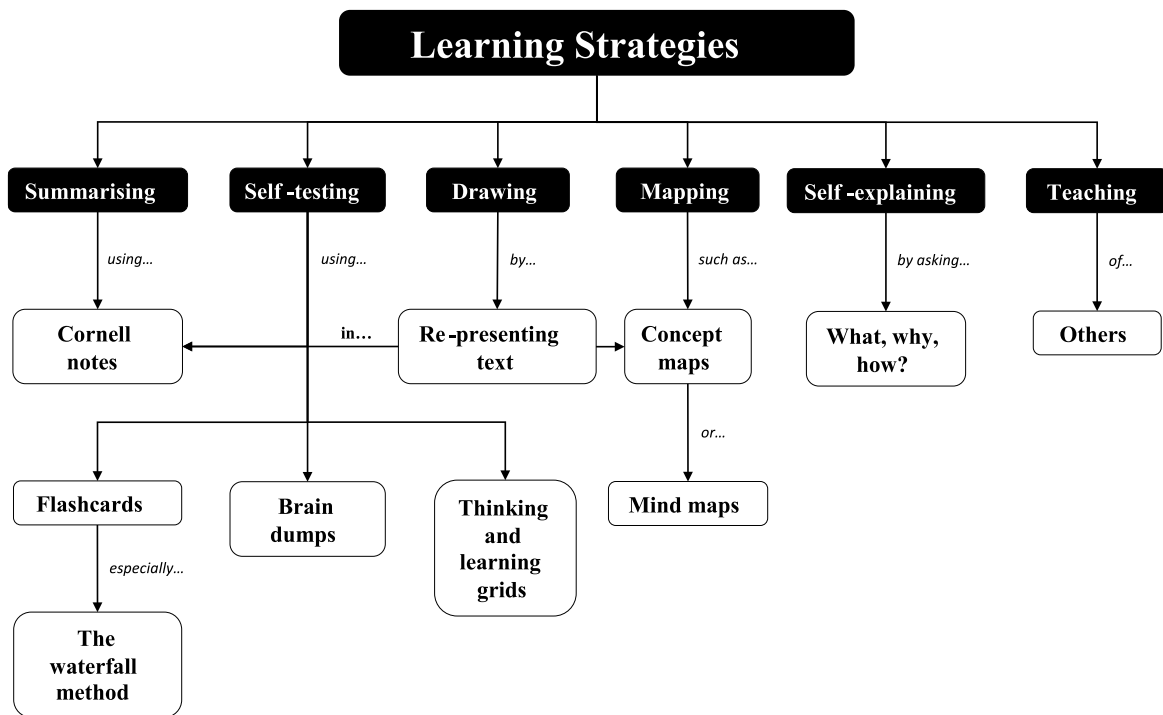A big part of your success in y13 will be the strategies you adopt to study for each of your subjects. The following SIL work will support you in reviewing and improving your study strategies.

Read through the information on the following pages.

Summarise details of any strategies you are unsure about

Reflect honestly on which of these strategies you already use and consider how you could apply additional strategies to each subject you study. Complete the chart so you can share your reflection with your teachers and tutor in September. You might choose a different way to present your reflection but be prepared to share it in September.

Learning Strategies

Summarising	Self-testing	Drawing	Mapping	Self-explaining	Teaching
using…	*using…*	*by…*	*such as…*	*by asking…*	*of…*

Cornell notes

in… Re-presenting text

Concept maps

What, why, how?

Others

Flashcards

Brain dumps

Thinking and learning grids

or… Mind maps

especially…

The waterfall method

	SUMMARISING	SELF-TESTING	DRAWING	MAPPING	SELF-EXPLAINING	TEACHING
SUBJECT 1						
SUBJECT 2						
SUBJECT 3						
SUBJECT 4						

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Study Smarter, Not Harder

Begin by asking yourself...

How do you study?

Then...

Why do you study this way?

And finally...

Does it work (and how do you know?)

Because...

