



TE KĀRETI TAMATĀNE O TE WHANGANUI-A-TARA

WELLINGTON COLLEGE

Founded 1867

Preparing learners for exam success

Best Practice Pedagogy

We will be starting in:

10:00

Please grab a hot drink, a biscuit,
and take a seat.

Who are we?

- **Serena Lawrence**
(Assistant Principal)
- **Luci Lendrum**
(Deputy Principal - NZQA)



KARAKIA

*E oha ki runga
E oha ki raro
Āna*

*Karakia gifted for the use of Te Kāhui Ako o Te Whanganui-a-Tara
by Tamahau Rowe (Taranaki Whānui), 2021*

Agenda

- 1. Knowing the brain - the secret to unlocking study success**
 - What works, what doesn't, and why
- 2. Knowing what to study and when**
 - Internal or External?
 - Revision, study and homework - what's the difference?
 - Long and short term lists
 - How to ensure all the right things are being covered and at the right time
- 3. Planning the session**
 - High reward strategies for getting the most out of your session
- 4. Supporting during the exam period**

The secrets to unlocking study success



In order to support with creating the conditions for successful study and revision at home, it is useful to understand two things:

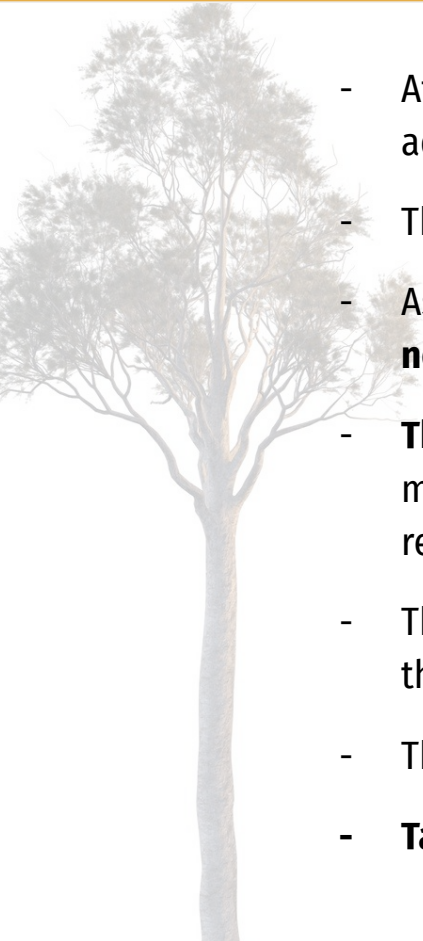
- How the teenage brain is different to the adult brain
- How brains learn

Knowing the brain: The teenage brain vs. the adult brain

The adult brain and the teenage brain are not the same machine.



Knowing the brain: The teenage brain vs. the adult brain

- 
- After childhood, the teenage brain undertakes a process called 'pruning' which lasts until adulthood (early to mid-20s)
 - The emotion and reward systems go through most of their big changes early in adolescence.
 - As a result, these systems become **highly responsive to emotion, rewards (*think dopamine*), novelty and social feedback**
 - **The decision making and self-control systems finish their pruning last**, well into the mid-20s. This area supports planning, impulse control, weighing consequences and regulating emotions.
 - This makes the teenage brain **much more sensitive to perceived perception of others** than the adult brain
 - This means that on the whole, **social reward will trump everything else.**
 - **Takeaway: The teenage and adult brains make decisions using different information.**

