A handy guide to revision

WHAT -TO REVISE

There's no doubt that the pressures around exams can be stressful. Good preparation for your exams is a vital way of reducing the stress and that means revising effectively throughout Year 11. This booklet shares effective revision strategies. The key that makes a revision strategy effective is that it is active not passive. A passive activity might be re-reading your notes. An active strategy might be reading your notes to create a mind map. For each of your subjects, you will need to revise the content of the course as well as exam techniques, so you know how to answer different types of question. You will continue to practise exam skills in lessons and for homework, but you must use your time outside lessons to make sure you know the content well. This means revising regularly by revisiting past content.

Create a list of all the subjects for which you need to revise:

- English Language
- English Literature
- Mathematics
- The Sciences (combined or triple?)
- Option A:
- Option B:
- Option C:
- Option D:

HOW TO REVISE

Over the next few pages, you will find an outline of The Learning Scientists' Six Strategies for Effective Learning. You need to use these strategies when you study for your exams. The strategies provide specific revision activities to do as well as ways of organising and scheduling your work. The first three are particularly important for your revision at home, but they will all help you to improve your long-term memory and prepare for exams. The strategies are:

1. RETRIEVAL PRACTICE— the practice of bringing information to mind. There are many ways of doing retrieval practice and these will form the basis of most of your revision activity.

2. SPACED PRACTICE the method of spacing out your study over time, spreading out subjects and revisiting them rather than doing a large block of time on one subject.

3. INTERLEAVING — the method of switching between ideas or topics as you study, rather than studying one for too long. You should interleave different ideas and topics from one subject, as well as interleave subjects.

4. DUAL CODING —the strategy of combining words and visuals when creating revision resources and when recalling information.

5. ELABORATION — the practice of explaining and describing ideas with many details; in addition to learning the basic facts, think about how things work and why, elaborate further and make connections.

6. CONCRETE EXAMPLES the use of specific, concrete examples to understand and explain abstract ideas.

LEARN TO STUDY USING...

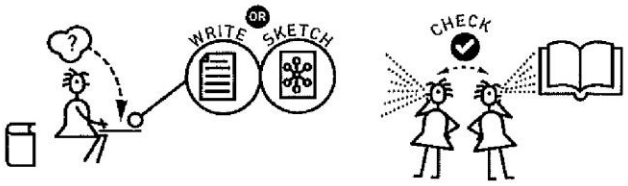
Retrieval Practice

PRACTICE BRINGING INFORMATION TO MIND

LEARNINGSCIENTISTS.ORG

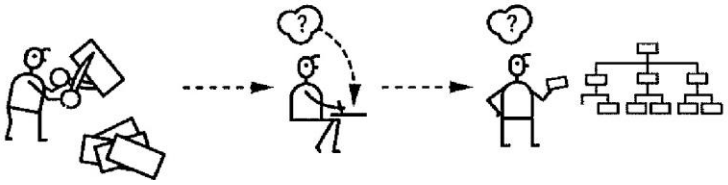
HOW TO DO IT

Put away your class materials, and write or sketch everything you know. Be as thorough as possible. Then, check your class materials for accuracy and important points you missed.



Take as many practice tests as you can get your hands on. If you don't have ready-made tests, try making your own and trading with a friend who has done the same.

You can also make flashcards. Just make sure you practice recalling the information on them, and go beyond definitions by thinking of links between ideas.



HOLD ON!

Retrieval practice works best when you go back to check your class materials for accuracy afterward.

Retrieval is hard! If you're struggling, identify the things you've missed from your class materials, and work your way up to recalling it on your own with the class materials closed.

Don't only recall words and definitions. Make sure to recall main ideas, how things are related or different from one another, and new examples.

RESEARCH

Read more about retrieval practice as a study strategy

Roediger, H. L., Putnam, A. L., & Smith, M. A. (2011). Ten benefits of testing and their applications to educational practice. In J. Mestre & B. Ross (Eds.), *Psychology of learning and motivation: Cognition in education*, (pp. 1-36). Oxford: Elsevier.

Content by Yana Weinstein (University of Massachusetts Lowell) & Megan Smith (Rhode Island College) | Illustrations by Oliver Caviglioli (teachinghow2s.com/cogsci)
Funding provided by the APS Fund for Teaching and Public Understanding of Psychological Science

Read more about Roedigert H, L, , Putnam, A. L., & Smith, M. A. [201 1]. Ten benefits of testing and their retrieval practice applications to educational practice. In J. Mestre & BF Ross (Eds.], Psychology of learning and motivation: Cognition in education* (pp. 1-36). Oxford: Elsevier.