If your study methods feel easy, then they're not working.

For example...

Simply reading notes is not an effective learning method

and...

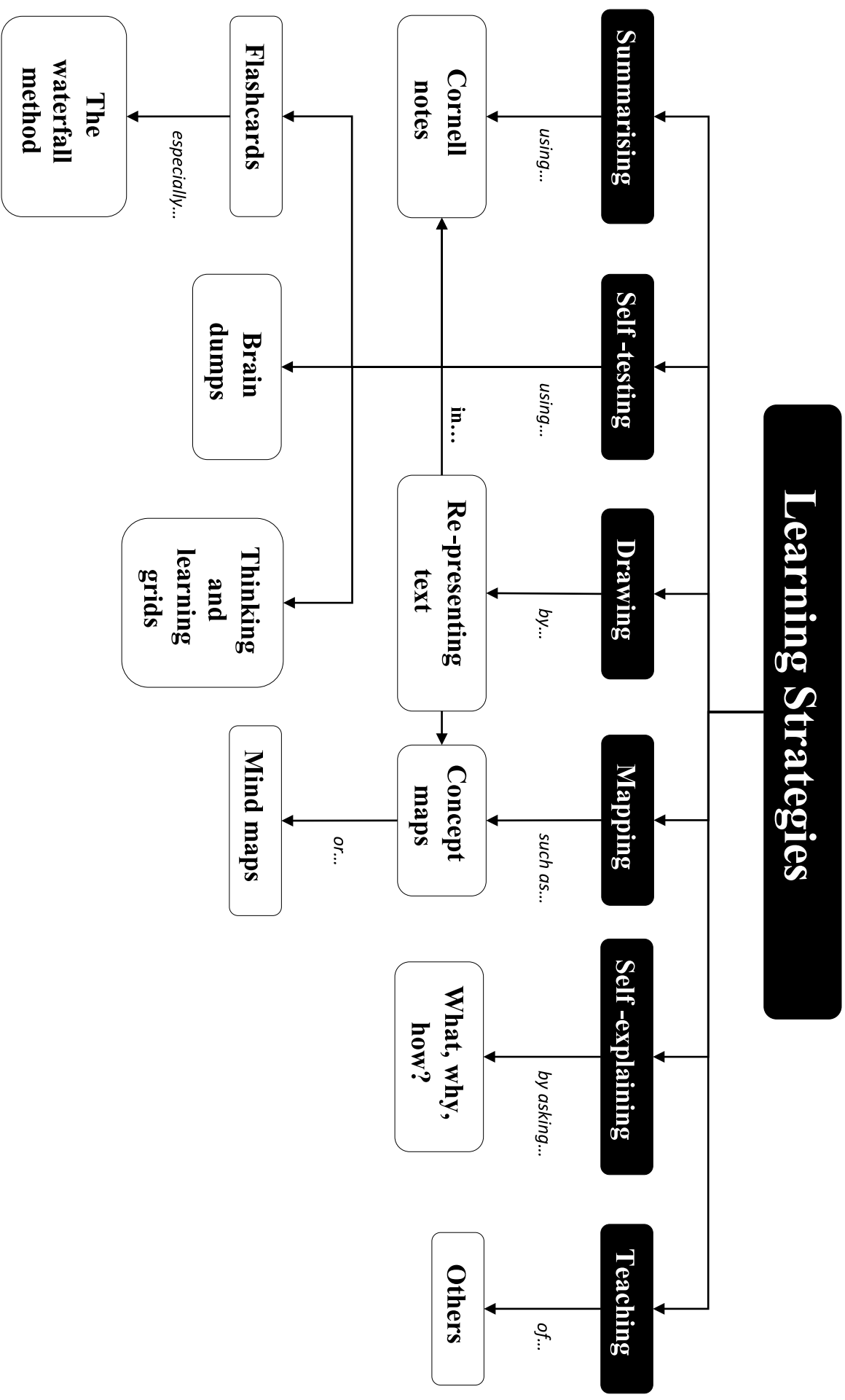**Neither is highlighting or underlining.**

This is because...

