



# Revision Skills Booklet



Co-op Academy  
Walkden

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# The Science of Learning

Research into cognitive science can really help us when we are learning. It can tell us what works best and what should be avoided.

Understanding the basis of how memory works can help us to understand how we learn and how to revise.

Have you ever revised for a test the night before and then forgotten everything on the day?

There is a reason for this and you can avoid it! Need to know more? Read on.

We have all been there. You cram for a test the night before and manage to get all of the information into your head. Next day, the test rolls up and you have forgotten everything! And you have actually forgotten everything! Why? Read on.

Now for the technical bit! Your brain is divided into several different sections each with different roles to fulfil.

## Short term memory - Working memory

This is where you take in new information e.g. what you see / read / hear / experience.

Unless you go on to actively think about it, most of it is forgotten.

Your working memory is very limited. It can hold approximately 7 pieces of information and then it becomes overloaded and cannot take in any more information. It is also affected by stress so when that test comes around and you feel under pressure all of the information in your working memory can vanish. The official term for this is cognitive load theory

## Long Term memory

This is where we store information when we have learned something. It has infinite capacity and is not affected by stress so in terms of our revision this is where we want to store our learning. However, this information will fade if we do not use it.

So what does this mean for your revision and learning?

We want to hold the information in our long term memory and only when we move the information

to this part of our brain is any long term learning taking place.

**"Memory is the residue of thought..."**

**"...the more you think about something, the more likely it is that you'll remember it later."**

Willingham DT. What Will Improve a Student's Memory? American Educator. Published online 2008.

'Cognitive Load' Theory was developed by John Sweller out of the study of problem solving.

Cognitive load is the amount of information our working memory can hold at any one time. The working memory is where we process information and is key to learning.

# Effective Revision Habits

There are certain ways in which we can help our brain to process information.



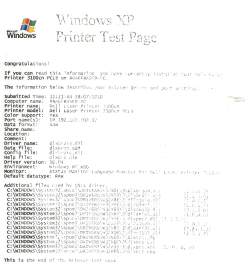
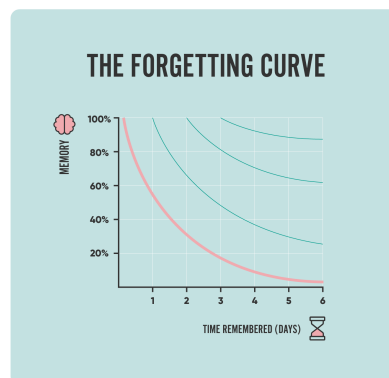
We know that information and skills are forgotten if not revisited or practised.

If we do not revisit information regularly, within 7 days we have forgotten almost 90% of it!

So how can we combat this?

Look what happens to our memory if we build in regular retrieval of content - by building in three opportunities for retrieval we are able to retain 90% of information. Regular

revisiting content stops the information fading from your long term memory. It helps you organise the information in your memory and makes it easier and quicker to remember in the future.



Think of it like ink that fades over time - when you revisit content you are rewriting the ink so the memory does not fade.

## What we know does not work

1. Highlighting - whilst you may think that this is helping it can waste time, leaving you focusing on a narrow area and not the bigger picture.

2. Re-reading - your brain is not doing any hard work here so it will not help with long term learning

3. Cramming - this simply overloads your working memory which cannot cope with the volume.

4. Re-writing notes - again, your brain is not working hard and so it will not help with long term learning.

So what should you do? Read on!

# How do I make my revision effective?

Contrary to what you may think you should revise for your chronological age plus/minus 2 up to a maximum of 20 minutes. After 20 minutes your brain needs a very quick break - only a couple of minutes and then back to revision. Repeat this three times and then take a longer break.

Why? This helps your brain to cope with the information. Research also tells us that we learn most at the beginning and the end of any revision period so by breaking a 60 minute session into three lots of 20 minutes we triple our key learning points.

Use the three step strategy of:

1. Miniturise
2. Produce
3. Retrieve

## **1. Minturise**

You will have lots of notes that can feel overwhelming. The first step in our revision process is to pull out the key points from our notes and condense the information down. You can write this out or create a mind map with the information

## **2. Produce**

The second step is to create a revision resource with the information - this may be flashcards / Q & A cards. The next few pages will give you some ideas.

## **3. Retrieve**

By completing an exam style question you are then asking your brain to retrieve the information. Only when you are able to do this part of the process does your brain remember the content. Then mark the question or ask your teacher to look at it - are there any bits you missed or misunderstood? Go back to step 1.



## Effective revision Habits

We can help our brain by automating decisions so that our brain doesn't have to think about these elements freeing up space.

## Make it Obvious



- Revise in one area, so you relate the area to 'work'
- Leave your revision materials out ready to start
- Write a revision contract to schedule your revision
- Stack habits together, so go for a walk and listen to revision podcasts, or revise then tidy your room!