LEARN TO STUDY USING...

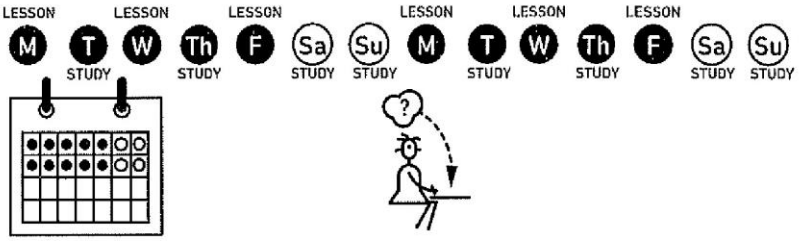
Spaced Practice

SPACE OUT YOUR STUDYING OVER TIME

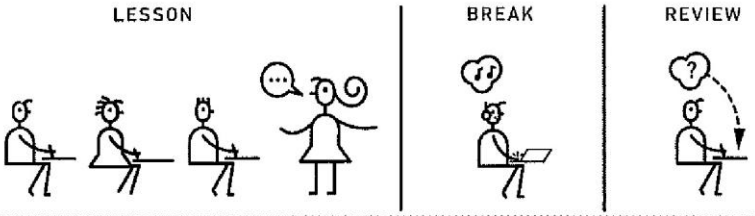
LEARNINGSCIENTISTS.ORG

HOW TO DO IT

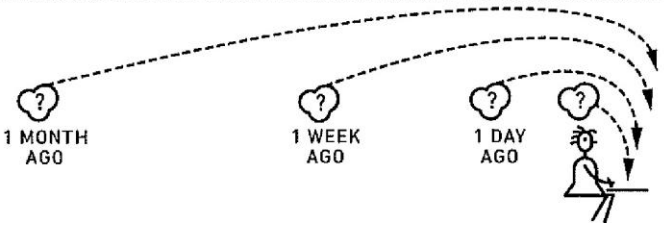
Start planning early for exams, and set aside a little bit of time every day. Five hours spread out over two weeks is better than the same five hours all at once.



Review information from each class, but not immediately after class.

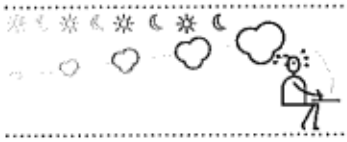


After you review information from the most recent class, make sure to go back and study important older information to keep it fresh.



HOLD ON!

When you sit down to study, make sure you are using effective study strategies rather than just re-reading your class notes.



This may seem difficult and you may forget some information from day to day, but this is actually a good thing! This forces you to retrieve information from memory (see Retrieval Practice poster).

Create small spaces (a few days) and do a little bit over time, so that it adds up!

RESEARCH

Read more about spacing as a study strategy

Benjamin, A. S., & Tullis, J. (2010). What makes distributed practice effective? *Cognitive Psychology, 61*, 228-247.

Content by Yana Weinstein (University of Massachusetts Lowell) & Megan Smith (Rhode Island College) | Illustrations by Oliver Caviglioli (teachinghow2s.com/cogsci)

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LEARN TO STUDY USING...

Interleaving

SWITCH BETWEEN IDEAS WHILE YOU STUDY

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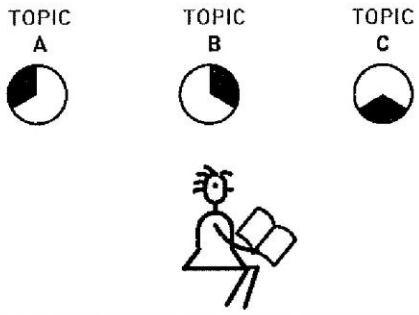
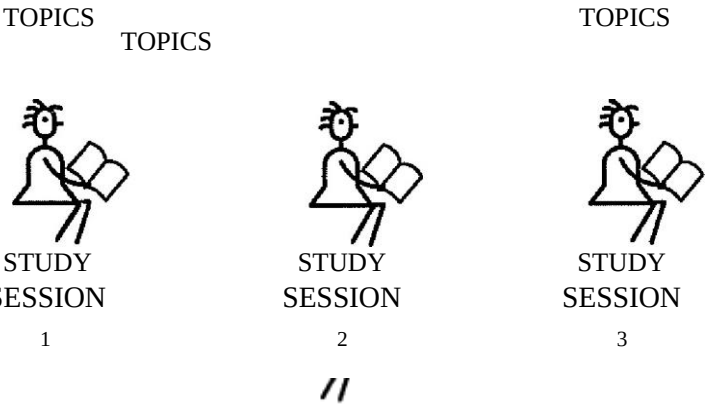
HOW TO DO IT

Switch between ideas during a study session. Don't study one idea for too long.



