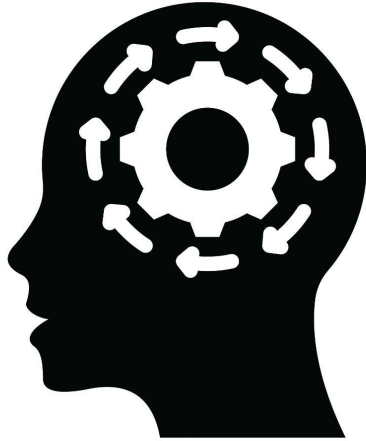


Learning How to Learn

The Y13 Edition



The Camden School for Girls 2024-25

Compiled by Simon Flynn

Y13 Parents Online Session

4.00pm - 5.00pm
Tuesday 11th February

Simon Flynn

Learning How to Learn

The GCSE Edition



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Summarising

When asked a question such as "what have you done today?", you'll likely provide a summary. This involves you selecting, organising and integrating the critical moments of your day. Taking a similar approach with your studies can have a powerful effect on your learning. What is vital is that you use your own words and don't mindlessly copy your notes or revision guide.

Self-testing

Research has shown that every time you bring a memory to mind, you strengthen it. And the more challenging you make this retrieval, the greater the benefit. Self-testing improves the recall of information, transfer of knowledge and making inferences between information. Equally, there are many indirect effects, such as a greater appreciation of what you do and don't know, which helps you plan your next steps.

Mapping

Mapping is a brilliant way of organising and learning information, demonstrated on various pages in this booklet. It helps you break down complex information, memorise it, and see the connections between different ideas.

Drawing

This involves turning text into some form of drawing. Doing so consists in selecting, organising and integrating the information that matters, which forces you to think. This approach can be incorporated into the three strategies above too.

Self-explaining

Continually ask yourself "how?" and "why?" when studying a topic and then try to answer these questions. Doing so helps you to see connections and differences between ideas. Self-explaining can also involve you saying loud the steps you're taking when solving a problem. For example, a recent analysis of 61 research studies showed that "it is better to ask a student to explain if they can explain something to themselves, than for a teacher or book to always explain it to them".

Teaching

Einstein is supposed to have said, "If you can't explain it simply, you don't know it well enough". This strategy works better when you know in substance you're teaching someone. As with self-explaining, you're forced to select and organise what's important so that your teaching is as straightforward as possible. Having someone to interact with and ask you questions strengthens your learning.

Flashcards

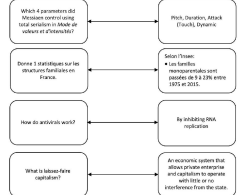
Flashcards have the potential to be a powerful learning aid. However, how successful this will depend on the thought you put into making them in the first place and then how they're used. It's very important to remember that they're for **learning**, not **memorising**.

Making good flashcards

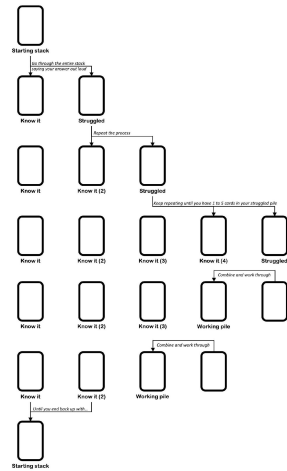
- One side of the flashcard should be a single question and its answer on the reverse.
- Select the essential information to go on each flashcard. You could use topic checklists or **bolded** terms in your study guide to help you choose.
- Break complex concepts down so that they cover multiple cards.
- Use drawing to illustrate answers.

Using flashcards

- Say your answer out loud and not just in your head. You must be fully committed to your response. Even better would be to write your answer out so you would have to do it on a page.
- Use them both ways – look at the answers and what the question is.



Flashcards – The Waterfall Method



Flashcards – The Leitner System

This is an excellent method of using flashcards over a sustained period of time and requires serious commitment. However, there can be a great return to your effort as the Leitner system allows you to see clearly that your learning is improving. Begin by finding three boxes that your flashcards can go in. Each box will determine the frequency you test yourself on the flashcard it contains (note: you decide how many boxes and the frequency you look at them). For example:



Place ALL your flashcards in the first box and test yourself. If you get a card right, move it to the second box. If you get it wrong, it remains in the first.