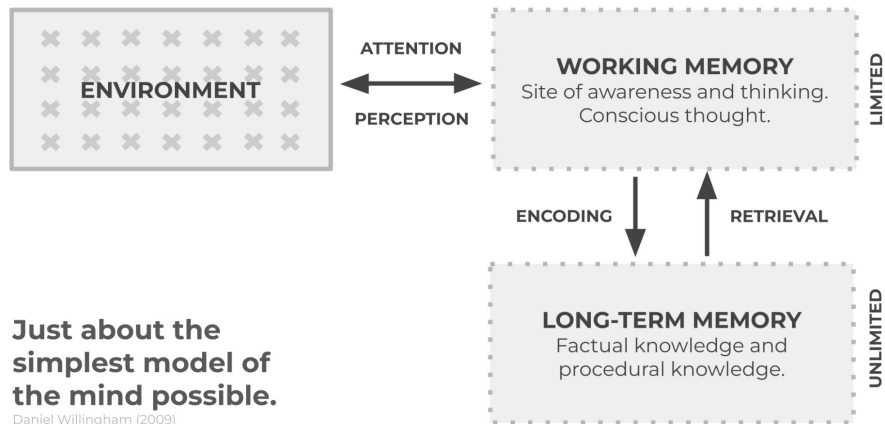
The secrets to unlocking study success



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- How the teenage brain is different to the adult brain
- How brains learn

How do memory, and learning, work?



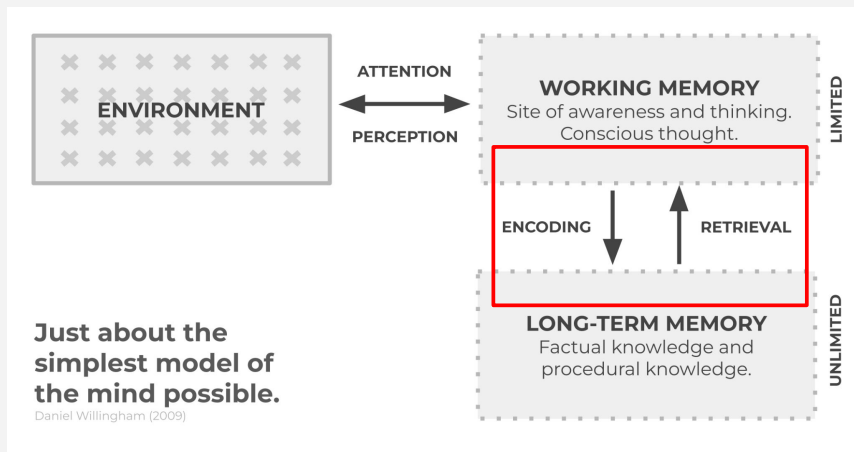
Just about the
simplest model of
the mind possible.

Daniel Willingham (2009)

In order to think, we draw upon our environment (*unlimited*), working memory (*limited*) and long-term memory (*unlimited*)

- Oliver Lovell, 2020

Why does this matter?



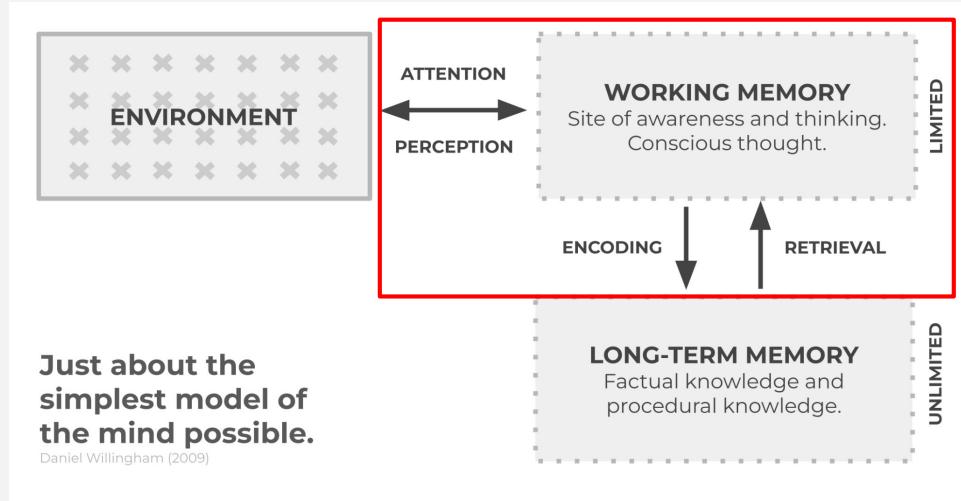
Learning is a change in long term memory.

