

WHAT EVERY STUDENT needs to know about REVISION



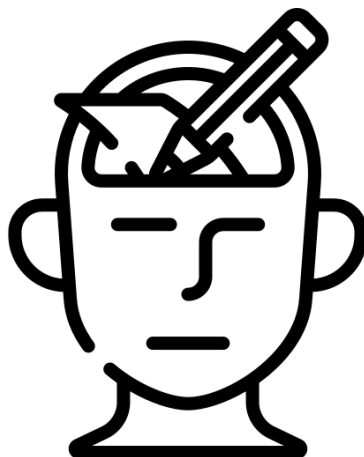
When to start?

What techniques?

What to revise?

Where is best?

How often?



I WAS NEVER taught how to revise...

I WAS NEVER taught how to revise and as a teacher I have never taught students to revise particularly well. It's not something I was taught at school and nor was I taught at teacher training.

Over the 20+ years, as I and the students I teach, have approached each exam season, I have set revision homework and I have even sat down with students and planned revision timetables with students. However, in all that time I have never taught students how to revise properly.

UNTIL NOW...

This booklet is my attempt to make amends for all the times I have set revision homework, or created wonderful revision timetables for my students, but never taught effective revision techniques.

Fortunately, the science of how we learn has been well researched and teachers are using this research to help us improve our teaching and your learning. The science of learning applies equally to **revision** and I am able to bring this booklet to you with the help of the latest evidence-based research on the science of learning.

In bringing this guide to you I have leaned heavily on the work of the Learning Scientists. They are a group of expert “**cognitive psychological scientists interested in research on education**” and their “**main research focus is on the science of learning**”.

Also, the way I have presented this guide is very different from the way in which I would have created it a year ago. I have tried to design this guide according to the principles of dual coding and my go-to expert is a man called **Oliver Caviglioli**. He has written an excellent book called “**Dual Coding with Teachers**”. And the icons I have used are from www.flaticon.com.

Oliver Caviglioli's work, like the Learning Scientists' work, is based upon cognitive science. In other words the science of learning.

Suffice to say, I have every confidence that this guide will not only help you navigate the tricky waters of revision but will ensure that your revision will be based upon the most up-to-date evidence-based research on how we learn. So get **revising** and **learning**.

Find out more about the science behind your learning



THE LEARNING SCIENTISTS

www.learningscientists.org

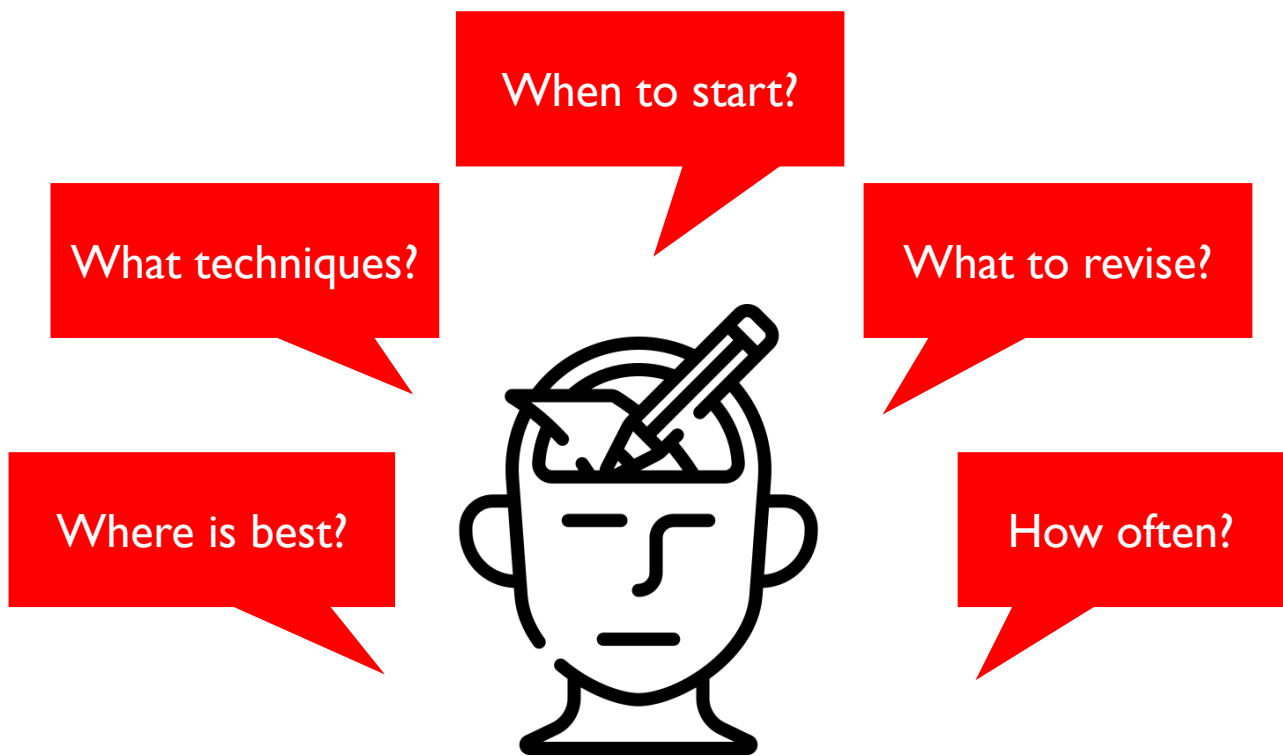


VISUAL CLARITY

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ALL OF YOUR revision questions answered

This guide will provide answers to all of the questions below and give you methods of revision to help you *revisit* your previous learning to prepare for tests and exams. There is also a section at the end of this booklet for parents and carers so they can help you revise effectively.



WHEN

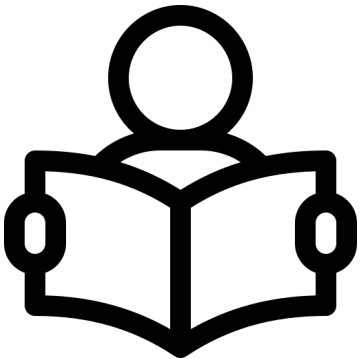
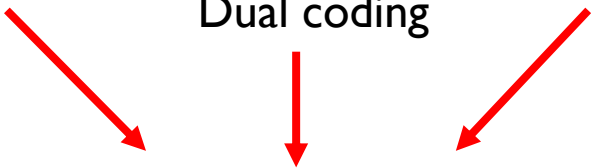
Spaced practice
Interleaving

HOW

Elaboration
Concrete examples
Retrieval practice
Dual coding

WHERE

Calm
Neutral
Clutter free

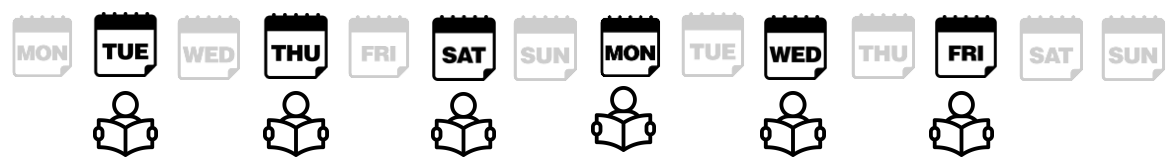


WHEN IS THE best time to revise?