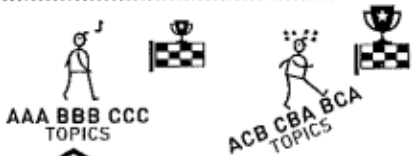
A B C

Go back over the ideas again in different orders to strengthen your understanding.



HOLD ON!

While it's good to switch between ideas, don't switch too often, or spend too little time on any one idea; you need to make sure you understand them.



Interleaving will feel harder than studying the same thing for a long time. But don't worry - this is actually helpful to your learning!

RESEARCH

Read more about interleaving as a study strategy

Rohrer, D. (2012). Interleaving helps students distinguish among similar concepts. *Educational Psychology Review, 24*, 355-367.

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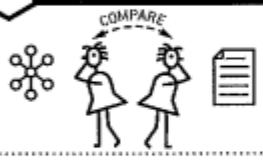
LEARN TO STUDY USING...

Dual Coding

COMBINE WORDS AND VISUALS

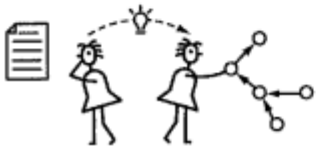
LEARNINGSCIENTISTS.ORG

HOW TO DO IT



Look at your class materials and find visuals. Look over the visuals and compare to the words.

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

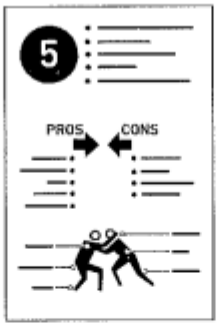


Take information that you are trying to learn, and draw visuals to go along with it.

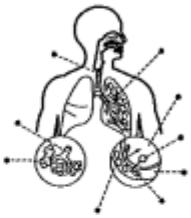
HOLD ON!

Try to come up with different ways to represent the information visually, for example an infographic, a timeline, a cartoon strip, or a diagram of parts that work together.

INFOGRAPHIC

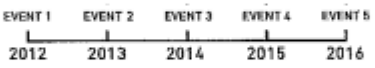


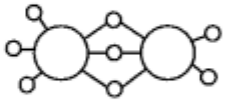
CARTOON STRIP



DIAGRAM

TIMELINE





GRAPHIC ORGANIZER

Work your way up to drawing what you know from memory.

RESEARCH

Read more about dual coding as a study strategy

Mayer, R. E., & Anderson, R. B. (1992). The instructive animation: Helping students build connections between words and pictures in multimedia learning. *Journal of Educational Psychology*, *4*, 444-452.

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LEARN TO STUDY USING...

Elaboration

EXPLAIN AND DESCRIBE IDEAS WITH MANY DETAILS

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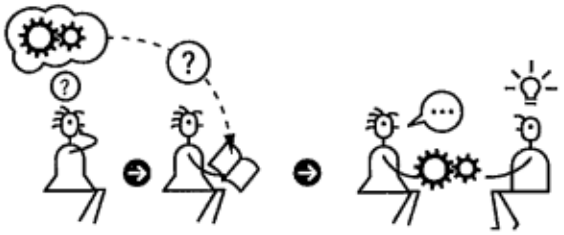
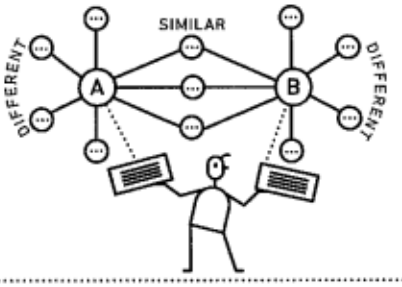
HOW TO DO IT

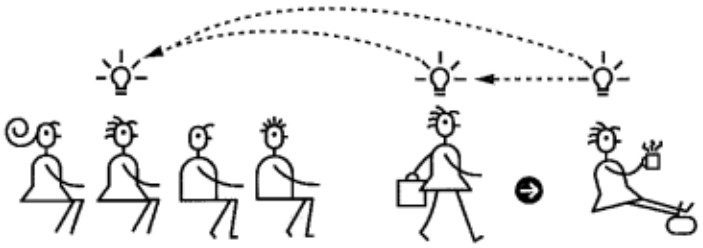
Ask yourself questions while you are studying about how things work and why, and then find the answers in your class materials and discuss them with your classmates.