We have only **truly learned** something once we are able to **retrieve it from our long term memory and use it** again at a later time and in a different context.

How do we do this efficiently?

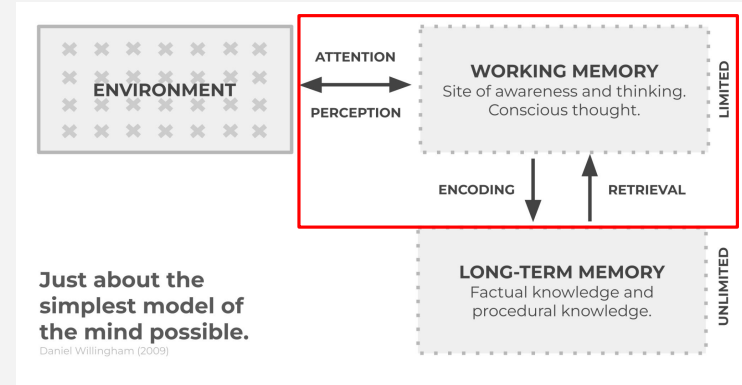
We need to manage two things:

- A) The load on our working memory, and
- B) Forgetting. Our brains are designed to forget.



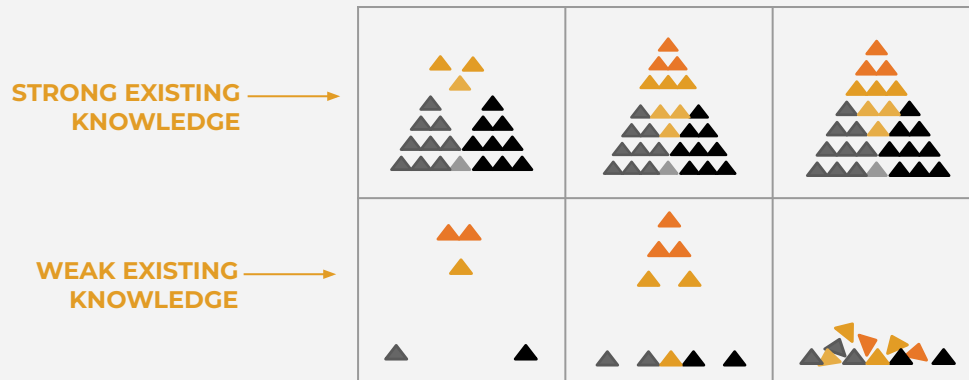
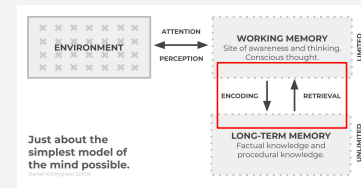
Managing our working memory (our cognitive load)

- **Cognitive Load Theory** is the idea that our working memory is *finite*, while our long-term memory is *infinite*.
- The brain pays **attention** to its environment.
- *Approximately* seven 'chunks' of information from the environment are held in working memory at any given time, where the brain can use it.
- **For learning to occur, we cannot exceed the capacity of working memory.** This is sometimes referred to as 'cognitive overload'. We do this by reducing 'distraction' and using tools such as chunking and retrieval.
- The size of a chunk varies greatly between a novice and an expert (because memory is sticky).
- **Multiple encounters with new information are needed for it to move to long-term memory.**



How do we do it?

Through the process of encoding.

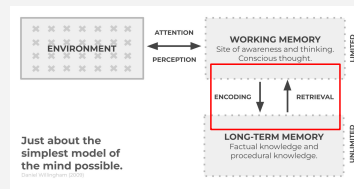


Memory is sticky.