This WHEN section is not about planning revision timetables, I will give examples of revision plans later in this booklet. Rather, below shows two techniques which can be used separately or together (for maximum effect), to plan effective revision. The first is Spaced Practice.

Spaced Practice

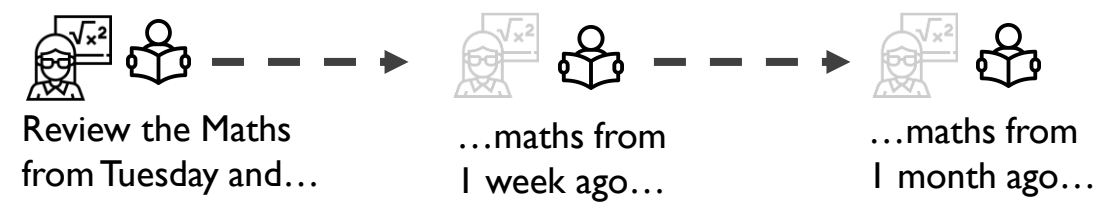
6 hours over two weeks is BETTER than 6 hours all at once



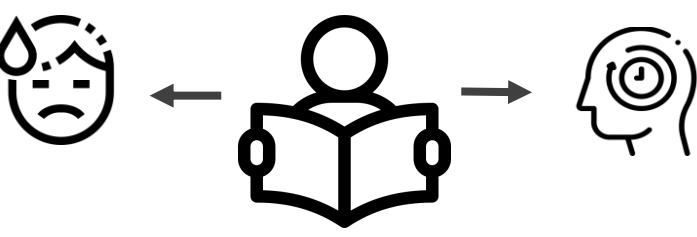
Review information from class but NOT straight away



After reviewing the most recent class information make sure you go back and review older important information



Why does Spaced Practice work?



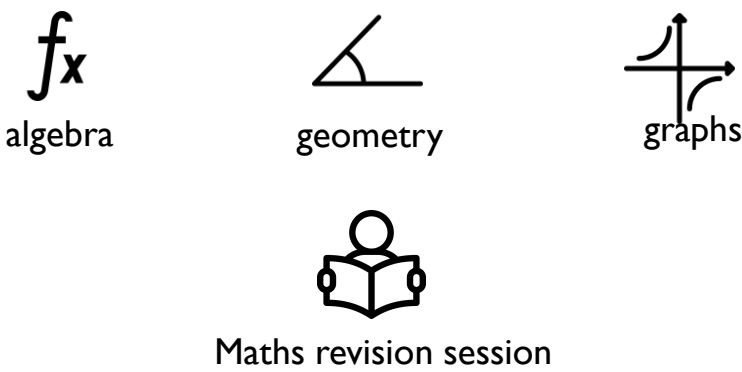
This may seem difficult and you may struggle to remember some information. But don't worry, this is a good thing. Spaced Practice forces you to retrieve information from your memory. And that's where it needs to be.

WHEN IS THE best time to revise?

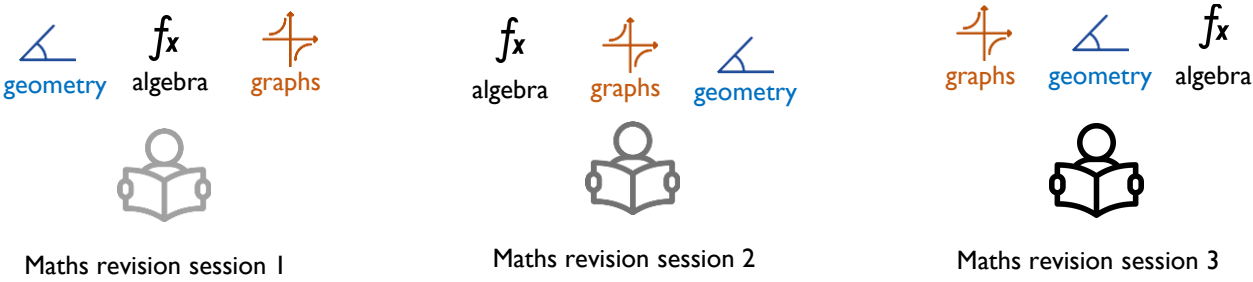
On the previous page you learnt about Spaced Practice. This looked at information from subjects and showed you how to space out your revision to ensure that it lodges in your long-term memory. Interleaving alongside Spaced Practice upgrades your revision to PREMIUM learning!

Interleaving

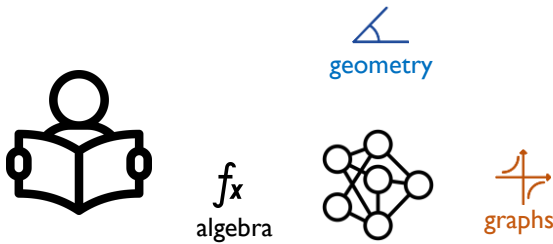
During a revision session, switch topics. *Don't study one topic for too long.*



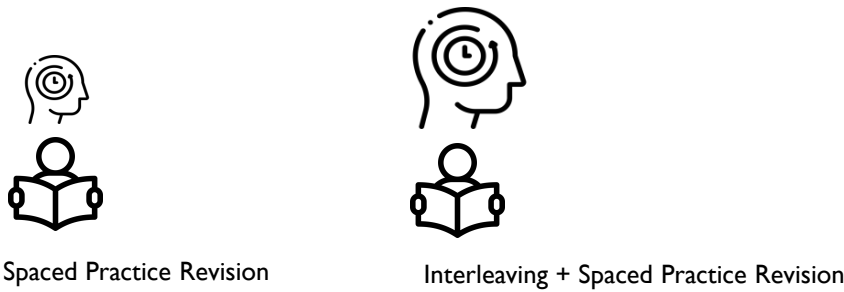
Go over the topics in a different order to strengthen your understanding.