You test yourself on the card in the first box the following week and the second in two weeks. Whenever you get a card right, you move it to the next box. However, if you get it wrong, you move it back to the first box. You must be strict about this.



Continue testing yourself according to each box's frequency.



List It

This is a simple free recall task that is very versatile. It can be fun challenging, but this is a good thing, and it provides clear feedback on what you do and don't know. Choose a topic, set yourself a time limit and...

- List as many keywords as you can
- List as many facts as you can
- List as many key events/dates/individuals as you can
- List as many causes of X as you can
- List as many consequences of Y as you can

Brain Dumps

An extension of "List It" above, brain dumps can be incredibly effective. Spend 15-30 minutes with a blank piece of paper and write down everything you know about a topic. Once finished, look at your class notes, textbook and/or revision guide and check that what you wrote is correct. Then look at what you forgot and focus on this. Date the sheet and store it away. At a later date, do the exercise again and compare the sheets – hopefully, you remember more the second (third, fourth etc.) time and will be able to see the improvement you've made.

Brain dumps made easier

Brain dumping can be a torturing exercise. To create a gentler, if less effective, version, compile a list of keywords, terms, people, countries etc., connected with a topic and write uninterupted for fifteen minutes using these as prompts. For example, if your brain dump was on the "Energy" topic in Physics, your prompts could be:

= 3x work = 1/2 t = F x s = m x a = high biotical chemical conduction
 conservation of energy dissipate distance efficiency elastic potential electricity
 electrostatic force fossil fuels friction geothermal gravitational potential heating
 hydroelectric insulation insulator kilogram(kg) kinetic lake/sea magnetic
 meter (m) Newton(N) non-renewable nuclear power renewable Sankey diagram
 stored heat causality store thermal insulator tidal water work done

So, a brain dump on energy might start... Energy cannot be created or destroyed but only transferred from one store to another. There are eight energy stores. These are: kinetic, gravitational potential, chemical, elastic potential, internal (thermal), nuclear, electrostatic, and magnetic. Anything moving has a kinetic energy store. Anything raised a height has a gravitational potential store. Food, fuels and batteries are examples of chemical store. Anything that can be squashed or stretched has an elastic potential store. A change in temperature means a change in the internal (thermal) store. There are four energy transfers: work done (mechanical), radiation,

Cornell Note Taking Method

This is the best way for taking and reviewing notes.

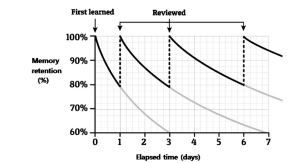
- Write notes on the area in question using the text below.
- Create recall cues one or two days later.
- After a few days, write a summary of the key points.
- At any future point, cover the notes and summary and use the recall cues to test yourself.

Topic:	Sub-topic:	Date:
Recall cues	Notes	
Questions and tasks based on the notes opposite	<ul style="list-style-type: none"> Bullet points Symbols and abbreviations Write in your own words (don't mindlessly copy) Make sure it makes sense to you 	
	<p>What to write</p> <ul style="list-style-type: none"> Keywords and ideas Important dates / people / places Diagrams / charts Formulas Examples / case studies Critical analysis, e.g. strengths/weaknesses 	
Summary		
Summarise the main points in the notes above. Think about: <ul style="list-style-type: none"> Why is this info important? What conclusions can I draw? 		

Final Learning Tips

Space out your learning on a subject

Spacing out your learning over time is far more effective than last-minute cramming. This is based on research into how we forget and how we remember. The speed at which we forget something will depend on many factors, such as the difficulty of the material, how meaningful it was to us, how we learned it and how frequently we relearn or remember it. The last factor tells us that when we learn something for the first time, we need to review it fairly often afterwards. The more times we force ourselves to remember something, the longer the gap between reviews, which the diagram below illustrates neatly. The Leitner System and Cornell Notes mentioned earlier provide an excellent way of achieving this, but the principle applies to all learning strategies mentioned in this booklet.



Don't study one topic at a time – mix it up!