The more memories you have on a topic, the easier it is to have more.

E.g. from *H* to *Hello*

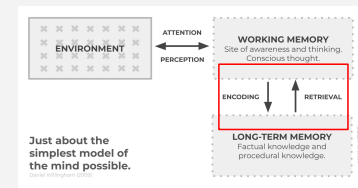
Paying attention matters for memory



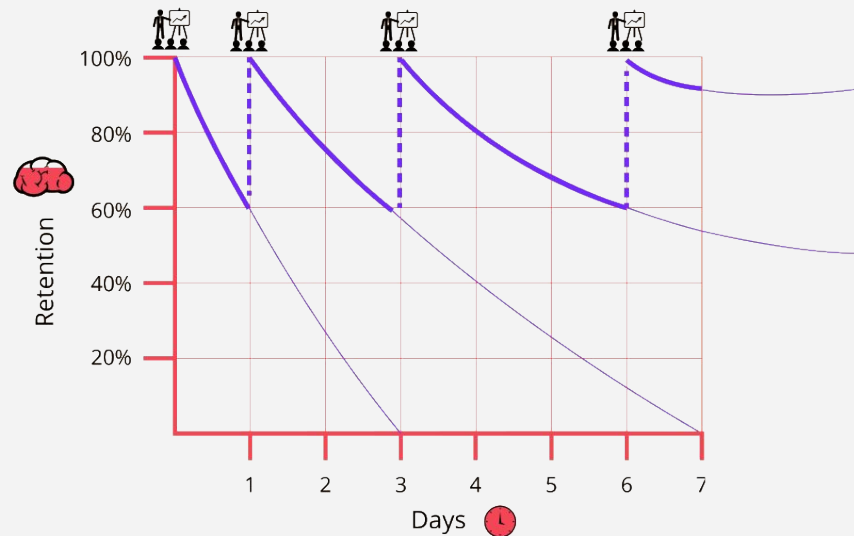
We can think of attention as **‘the spotlight of the mind’**.

- When we focus on a particular thing, our brain is able to ‘filter’ everything else (give everything else less processing). **Without attention, information is essentially ‘invisible’ to the brain.**
- **Multitasking is a myth.** Instead, everytime we switch tasks, we suffer ‘switch cost’ as a result of the shift in attention. The brain must use extra working memory to re-establish the ‘thread’ of thinking each time it ‘switches’.
- **Distraction leads to cognitive overload.** We only learn what we pay attention to.

Moving from working to long term memory: The impact of forgetting



- **Rapid Initial Decay:** We lose *around 50%* of new information within an hour of learning it, and *up to 70%* within 24 hours.
- **The 'Savings' Effect:** While it appears as if learning has been forgotten, the brain does retain a 'trace'. This means that 're-learning' the material becomes significantly faster.
- **The Power of Spaced Repetition:** Retention of information increases when revisited at increasing intervals (e.g. one day, one week, one month).
- **Flattening the Curve:** Each time you retrieves information, the rate of forgetting slows.



The takeaways

- Teenagers and adults make decisions using different information.
- In order to be ready for exams, students need to **learn both the what and how** for each of their subjects
- This happens by **moving knowledge from working to long term memory**
- To do this, students need to **manage their cognitive load**, and **overcome forgetting**
- Students can do this by **chunking their learning** and **spreading it across time**
- **Cramming won't work**, it's just not how the brain works
- **Teenagers need us to help them with the hard decisions sometimes. It is our job as adults to support in creating the conditions for exam success.**

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4. **Supporting during the exam period**

Old vs new

One Exam	Assessments throughout the year	
A - E grades EG: Bursary, School Cert	NCEA Grades	
A 80 - 100%	PASS	E Excellence
B 65 - 79%	PASS	M Merit
C 50 - 64%	PASS	A Achieved
D 30 - 49%	FAIL	N Not Achieved
E 1 - 29%	FAIL	