As you elaborate, make connections between different ideas to explain how they work together. Take two ideas and think of ways they are similar and different.



Describe how the ideas you are studying apply to your own experiences or memories. As you go through your day, make connections to the ideas you are learning in class.



HOLD ON!

Make sure the way you are explaining and describing an idea is accurate. Don't overextend the elaborations, and always check your class materials or ask your teacher.

Work your way up so that you can describe and explain without looking at your class materials.

RESEARCH

Read more about elaboration as a study strategy

McDaniel, M. A., & Donnelly, C. M. (1996). Learning with analogy and elaborative interrogation. *Journal of Educational Psychology, 88*, 508-519.

Wong, B. Y. L. (1985). Self-questioning instructional research: A review. *Review of Educational Research, 55*, 227-268.

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LEARN TO STUDY USING...

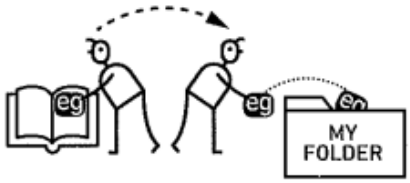
Concrete Examples

USE SPECIFIC EXAMPLES TO UNDERSTAND ABSTRACT IDEAS

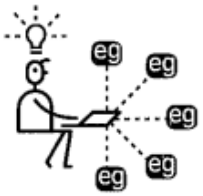
LEARNINGSCIENTISTS.ORG

HOW TO DO IT

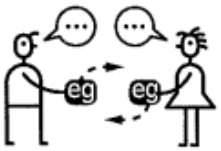
Collect examples your teacher has used, and look in your class materials for as many examples as you can find.



Make the link between the idea you are studying and each example, so that you understand how the example applies to the idea.



Share examples with friends, and explain them to each other for added benefits.



HOLD ON!

You may find examples on the internet that are not used appropriately. Make sure your examples are correct - check with your teacher.

Ultimately, creating your own relevant examples will be the most helpful for learning.

RESEARCH

Read more about concrete examples as a study strategy

Rawson, K. A., Thomas, R. C., & Jacoby, L. L. (2014). The power of examples: Illustrative examples enhance conceptual learning of declarative concepts. *Educational Psychology Review, 27*, 483-504.

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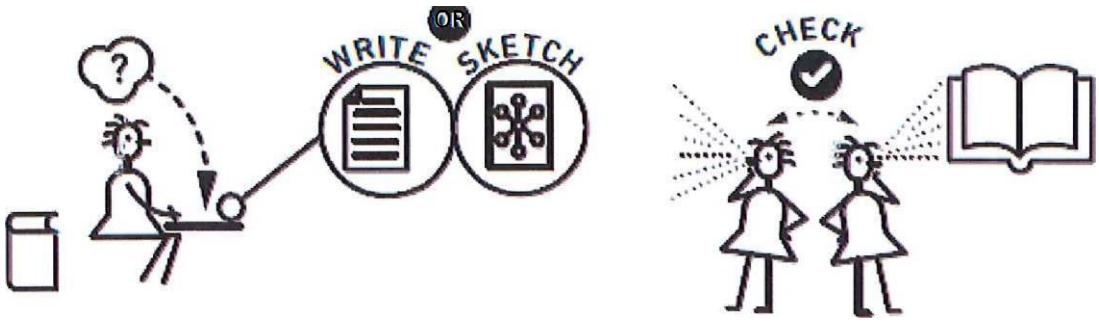
RETRIEVAL PRACTICE: STRATEGIES -TO GET YOU STARTED

Listed below are some strategies for retrieval practice that you will probably already have used at some point. You do not need to use all of these, but it is a good idea to use a variety of methods when revising for each subject.