Make links between the topics as you switch between them.



Why does Interleaving work?



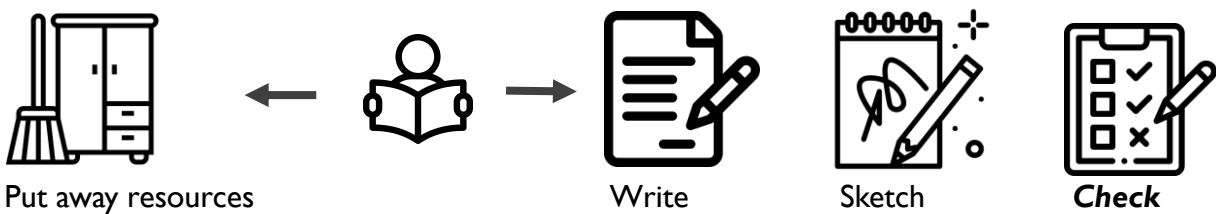
Interleaving will feel harder than just studying a single topic. Don't worry, the switching is helpful to your learning and long-term memory.

HOW SHOULD YOU revise?

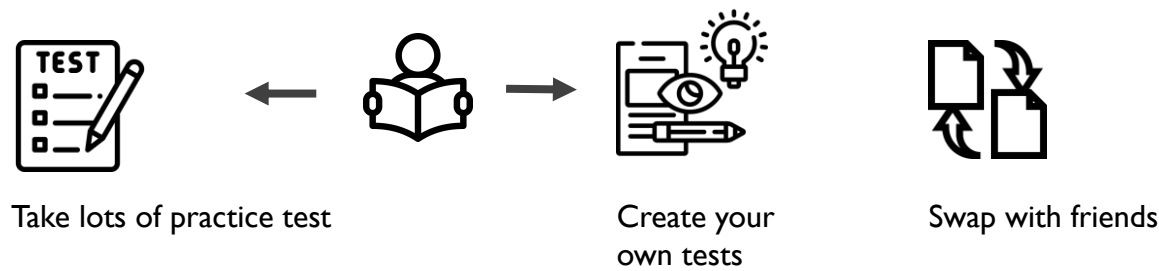
Knowing WHEN to revise based upon Spaced Practice and Interleaving is vital for successful revision but is only half the story. HOW you revise, choosing the most effective techniques to ensure that your learning sticks, is the key to your success. This next section is all about HOW you should revise. The ways to study I am sharing with you are designed to maximise your learning. Using the range of these techniques to suit the content you are studying and the time you have to revise are skills you will hone over time.

Retrieval Practice

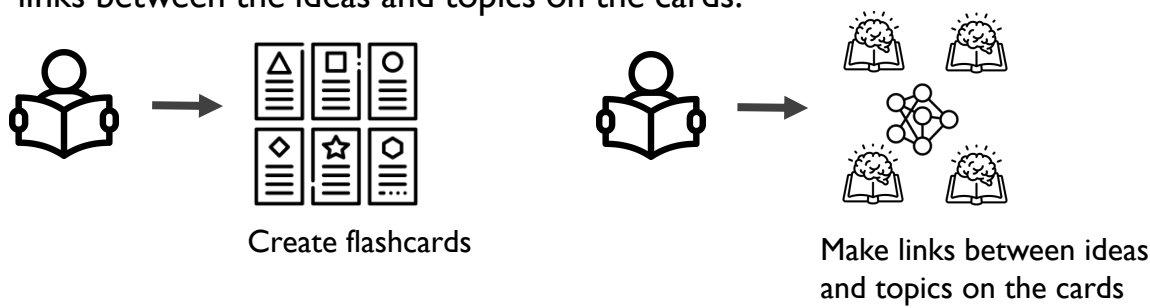
Put away exercise books and text books then write and sketch everything you know about a topic you want to revise. *THEN* check for accuracy against the exercise books and text books, **IT IS VITAL YOU CHECK!**



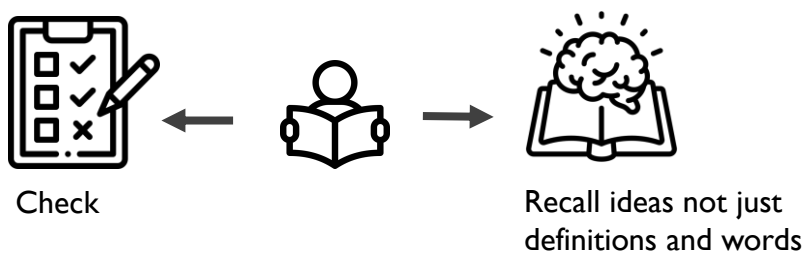
Take lots of practice tests. Create them yourself or swap with friends



Create flashcards and practice retrieving the information on them. Make links between the ideas and topics on the cards.



Why does Retrieval Practice work?



Retrieval Practice works best when you check for accuracy. You also need to make sure that you recall ideas and links as well as words and definitions.

HOW SHOULD YOU revise?

Retrieval Practice will work for most topics, and is crucial when you are using Spaced Practice and Interleaving to plan your revision. If you like to talk things through while you revise then Elaboration will ensure that you focus on the right things to talk through. Elaboration is a useful technique to use with Retrieval Practice. And if you revise with others, it will help focus your revision on the most effective learning.

Elaboration

Ask yourself how and why things work. Find the answers in your revision materials. Discuss the answers with revision buddies.

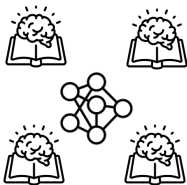


How and why?

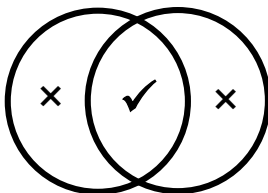


Discuss with revision buddies

As you elaborate make connections between different ideas. Explain similarities and differences.



Make connections
between ideas and topics



Explain similarities and differences

Link ideas and topics you are studying to you and your experiences. Keep making these connections.

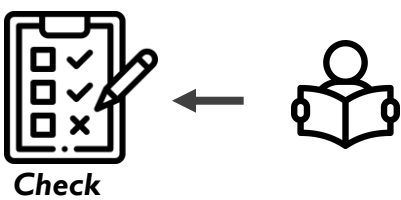


Idea of a house



Your own house

Why does Elaboration work?



