

How many old mobile numbers / postcodes / car registration plates do you remember?  
If you remember them it is because they were shifted from your short term to medium / long term memory as a result of constantly retrieving them. **Repetition and retrieval are the keys to effective revision.**

## The human brain

- Many people compare brains to computers and teenage brains in particular have a great capacity to process and store new ideas.
- However the brain, unlike a computer, doesn't store information neatly in files and folders - information is scattered around the brain and it is often hard to recall at a later date.
- Effective revision overcomes this by strengthening our grip on key information and creating useful shortcuts.
- The brain responds to regular **retrieval practise (testing)** by prioritising the relevant information and strengthening the connections related to it.
- **Spaced repetition** (regularly testing yourself on something after spaced intervals) is a way of influencing your brain's agenda and getting it to learn information of your choosing i.e. **hacking your brain**

## Why revise?

- The ending of most coursework & modular exams means KS4-5 students sit almost all of their exams at the end of a 2 year course.
- Revision will enable students to recall and deploy accurate and relevant detail in their examination answers.
- Revision will also increase their familiarity with exam style questions and the technique required to reach the top level.

## How should students revise?

- The two main aims of revision are to improve **knowledge** and to develop **technique**.
- Reading is a good first step in the process of revision but on its own it is not very effective. It doesn't automatically lead to accurate recall. *Having read a page of a novel or a website how much detail could you accurately recall?*
- Reading something a few times leads to recognition. We often recognise familiar songs but that doesn't mean that we can accurately recall the lyrics! (see YouTube/Peter Kay/misheard lyrics <https://www.youtube.com/watch?v=0ukn2YT5jeM>)
- In exams students have to do a lot more than merely recognise information - they will have to recall it accurately and use it effectively.
- Students should start revision by carefully reading their exercise books / revision guides **but crucially they should then test (or retrieve) what they remember and review their answers:**



*Read = remember some but forget most*

*Read + test + review = remember more*

***Read + test + review + test + review + test = remember most***



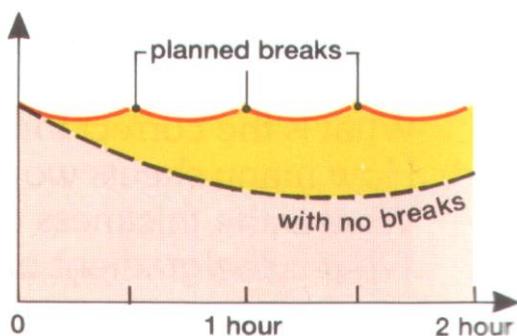
- **Known unknowns** – it is crucial that students **find out what they don't know** i.e. to identify their weaknesses. Testing allows them to do this.
- Students could put revision **flashcards** in a box and then test themselves on these throughout a week. **The ones they struggle with should be put in a separate pile for more frequent testing.**
- Students often benefit from producing their own revision notes, cards etc. However producing these is not revision. They need to then test themselves on the content.
- **Blank paper and a pen are** really useful. Students could read some pages from their exercise book or revision guide, close the book and then write down what they remember in 3-5 mins. They should then review their work (compare it with the revision guide) to find out what they haven't remembered. Repeat this 2 hours later, 2 days later, 2 weeks later.
- **Memory Beep Test** – students will be amazed at how much revision they can do in 5 minutes. They should identify 5 topics or questions they want to test themselves on and then give themselves 60 seconds on each one to write down what they know.
- **Interleaving** - mix up revision topics. This makes the brain work harder and leads to stronger recall. It also allows the brain to identify links between information – something examiners love.
- **Spaced testing** – students should re-test themselves on a topic having left enough time to have forgotten it.
- **Practise output rather than input** – students should avoid exclusively focusing on learning information at the expense of applying that information to exam questions.
- You wouldn't practise for a tennis tournament by never playing tennis and students shouldn't study for an exam without practising answering exam style **questions** in timed conditions.
- Students should practise writing whole answers, parts of answers (intros, sample paragraphs, conclusions) or drafting a plan for an answer.
- Students should ask a teacher to review their answers or plans and to identify strengths they should repeat and weaknesses they should eliminate.
- In addition to learning specific details, quotes etc. students need to see the **Big Picture** – they should practise summarising a whole topic in one diagram, timeline, 50 words etc.
- Most revision can be done **without a screen** – however Memrise, SAM learning etc. can help students to learn some key info.
- Make **audio recordings** of key information and listen to this on mobile phones.
- Leave **'Post It'** notes or posters around the house or on a revision wall to act as constant reminders of tricky info
- Use **highlighters** to identify **key info** – *however reading and highlighting is not effective revision on its own. Students must read and test.*
- Draw **mind maps** to present information more effectively.
- **Devise mnemonics** e.g. OIL RIG (Oxidation Is Losing electrons Reduction Is Gaining electrons)

