Improving learning through effective study skills and revision

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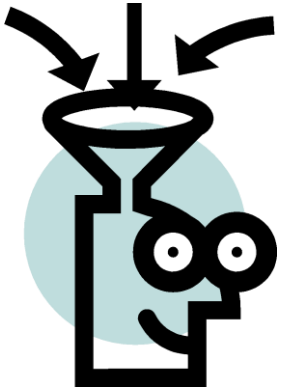
This session

1. Some practical advice about revision– the **basics**.
2. Some ideas from research about how to revise more productively – the **science**.

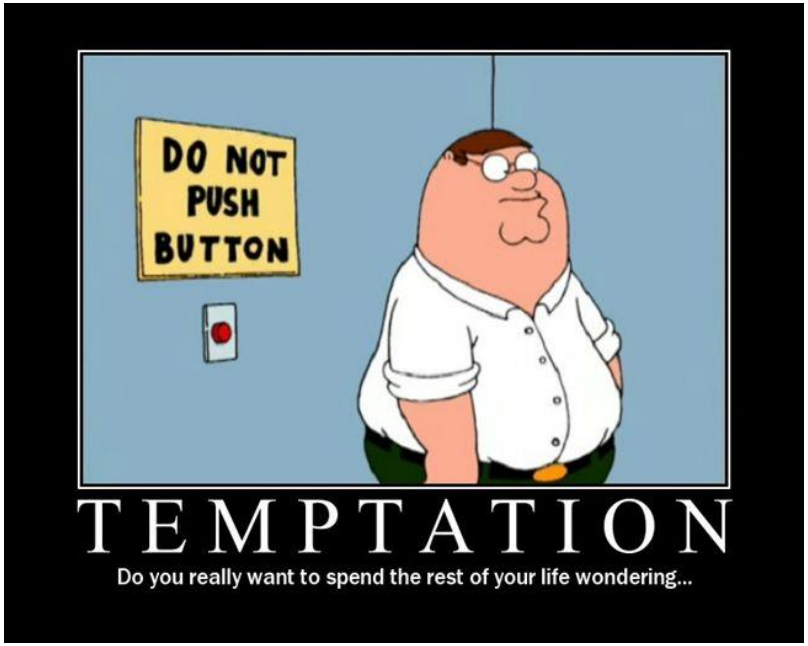
There is no great secret to revising...



It is a question of being prepared before you start

and

using your time properly



GET RID OF TEMPTATION…

- No clutter
- No computer
- No Phone
- No TV

Be Prepared…And Get Organised…

Have your textbooks and notes with you, **in an ordered way** so that you can find anything you need quickly.

CREATE A REVISION TIMETABLE

Daily revision diary for one week

Day	Date	Subject	Activity	
Monday	24/5	Maths PE English	5.00- 5.25 5.30- 5.55	Dinner
			6.00- 6.25 6.30- 6.55	Maths: try out some examples of equations English: underline key points from class work on poetry topic
			7.00- 7.25 7.30- 7.55	Watch TV
			8.00- 8.25 8.30- 8.55	PE: underline key points about the importance of training English: make study card on poetry topic
Tuesday	25/5	English Science Maths PE	5.00- 5.25 5.30- 5.55	Dinner
			6.00- 6.25 6.30- 6.55	Maths: try some more equations English: use study card to write a paragraph about poetry topic
			7.00- 7.25 7.30- 7.55	Watch TV
			8.00- 8.25 8.30- 8.55	Science: underline key ponts about green plants from class work PE: use key points as underlined to make a Mind Map about the importance of training
Wednesday	26/5	D&T Science English	5.00- 5.25 5.30- 5.55	Dinner
			6.00- 6.25 6.30- 6.55	Science: use key points about green plants to make a study card English: underline key points from class work on a Shakespeare play
			7.00- 7.25 7.30- 7.55	Cricket training
			8.00- 8.25 8.30- 8.55	D&T: underline key points about creating a design brief from class work and coursework notes Science: use study card about green plants to write a paragraph about how plants take up water and transpire
Thursday	27/5	English Maths D&T	5.00- 5.25 5.30- 5.55	Dinner
			6.00- 6.25 6.30-	English: use key points about Shakespeare play to male a study card Maths: work through some percentages

…AND STICK TO IT!

Revision: basics

- You must **understand** the learned material.
- You cannot easily learn or remember something you don’t understand.

understanding = knowing the parts and how they are related; being able to explain a topic to another person; being able to relate new ideas to older ones.