## Make it Attractive



- Revise with friends & attend revision classes together
- Do something enjoyable as a reward once you complete *"Once I've revised for 30 mins, I'll then play Xbox"*
- Write a revision contract with your family agreeing to revise specific days and times, they can keep you on track

## Make it Easy



- Start small - 10 minutes a night and build up over time
- Reduce distractions when you revise, no music or phone
- Ask your family to encourage you and get them involved in supporting your revision e.g. quizzing you.
- Create a revision timetable, place on your wall & tick off

## Make it Rewarding



- Start successful by easy tests/quizzes but make sure you are challenged by increasing how hard you test yourself
- Reframe your identity, think that *"I'm a hard worker"* not *"I want a Grade 8"*, the results will come with habits
- Track revision progress & *never* miss revision twice.





# Using Flashcards

Flashcards are a really useful revision tool for learning key facts and allowing you to quickly check if you have learned something.

## How do they help?



- They engage you in 'active recall' – this creates stronger connections for your memory to recall information.
- They promote self-reflection – also known as metacognition, which firmly commits knowledge to your memory.
- Metacognition – When you make and use flashcards, you take control of your own learning. You have to decide what to put on each card, how often you're going to use them, and then evaluate how well you know the information on each card.
- They can help you memorise facts quickly.
- Drilling – flashcards help you to practise the same information over and over again - and as we know, practice makes perfect.

## How to make them

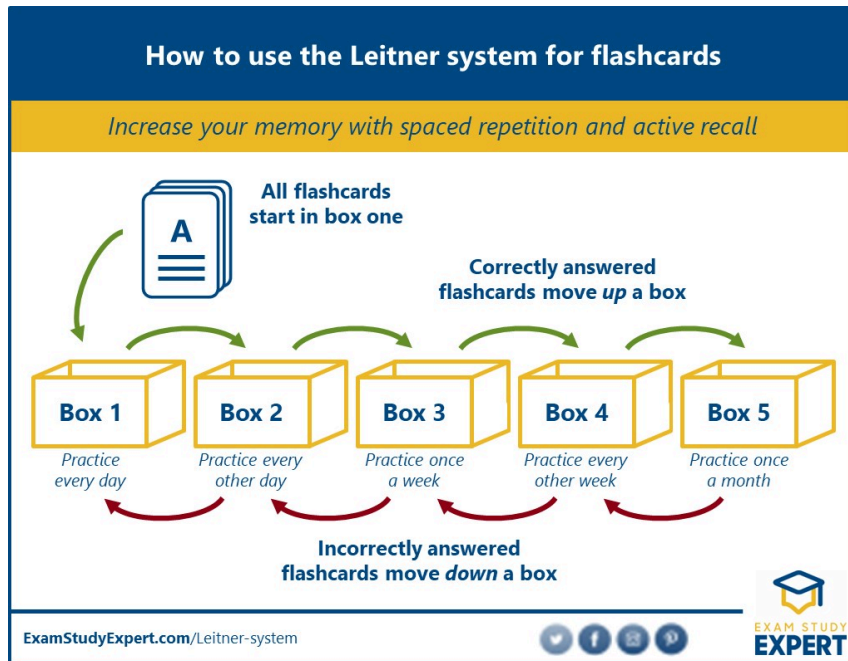
1. Ensure that the flashcards have a question or key term on one side and the answer or definition on the other:
  - The flashcard must work the memory.
  - If flashcards only contain notes then no retrieval practice will be happening.
2. Ensure the right questions and knowledge are on the cards.
3. Keep information as short as possible.
4. Write clearly. You should be able to read what you wrote at a very quick glance.
5. Use different coloured cards or pens to categorise your flashcards. For example, use a different colour for each subject or topic. This can help your brain to categorise information better.
6. Make your flashcards as soon as you've learnt the topic in class.

## Using Flashcards

- Using flashcards is a repetition strategy
- They are a simple 'cue' on the front and an 'answer' on the back
- Flashcards engage "active recall"

Studies have found that it's more effective to review a whole stack of cards in one sitting rather than to carry them around with you and glance at them every so often!

The Leitner system is a very effective method of using flashcards. It is a form of spaced practice so that you study the cards you do not know more often than those you know well.



Over time there should be more and more cards in boxes 4 and 5 as your knowledge increases.



# Spacing and Interleaving

**Spacing:** spacing your revision out over time so you do not feel swamped or overwhelmed.

## **How can it help you?**

- Doing something little and often – spacing – beats doing it at once, or cramming.
- The time in between revision allows you to forget and re-learn the information, which cements it in your long-term memory.
- It cements information into your long-term memory.
- We can learn more information over time than in one longer session.
- It helps you revise more efficiently.

So 5 hours revision spaced over time has more impact than 5 hours studied in one go.