It's better to jumble up your learning with a subject instead of focusing solely on one topic at a time and block studying that. So, rather than studying AAA BBB CCC (each letter represents a topic within a subject), there is a significant benefit in approaching it as, say, ABC BCA CAB because you're more likely to see connections between topics, which will result in a better grade.

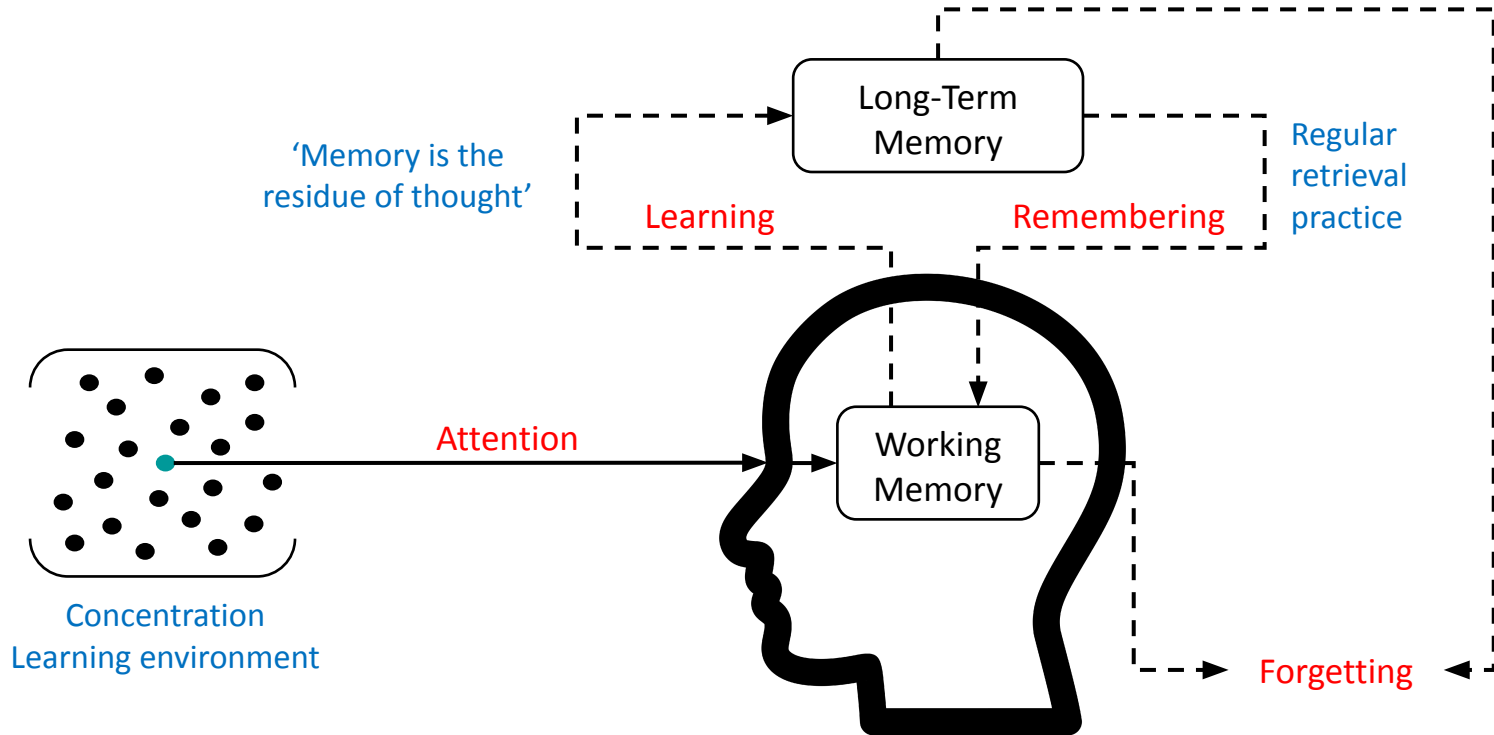
This interweaving of content can also be helpful when it comes to practicing questions. Problems are interwoven if arranged so that consecutive questions cannot be solved by the same strategy. This forces you to choose a strategy based on the problem, just as you must in exams.