Check

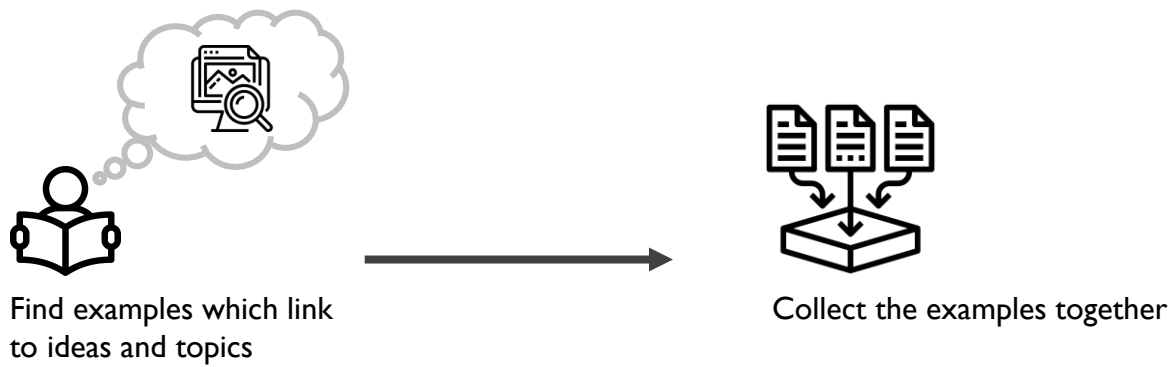
Elaboration works best when you check the accuracy of your explanations against the original material.

HOW SHOULD YOU revise?

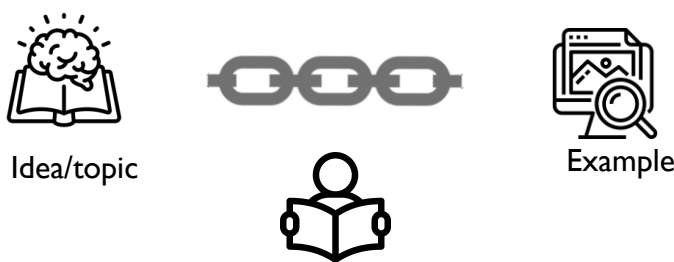
Using Concrete Examples as part of your Elaboration will ensure that you consolidate the topics you are revising. You can create the examples while revising on your own but Concrete Examples shared with your friends will provide additional benefits to your learning.

Concrete Examples

Find examples that link with ideas and topics from class notes, your teacher and exercise books and collect them together.



Make links between the examples and the idea/topic you are studying so you understand how the example applies to the idea/topic.



Share examples with revision buddies and explain the examples



Why do Concrete Examples work?



Relevant to you



Check

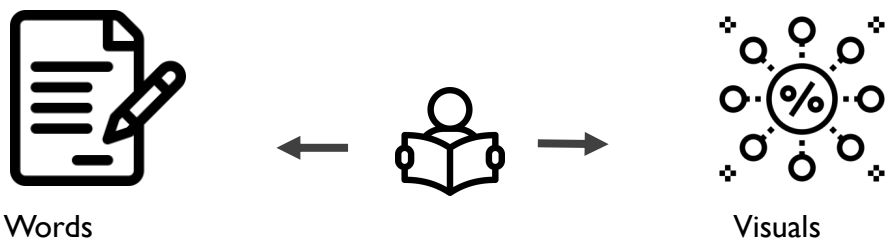
Concrete examples work if they are your own and relevant to you. However, do make sure they are correct examples; check with your teacher.

HOW SHOULD YOU revise?

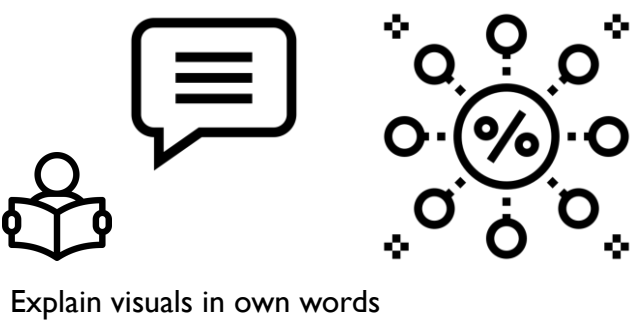
Using visuals with words helps your revision stick. It lodges information in your long term memory as you take in both the visual representation of the idea or concept and the words explaining it. Use Dual Coding as a main method of your note taking, sketching and writing when using Retrieval Practice, Concrete Examples and Elaboration.

Dual Coding

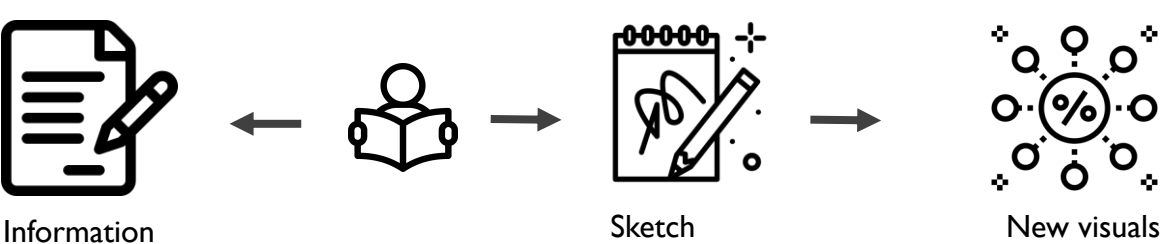
Look at your exercise books, text books and revision materials, look over the visuals and compare to the words.



Look at your visuals and explain in your own words what they mean.

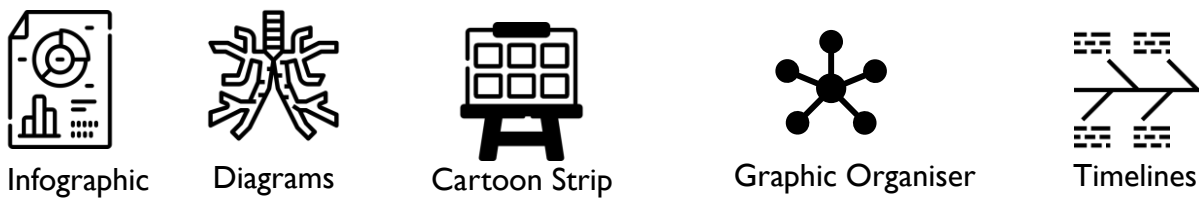


Take information you are trying to learn and draw visuals to go along with it



Why does Dual Coding work?