Revision: basics

- You must be **unstressed** for your memory to function and for you to be able to revise effectively.
- By:
  - Not leaving it to the last minute.
  - Understanding of the material **before** you overlearn it.
  - Having sequenced/ordered notes.
  - Having a quiet place in which to work.
  - Rehearsing the assessment context as well as the content
    - Knowing the format of the exam
    - Visualising the exam

Revision: basics

- You must be adequately **rested**.
- People in their late teens need 8.5 – 9 hours sleep a night.
- Less = sleep deprived.
- Most teenagers in Britain are **chronically sleep-deprived.**

– **"sleep deprivation** produces impairments in cognitive and motor performance **equivalent to** legally prescribed levels of alcohol intoxication." (Williamson, 2000):

Revision: The Science…

aps
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Improving Students' Learning With Effective Learning Techniques: Promising Directions From Cognitive and Educational Psychology

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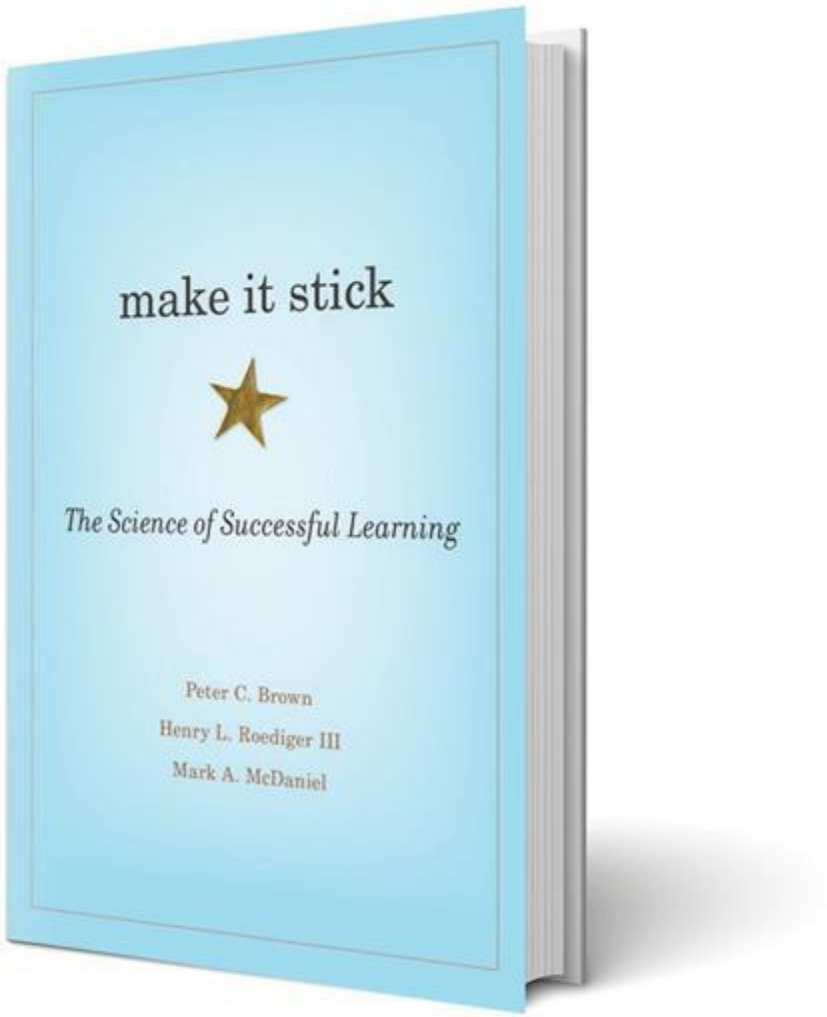
https://www.wku.edu/senate/documents/improving_student_learning_dunlosky_2013.pdf

Revision: The Science…



Revision techniques:
High, moderate or low impact?

- **Elaborative interrogation** - being able to explain a point or fact
- **Self-explanation** - how a problem was solved
- **Summarising** - writing summaries of texts
- **Highlighting/underlining**
- **Keyword mnemonics** - choosing a word to associate with information
- **Imagery -** forming mental pictures while reading or listening
- **Re-reading**
- **Practice testing** - Self-testing to check knowledge - especially using flash cards
- **Distributed practice -**spreading out study over time
- **Interleaved practice -**switching between different kinds of problems

Revision techniques:
High, moderate or low impact?

