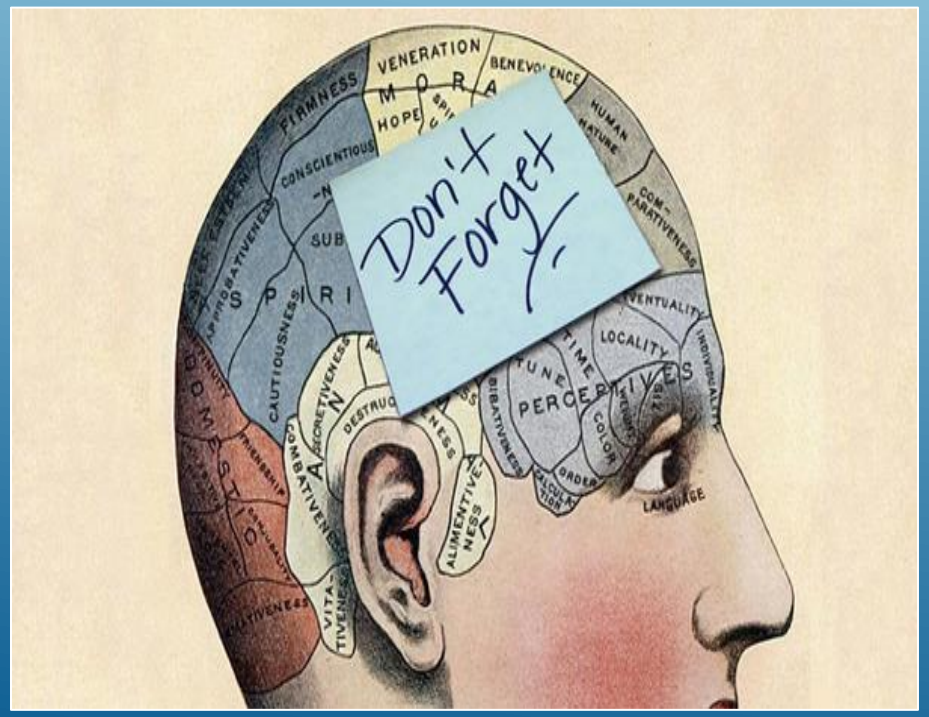
Learning to shape the future

Understanding the science of learning to help you to retain and recall information



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OUR STRANGE MEMORIES

What do you remember about your primary school?
Why do you think you remember these things?

Why do you think that we remember song lyrics from 5, 10, 30 years ago?

How can we explain the fact that 12 year old boys can recall detailed statistics about Mo Salah's season for Liverpool, but can't remember their times tables?

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There were 17 items on the conveyer belt – how many do you remember?
What techniques did you use to try and remember them?

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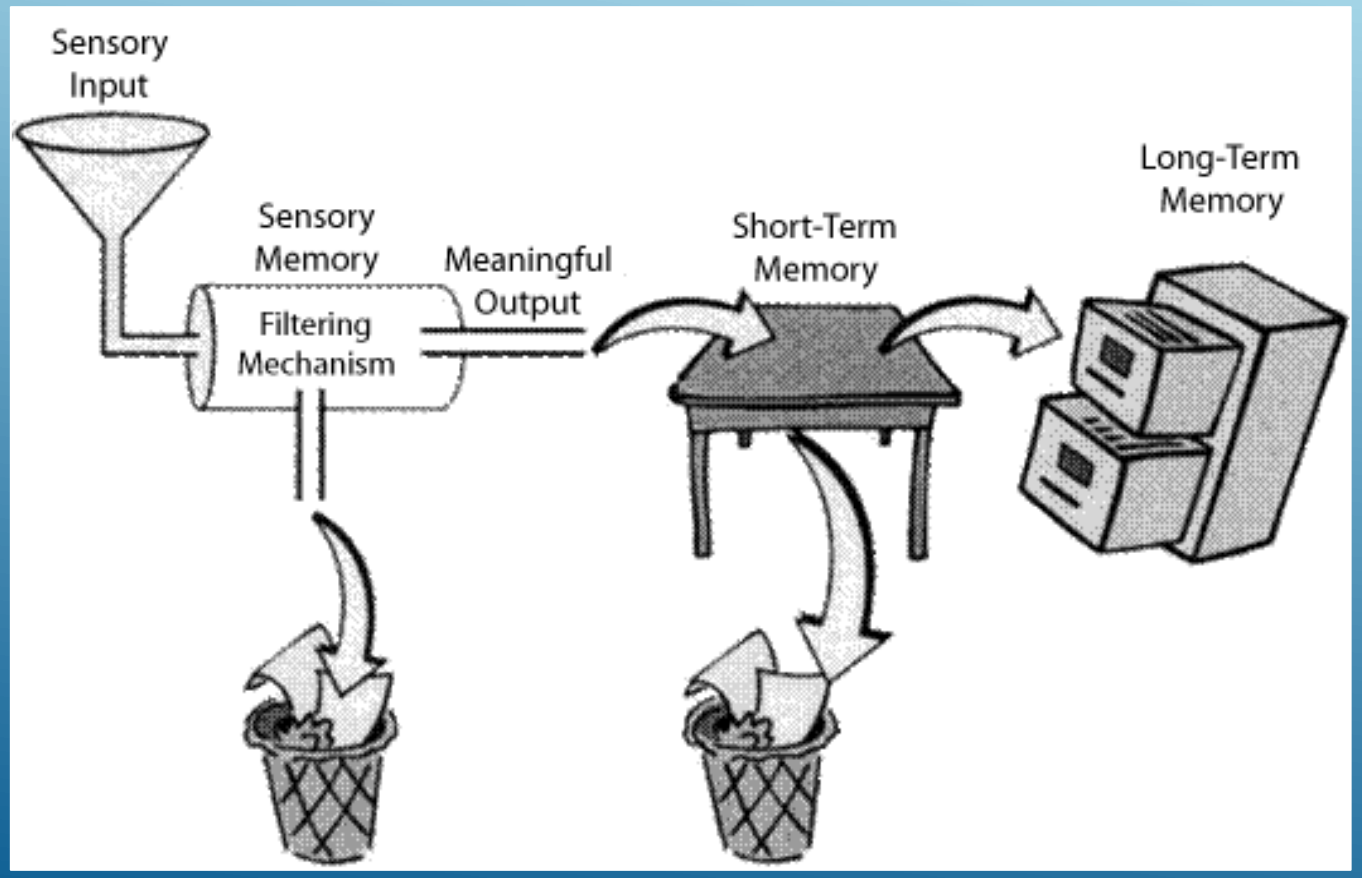
1. Loaf of bread
2. Mobile phone
3. Cup of tea
4. Microphone
5. Tin of Paint
6. DVD
7. Candle
8. Diamond Tiara
9. Shampoo
10. Camera
11. Violin
12. Kettle
13. Bible
14. Computer
15. Cuddly Toy
16. Bird House
17. Rabbit

How does memory work?

Memory is a highly complex process involving multiple components working simultaneously. Everything begins as sensory input from our environment. Using our sensory systems, we see, hear or feel a sensation or stimuli. Information 'grabbed' or made meaningful, moves on to short-term memory.