Dual Coding works when you look at visuals along with words. Try to come up with different ways to represent the information visually: Infographics, Diagrams, Cartoon Strips, Graphic Organisers, Timelines. Examples will be on the next few pages.



DUAL CODING examples



Infographic



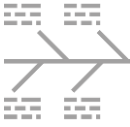
Diagrams



Cartoon Strip

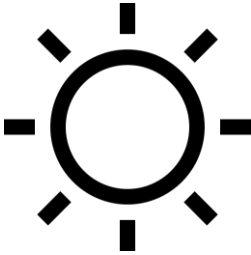


Graphic Organiser



Timelines

Themes through Day and Night



Identity

Family defines
identity in Verona



Youth

The young lovers
rush to wed after
one day



Passion

Impassioned
violence results in
two murders



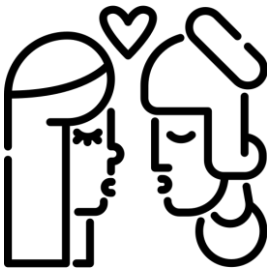
Banishment

Romeo is banished
from Verona for ever



Sacrifice

Confronted with death
the families reconcile



Romeo and Juliet



Identity

Faces concealed,
Romeo and Juliet meet



Youth

Driven by impulse
they meet secretly
at night



Passion

After the tragedy
the lovers still
share the night



Banishment

Juliet seeks escape
through pretend death



Sacrifice

In a double
suicide the lovers
sacrifice all



DUAL CODING examples



Infographic



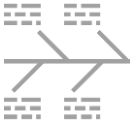
Diagrams



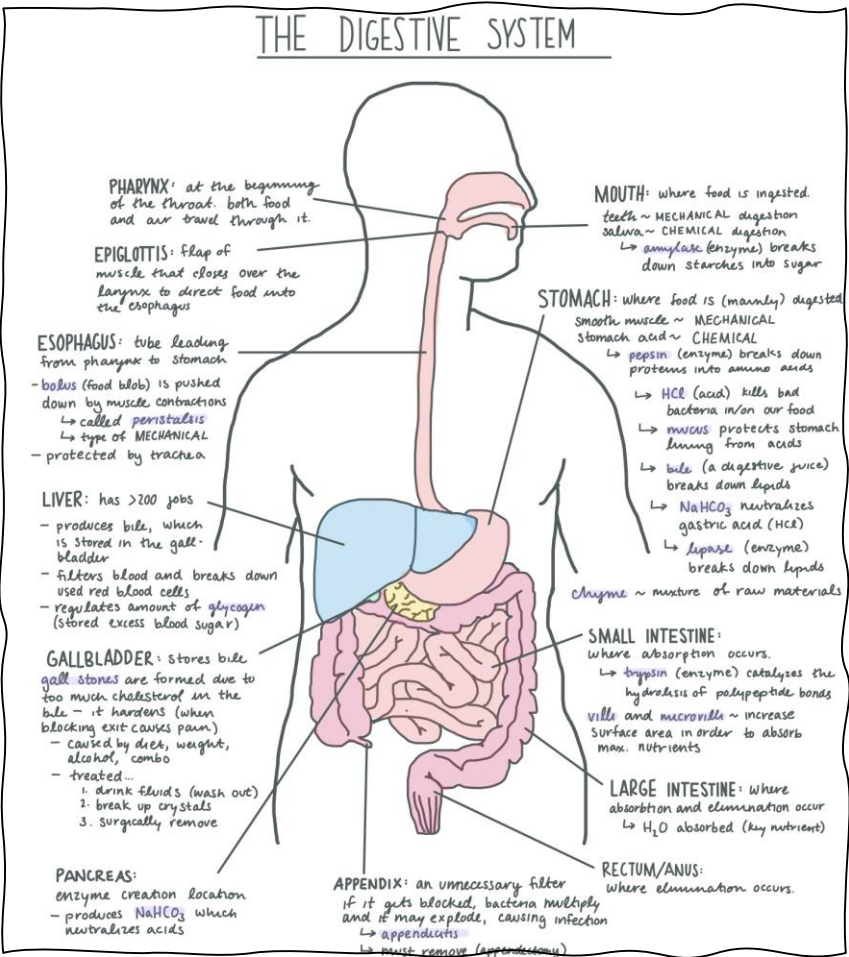
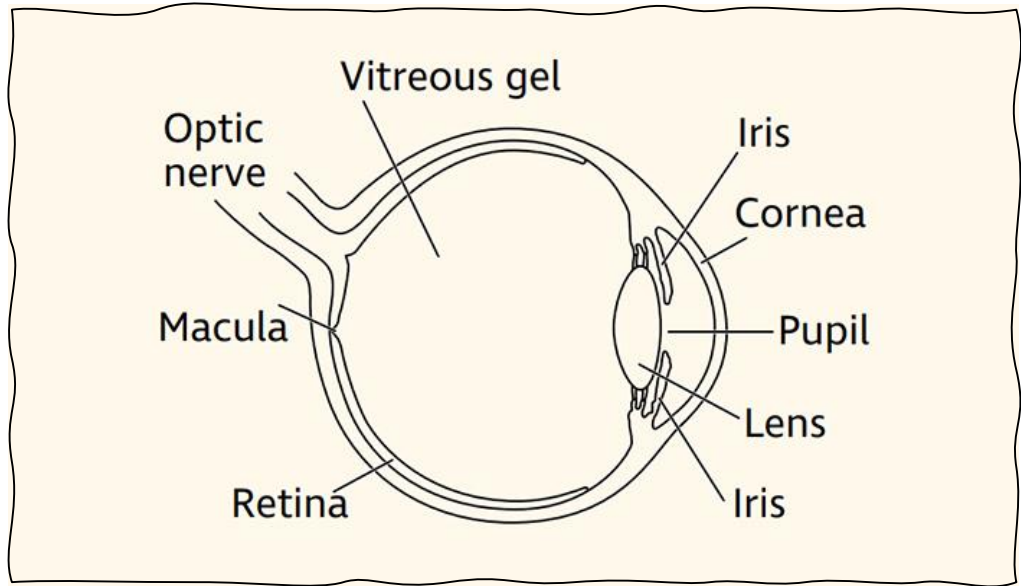
Cartoon Strip



Graphic Organiser



Timelines



DUAL CODING examples



Infographic



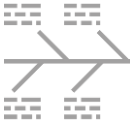
Diagrams



Cartoon Strip



Graphic Organiser



Timelines

"Boy, this shall not excuse the injuries that thou hast done me. Therefore turn and draw" (3.1.67-68).