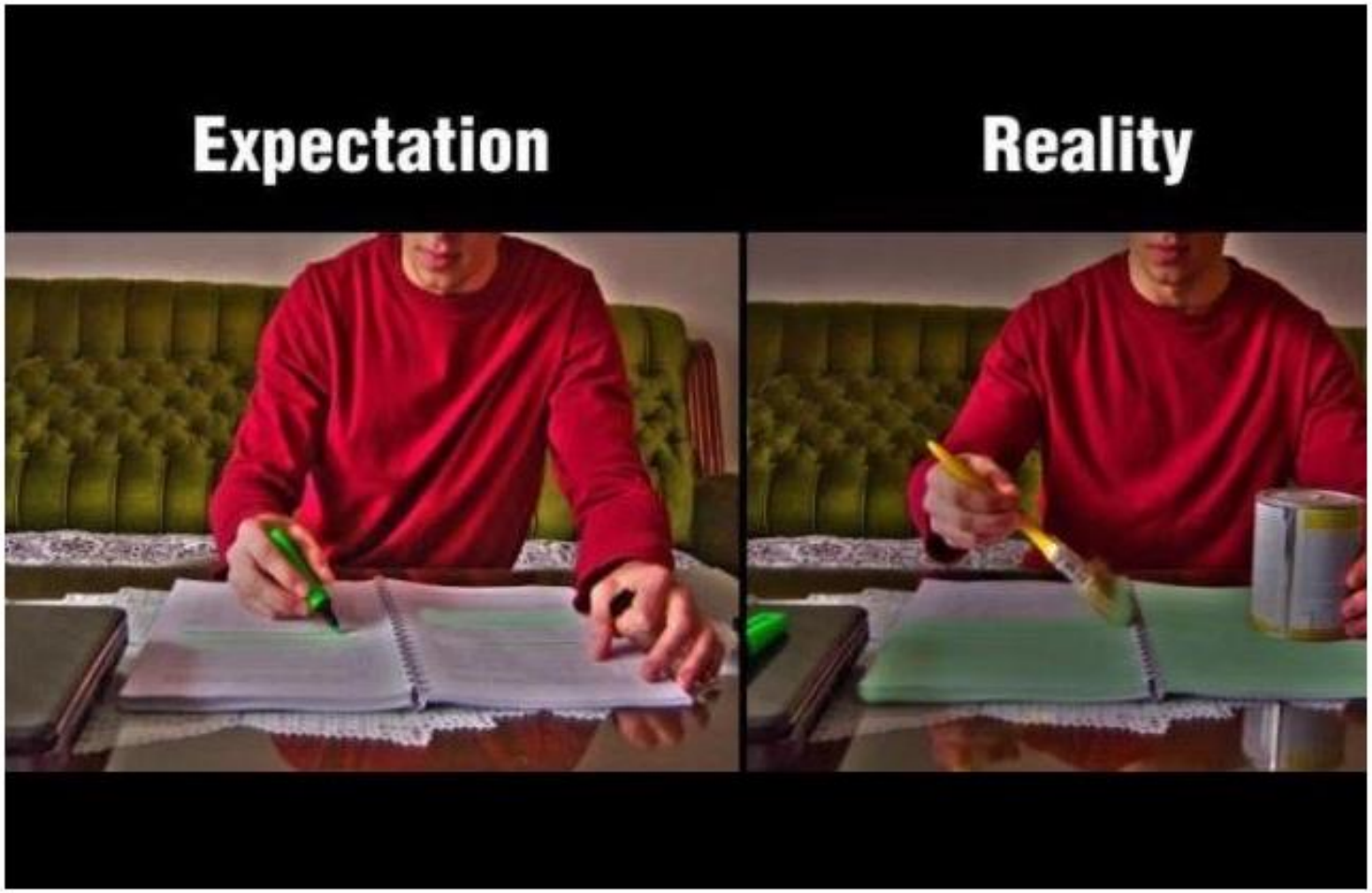
- **Elaborative interrogation -** being able to explain a point or fact **- MODERATE**
- **Self-explanation -** how a problem was solved **-MODERATE**
- **Summarising -** writing summaries of texts **-LOW**
- **Highlighting/underlining- LOW**
- **Keyword mnemonics -** choosing a word to associate with information **- LOW**
- **Imagery -** forming mental pictures while reading or listening **- LOW**
- **Re-reading - LOW**
- **Practice testing -** Self-testing to check knowledge - especially using flash cards **- HIGH**
- **Distributed practice -**spreading out study over time **- HIGH**
- **Interleaved practice -**switching between different kinds of problems **- MODERATE**

Ways of revising

- There are many ways of revising for effective retention.
- But you must revise **actively**
- by choosing effective ways of representing the information you need to remember
- Here are some…

Not very effective

Highlighting



Re-reading

Summarising Texts

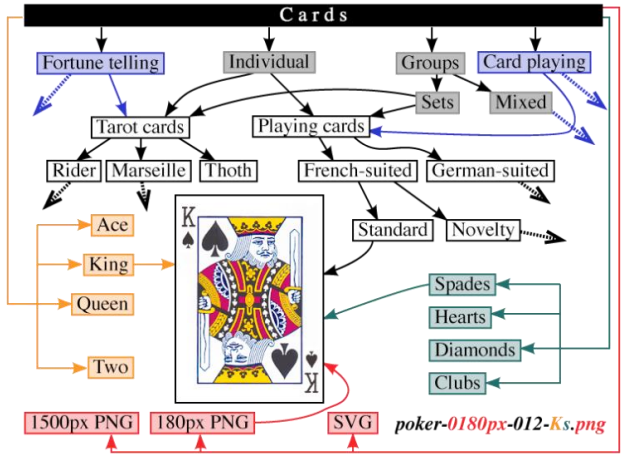
Why?