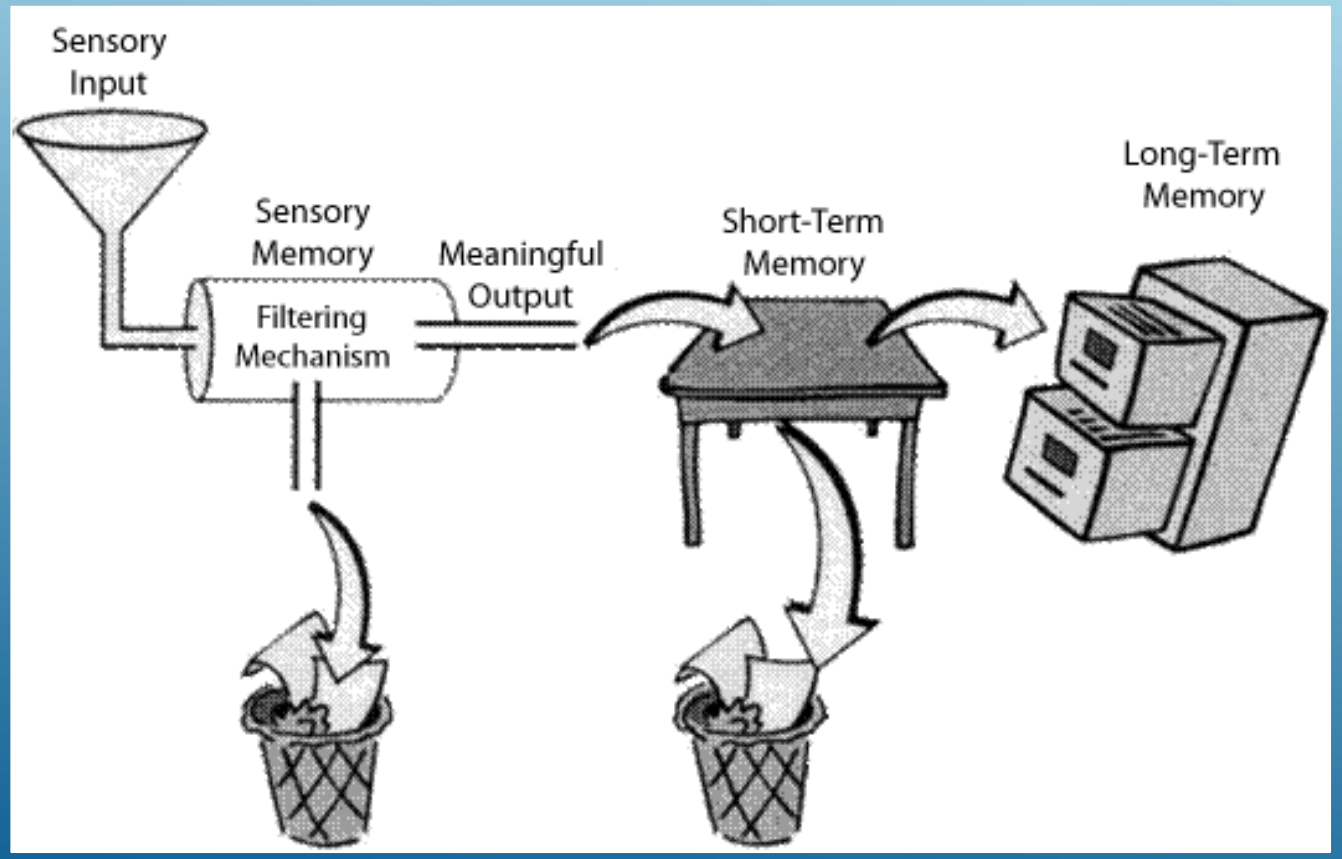


Our brains are programmed to pay attention to the unusual – something different. Incorporating novelty such as movement, music, humour, images into strategies help the information attract our attention. The use of strategies plays a very critical role in structuring input to help it move into long term memory in a meaningful and memorable format.

How does memory work?

To establish a more durable memory, we need to prevent information from being ‘dumped’.

If the information is important and rehearsed it moves to another part of the brain and then is eventually stored in long term memory.



There is more than one way to store a given memory. One person may prefer to remember a list by singing it whereas another person may prefer to visualise an association. There is no correct way.

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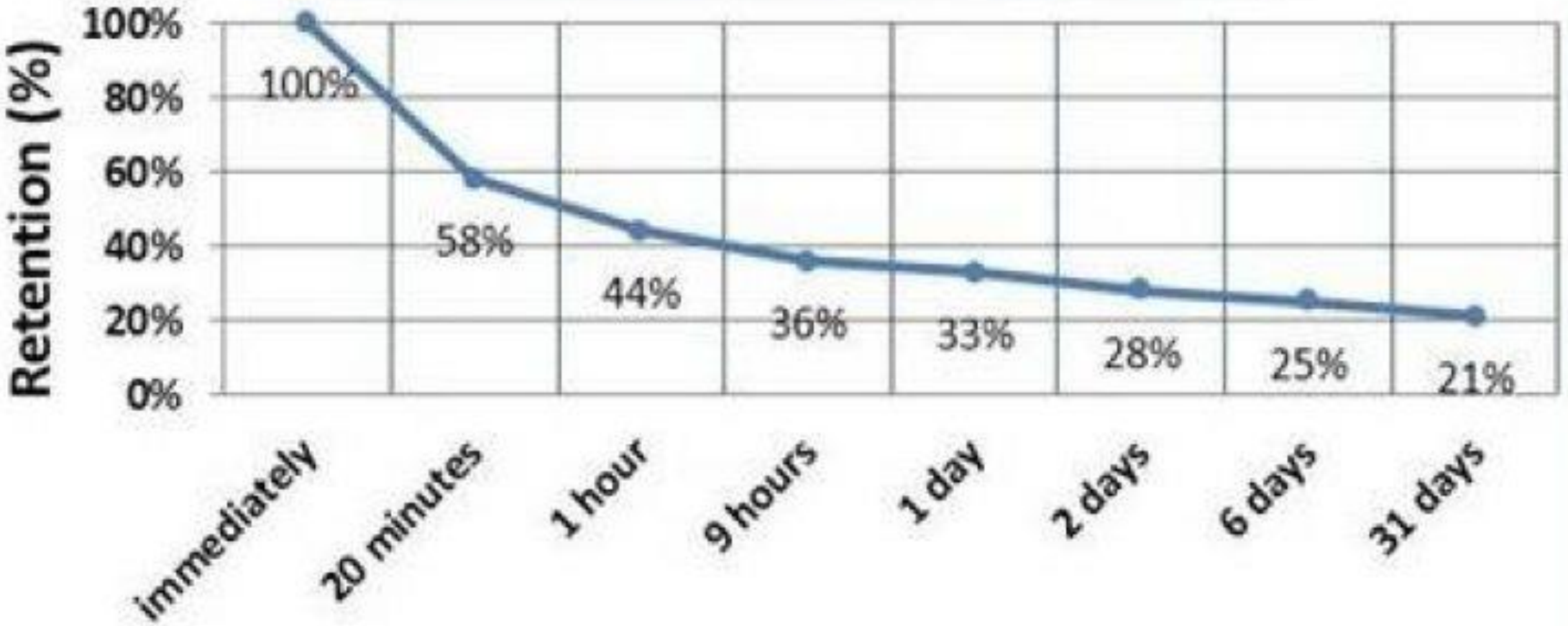
Ebbinghaus Forgetting Curve