What we'll cover today

- Why this session?
- A simple model of how learning happens
- Where to start
- Successful learning takes place over time
- Effortful learning
- The power of habits
- Improving study habits
- A short Q&A

Why this session?

- We have the same goal.
- How can we work together?
- Communication is key.



Where to start

1. How do you study?
2. Why do you study this way?
3. Does it work (and how to you know)?

If your methods feel easy...

... they're almost certainly not effective.

- If an athlete or musician wants to make noticeable and continual improvements, how easy are their methods for achieving this likely to be?
- What's the difference if we change 'athlete' or 'musician' to 'learner'?

Effortful Learning

- A recently published study showed that students often misinterpret the feeling of 'This is hard!' to mean 'I must not be learning much!'
- The truth is that more effortful strategies produce much greater long-term learning gains.



E

D

C

B

A

A*



E

D

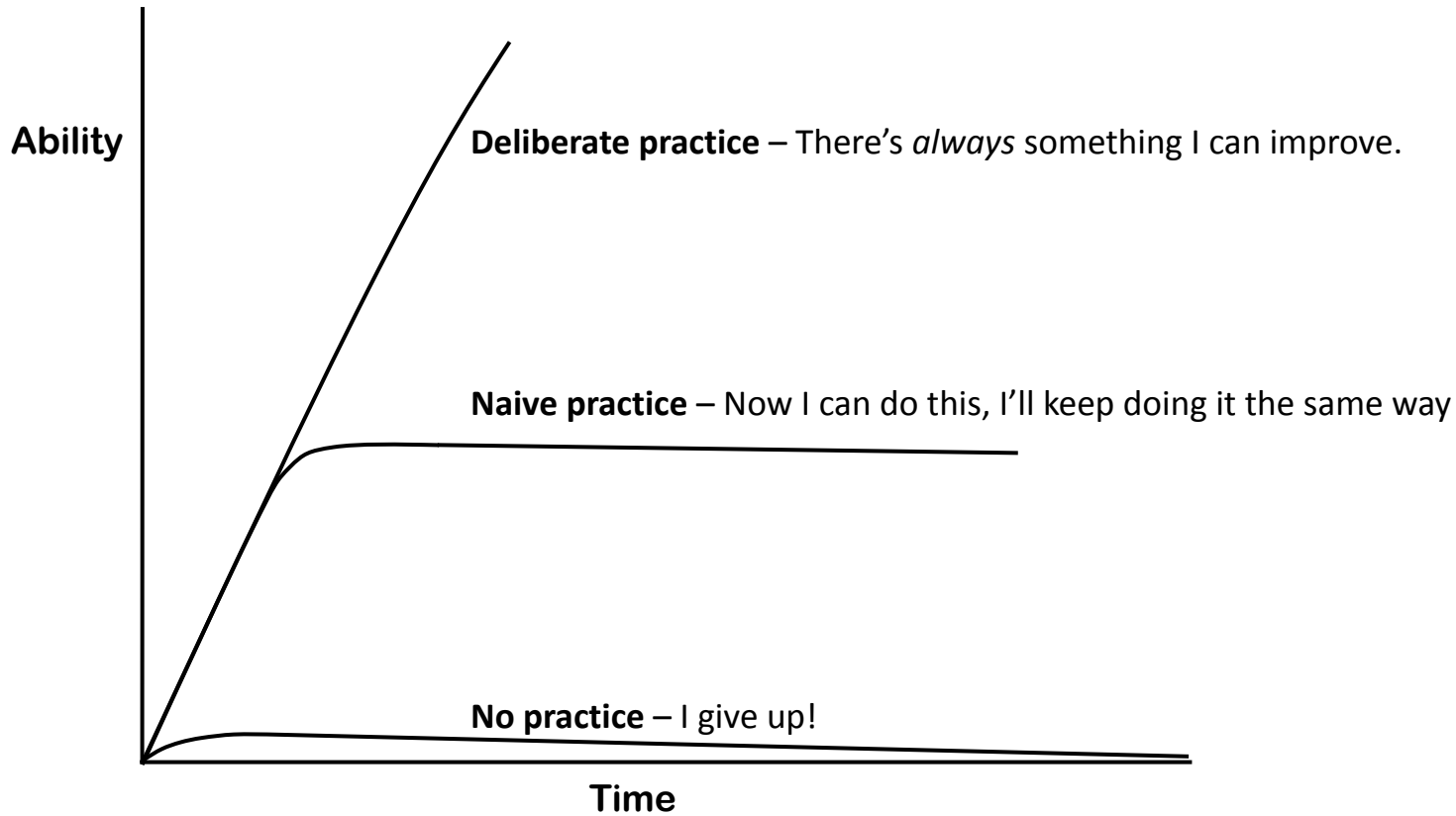
C

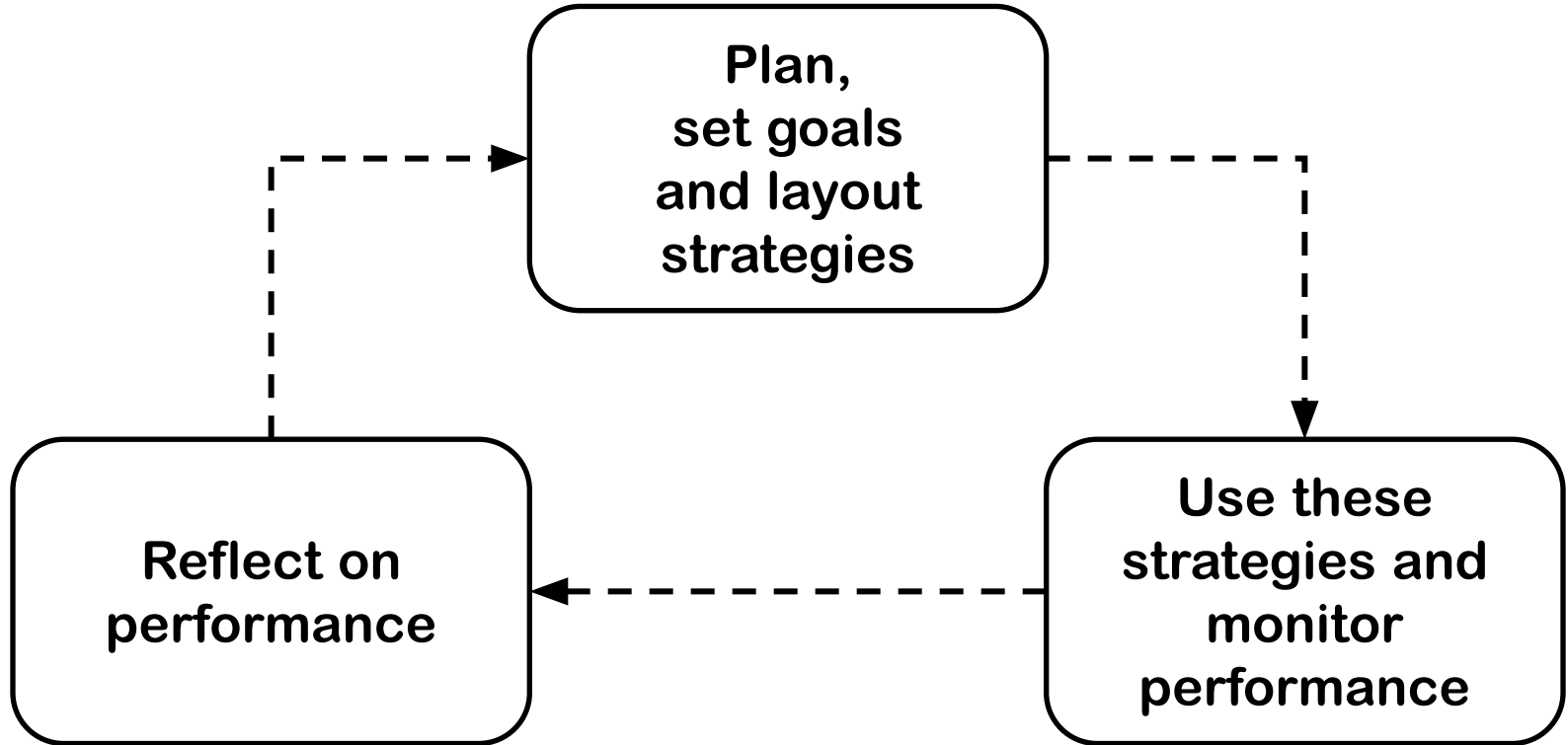
B

A

A*







In a nutshell...