They don't require much effort.

Instead...

More effortful strategies, like the ones covered in this booklet, produce greater long   -term learning gains.

It's important to realise that...

Difficulty is desirable even if it's not always   desired .

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Learning Strategies

Summarising — using... → **Cornell notes** → Flashcards — especially... → **The waterfall method**

Self-testing — using... → **Brain dumps**

in... → **Re-presenting text**

Drawing — by...

Mapping — such as... → **Concept maps** — or... → **Mind maps**

Thinking and learning grids

Self-explaining — by asking... → **What, why, how?**

Teaching — of... → **Others**

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 key moments of your day. Taking a similar approach with your studies can have a very powerful effect on your learning. What is absolutely key 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 a brilliant way of organising and learning information as I hope is 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 is about turning text into some form of drawing. Doing so involves you 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 provide answers to 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. A recent analysis of 64 research studies showed that 'it is better to ask a student to see 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 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 clear as possible. Having someone to interact with and ask you questions strengthens your own learning.
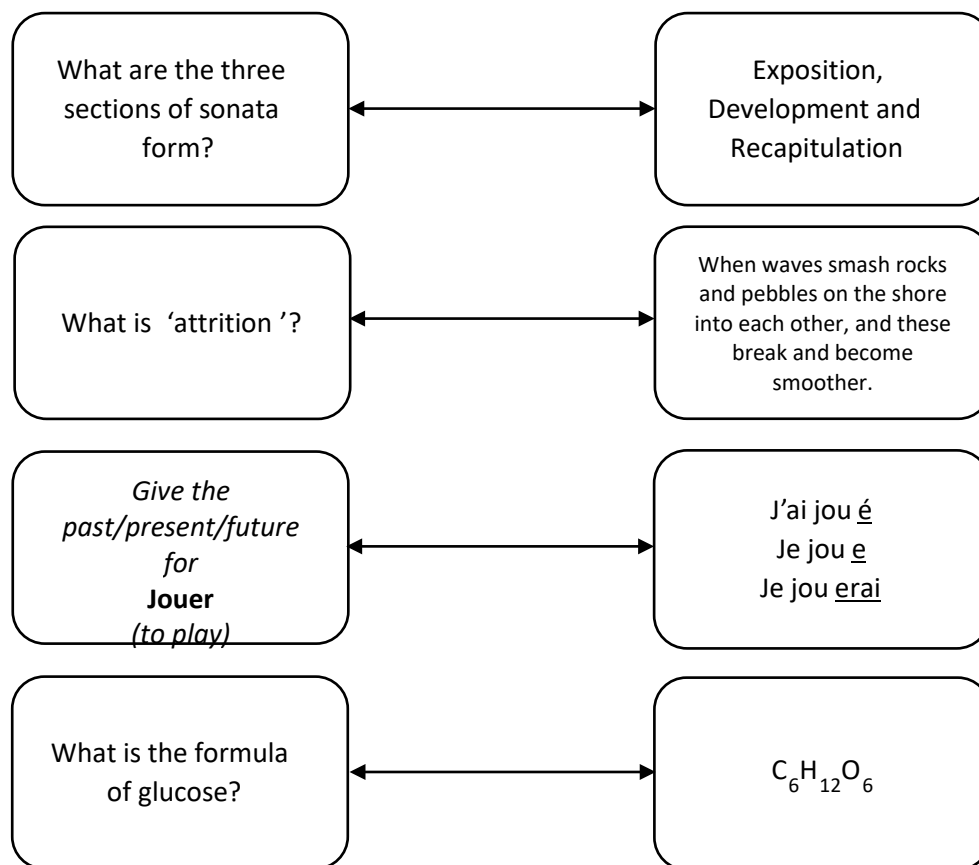
Flashcards