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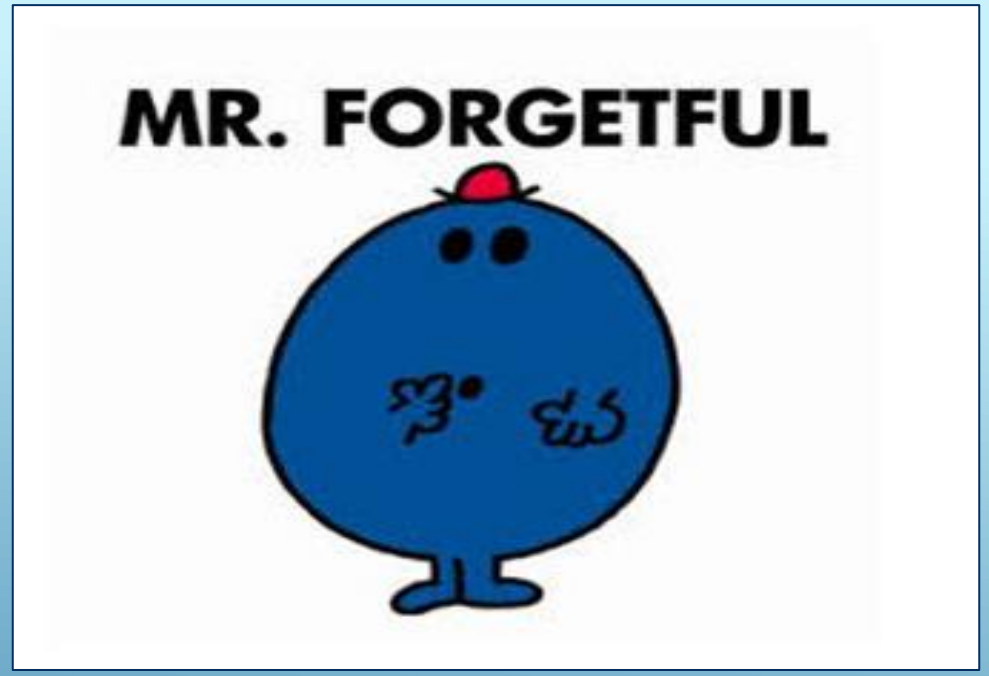
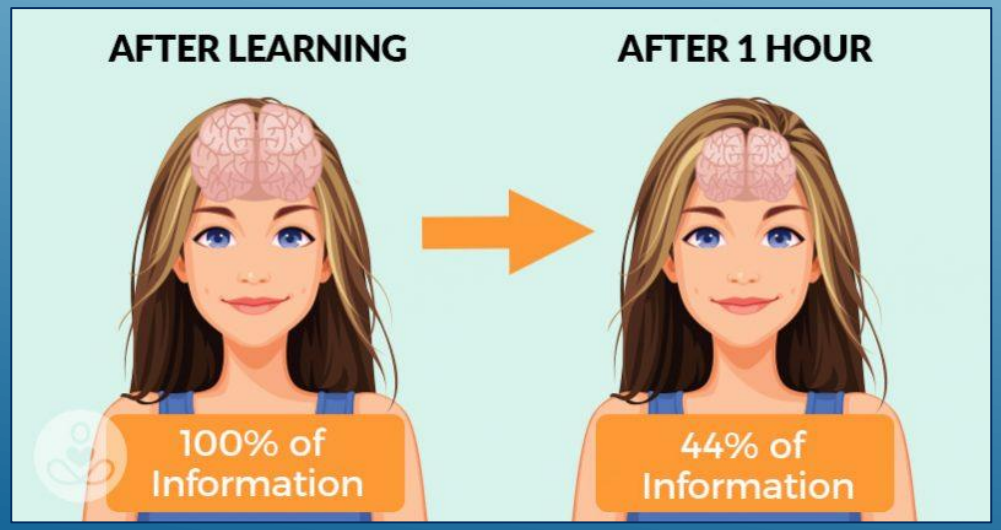


Why we forget

- Don’t understand context
- Conflicting contexts
- Lack of attention
- Lack of motivation
- Confusion
- Lack of associations/cues
- No review, or too long before a review
- New material might push out old material



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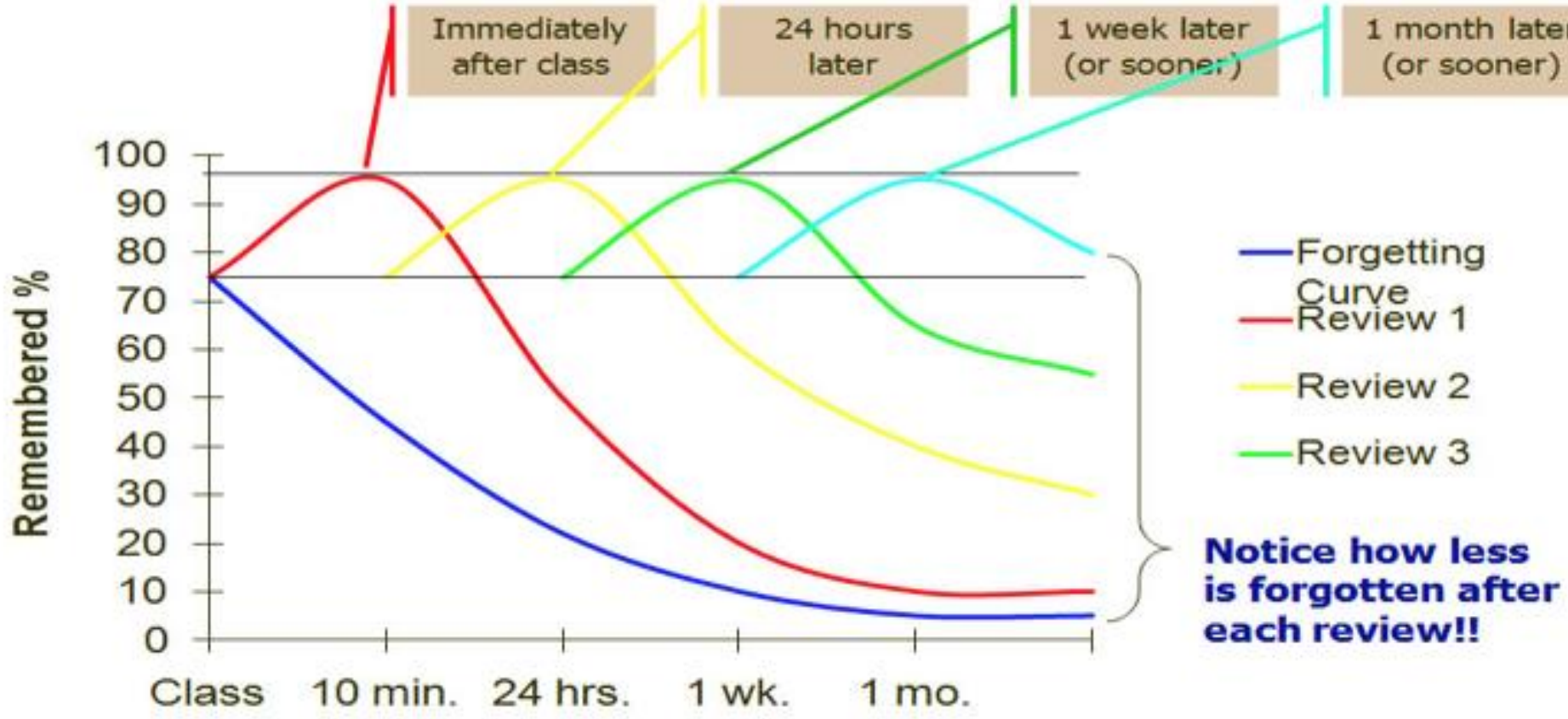
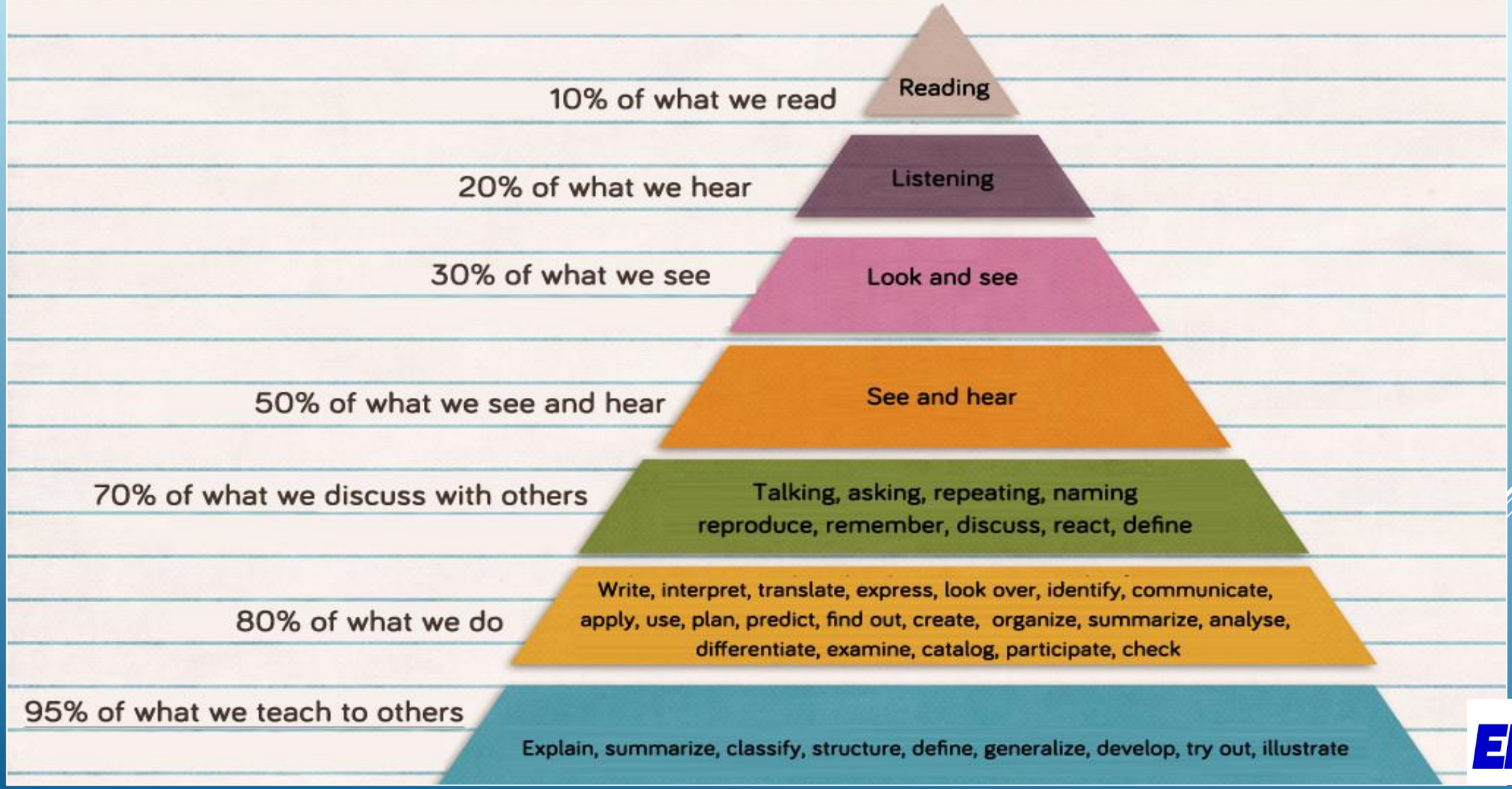
Overcoming the Curve