Old vs new

Bursary (7th form) English		
TOPICS	%	TYPE
Close reading	0	Practice Test
Shakespeare	0	Practice Essay
Language of advertising	0	Practice Essay
Novel study	0	Practice Essay
Non Shakespearean drama	0	Practice Essay
ALL OF THEM TOGETHER!	100%	End of year Exam

NCEA Level 3 English at WC		
STANDARDS	CREDITS	TYPE
3.4 Writing portfolio	6	Portfolio of writing (<i>Internal</i> - submitted Term 1)
3.8 Critical texts	4	Report (<i>Internal</i> - submitted Term 2)
3.5 Oral presentation	3	Seminar (<i>Internal</i> - submitted Term 3)
3.1 <i>Written text</i>	4	<i>External</i> - end of year Exam
3.2 <i>Visual text</i>	4	<i>External</i> - End of year Exam

Assessment at WC

Year 9	Students are assessed within school by teachers, using our Learning Progressions Framework.
Year 10	Assessments take different formats (eg. tests, essays, projects, presentations) and results are reported on the portal.
Year 11*	https://www.wellington-college.school.nz/junior-assessme/
Year 12	NCEA (our national assessment framework). Students work towards an NCEA certificate, made up of a mixture of internal and external assessments to earn credits.
Year 13	NCEA Level 2 = Year 12 NCEA Level 3 = Year 13 https://www.wellington-college.school.nz/assessment-information/ https://www2.nzqa.govt.nz/ncea/exam-timetable-and-key-assessment-dates/exam-timetable/ https://www2.nzqa.govt.nz/ncea/about-ncea/ https://www2.nzqa.govt.nz/ncea/subjects/past-exams-and-exemplars/

**If students are part of our accelerated programme, they sit NCEA early in some subjects*

When do students sit exams?

Year 9	Typically no exams
Year 10	Students sit the NZQA Co-Requisite tests in Reading and Numeracy https://www.wellington-college.school.nz/co-requisites/
Year 11	Students sit the NZQA Co-Requisite test in Writing End-of-year exam series in English, Maths and Science (marked by WC teachers using the Learning Progressions Framework)
Year 12	Internal assessments throughout the year
Year 13	Derived grade exams in September (these are practice / 'mock' exams) External exams in November

Internal Assessment

- Will have a deadline during the year
- Marked in school by teachers
- Grade goes on student's NCEA record of learning and credits are earned towards their 60 required for NCEA
- Likely worked on in a combination of class and home, however this varies depending on the subject and conditions of assessment

External Exams

- Marked externally by NZQA
- Students could have anywhere from 1 - 3 standards to complete in their exam
- Students have three hours, regardless of the number of standards (they must stay at least 45 minutes)
- The standards (topics) will each be in separate booklets
- Standards are marked, and grades awarded, independently of each other. Therefore the grade awarded in one does not impact the grade of another.
- Some students will try to say that they don't need to sit their externals, this is wrong for many reasons!

Maximising study time

The importance of planning

‘There’s heaps of time, I don’t need to worry about that yet’

‘I’ve got an Internal due, I need to focus on that’

‘You only need to study for Science’

‘I don’t have any homework’

‘You don’t need to worry about it, I’ve got it sorted’

‘I don’t need to sit that exam...’

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Term 2, W11			Today				
Term 3, W1							
Term 3, W2							
Term 3, W3							
Term 3, W4							
Term 3, W5							
Term 3, W6							
Term 3, W7	Tournament Week						
Term 3, W8 & 9	Derived Grade Exams						
Term 3, W10							
Term 4, W1							
Term 4, W2							
Term 4, W3	Labour Day						
Term 4, W4			Year 13 Final Assembly	Senior Prizegiving	Study Leave begins		
Term 4, W5	NCEA Exams						