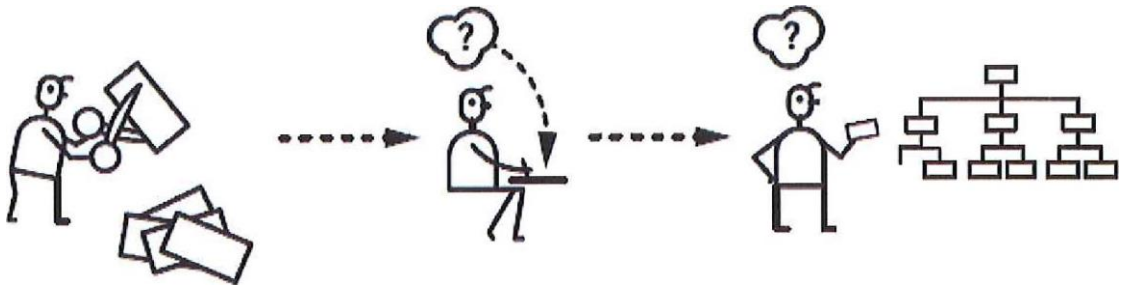
- Online quizzes. These can be found at various locations – your teachers will be able to guide to you the best platforms for their subject. Platforms may include Seneca, BBC Bitesize, Carousel and more. Please check with your individual subject teachers if you are not sure which to use. Repetition is the key to success with quizzes, so make sure you repeat them multiple times to help the knowledge stick.

- Podcasts. Simple, short audio or video files are available for many subjects. Please check with your individual subject teachers if you are not sure what to use. These audio or video files summarise topics you have learnt and can be listened to quickly; they are particularly useful where you have missed a part of the course or forgotten about a topic. Whilst repeated listening can be helpful, you should pause the pod frequently and make summary notes, perhaps as bullet points or a mind map. These notes can then be used for other revision activities.

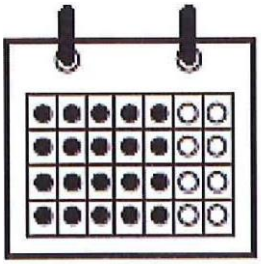
- Mind maps. Write the key topic in the middle of a big bit of paper and then see how much to recall from memory about that topic - mind map key information round the edge. Then you could colour-code the things you have written into 'bigger ideas' or create a second copy, organising the information into categories or groups. These 'bigger ideas' might form essay plans for extended-answer questions. Once you have done a mind map, use your class notes or revision guide to check for accuracy and for what is missing and then add to the diagram.



- Flash cards. Create a series of cards for each topic in a subject. You can create these by hand on card, by using PowerPoint or by using online revision resources such as www.memrise.com Make sure you write the question or topic heading on one side and the information on the other so you have think to recall the information on the reverse of the card. The next step is to then go beyond the definitions and make links between ideas and information you have learnt. You can also sort the cue cards into relevant chunks relating to your course, or into chronological order for example. You can also get someone to test your knowledge using the flash cards.



- Find someone to test you. Find a friend or family member to help test your knowledge. Get out your revision guide, your flash cards or mind maps. Get the tester to ask you questions about the content. Ask them to ask you to explain what things mean. Get them to increase the challenge by explaining things in detail to them you are practising the skills you will need for exam questions. For some people, the temptation to talk to their friends about unhelpful things is too great. These people should probably revise alone or at least use a family member instead!



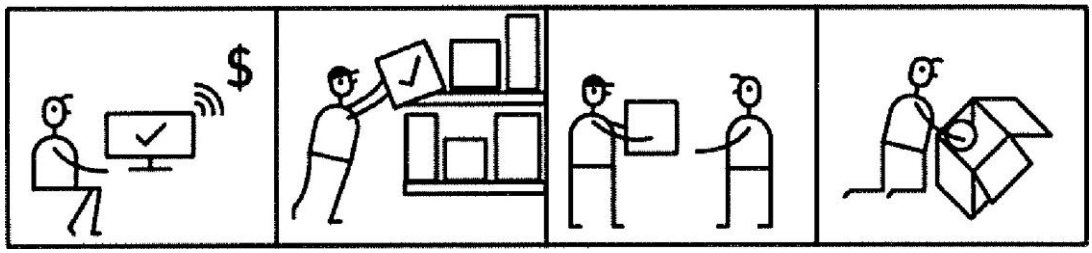
- Create a timeline. In some subjects, knowing the sequence of events is important (e.g. the plot of a book, a geological process, historical events). Choose a topic and create a timeline or sequence with all the key dates or sections labelled on it. Try to recall the sequence from memory before checking for accuracy using your class notes or revision guides.

- Write (a plan for) an exam question. Particularly for subjects where you need to do extended writing, use a blank piece of paper to plan out an answer to an exam question. Try to recall more and more specific details and add them to the plan. Then use your class notes or revision guide to check what you missed and add to the plan in another colour — focus on learning these things.