A simple question that a student can repeatedly ask themselves to help guide their decisions and actions is:

- *What would an effective learner do?*

Learning and the Importance of Good Habits

Success is the product of daily habits – not once-in-a-lifetime transformations.

The Power of Habits

- Research has shown that about 43% of what people do daily is repeated in the same context.
- Habits are automated behaviours that shape our daily routines and decisions without much conscious thought.

The Power of Habits

- The best learners tend to have excellent learning habits.
- Forming new habits is much easier said than done – studies show that 88% of people who set New Year's resolutions fail them within the first two weeks.

The Power of Atomic Habits

- Atomic habits are small, easily achievable actions that can substantially transform one's life when practised consistently over time.
- For example, one could begin with a single push-up or a 30-second plank each morning rather than committing to hour-long gym sessions.
- Instead of telling yourself you must study for hours, start with just 5 minutes. Set a timer and dive into your work. Often, once you've started, it's easier to keep going.

Improving study habits

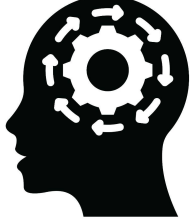
- Know Where and When
- Use Habit Stacking
- Establish a Dedicated Study Space
- Minimise Digital Distractions
- Set Goals and Rewards

Improving study habits

- Establish a Consistent Routine
- Prioritise and Organise Your Tasks
- Manage Your Physical Environment
- Incorporate Movement and Exercise
- Prioritise Your Well-being

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Someone is supposed to have said, 'If you can't explain it simply, you don't know it well enough'. This strategy works best when you know in advance that you will be teaching someone. As with self-explaining, you're forced to select and organise what's important so that your teaching is as straightforward as possible. Having someone to interact with and ask you questions strengthens your learning.

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 conservation of energy dissipate distance efficiency elastic potential energy
 electrostatic force fossil fuels friction geothermal gravitational potential heating
 hydroelectric insulation Joule(J) kilogram(kg) litres latent heat magnetic
 metre(m) Newton(N) non-renewable nuclear power renewable Sankey diagram
 solar specific heat capacity stored thermal solid transfer useful energy
 wasted energy water waves Watt(W) waves wind work done

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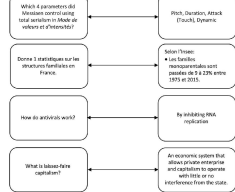
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Importantly answered flashcards go at the way back to the first box

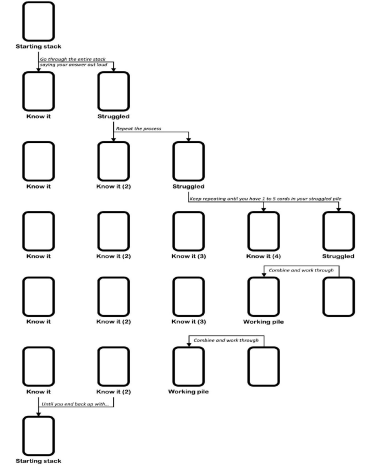
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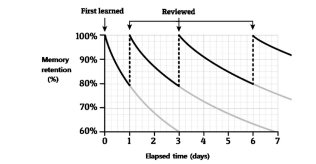


Adapted from https://www.youtube.com/watch?v=...

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This interleaving of content can be also helpful when it comes to practising questions. Problems are interrelated if arranged so that consecutive questions cannot be solved by the same strategy. This forces you to choose a strategy based on the problem, just as you must in exams.

Active Learning and Regular Retrieval Practice

To learn something successfully, you have to be actively involved in constructing your understanding so that it can be stored in your long-term memory. This knowledge then needs to be regularly retrieved to help its use become automatic. Here are some guiding principles designed to help achieve this.