- Low challenge.
- Little thinking required.
- Makes the student think that they are ‘doing something’

More effective

Ways of revising: **file cards**

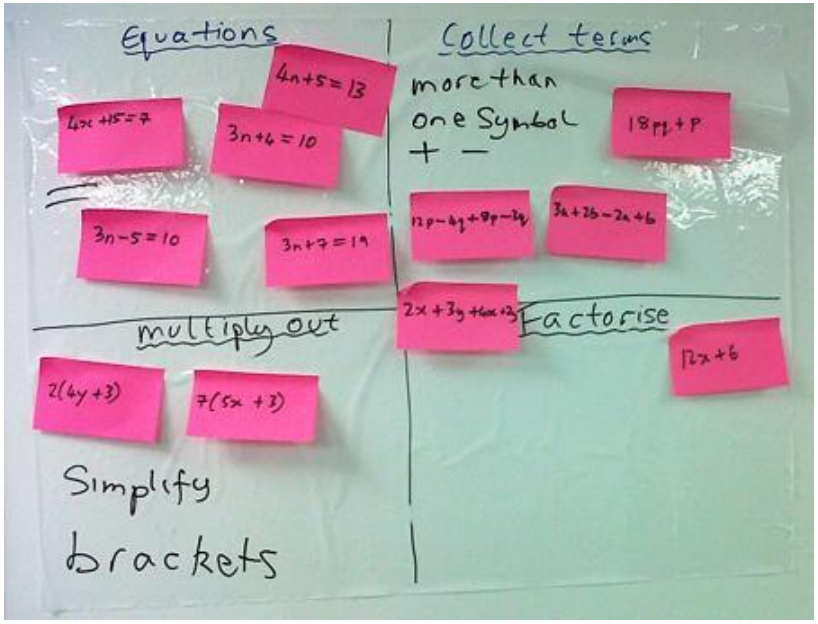
- boiling the course down
- broad themes become visible and detail becomes manageable
- You can achieve this by following the steps below.
  - Summarise your notes.
  - Pull out the main points, using headings and key points.
  - Reduce to A4 paper or even a small file card.
  - Keep in bum pocket of jeans and look at constantly



