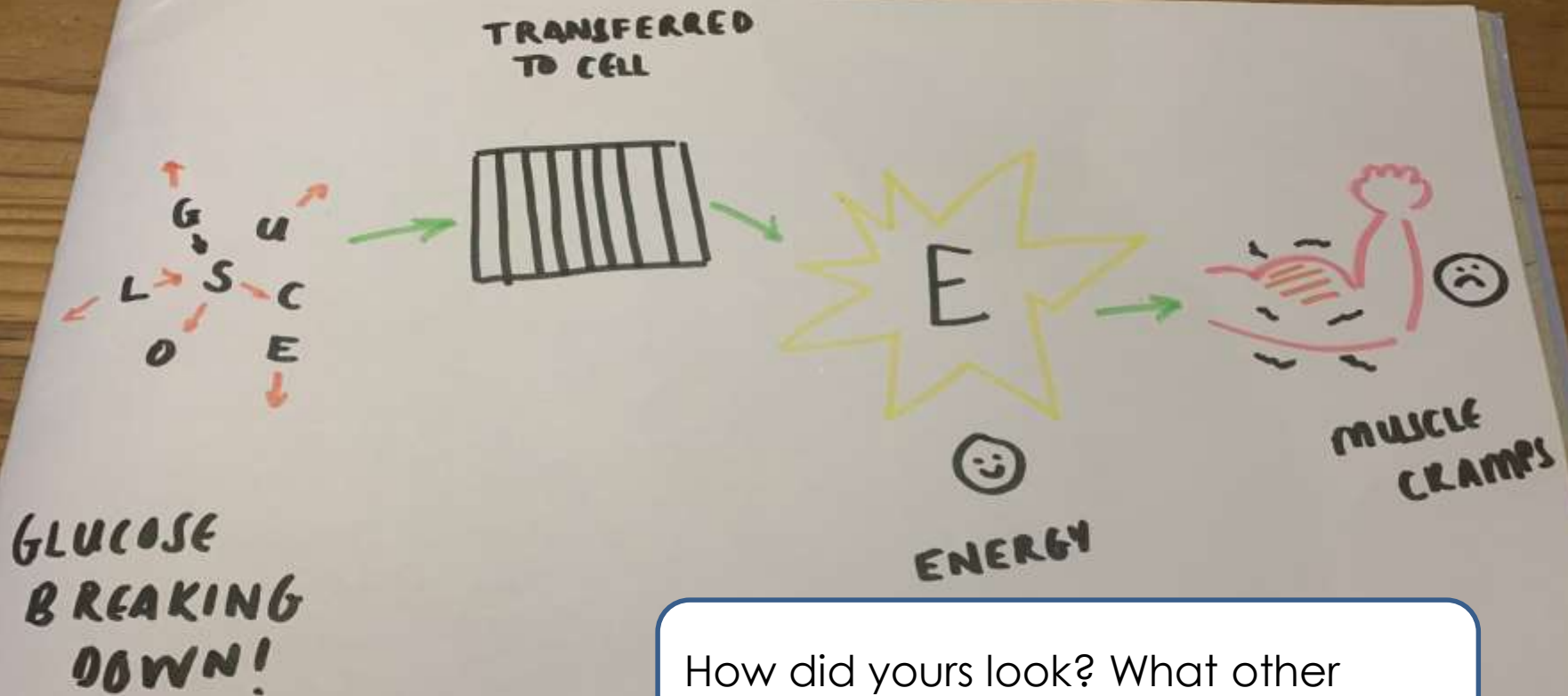
In anaerobic respiration, glucose breaks down without oxygen. The chemical reaction transfers energy from glucose to the cell. Anaerobic respiration produces lactic acid, rather than carbon dioxide and water. Unfortunately this can lead to painful muscle cramps.

First pick out the key words or concepts that you need to remember, then convert them into images...