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

Making good flashcards

- One side of the flashcard should be a single question and its answer on the reverse
- Select the most important 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.
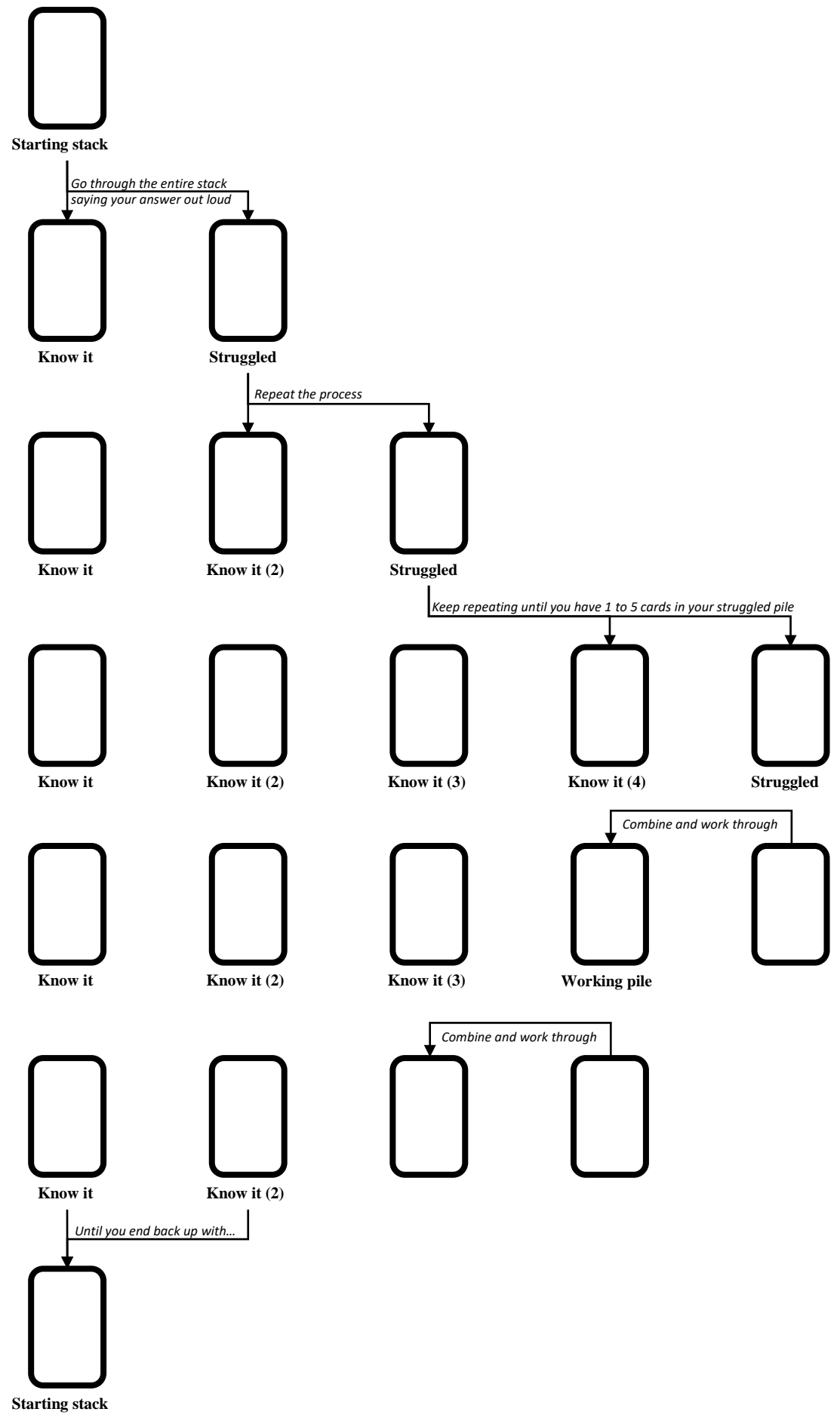- Use drawings to illustrate answers.