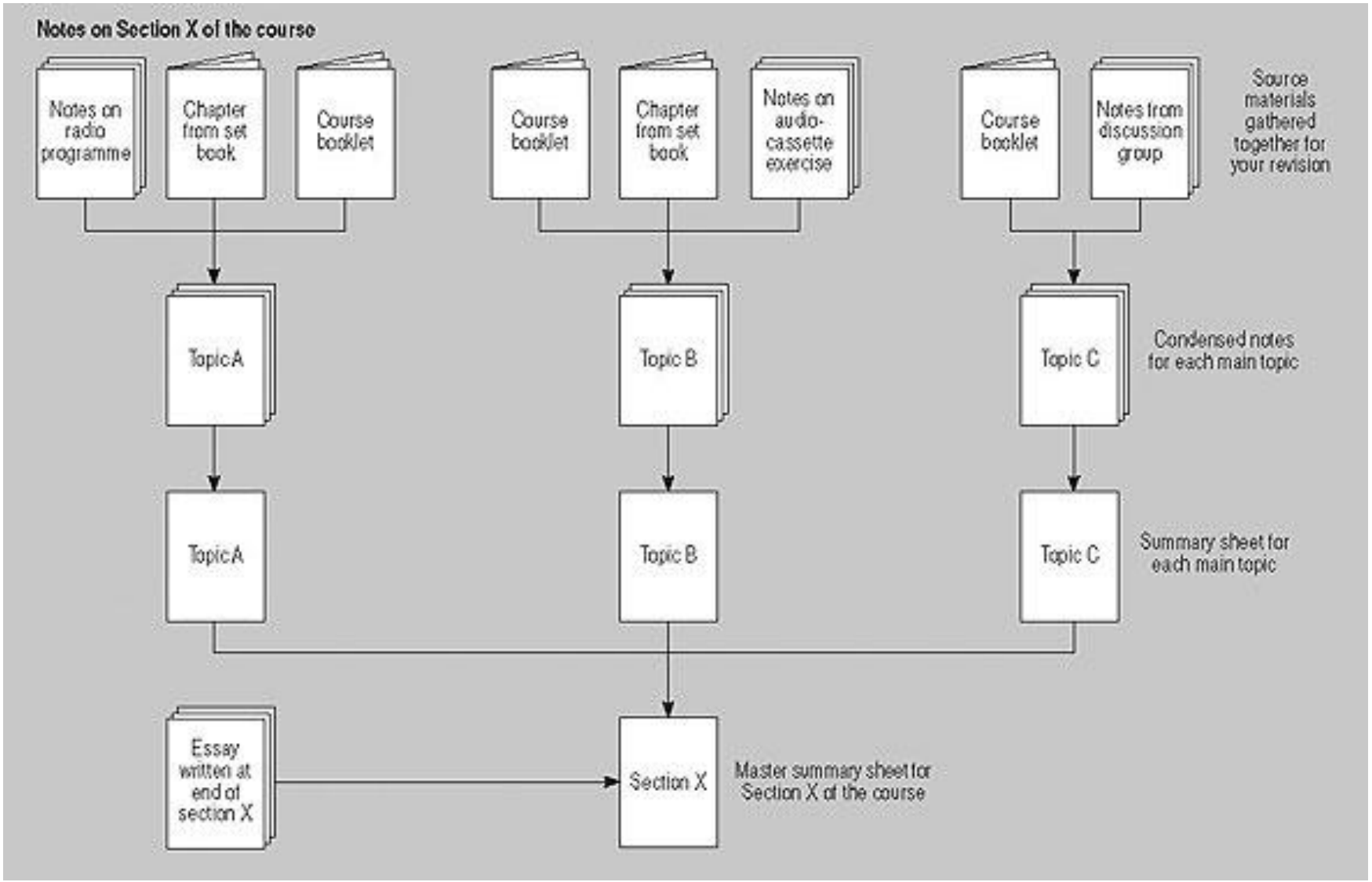
Or: **learning posters, post-its**

- You may find that, rather than reducing notes to small summary cards, posters or post-its are good.
- Use pattern, colour, diagrams and drawings.
- Leave them up, look at them – i.e. on the loo!

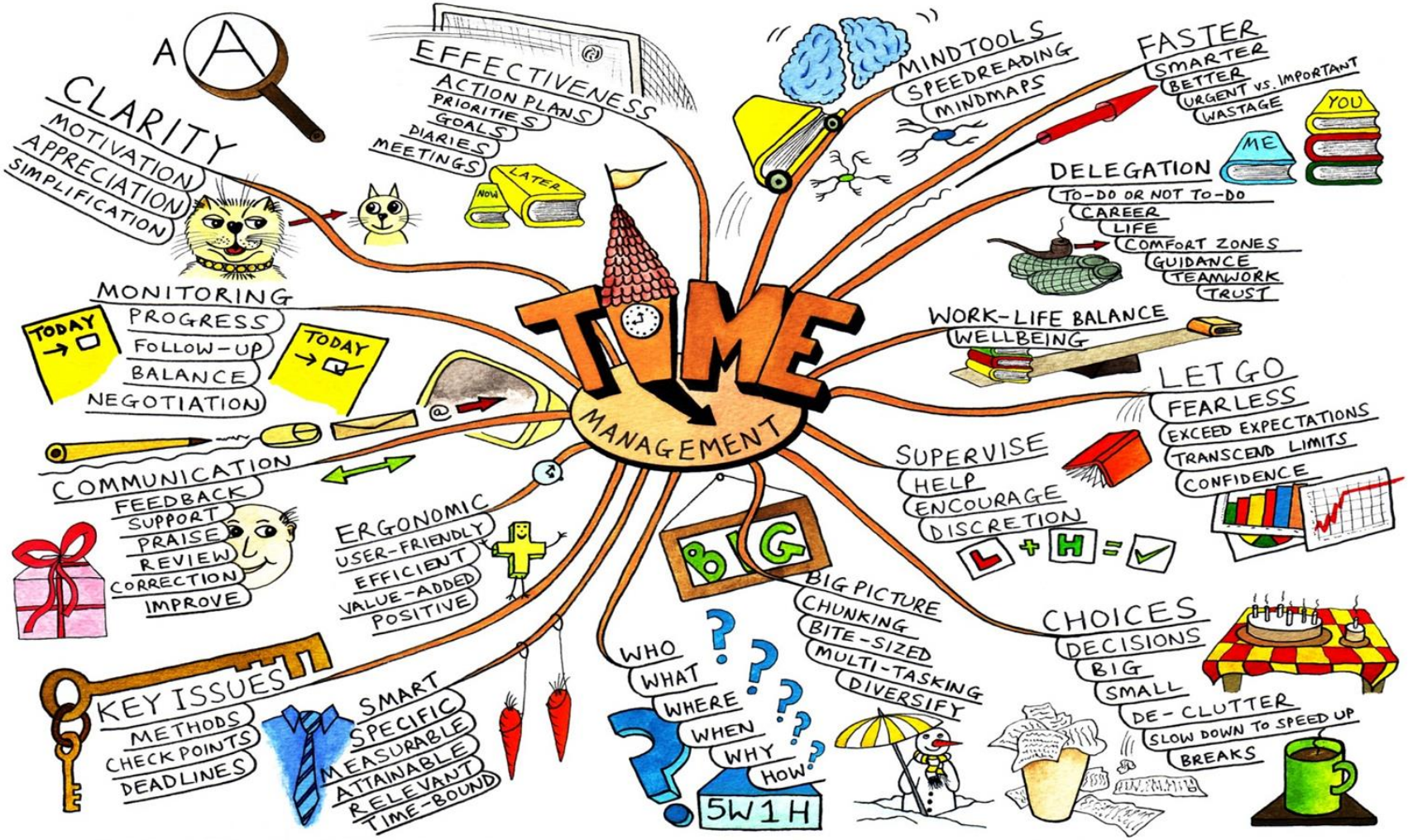
Colour-code or highlight your revision notes