Remember it's not about how good you are at art, it is about giving your brain **multiple different pathways to support memory!**

Keywords: Glucose, (Broken down), Chemical Reaction, Cell, Lactic Acid, Muscle Cramps, Energy

It's PERSONAL!



How did yours look? What other subjects might this work in?

Reflect

- Each of these methods is about personal preference, it's **not about doing them all or all doing the same**, the important factor is varying the way we prepare for assessments based on what works best for us as individuals!
- They **won't all work in all subjects**, but they give you a **different pathway for your brain to retain information**

Dual Coding in practice...

- Can be **used with Flashcards**, image on one side keywords/concepts on the reverse
(more info on these coming in Session 4)
- **Multiple concepts can be included** in the same diagram/sketch especially useful if they are connected as this can be shown with the images used
- The same concept/idea can be **drawn in multiple different ways** to reinforce the key knowledge

Session 3

- Spaced Practice (*'The Pomodoro Technique'*)
- Look at the 'Dual Coded' reminder below, what can you tell me about '**Spaced Practice**'?



Spaced Practice

Spaced practice is a study technique where students review material over a long period of time. This gives their minds time to form connections between the ideas and concepts so knowledge can be built upon and easily recalled later.

The Learning Scientists

- **So how's it done...?**

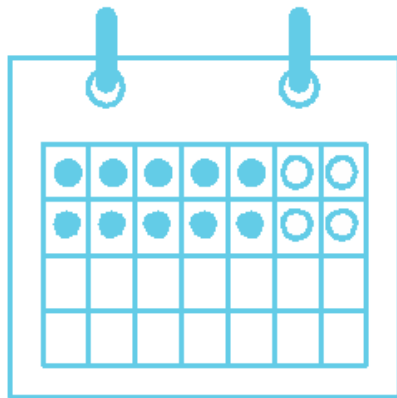
More effective and when used properly means less overall time is spent to remember larger amounts of information



Spaced Practice

HOW TO DO IT

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.



'Use
<https://getrevising.co.uk/>
to help plan your revision'.

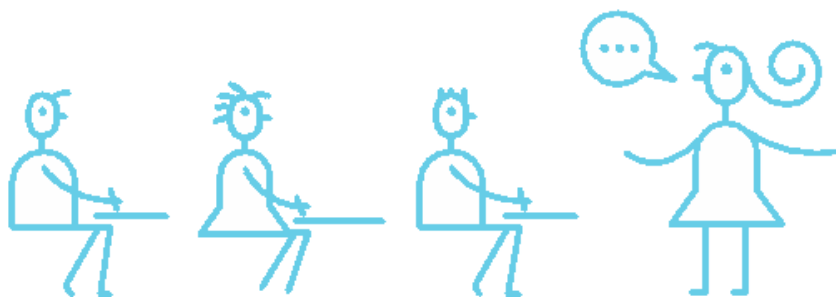


Spaced Practice

HOW TO DO IT

Review information from each class, but not immediately after class.

LESSON



BREAK



REVIEW



Reflect

1. Q for discussion: Why is it important to leave it a little while after class?
- Allows time for memory/recall – see what you have remembered in LT memory, how secure is the knowledge?
1. This is where **Retrieval Practice** could be used to highlight the information they know and identify the gaps in learning.
- Can be done simply with a mind map, students start writing in one colour all of the information they can remember about a topic
- They then switch colours to add information they missed (hadn't remembered!) using their exercise books to fill in the blanks! If they keep this they then know what area's to revise when they come back to the same topic. Anything written in the second colour is information they hadn't originally retained!



Spaced Practice

Work on RECALL again, how much can I remember?

HOW TO DO IT

After you review information from the most recent class, make sure to go back and study important older information to keep it fresh.





Spaced Practice

HOLD ON

When you sit down to study, make sure you are using effective study strategies rather than just re-reading your class notes.

TESTING ①

② SPACING

③ SKETCHING

When you revise, make sure you use the most effective methods!
(See slide 6)





Spaced Practice

HOLD ON

This may seem difficult and you may forget some information from day to day, but this is actually a good thing! This forces you to retrieve information from memory.