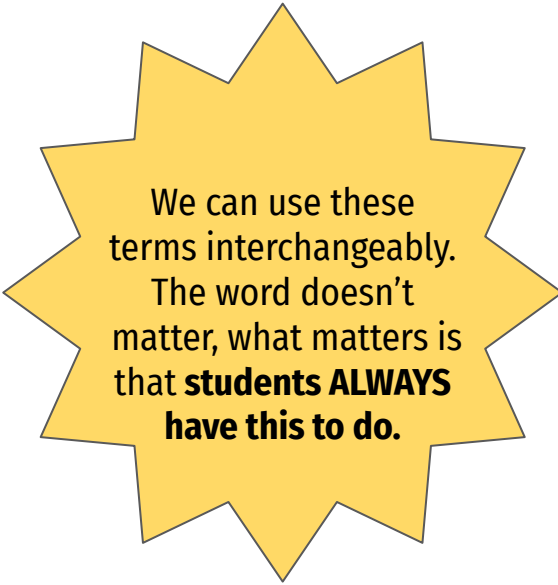
Maximising study time

The importance of planning

Term 4, W3	Labour Day	Pō Whakanui					
Term 4, W4			Year 13 Final Assembly	Senior Prizegiving	Study Leave begins		
Term 4, W5	9 November - English (AM)						
Term 4, W6	16 November - History (PM)		18 November - Health (AM)				
Term 4, W7		24 November - Statistics (AM)		26 November - Media Studies (PM)			
Term 4, W8			2 December - French (AM)				

Revision v Study v Homework

- **Study:** The Learning and Consolidating phase
 - *Happens throughout the year and supports in moving new information from working to long term memory*
- **Revision:** The Retrieving and Practicing phase
 - *In the lead up to exams or tests*
- **Homework:** Tasks set by the teacher that have a specific set of instructions and quick turn around.



We can use these terms interchangeably. The word doesn't matter, what matters is that **students ALWAYS have this to do.**

Getting ready to study: Step One

Students need to make two lists, these should be updated at the end of each day, or at the start of the study session.

- **Long term list:** As students are taught new material for Externals, add to this list
- **Short term list:** This list is constantly having things added and removed. This is likely to be focused on Internals.

Long Term	Last Reviewed			Short Term
Subject 1 Chemistry				
				Revise for test on Wednesday
Subject 2 English				
Revise key themes and quotes from novel for external	12 May			Rehearse speech
Write practice essay	28 April			
Subject 3				

LONG	LAST REVIEWED		SHORT
MEDIA			
• Gangster genre conventions • Critical Theory-male gaze • Film study • Practice essay	21.4	20.5	• Finish proof reading script • Edit new Scene
STATS			
• Binomial distribution • Probability trees • Margins of error	27.5	19.6	• Collate research materials • Reuse model for prediction
MIS			
• Practice test - sources • Review dates			• Research secondary sources
ENGL			
• King Lear quotes • Film scene analysis • Critical lens theory-Freud	12.3	15.4	• Research critical discussion-King Lear • Draft 3.1 piece 1
			POLITICS
			• Trump sources • Draft of paragraph 2

Getting ready to study: Step Two

Planning the week is crucial. Ideally the plan would be made on the same day each week, and then kept in a public place, like the refrigerator door, to support accountability.

Plan in the following order (all of these items are important):

1. Commitments (non-negotiables such as work, trainings and chores)
2. Study time (when does your brain work best)
3. Flexi-hour (if you miss an hour of study, this is when you make it up)
4. Rest and fun stuff (your brain needs good things if it is going to function well for the less 'rewarding' stuff)
5. Plot in study using the long and short term lists