## **Optimum Spacing**

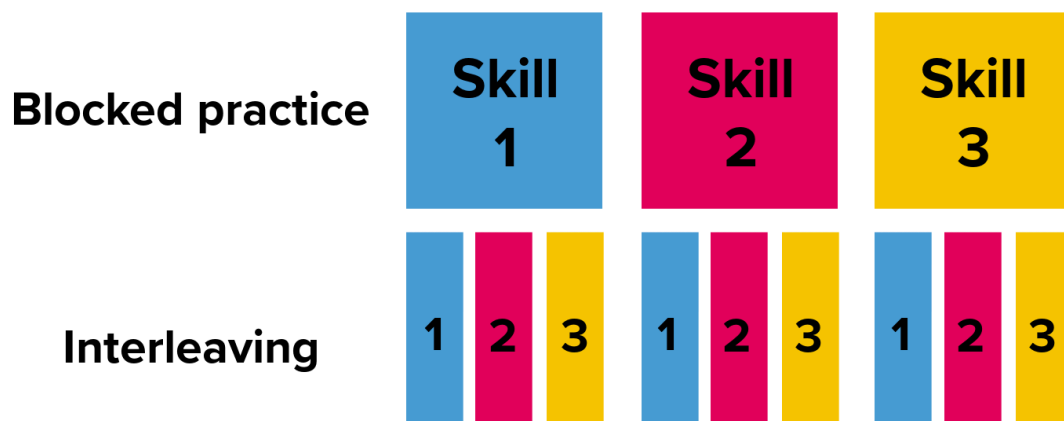
- Research suggests there is an 'optimal gap' between revision sessions so you can retain the information.
- If the test is in a month, you should review the information around once a week; if the test is in a week, create time once a day.

Time to the test	Revision Gap
1 Week	1-2 days
1 Month	1 week
3 Months	2 weeks
6 Months	3 weeks
1 Year	1 month

**To commit something to memory, it takes time and repetition.**

**Interleaving:** rather than revising in topic blocks, mix up your topics, interleave them. This makes the brain work to retrieve the information and has increased impact.

We know that memories are solidified when the content is revisited over time . So by interleaving your topics you will maximise your learning. This means splitting up your subjects into topics and mixing the topics up. This will probably feel hard - dont worry, it will pay off in the long run



### How can you apply spacing and interleaving?

“A well thought out timetable provides a framework for your study and helps you to maintain a regular pattern of work and food” (The Holy Grail of Exam Success)

How tempting is it to study the subjects that you like and enjoy first? Do you tend to put off the subjects you find more challenging?

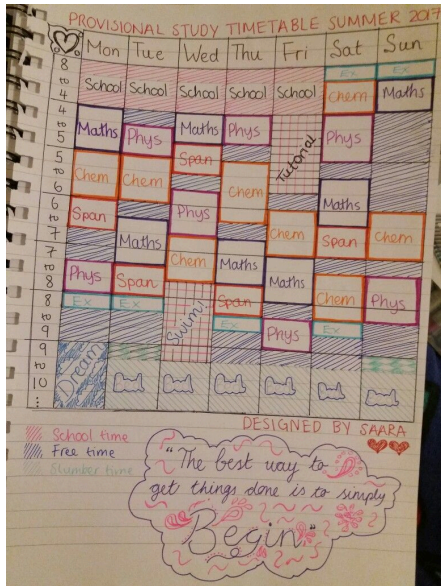
Whilst this is understandable a clear timetable of study is vital to exam success. A good idea is to study subjects in the chronological order in which you will sit your exams. The amount of time you give to each subject should reflect your need in that subject.

The number of weeks you have prior to our exams will determine how you allocate your time. Split the time you have available between the subjects that you need to work on.



It is so important to look after yourself. If you do not sleep nor eat well your brain will not function at its optimum level and your revision will become less effective. So you need to be realistic with your revision timetable and ensure that you build in time for yourself, be that spending time with family and friends, playing sports or

watching your favourite TV programme. View breaks as a reward for the work you do and do not feel guilty about taking them.



## What does an exam timetable look like?

Week Commencing:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
9:00am							
10:00am							
11:00am							
12:00pm							
1:00pm							
2:00pm							
3:00pm							
4:00pm							
5:00pm							
6:00pm							
7:00pm							
8:00pm							
9:00pm							
10:00pm							

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It does not need to be complicated. Simple formats like these will work fine.

1. Collate all your topics and decide which ones need the most focus.
2. Create a timetable for each week, 20 minute slots with breaks built in
3. Add the subjects to your timetable remembering to leave at least two days between each subject
4. Put it somewhere visible and tick off what you achieve.
5. Stay flexible - sometimes things change and that is fine!

## Finally...

There is no magic bullet to revision - I think we all wish there was! Revision is hard and it takes time but if you can persevere and apply the things we have looked at in this booklet you will find that all your hard work pays off.

Keep focused and keep revising!