Spaced Practice

HOLD ON

Create small spaces (a few days) and do a little bit over time, so that it adds up!



The ‘Pomodoro technique’

- A Pomodoro is a type of tomato!
- This technique is named after the type of timer that was used by the person that came up with it...



The effective 'Pomodoro' session

- 25 minutes of **study** (= 1 'Pomodoro')
- 5 minutes **break**
- *Important breaks are briefer, to allow a rest but not so long you forget what you were working on!*
- *A break also motivates you to work harder in the study time!*
- **Maximum** of 4 'Pomodoro's' then take a longer break (25-30mins)

Session 4

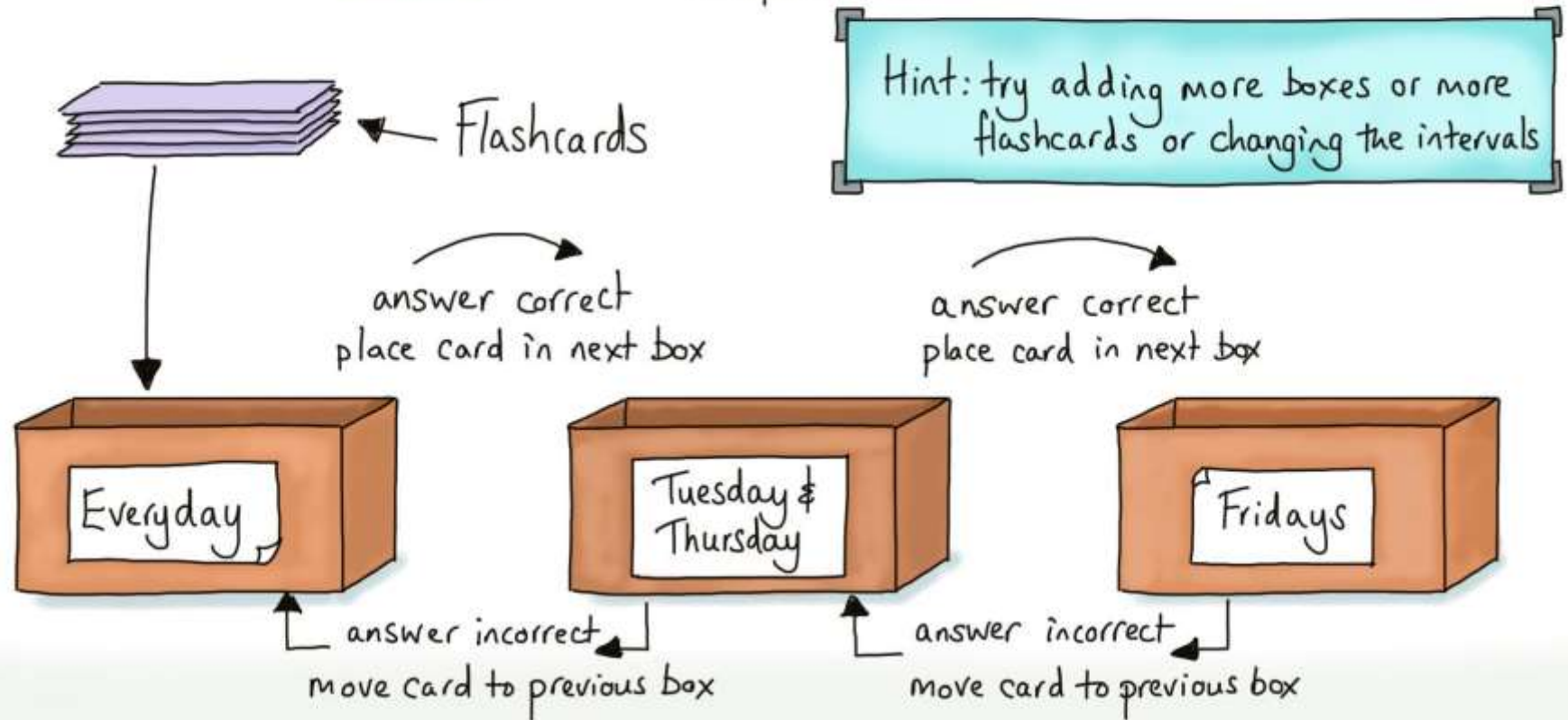
- **Flashcards**

- *Who has already used flashcards?*
 - *Who has already made their own set?*
 - *What are the steps to making flashcards?*
1. **Phase 1** – pick out keywords from notes, write these on one side of the flashcard
 2. **Phase 2** – write the definition to each keyword on the reverse of the card (*See Leitner Method*)
 3. **Phase 3** – On separate cards of a different colour write a **set of instruction cards**

*Phase 3 is the most important part, it encourages us to A – ELABORATE!
And think more deeply about what we are learning!*

LEITNER Flash card method

@ImpactWales



An effective use of flashcards to prompt & recall learning using spaced practice proposed by Leitner in the 1970s. It focuses on the proficiency of recall of the learner. Information which is easily recalled has a longer time lapse before the next recall opportunity.