Using flashcards

- Say your answer out loud and not just in your head. It's very important you are fully committed to your answer. Even better would be to write your answer out as this is what you would have to do in an exam.
- Use them both ways – look at the answers and say what the question is.

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What are the three sections of sonata form?	↔	Exposition, Development and Recapitulation
What is 'attrition'?	↔	When waves smash rocks and pebbles on the shore into each other, and these break and become smoother.
Give the past/present/future for **Jouer** *(to play)*	↔	J'ai jou é Je jou e Je jou erai
What is the formula of glucose?	↔	$C_6H_{12}O_6$

Taking things further: making meaning with flashcards

- Ask yourself questions about individual cards. Once you can remember the information on the back associated with the prompt on the front, raise questions such as, 'What else is this related to?', 'Why is this important?' and 'How would I apply this information?'

- Group cards together in themes. Taking this additional step forces you to ask yourself 'Which cards have something in common with others?'. Also, this serves as a form of chunking, which helps you to remember information together instead of separately.
- Create a mind map with the cards. Explain all the connections you see between individual cards and between groups of cards. A related strategy is to use yarn or string to literally connect cards together.

Use the waterfall method illustrated below to ensure you are using spaced revision:

Starting stack

Go through the entire stack saying your answer out loud

Know it   **Struggled**

Repeat the process

Know it   **Know it (2)**   **Struggled**

Keep repeating until you have 1 to 5 cards in your struggled pile

Know it   **Know it (2)**   **Know it (3)**   **Know it (4)**   **Struggled**

Combine and work through

Know it   **Know it (2)**   **Know it (3)**   **Working pile**

Combine and work through

Know it   **Know it (2)**

Until you end back up with…

Starting stack

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Brain dumps

This is so simple and so effective. Spend, say, fifteen 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 terrifying exercise. To create a gentler, if less effective, version, compile a list of key words, terms, people, countries etc. connected with a topic and write uninterrupted for fifteen minutes using these as prompts. For example. If your brain dump was on the 'Bonding, structure and properties of matter' topic in Chemistry, your prompts could be:

$= \frac{1}{2} mv^2$ $= wd/time$ **$= F \times d$** $= mcDT$ **$= mgh$**   biofuel   **chemical**   conduction   **conservation of energy**   dissipate   **distance**   efficiency   **elastic potential**   electricity
electrostatic   force   **fossil fuels**   friction   **geothermal**   gravitational potential
heating   hydroelectric   **insulation**   Joule (J)   **Kilogram (kg)**   kinetic   **lubricant**   magnetic   **metre**
(m)   Newton (N)   **non-renewable**   nuclear   **power**   renewable   **Sankey diagram**   solar   **specific heat capacity**   store   **thermal**   tidal   **transfer**   useful energy   **wasted energy**   water waves   **Watt (W)**   waves   **wind**   work done

Thinking and Linking Grids
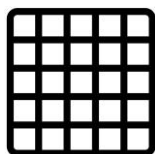
These force you to think deeply about an area of a subject you've studied. Below is an example grid for Macbeth along with the instructions. It's possible for you and your friends to make grids of your own. Create a 6 x 6 grid and look through your class notes and study guides to identify key people, ideas, themes, countries etc. to populate the grid with. Ask your teacher to double-check them and share with your classmates.

'Macbeth' Thinking and Linking Grid (created by @SPryke2)

|	1	2	3	4	5	6
1	Macduff	Guilt	Infanticide	Power	Murder	Tyranny
2	The Supernatural	Light	Prophecy	Visions and Hallucinations	Hamartia	Animal Imagery
3	Lennox	Equivocation	Witches	Macbeth	Morality	Lady Macbeth
4	Hubris	Masculinity	Kingship	Appearance vs Reality	Violence	Children
5	Sleep	Banquo	Loyalty	Hands	King Duncan	Time
6	Blood	Regicide	Lady Macduff	Ambition	The porter	Darkness

Instructions

You need a pair of dice.