But I love you! I can't hurt you!

"O calm, dishonorable, vile submission" (3.1.74).

"Tybalt! Mercutio! The prince expressly hath forbid this bandying in Verona streets. Hold, Tybalt! Good Mercutio" (3.1.88-91).

"A plague o' both your houses" (3.1.103-104).

"Romeo slew him; he slew Mercutio" (3.1.191).

Not Romeo, Prince; he was Mercutio's friend. His fault concludes but what the law should end, the life of Tybalt (3.1.193-195).

"Immediately we do exile him hence" (3.1.197).

THE CAUSES OF WWI (M.A.N.I.A)

Abeeha Chaudhary 822

MILITARISM-
Building up strong armed forces to prepare for war (European nations expanded armies and navies)

LET'S GO!!

ALLIANCES-
Formed rival alliances, the allies had agreed to support each other in case of an attack

TRIPLE ALLIANCE: GERMANY, AUSTRIA-HUNGARY, ITALY
TRIPLE ENTENTE: FRANCE, UK (BRITAIN), RUSSIA
WE SUPPORT EACH OTHER!
WE HAVE AN UNDERSTANDING!

NATIONALISM-
Pride in one's nation, encouraging unity, this created rivalry and mistrust (nationalism was really strong in the Balkans)

NATIONALISM
EVERYBODY FOLLOW ME!

IMPERIALISM-
When the strong takes over the weak, also there were rivalries among powerful nations (this led to wars)

THE STRONGER NATION: I AM STRONGER THAN YOU!
THE WEAKER NATION: THIS ISN'T FAIR!

ASSASSINATION-
The final spark is the assassination of Archduke Franz Ferdinand

this sparked the outbreak of WWI

Create your own at Storyboard That

DUAL CODING examples



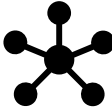
Infographic



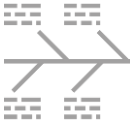
Diagrams



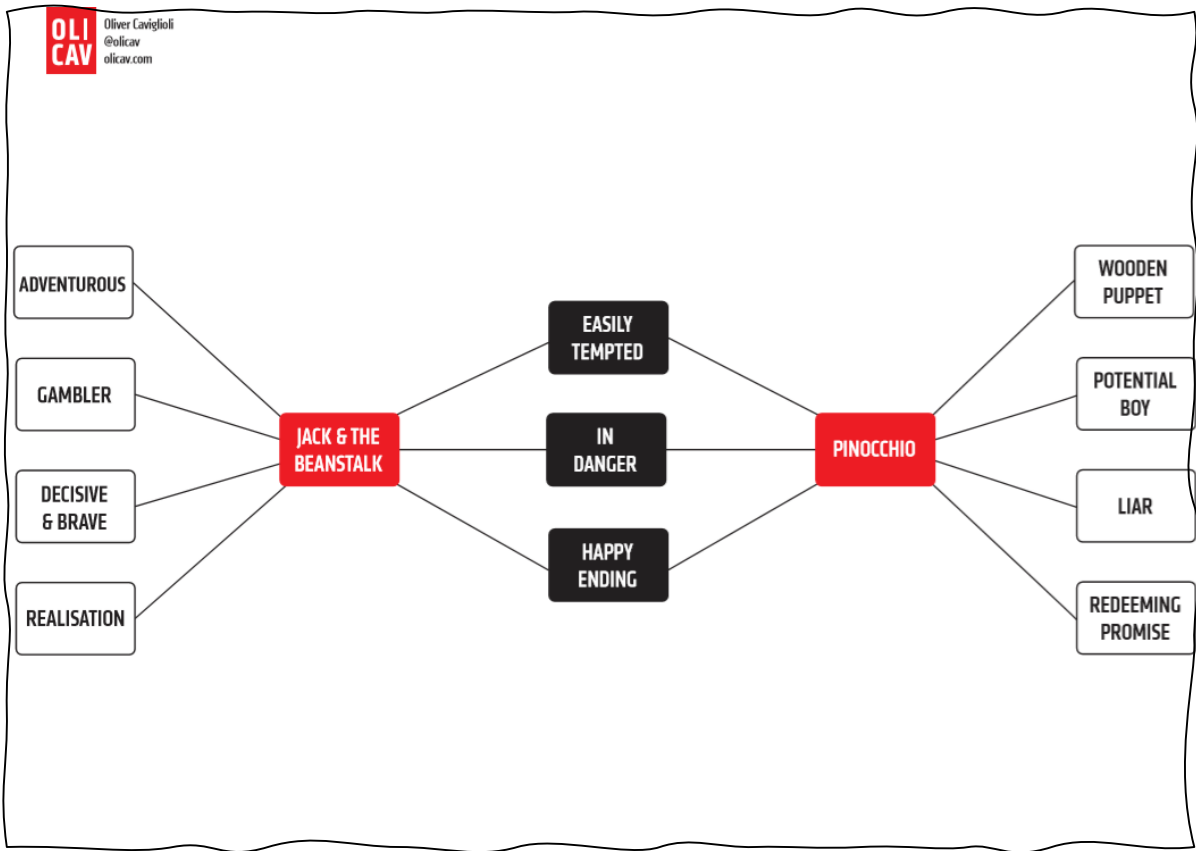
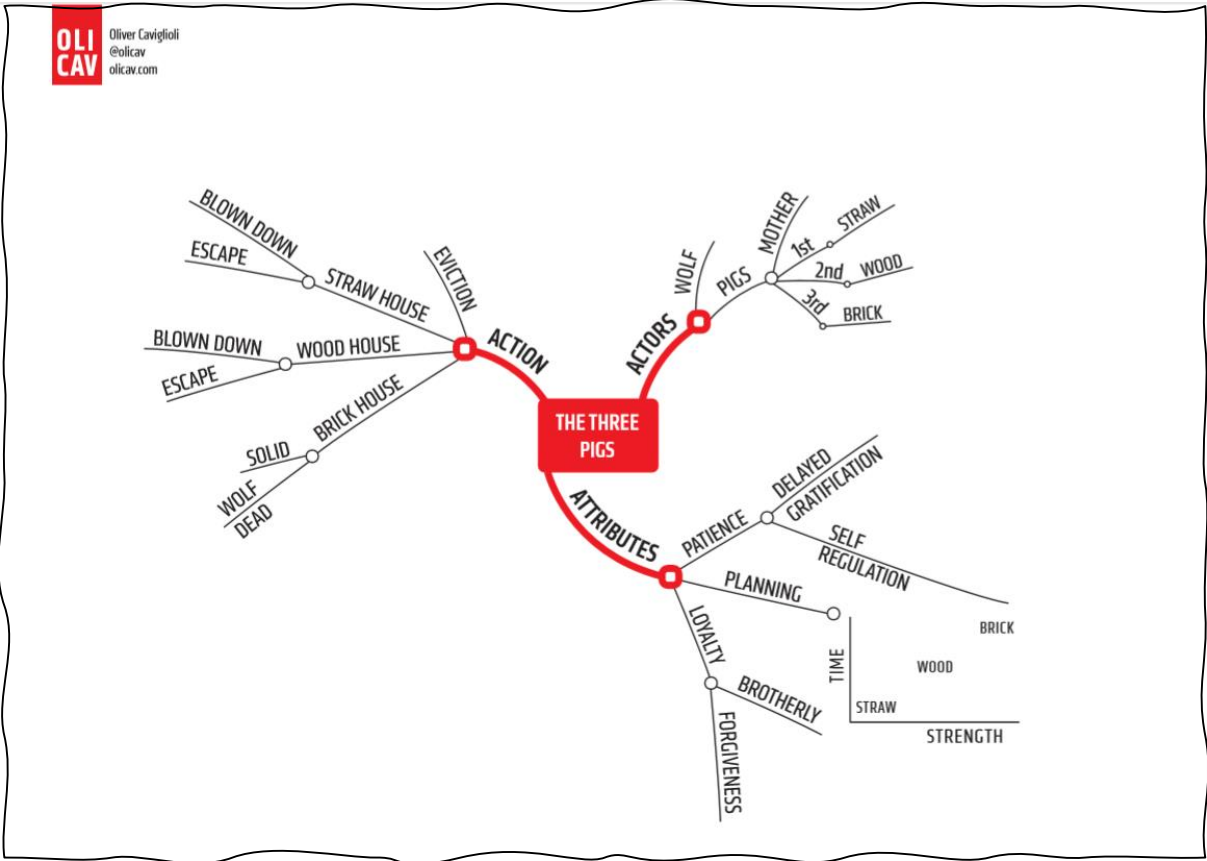
Cartoon Strip