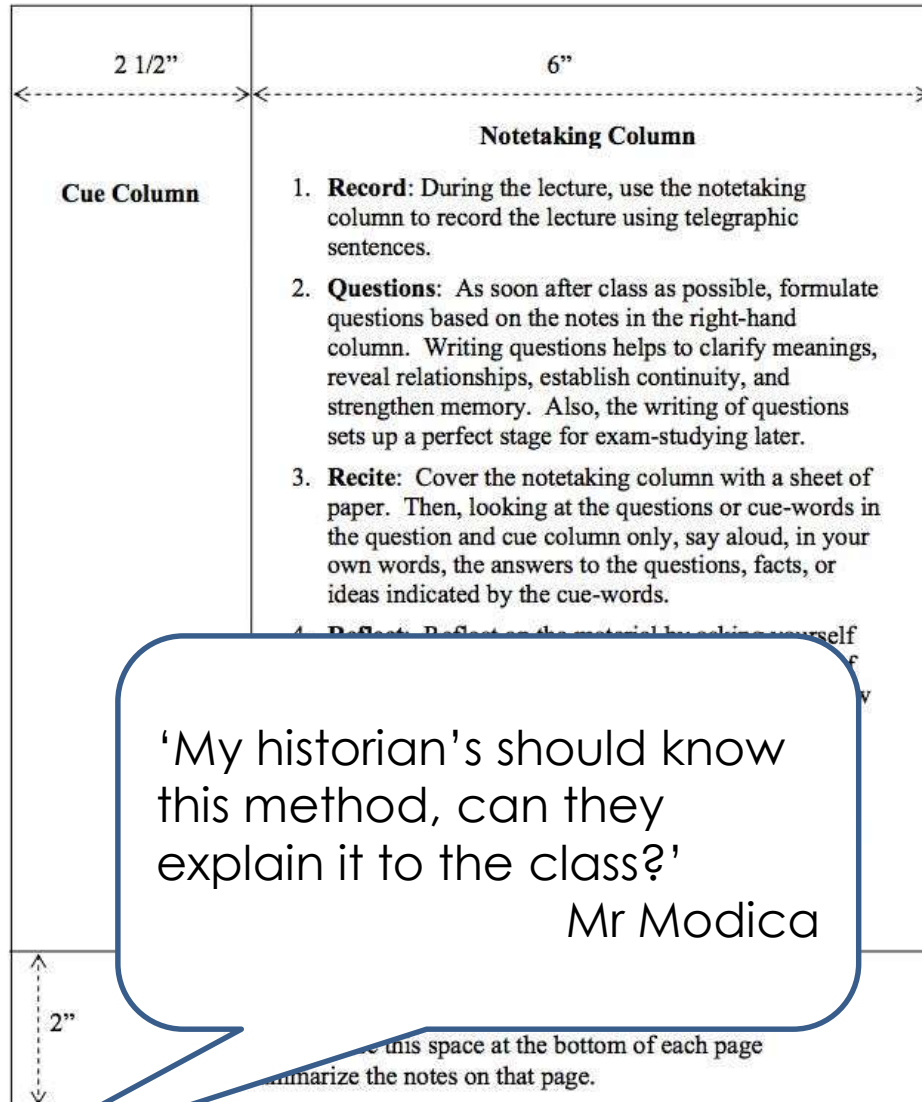
Instruction Cards

- **Phase 3** – on a separate colour make instruction card's (*below are some possible instruction cards*)
 1. Describe a movie/television scene that depicts this concept
 2. Describe how an animal might portray this concept
 3. Describe this concept without using any key words written on the flashcard
 4. Draw this concept
 5. Give a real life example of this concept
 6. How would you explain this to a child/someone who has never heard of it before

Can you think of any other good one's?



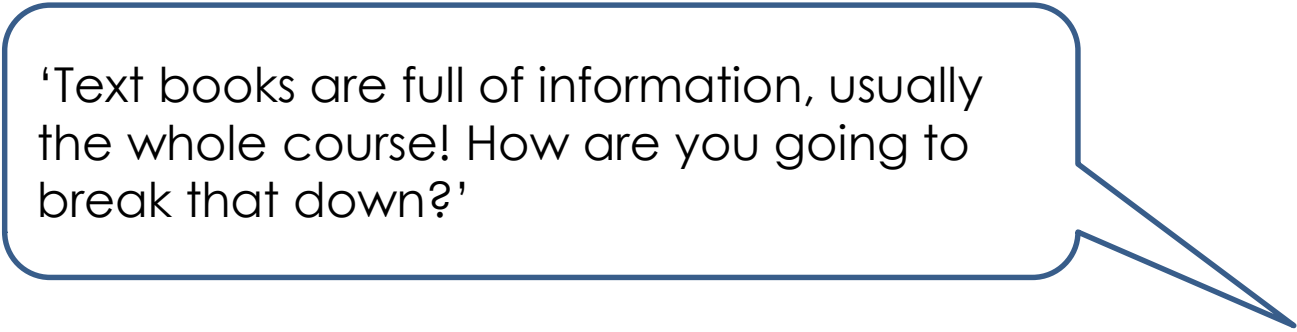
Session 5 – ‘Cornell Note Taking’



1. Students **divide their page** as indicated to the left
2. **Notetaking Column (right)** – record notes from class as normal
3. **Cue Column (left)** – students write Q's or keywords only in this column taken from the notetaking column
4. **Recite – cover** the notetaking column and use the keywords/Q's to attempt to recall the information from class
5. **Summary** (bottom) – write a brief summary of the notes taken in the lesson
6. **Reflect** – the more you reflect on the notes the more they will stick!

Session 6

- Making notes from a textbook;
- **Think and make notes;**
- Based on the previous sessions what advice might you give to someone using a textbook for revision?
- *Think about some of the methods you have learnt about*



'Text books are full of information, usually the whole course! How are you going to break that down?'

Here's how it's done...

1. Choose a small chunk (a few paragraphs MAX)
2. Make notes (Proforma's provided)
3. Write questions and answers (see proforma)
4. Separate the questions from the answers
5. **Repeat** with the next small section
6. When you're done – take a break
7. **Test your self** using the questions (*and maybe the Leitner Method?*)
8. Refer back to the book if needed

Session 7

Which method are
you keen to try?
Why?

Are there any
particular subjects
where you think a
method might be
most effective?

Session 2 – *Dual Coding*

Session 3 – Spaced Practice & ‘Pomodore Technique’

Session 4 – *Flashcards (‘Leitner Method’)*

What are the next
steps in terms of
putting these
things into
practice?

Taking

a Textbook