Or: **reducing notes**

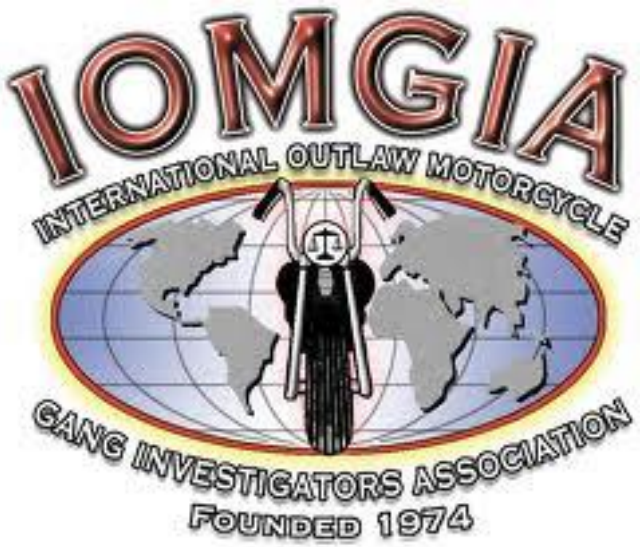


Or: **Mind Maps**


TIME MANAGEMENT
CLARITY
MOTIVATION
APPRECIATION
SIMPLIFICATION
EFFECTIVENESS
ACTION PLANS
PRIORITIES
GOALS
DIARIES
MEETINGS
MINDTOOLS
SPEEDREADING
MINDMAPS
FASTER
SMARTER
BETTER
URGENT VS. IMPORTANT
WASTAGE
DELEGATION
TO-DO OR NOT TO-DO
CAREER
LIFE
COMFORT ZONES
GUIDANCE
TEAMWORK
TRUST
YOU
ME
MONITORING
PROGRESS
FOLLOW-UP
BALANCE
NEGOTIATION
TODAY
WORK-LIFE BALANCE
WELLBEING
LET GO
FEARLESS
EXCEED EXPECTATIONS
TRANSCEND LIMITS
CONFIDENCE
COMMUNICATION
FEEDBACK
SUPPORT
PRAISE
REVIEW
CORRECTION
IMPROVE
SUPERVISE
HELP
ENCOURAGE
DISCRETION
L + H =
ERGONOMIC
USER-FRIENDLY
EFFICIENT
VALUE-ADDED
POSITIVE
BIG
BIG PICTURE
CHUNKING
BITE-SIZED
MULTI-TASKING
DIVERSIFY
CHOICES
DECISIONS
BIG
SMALL
DE-CLUTTER
SLOW DOWN TO SPEED UP
BREAKS
KEY ISSUES
METHODS
CHECK POINTS
DEADLINES
SMART
SPECIFIC
MEASURABLE
ATTAINABLE
RELEVANT
TIME-BOUND
WHO
WHAT
WHERE
WHEN
WHY
HOW
5W1H

Or: **mnemonic devices**

- Some you may know: AFIAK, ROFL
- Medical: (look at your notes) FLGD, SNEFG, FLKBLATP
- Or…any you devise.
- Some less good…→