https://www.youtube.com/watch?v=cVf38y07cfk&vl=en

How Do We Learn?



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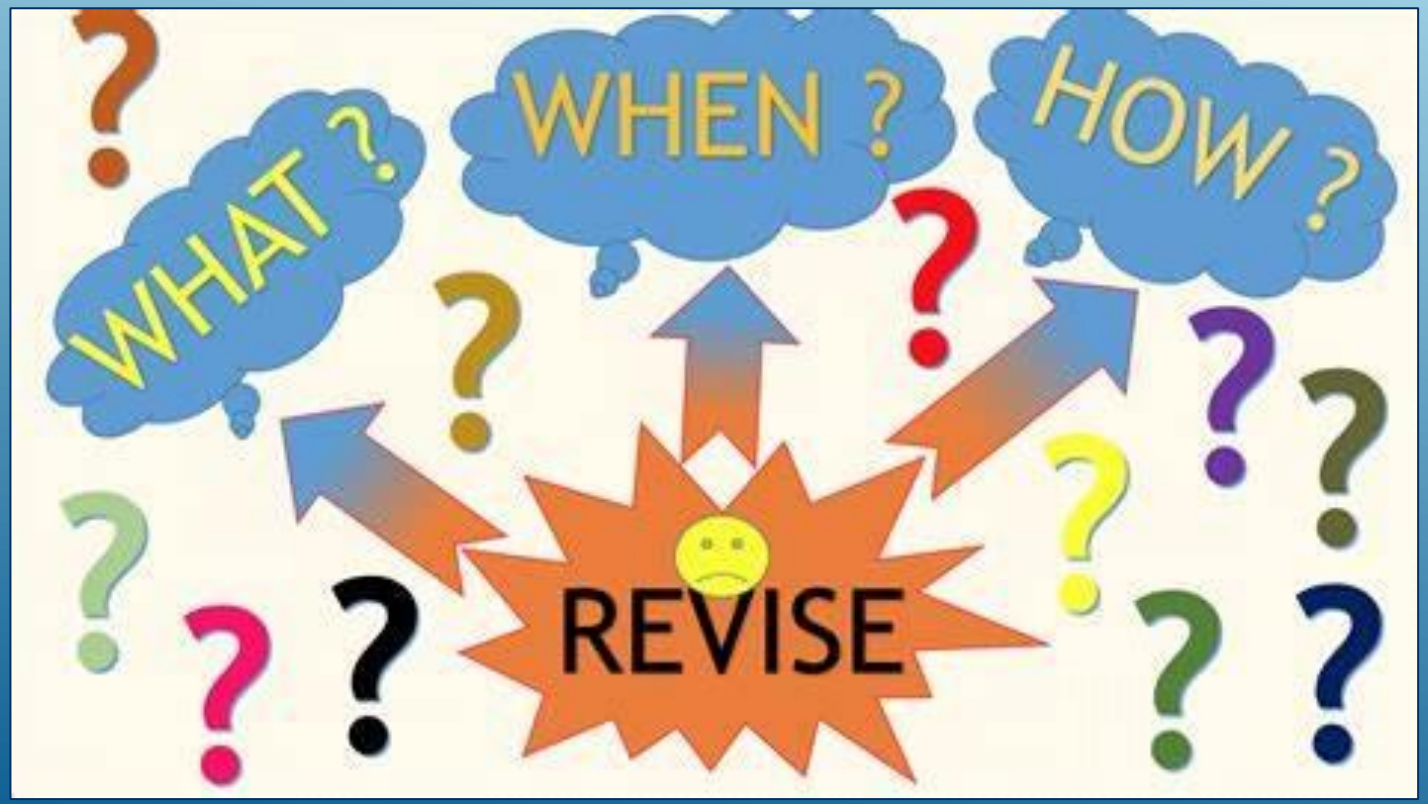
I don't know how to revise



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Routines and Habits

Creating an effective revision environment

- ✓ Find a quiet, tidy room with minimal distractions – your bedroom, library or classroom
- ✓ Put your phone in another room, it is too much of a distraction
- ✓ Put your revision timetable, exam timetable and other key documents visible on your wall
- ✓ Loud music is a distraction, if you must listen, it needs to be low tempo, without lyrics
- ✓ Have all your revision materials and stationary on your desk ready to go – make it obvious
- ✓ Make sure you have a drink and snack with you, staying hydrated is important

Ineffective revision strategies

The science of learning has also told us there are several ineffective revision strategies which remain popular. Students often feel as they have been 'busy' doing these, thinking that they are revising hard. However, they have little impact.

Re-Reading

This gives a false sense that you 'know it'. However, but your brain isn't doing any hard work or learning.