	Mon	Tue	Wed	Thur	Fri		Sat	Sun
3.30-4.00					Study Review the week	8-9 AM		
4.00-4.30		Training		Training		9-10 AM		
4.30-5.00	Study Filming for Media		Study Review Mon/Tue		Sport	10-11 AM		
5.00-5.30						11-12 PM	Study History internal	Flexi catch up time
5.30-6.00								
6.00-6.30	Chores		Chores			1-2 PM		Study - Stats revision + practice paper
6.30-7.00	Family time/ dinner	Family time/ dinner	Family time/ dinner	Family time/ dinner		2-3 PM		
7.00-7.30						3-4 PM	Study English internal	
7.30-8.00	Study History internal	Study History revision + practice paper	Study Politics Internal	Study Media Studies - editing + external		4-5 PM		
8.00-8.30						5-6 PM		
8.30-9.00						6-7 PM		Dinner
9.00-9.30						7-8 PM		Plan week ahead
9.30-10.00						8-9 PM		

Over to you...

10:00

Time together to plan the next week.

1. Either update or create your long and short term lists
2. Create a timetable for the next seven days (you don't have to make it on a Sunday, whenever suits you and your family is best!)

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Creating the conditions: *The environment*

- Phone on 'do not disturb' and in another room
- Music v. non music
- A place free of distraction, or to the best of your ability. If you are sharing a space, what else is happening in that space to support the study?

Creating the conditions: *Having a 'lesson plan'*

- Having no plan leads to activities such as rereading or rewriting notes, or highlighting, which are proven to be very ineffective in changing long-term memory, they just create a 'fluency illusion'
- The brain has to work hard for it to see information as important and therefore memorable
- Evidence suggests planned breaks reduce demand on the brain, leading to more successful study 'sprints'.
- Year 13 students should be using their study periods for the review of the weeks learning
- Think of a block as three 'sprints':
 - 25 minutes, 5 minute break
 - 25 minutes, 5 minute break
 - 1 hour, 15 minute break (if continuing)

Creating the conditions: *A guide to using study 'sprints'*

Two hour block

25 minutes: Reviewing learning from the week for English

- Brain dump everything that is remembered in one colour pen
- Reread notes and compare
- Fill in gaps that are missed in another colour pen

25 minutes: Plan essay from past paper

1 hour: Write essay

Three hour block

25 minutes (5 minute break): Reviewing learning from the week for English

- Brain dump everything that is remembered in one colour pen
- Reread notes and compare
- Fill in gaps that are missed in another colour pen

25 minutes (5 minute break): Reviewing learning from the week from novel

- Create character profiles from memory
- Watch youtube revision videos on character, adding detail to profiles
- Check back through class material for anything missed

25 minutes (15 minute break): Plan essay from past paper

50 minutes (5 minute break): Write essay

25 minutes: Maths - solve equations using AI as tutor

- Ask AI to be your tutor, providing you maths problems to solve, then to give you corrections and teach you where you have gone wrong

But how does my son know what to do?

We do this in Tīaho

Subject teachers also regularly use retrieval practice

Date:	Subject:	Topic:
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Goals:

Output: *(How much you aim to do)*

Outcome: *(The ability or understanding you want to reach)*

Strategies: (tick or circle relevant strategies - you can add others)

RETRIEVE IT	SPACE IT	JUMBLE IT	VISUALISE IT		(other)
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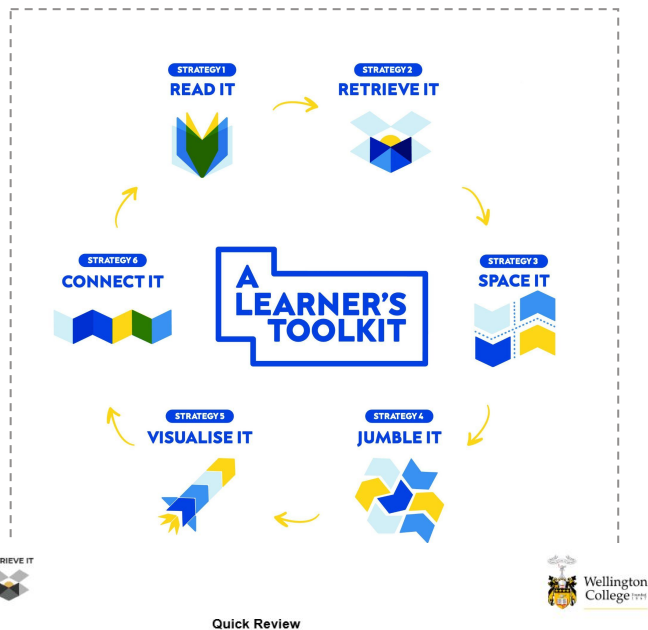
Methods to reduce distraction: (think about your environment & motivation)