<b>If a student feels...</b>	<b>Parents should be..</b>
• Stressed	• Calm
• Nervous	• Confident
• Doomed	• Motivating
• Apathetic	• Energising
• Complacent	• Challenging

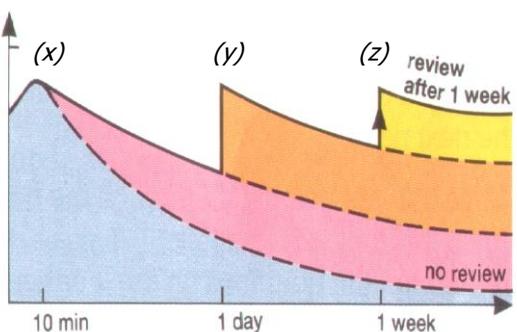
<b>Jargon</b>	<b>Meaning</b>
<b>Retrieval practice</b>	Testing
<b>Interleaving</b>	Mix up revision topics and subjects.
<b>Spacing</b>	Allow students to forget a topic before testing again

### Top Tips

1. Parents/guardians can play a vital role in:
  - *encouraging students who are reluctant to revise*
  - *calming the nerves of anxious students and encourage positive thinking e.g. I don't understand this yet but I will!*
  - *persuading some students to have a necessary break from revision if they have been working too hard*
  - *Raising morale by pointing out the progress students are making with their revision (in terms of covering the specification, sticking to their timetable or improving their scores on memory tests.)*
2. Encourage your children to see the value of revision i.e. link revision with aspirations for the future.
3. Revision is most effective when there are no distractions – mobile phones should be absent and computers should only be used for specific activities.
4. Avoid 'binge' revision. 5 hours of revision spread over a week is usually better than 5 hours of revision on one day
5. Students should take short breaks from revision after 30 minutes. This will improve their learning efficiency.



6. After a 10 minute break students should briefly revise the same work again (x). This should be repeated one day later (y) and finally one week later (z). This will fix the work firmly into their long-term memory.



**“A small daily task, if it be really daily, will beat the labours of a spasmodic Hercules.” Trollope**

### When should students revise?

- Low intensity - consistently throughout the year.
- Medium intensity – 3 months before the exams.
- High intensity – 1 month before the exams.
- Medium intensity – night before the exam.

### Throughout the year

Revision should take place throughout the year – not just when exams are approaching. Students should take a few minutes each day to skim through their recent class work, identify work they might have missed and questions they have. Without ongoing revision we can lose over 90% of the information entering the mind within a four week period. Regular reading of recent work will help to transfer information from their short term memory to their long term memory. It is important to review all subjects – not just their favourite ones. Students should also aim to make revision notes for the different units of each subject.

### Approaching the exam period

Our brain doesn't like remembering lots of new information at once so cramming is a bad idea. Serious revision should begin at least 3 months before the exams and gradually increase in intensity. The hardest thing is to stop talking about revision and to start doing it. Students need to build up **revision momentum** and this can be achieved by starting with just 15 minutes a day in February. This should steadily increase as the exams draw closer. The night before an exam night students should still revise but should also aim to get a good night's sleep.

### Preparation is vital

**“If I had six hours to chop down a tree, I'd spend the first hour sharpening the axe.” Abraham Lincoln**

### Revision Checklist for students:

1. For each subject do they know..
  - ..the exam board and syllabus?
  - ..what the exam specification includes? (If there is any key content or vocabulary which they are unsure of they must ask their teacher.)
  - ..where to get past papers, mark schemes and model answers?
  - ..which revision books / websites are recommended?
  - ..if there are question types which feature every year?
  - ..how long they should spend on each question?
2. Have they drafted a realistic week by week revision timetable which incorporates the ideas of spaced revision and interleaving?

### Want to find out more?

- <https://www.theguardian.com/education/2016/may/07/the-way-youre-revising-may-let-you-down-in-exams-and-heres-why>
- [https://en.wikipedia.org/wiki/Testing\\_effect](https://en.wikipedia.org/wiki/Testing_effect)
- <https://www.theguardian.com/education/2016/jan/23/spaced-repetition-a-hack-to-make-your-brain-store-information>
- <http://www.sec-ed.co.uk/best-practice/revision-and-study-skills-retrieval-practice>

### And finally...

- Students need to work smart and not suffer in silence. If they are finding something impossible to understand they should phone a friend or speak to their teacher. 5 minutes with an expert can save hours of fruitless worrying.
- Revision is very personal. There are lots of effective revision strategies and students should choose the ones which work for them.
- If students are finding revision tough going that probably means they are doing it effectively. Revision isn't meant to be easy!
- Effective revision leads to better exam results and **students will reap the benefits for years to come.**