Highlighting

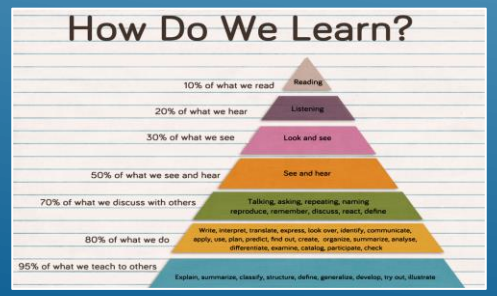
It wastes time & leaves you focusing on a narrow area, often missing the big picture of the notes.

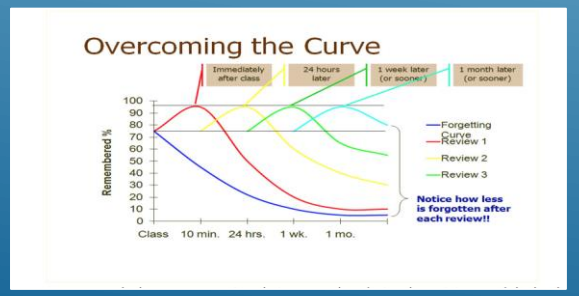
Cramming

This essentially overloads your working memory, you can't learn it all. It causes stress/anxiety before exams

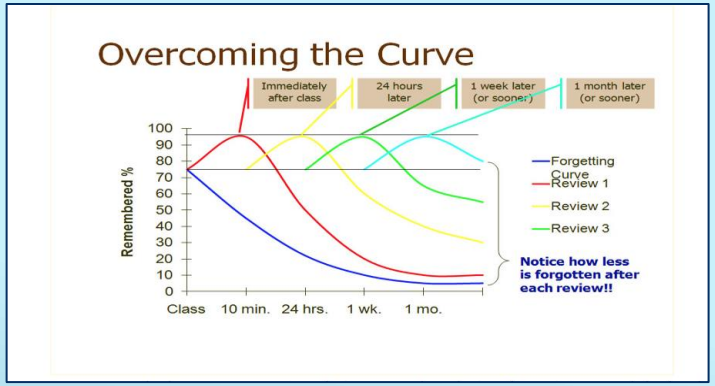
Re-Writing

Writing out your notes again isn't making your brain do any hard work, it simply wastes time.





Retrieval Practice



Retrieval Practice is a learning strategy which makes you think hard and brings information to mind. It is knowledge that boosts learning and strengthens memory.

- ✓ Knowledge quizzing, low stakes testing and multi-choice tests.
- ✓ Completing past papers or practice answers
- ✓ Answering verbal questions asked by teachers/peers/parents/guardians
- ✓ Summarising, creating flash cards or revision materials where you can 'test' yourself
- ✓ A brain dump where students write down everything they know about a topic

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Retrieval Practice

Summary: Brain dumps

1.

Identify knowledge

Identify the knowledge/topic area you want to cover.

2.

Write it down

Take a blank piece of paper/white board and write down everything you can remember about that topic. (with no prompts)

Give yourself a timed limit (e.g. 10 minutes)

3.

Organise information

Once complete and you cannot remember any more use different colours to highlight/underline words in groups.

This categories/links information.

4.

Check understanding

Compare your brain dump to your K/O or book and check understanding.

Add any key information you have missed (key words) in a different colour.

5.

Store and compare

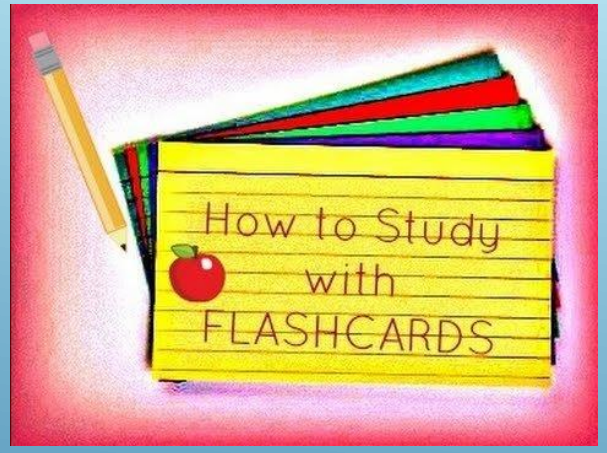
Keep your brain dump safe and revisit it.

Next time you attempt the same topic try and complete the same amount of information in a shorter period of time or add more information.

Brain dumps are a way of getting information out of your brain.

Retrieval Practice

Technique: flash/cue cards:

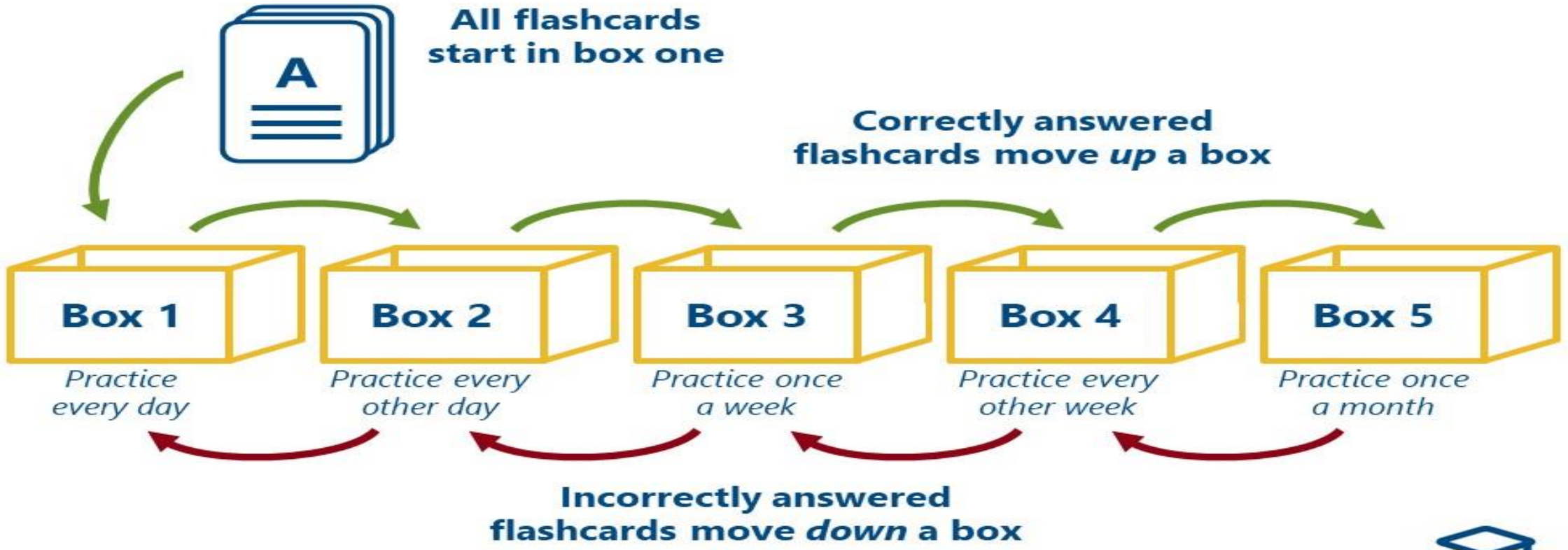


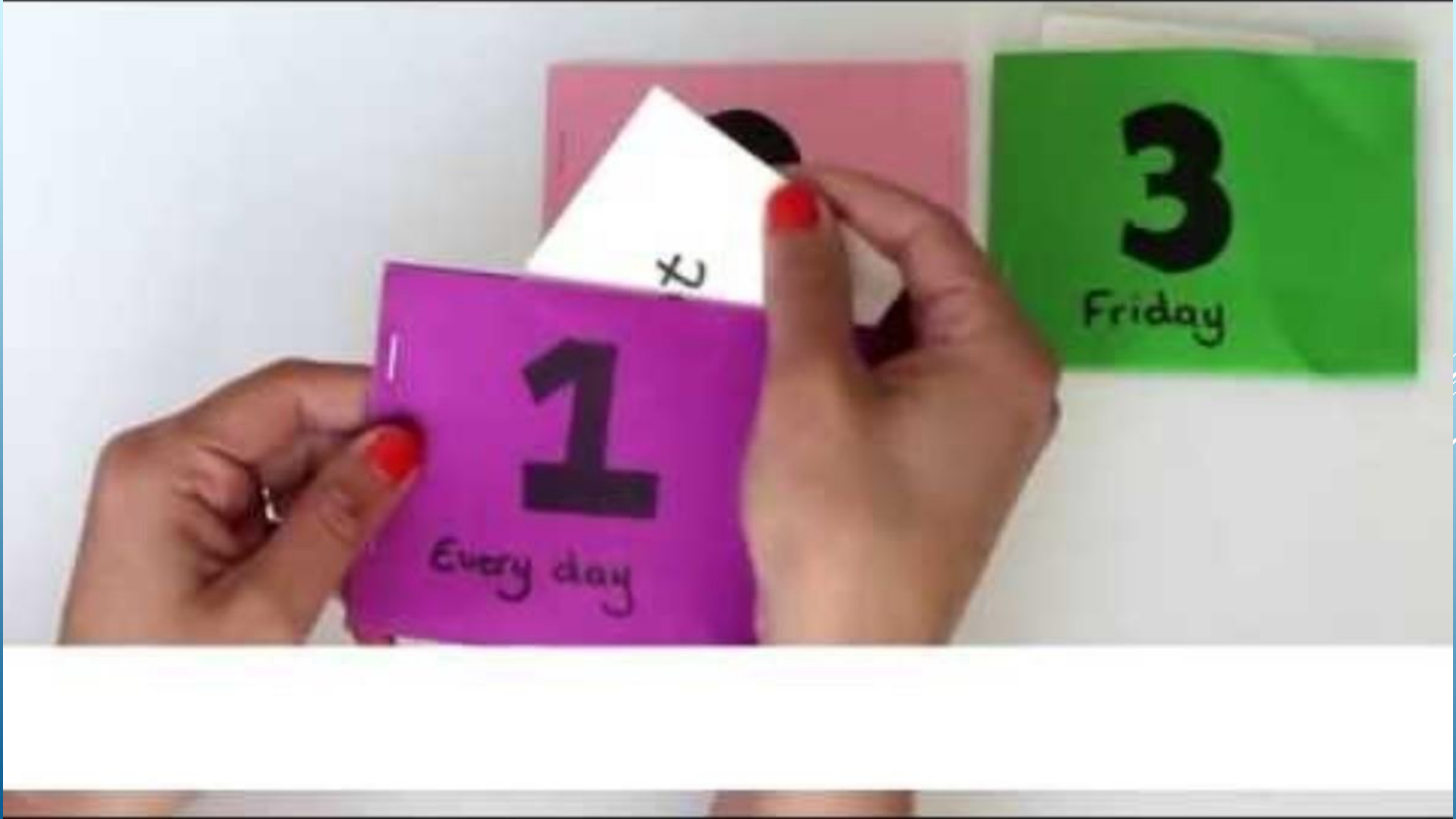
- Summarise: Once you have written out your revision notes, it's time to condense that information into small manageable facts. This is where memory cards come in to play.
- Word power: For each topic, write bullet points of key facts on a set of index cards.
- Organise: Categorise the facts into sub-categories, then sub-sub-categories so you can understand how they all link together.
- Link: Don't just remember the key facts on the cards. They should act as prompts for all the other revision facts you've been learning.
- Portable: The great thing about small index cards is that you can put them in your bag/pocket and take them anywhere. That way you can look at them on the way to school or even when you're out shopping!

- 1 piece of info per card
- A question linked to the topic on the card, on the reverse
- Good for quizzing each other, and verbalising your understanding (if you can talk about it, you can often write about it!)
- Good for revising with people at home who have no subject knowledge – they can quiz you!

How to use the Leitner system for flashcards

Increase your memory with spaced repetition and active recall

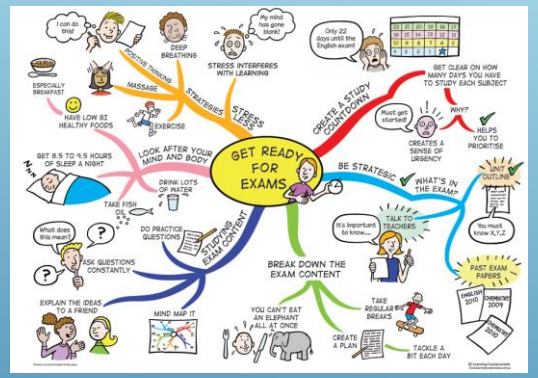


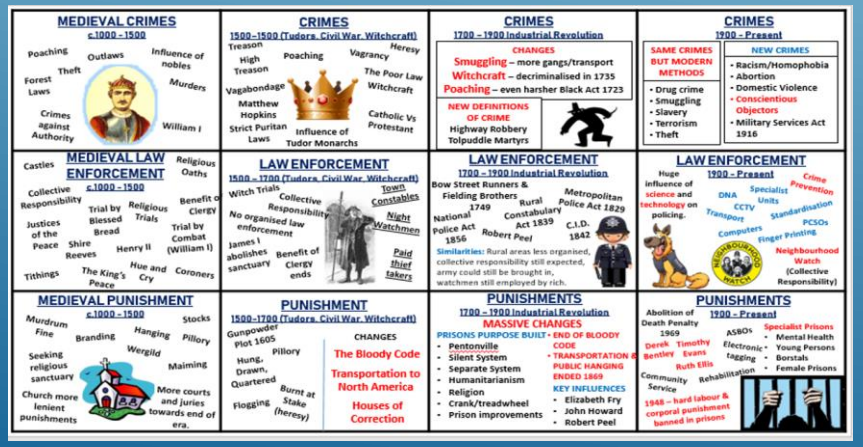

3
Friday
1
Every day

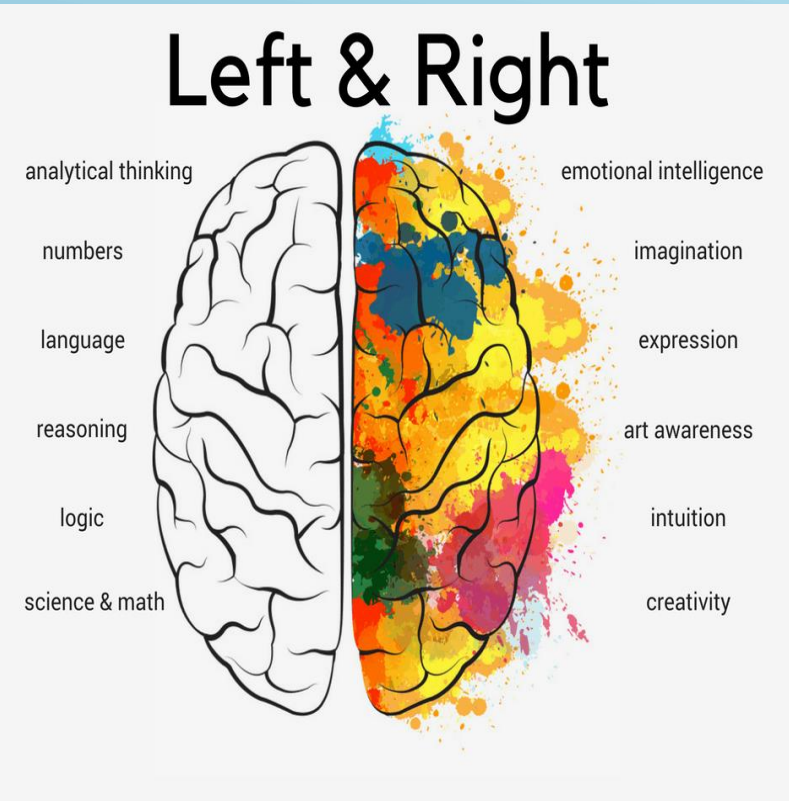
Dual coding

When reviewing something you have learnt, combining words and pictures can be powerful. Research suggests that combining words and images increases your learning by visually representing information in two different ways. Some examples are:

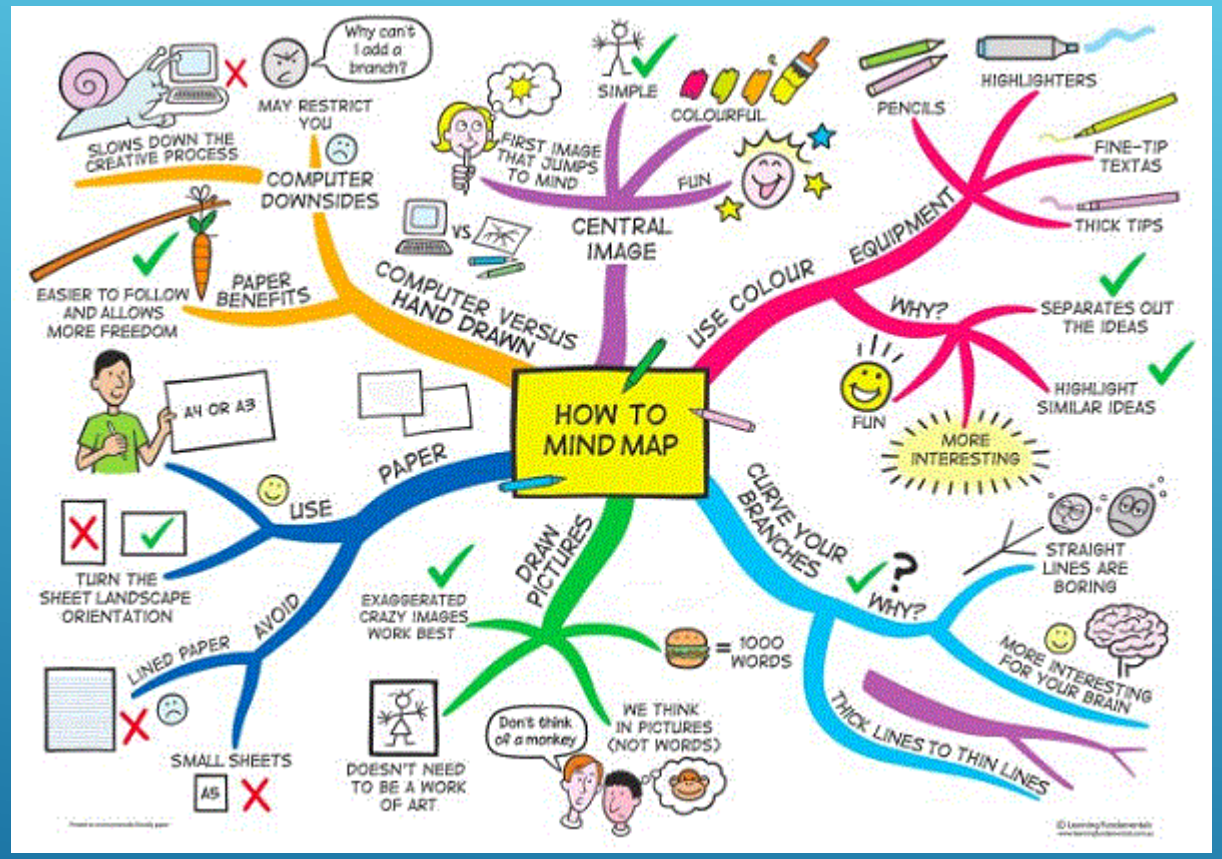
- ✓Timelines
- ✓Flow diagrams
- ✓Mind maps
- ✓Venn diagrams
- ✓Concept maps
- ✓Story boards
- ✓Diagrams







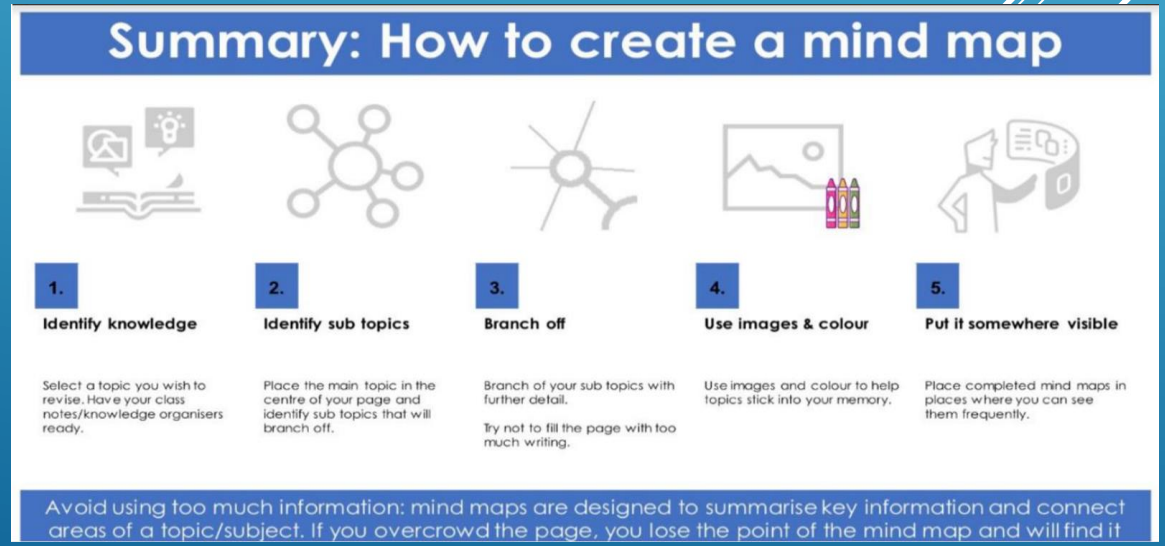
Revision Technique : Mind maps



Technique – Mind maps:

They are a useful memory tool because:

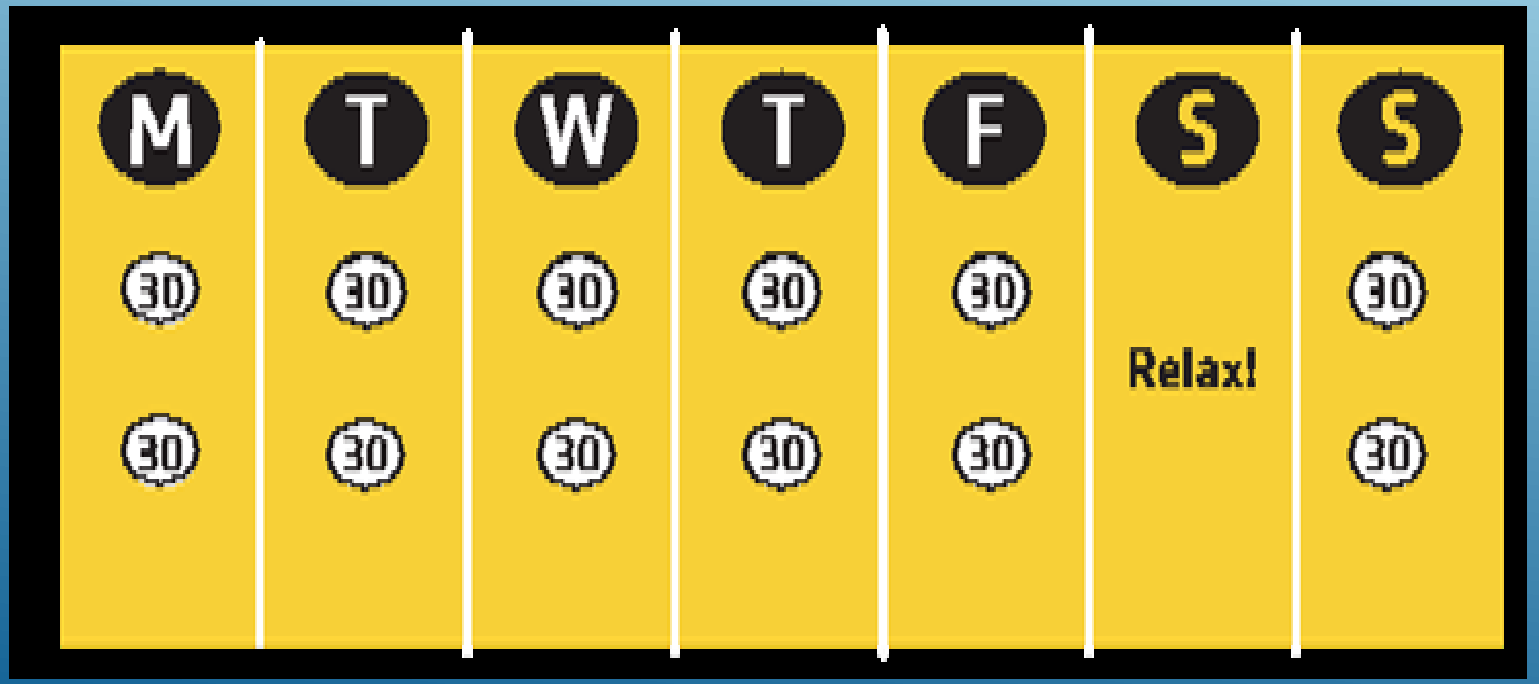
- **They are visual and visual memory is strong in everyone (irrespective of learning style)**
- **Memory is about association and mind maps force pupils to make associations**
- **They can act as memory cues in a variety of ways (memories can be cued in by remembering the layout, the words, the pictures, the colours and the links)**



Key to successful revision is repetition

Spaced Retrieval Practice

SPACING out your revision into smaller chunks over a period helps you to remember the material better and ensures you are less stressed with your revision.



This ensures you are not **cramming** as it will overload your memory and make you overconfident. By leaving time between revising and testing, and making the brain work harder, the more chances you have of remembering.

Interleaving

Interleaving involves switching between ideas and topics during a study session and not revising in blocks of topics.

M	T	W	T	F
MACBETH	UNSEEN POETRY	AN INSPECTOR CALLS	JEKYLL AND HYDE	CREATIVE WRITING
AN INSPECTOR CALLS	JEKYLL AND HYDE	CREATIVE WRITING	MACBETH	UNSEEN POETRY
CREATIVE WRITING	MACBETH	UNSEEN POETRY	AN INSPECTOR CALLS	JEKYLL AND HYDE

This ensures you are not studying one idea or topic for too long – research states that

Mixing up your revision and chunking it supports learning and strengthens your memory as we know you need to review information overtime to reinforce learning.

Coping with the pressures of exams – how can we support each other through the exam period?

Has their behaviour changed?

Worried?

Not sleeping?

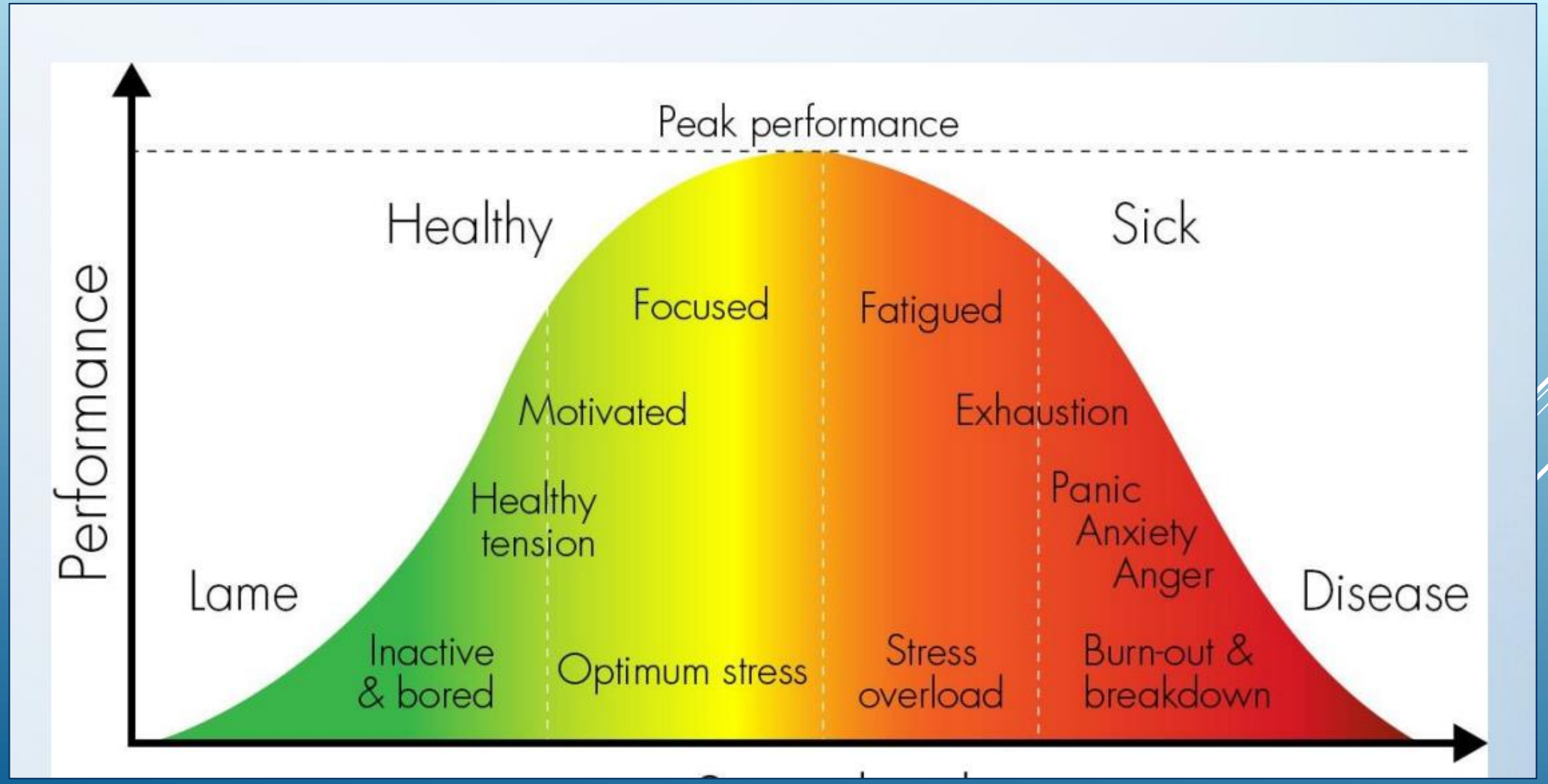
Headaches or stomach pains?

Irritable?

change in eating habits?

What will I do?

Coping with the pressures of exams – how can we support each other through the exam period?



Coping with the pressures of exams – how can we support each other through the exam period?

Top tips to help at home:

1. Healthy balanced diet with lots of water to keep hydrated
2. Sleep well – try to stick to regular bedtimes and aim to get approx. 8 hours sleep
3. Be flexible
4. Give them space
5. Encourage breaks and exercise
6. Please contact school if additional support/advice needed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Any
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