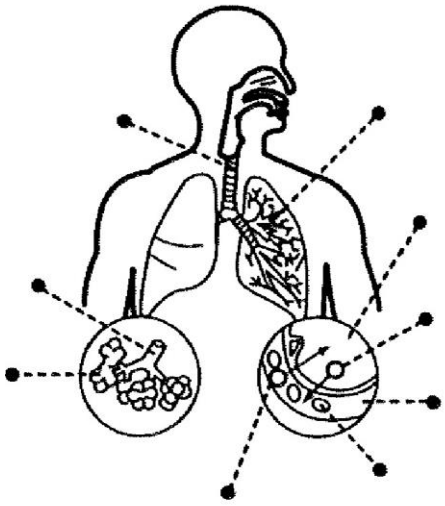
- Create mnemonics and acronyms. Mnemonics are words or phrases that help someone remember something ("Richard Of York gave Battle In Vain" gives you the colours of the rainbow - Red, Orange, Yellow, Green, Blue, Indigo and Yiolet). Acronyms are words where the letters stand for other words. (BPAIN gives you JFK's options for dealing with the Cuban Missile Crisis Blockade; Pressure through the UN; Airstrikes; Invasion or do . Nothing). Create mnemonics for the information needed to explain a key topic or question.

- Write out and reduce your notes. Start with a blank piece of paper and try to recall as much as you can about a topic or a recent lesson. Check for accuracy before then re-writing your notes using fewer words. Re-write your notes again using fewer words still. Repeat this until you have boiled the topic down to a handful of sentences. Remember, at each stage try to recall the information from memory and check for accuracy. Alternatively, as you write out information about a topic from memory, use a combination of words and images (see 'dual coding').

CARTOON STRIP



DIAGRAM



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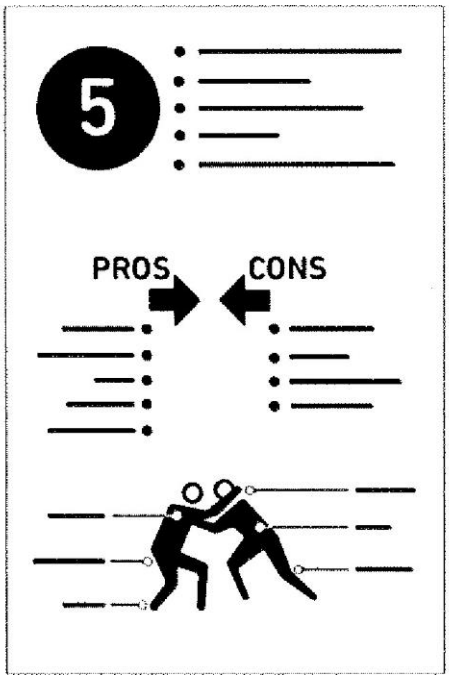

TOP TIPS

1. Set yourself achievable tasks. "Revise for English" is not achievable. "Create a summary timeline for the plot of Jekyll and Hyde" is — you will know when you have finished. Set yourself achievable tasks so that you know when you have succeeded.

2. Do little and often. Doing your hour revision homework per subject across 3 20-minute slots across the week is better than completing it in one go. You could revise three or four different subjects ('interleave' them) if you followed this model. Make sure you also build in breaks where you can switch off and let your mind recover.

3. Work in a calm, quiet place. Always find somewhere you can do your blocks of revision without distraction. Turn off your mobile, your TV, your music and your computer. You will achieve a lot more in 20-30 minutes of focused effort than an hour with distractions.

4. Avoid re-reading & highlighting notes. It is not an effective strategy for learning. In reality, once the notes are taken away, it's difficult to recall them. You have to try to recall information and think hard if you want to develop your long-term memory.

5. Do it systematically. Work through key topics and content from different parts of the course in a single session, but don't switch topic too often. Tick off topics you do on a course summary document.

6. Give yourself a break. Spend a short amount of time between your planned revision sessions doing short tasks that use your brain in a different way — it is good for your memory. Do not play computer games, watch TV or phone your mates — you will get sucked in and lose time. Learn to juggle. Practise musical scales. Do press-ups. Meditate. Go for a quick walk. Do some 'keepy-uppies'. Physical activity is particularly helpful as a way of letting what you are learning sink in and stick.

7. Reward yourself. When you have done a night's worth of revision TV shows, computer games and playing sports are good rewards. When you have done a good week's revision a day off is a good reward.

MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				
FRIDAY				
SATURDAY				
SUNDAY				