- Digital Clean-up (close irrelevant tabs/programs - even if they are for other subjects)

Resources Required: (have all of these items ready before you begin, so that you can quickly transition between tasks)

Study notes/planning:

Evaluation: (Did you achieve your goals? Other positives? Any areas for improvement?)



Name:

Date:

Yesterday Topic(s):	
Last Week Topic(s):	
Last Month Topic(s):	

Space it

Today we will explore the **Leitner System** as a way of using spaced practice.

What is the Leitner System?

- Read about the Leitner System in [this article](#) (your teacher will share it with you)
- Watch the video below
- Begin making some flashcards using this [template](#) (your teacher will share it with you)
- [Alternative template for device use](#)



SPACE IT



Date:

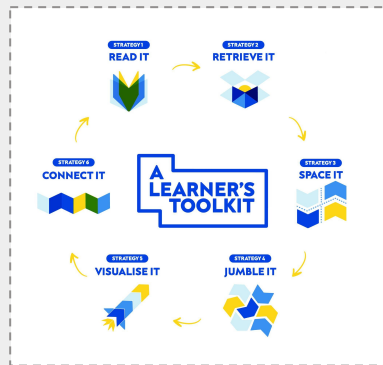


Aspects of the lesson/week that I understood:



Cloudy: Aspects of the lesson/week that I struggle to understand:

Some suggested revision and study activities



Remembering that sequencing is important.

A few months out from the exam a typical 'sprint' could look like:

- Retrieval task (brain dump type activity, flash cards, quizzing
 - lots of online quizzes available, mnemonics)
- Filling in knowledge gaps (using notes, youtube, study guides etc)
- Applying the knowledge (practice questions, planning essays, using AI to create problems and answers)

In the 6 week lead up to exams:

- Replicating exam conditions
 - Going in 'cold' to a past paper
 - Using 'real time' for tasks
 - Sitting two 'exams' in one day
 - Moving location when completing 'exams'

Key takeaways

- Having a plan helps to calm your brain, reducing demand on working memory
- Sharing the plan as a family creates support for when the desire for quick reward and peer approval takes over
- Chunking tasks helps with sticky memory
- Correcting errors is important in creating accurate long term memories

Finally... Exam Time!

- Know your young person's exam timetable
- Check if they are AM or PM
- Is the laptop on charge (plugged in and turned on at the wall!)
- Are they getting an early enough bus?
- Have they packed their exam slip and all other bits and pieces needed for their exam?
- Ensure they have are getting full night's sleep every night in the lead up to exams (not just the night before)
 - they will want to stay up studying - this is not good practice!
- If they are particularly anxious, talk about some calming strategies for in the exam room to help move through the moments of stress.

	Mon	Tue	Wed	Thur	Fri		Sat	Sun
3.30-4.00						8-9 AM		
4.00-4.30						9-10 AM		
4.30-5.00						10-11 AM		
5.00-5.30						11-12 PM		
5.30-6.00						12-1 PM		
6.00-6.30						1-2 PM		
6.30-7.00						2-3 PM		
7.00-7.30						3-4 PM		
7.30-8.00						4-5 PM		
8.00-8.30						5-6 PM		
8.30-9.00						6-7 PM		
9.00-9.30						7-8 PM		
9.30-10.00						8-9 PM		



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