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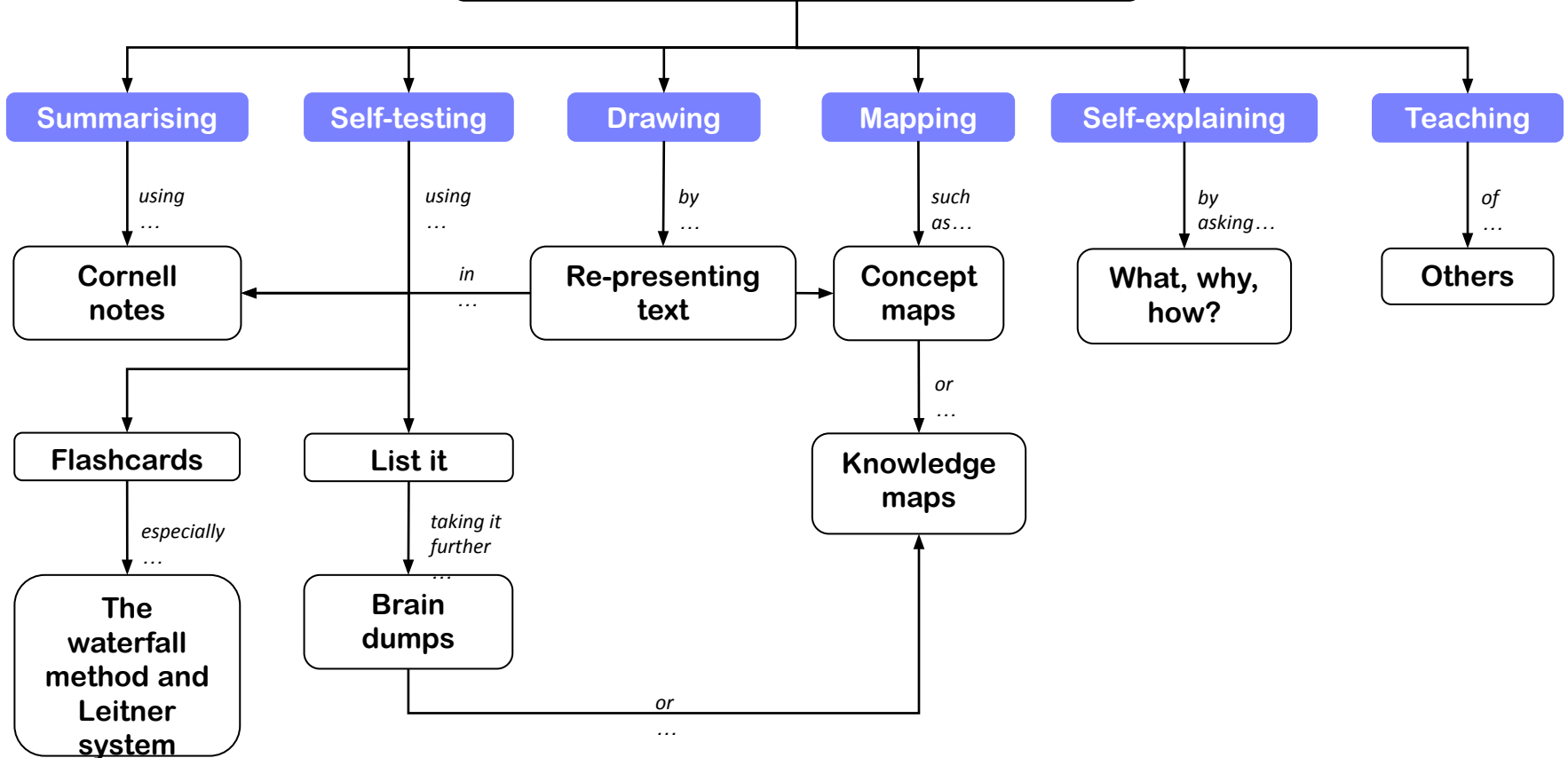
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Learning Strategies



ParentMail

You will shortly receive a ParentMail communication. This will include:

- A link to a video of today's session
- A link to a PDF of the Y13 *Learning How to Learn* booklet
- A link to a short feedback form

A short Q&A

- Please write any questions you have in the chat box and I'll do my best to answer them.

Thank you!