Graphic Organiser



Timelines



DUAL CODING examples



Infographic



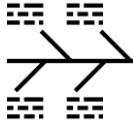
Diagrams



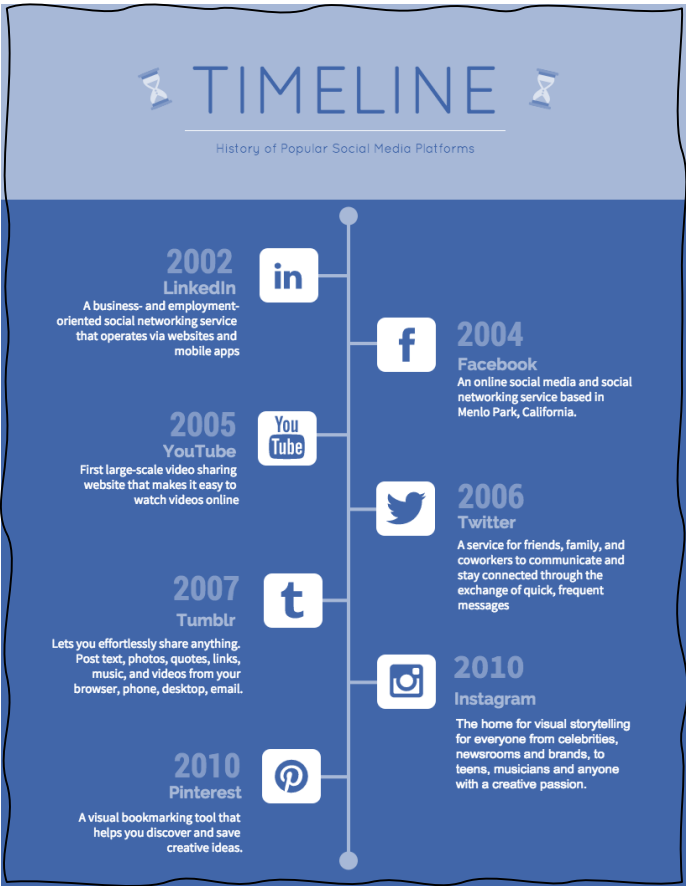
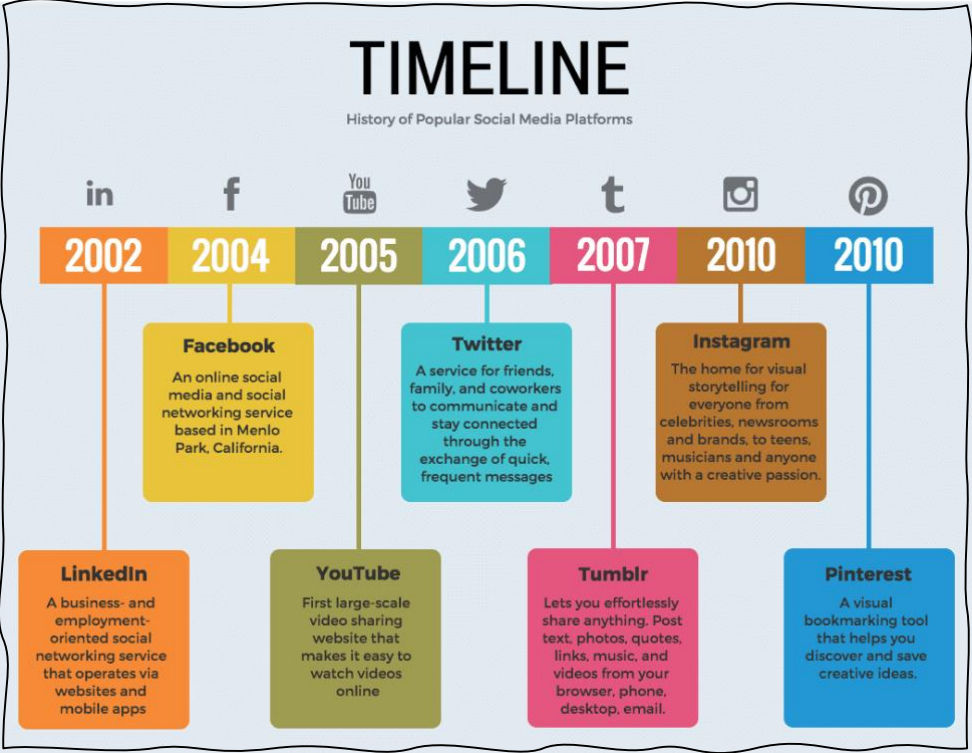
Cartoon Strip



Graphic Organiser



Timelines



REVISION PLAN EXAMPLES

Here are two examples of revision timetables put together using Spaced Practice and Interleaving. The first is KS3 Science Y7 with the test on Friday 6 March and the second for KS3 Y9 Maths, and Science with the tests at different times. 10 minutes was spent on each topic using retrieval practice, dual coding, concrete examples and elaboration. Both timetables were fairly short revision windows so the Spaced Practice is a little squeezed but the Interleaving works reasonably well.