Or: **memorable visual representations**

- **Memorable visual representations** are particularly likely to stick…

Most effective

1. Retrieval Practice

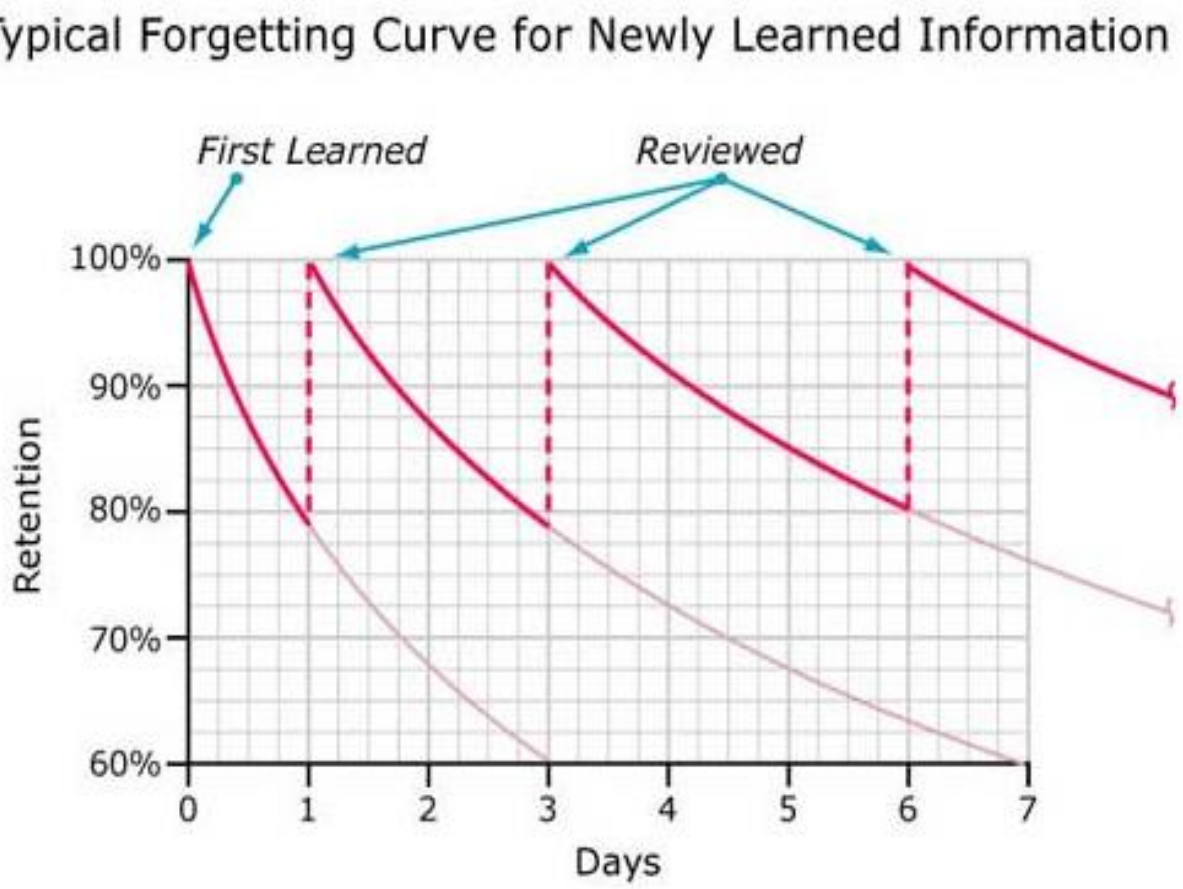
This technique is pretty straightforward – keep testing yourself (or each other) on what you have got to learn. Some ways in which you can do this easily:

- Create some flashcards (as before), with questions on one side and answers on the other – and keep testing yourself.
- Work through past exam papers – many can be acquired through exam board websites.
- Simply quiz each other (or yourself) on key bits of information.
- Create ‘fill the gap’ exercises for you and a friend to complete.
- Create multiple choice quizzes for friends to complete.

2. Distributed practice

- Revise small topics **repeatedly** but in **short blasts**.
- **Space them out** – leave time between sessions
- **Chunk it!**

Ebbinghaus's Curve



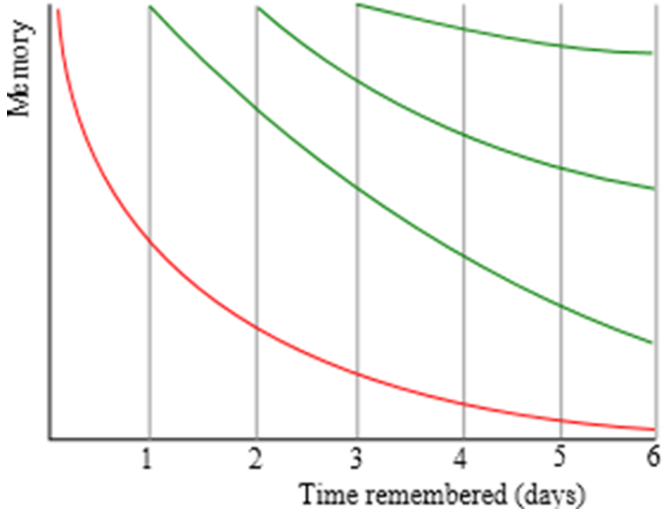
Aside: **your mental engineering**

You learn by making new connections between the 86 billion neurons in your brain.

- Imagine treading down paths in a wheat field.
- Unless revisited, the wheat springs up and the path disappears.