1. Roll your dice to get the co-ordinates of your first box and find the word/phrase in it. Start with the numbers along the side first. For example:

would equal 'Macbeth'.

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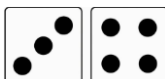
2. Write how your word/phrase links to the play. For example, for 'Macbeth' you could talk about how he is a loyal soldier at the beginning of the play who is corrupted by ambition and falls into a cyclical nature of violence in order to preserve the power that he has pursued.

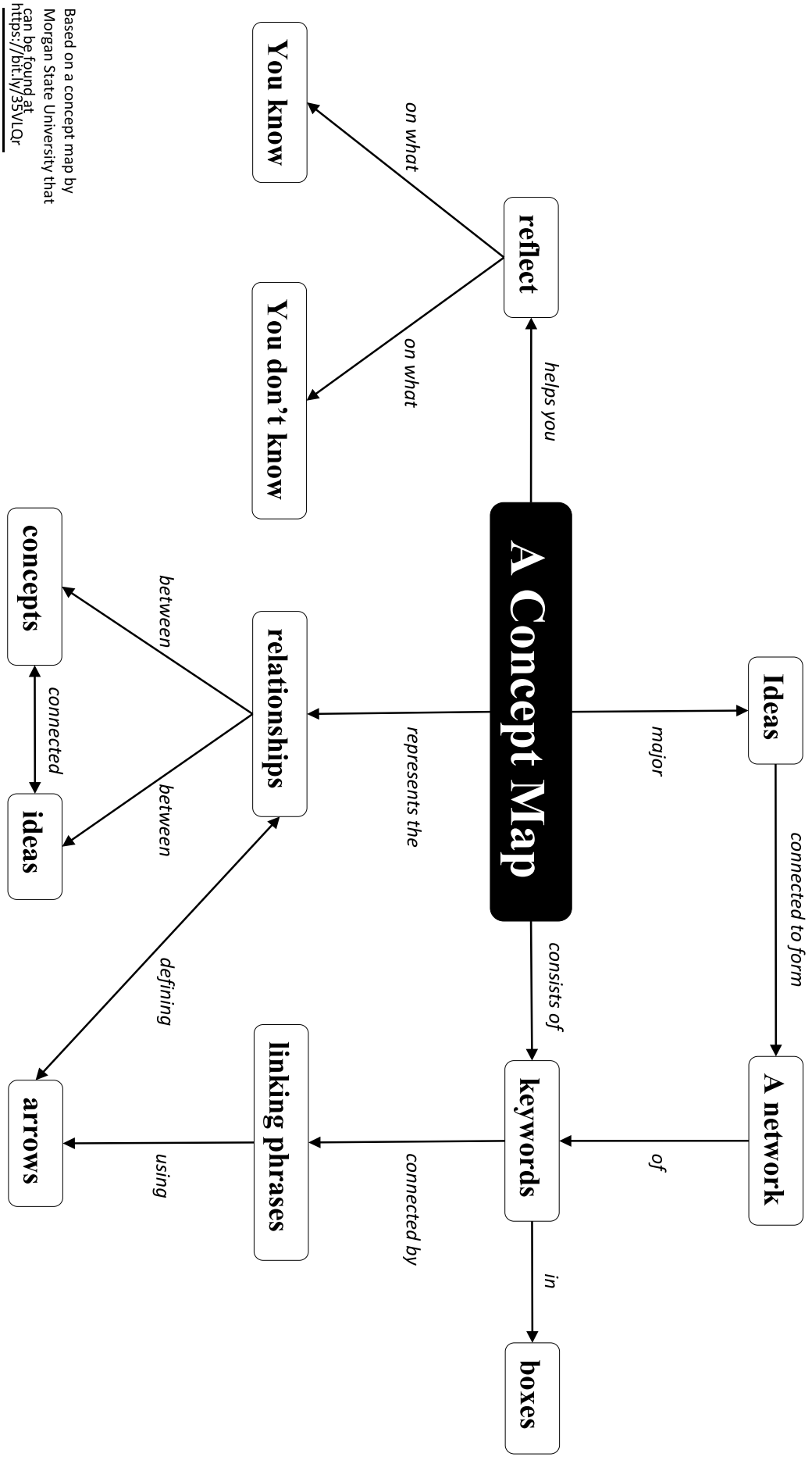3. Roll the dice again to find a new word. For example:
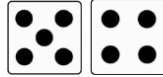
   would equal 'hands'