KS3 Y7 Science Revision

Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday		
29 Feb			1 Mar			2 Mar			3 Mar			4 Mar			5 Mar		
A	B	C	D	E	F	G	B	A	C	F	E	G	D	B	D	A	C

- A. Adolescence

B. Reproductive Systems

C. Fertilisation and implantation

D. Development of a foetus
- E. Menstrual cycle

F. Pollination, fertilisation and germination

G. Seed dispersal

Revision	Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Friday		
	22 Feb			23 Feb			24 Feb			25 Feb			26 Feb			27 Feb			28 Feb		
Maths	Time series	Grouped Frequency tables	Frequency tables	Sampling and bias	Conditional Probability	AND/OR rules	Probability experiments	Counting outcomes	Probability basics	Vectors	3D Trig	Trig-common values	Trig-Sin, Cos, Tan	Pythagoras	Bearings	Enlargement/projections	The Four Transformations	Congruent shapes	Geometry problems	Geometry	Compound growth + decay
Science	Cells	Body system	Reproduction	Particles	Elements	Reactions	Acids +Alkalis	Forces	Space	Health	Ecosystem	Adaptation	Periodic table	Separation tech	Metals + Acids	Earth	Electricity	Energy	Light	Sound	New tech Biol
	Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Friday		
	29 Feb			1 Mar			2 Mar			3 Mar			4 Mar			5 Mar			6 Mar		
Maths	Direct + Inverse proportion	Ratios	Velocity-time graphs	Coordinates + Ratios	Y = mx+c	Functions	Proof	Iterative Methods	Graphical Inequalities	Inequalities	Completing the square	The Quadratic formula	Factorising quadratics	Manipulating surds	Factorising	Algebra Basics	Fractions /decimals /percentages	Time series	Grouped Frequency tables	Frequency tables	Sampling and bias
Science	Motion + Pressure	Space	Climate Change	Cells	Body system	Reproduction	Particles	Elements	Reactions	Acids +Alkalis	Forces	Space	Health	Ecosystem	Adaptation	Periodic table	Separation tech	Metals + Acids	Earth	Electricity	Energy
	Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Friday		
	7 Mar			8 Mar			9 Mar			10 Mar			11 Mar			12 Mar			13 Mar		
Maths	Conditional Probability	AND/OR rules	Probability experiments	Counting outcomes	Probability basics	Vectors	3D Trig	Trig-common values	Trig-Sin, Cos, Tan	Pythagoras	Bearings	Enlargement/projections	The Four Transformations	Congruent shapes	Geometry problems	TEST			GAPS from Test 1		
Science	Light	Sound	New tech Biol	Motion + Pressure	Space	Climate Change	TEST			GAPS from Test 1			TEST								
	Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Friday		
	14 Mar			15 Mar			16 Mar			17 Mar			18 Mar			19 Mar			20 Mar		
Maths	GAPS from Test 1			GAPS from Test 1			GAPS from Test 1			TEST											
Science																					

Maths: 30 mins per night: Science 30 Mins per night

RECIPE FOR EFFECTIVE revision

The table below shows very clearly what ingredients are needed for effective revision. The credit for this table goes to Kate Jones from her excellent book “RETRIEVAL PRACTICE Research & Resources for every classroom”. Her chapter on revision starts with the table below. This table will provide you with a simple way of deciding how effective your current revision strategies are and what you need to do to improve them.

Retrieval Practice	Spaced Practice + Interleaving	Motivation	Support	Attendance	=	Success
Retrieval Practice	Spaced Practice + Interleaving	Motivation	Support	Missing	=	Lower results
Retrieval Practice	Spaced Practice + Interleaving	Motivation	Missing	Attendance	=	Anxiety
Retrieval Practice	Spaced Practice + Interleaving	Missing	Support	Attendance	=	Under performance
Retrieval Practice	Missing	Motivation	Support	Attendance	=	Cramming
Missing	Spaced Practice + Interleaving	Motivation	Support	Attendance	=	Ineffective strategies

This booklet is not the only way to approach revision but it is based on strategies which have been proven by experts to be highly effective. Spaced Practice and Interleaving, together with the strategies centred around Retrieval Practice, Elaboration, Concrete Examples and fuelled by Dual Coding will ensure that WHEN you revise and HOW you revise are going to help you succeed.

However, you need to be motivated, this can only come from you but will be boosted by those around you (teachers, parents and carers, friends and peers). You will also need support, from home and if it’s not going to be easy to revise at home, you will get support from your teachers at school, just ask them. And crucially, you have to commit to the revision. Don’t skip days on your plan, you must attend to the revision. In other words be present and deal with it!

HOW CAN I help?

The last words of this booklet are for parents and carers.

If you find yourself struggling to support your son/daughter through their revision, having told them for the umpteenth time to knuckle down and revise. If you've bought yet another pack of highlighter pens so they can continue to plaster their exercise books in dayglow green and orange, if you've helped them plan yet another revision timetable because they've not managed to stick to the last eight iterations, and if you are trying to manage stress levels for all members of the family as the exam deadline looms, then all is not lost.

It's an onerous task being the parent/carer of a revising student. Learning is messy and complicated and any help we can get with the process is most welcome.

The content of this booklet is not simply about revision, rather it is promoting effective study habits that will stay with students throughout their lives. The more we can support young people in developing effective study habits, the better they will become at studying and performing in tests and exams.

HOWEVER, if you simply don't have the time to go through every aspect of the booklet on your own but want to know what will make the biggest difference to your son/daughter's revision then below is an infographic for you to use to help make your son/daughter's revision more effective.



Go through this booklet together



Help them plan their revision timetable



Keep them motivated



Make sure they stick to their plan



Help them revise



Make sure they have a calm and peaceful place to revise



Make sure they eat well and don't skip meals



Make sure they get the right amount of sleep



Make sure they exercise



And don't forget to build in some time for them to relax, with or without you!