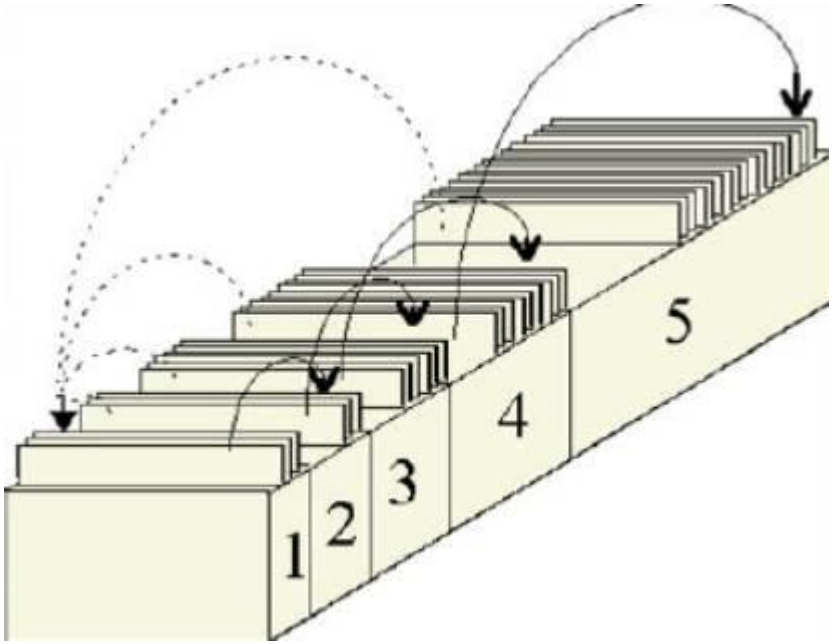
Once formed, the physical connections **myelinise**. They become electrically insulated
So thought impulses speed up

So, overlearning enables **recall** that is fast



3. Interleaved practice

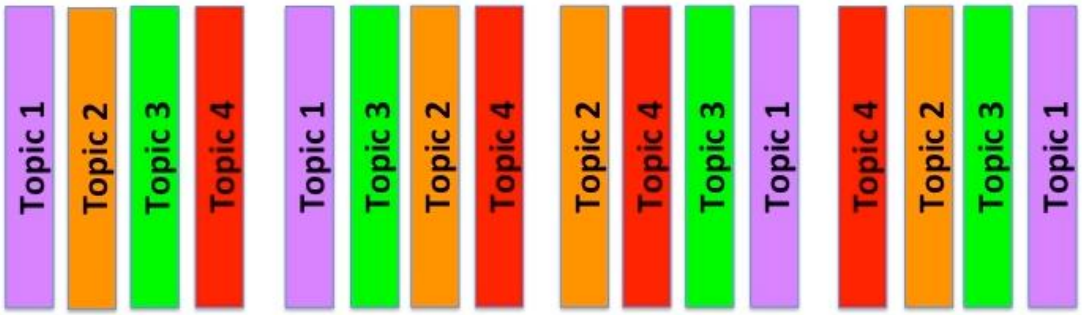
- **Spaced repetition** is how everyone learns everything.
- Learning **must be consolidated**.
- This is why a **revision timetable** must be drawn up with **repeated exposure** to the stuff you need to learn.
- You need to **overlearn material** until it's in your long-term memory.



Interleaved Practice

When you are revising a subject, the temptation is to do it in ‘blocks’ of topics. Like below:

The problem with this is, is that it doesn't support the importance of repetition – which is so important to learning. So rather than revising in 'topic blocks' it's better to chunk these topics up in your revision programme and interleave them:



This means that you keep coming back to the topics. So, instead of doing a two hour block of revision on topic 1, do 25 minutes on topic 1, then 25 minutes on topic 2, then the same for topic 3 and 4.

The **Pomodoro Technique**

There are five basic steps to implementing the technique:

- Decide on the task to be done
- Set a timer for 25 minutes
- Work on the task until the timer rings
- Take a short break (5-10 minutes)
- Repeat. After four pomodori, take a longer break (30-60 minutes)

And: **web tools**

- You may find that using the net to collaborate on making revision materials works for you or your peer group. All the sites below are free (in their basic form). Try:
  - www.stixy.com – an online bulletin board
  - www.mindmeister.com – an online mindmapping tool
  - www.tumblr.com – a blogging tool
  - www.weebly.com – a website creation tool
  - www.wallwisher.com – an online post-it tool
  - www.wordle.net – an online vocabulary poster tool
  - www.popplet.com – makes mindmaps

So: **revising the what and the how**

- **Revision MUST be ACTIVE**
  - Reviewing
  - Testing
  - Mastering an outline of
  - Changing the format of
  - (Re)presenting **the material in a different way**
  - Doing past exam questions
- **NOT** just rereading

Summary

- “Memory is the residue of thought”.
- Start early
- Space it out (spaced repetition / interleaving)
- Test yourself – be active, not passive!
- Tomatoes!