4. Write both words in the blank table below the grid. Think about how the two words/phrases link together before writing your answer in the table.
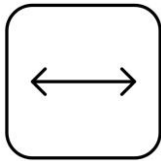
**LINKS MADE**

Box 1	Box 2	Link between the two

w

A Concept Map

- reflect
  - helps you → reflect
  - on what → You know
  - on what → You don't know
- represents the → relationships
  - between → concepts
  - between → ideas
  - concepts ↔ connected ↔ ideas
  - defining → arrows
- consists of → keywords
  - connected by → linking phrases
    - using → arrows
  - in → boxes
- major → Ideas
  - connected to form → A network
    - of → keywords

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. What the last factor tells us is that when we learn something for the first time, we need to review it quickly afterwards. The more times we force ourselves to remember something, the longer the gap can be between reviews, which the diagram below illustrates nicely.
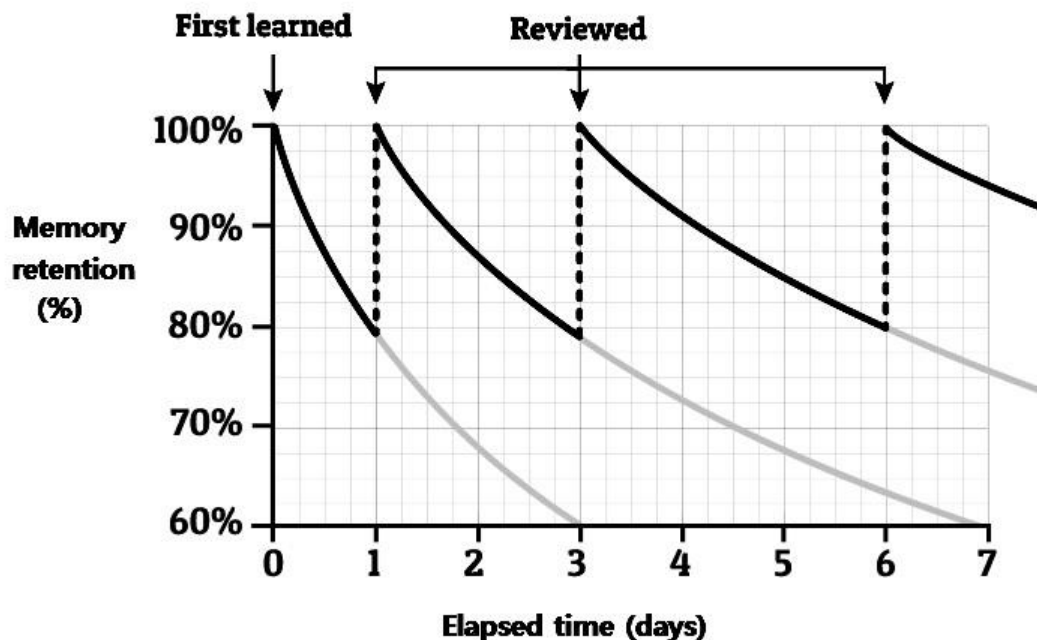
Don't study one topic at a time – mix it up!

It's better to jumble up your learning within a subject instead of focussing 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.

A final self-testing and self-explaining tip – 'Just a Minute'

Based on the Radio 4 show, you must talk for a minute on the given concept or topic without pause, hesitation or repetition. You'll discover very quickly how well you know the topic while also consolidating the knowledge and understanding you retrieve from your memory.