

Improve your Memory

This guide explains how the memory works, and the role it plays in university study. It suggests mnemonic strategies for remembering information in exams, and ways of improving your memory.

Related guides: ['Revision and Exam Skills'](#) and ['Creative Revision Strategies'](#).

What is memory?

A good memory plays a role in successful study. Memory is useful for exams, of course, and also for a general working knowledge of your subject, in seminars, presentations and assignments. It can be developed and improved by understanding how it works, training and practice. There are many mnemonic strategies for remembering information which you can use to improve your learning. However, you should not rely too heavily on rote learning, as university study is more a test of your understanding, and your ability to apply, analyse and evaluate your knowledge.

How does memory work?

There are different types of memory. Short term memory can retain small amounts of information for a limited time, even just a few seconds, and although it has a role to play in academic learning, that role is limited. A common mistake in preparing for exams is to focus only on revision techniques and strategies that involve short-term memory, such as re-reading notes, or copying out information. Relying on last-minute 'cramming' is also not advisable. Long-term memory has a much more useful function in studying, particularly when revising for exams. To retain something in your long-term memory, you should consider three things: the information must have meaningful associations for you, you must engage with it actively, and it must be rehearsed and revisited often. If information is meaningless and doesn't relate to anything, if you passively hope it will 'go in', or if you do not repeatedly go over it, it will not be memorable, and you will find it difficult to recall.

There are three stages involved in memory; the information must be **encoded**, **stored** and **retrieved**. **Encoding** information means actively making it memorable through meaningful association, or mnemonic strategies, so the memory can process it easily. **Storing** information means to actively rehearse and revisit it, so that a long-term record is made and retained in the memory. **Retrieving** information involves practising recall, so that you can access the information when you need it in the exam.

Mnemonic strategies

There are a number of tried-and-tested methods for remembering information. All of them work with the principle of actively making information to be remembered meaningful in some way, and associating it with a memorable trigger. The first stage of revision is reducing your notes down to a few words or phrases (see the Study Guide *Revision*), and these strategies help with the next step of remembering your condensed notes. These methods draw on different senses, and it may be useful for you to consider what your learning style is, and work with techniques that suit the way you learn best, whether that is visual, aural, textual, or kinesthetic (physical). What makes many of these strategies memorable is the active effort that goes into devising the mnemonic, and associations or meanings which are striking, funny, absurd or bizarre. While academic study is a serious goal, learning need not be serious; indeed in these cases, the sillier the strategy, the better and more memorable it will be!

- **Numbered lists:** this is one of the simplest mnemonic techniques. A numbered list will help you to remember a few items if they form a 'set', and it is important that you remember all of them, for example, the seven colours of the rainbow (Red, Orange, Yellow, Green, Blue, Indigo and Violet). You will know you have left something out if you cannot recall all seven of them. However, this technique may not help to jog your memory if you really can't remember what one of them is. For this, an acronym or acrostic may be more effective. Make sure that you are not trying to remember too many items at once as this will overburden your memory (see 'chunking' below).
- **Acronyms:** an acronym is a word formed out of the first letter of other words. It need not be a real word, just one that is memorable. Many people remember what the seven colours of the rainbow are using the acronym ROY G BIV, which sounds like a person's name. If the items need to be in a certain order, and this order does not form a word naturally, then acronyms may not be the best method, but if the order doesn't matter, then you can reorder them so that their initial letters do form a word. If you cannot remember one of them, then you have the first letter to jog your memory.
- **Acrostics** are like acronyms, in that they use the first letter of each word that you want to remember, but the letters form the first word of a memorable sentence. People also use the sentence 'Richard Of York Gave Battle In Vain' to remember the colours of the rainbow, or 'Big Elephants Can Always Understand Small Elephants', which is the correct spelling of 'because'. These sentences can be more meaningful and flexible than acronyms, if the items need to be in a certain order, and you can make the meaning of the sentence reflect the meaning of the words you are trying to remember. Acronyms and acrostics may particularly suit those who learn easily through reading and writing (textual learners) but may also work for visual and aural learners.

- **Rhymes and rhythms** are useful if you have an aural learning style. Reciting or singing information to a rhythm or tune can help you remember it in the same way that you do song lyrics and nursery rhymes, and many people learned the alphabet this way. Sentences that rhyme are also commonly used, for example, the rhyme '30 days hath September' to remember how many days there are in each month, or 'in 1492, Columbus sailed the ocean blue'.
- **Images and visualisations:** a striking image or scene can help to make unrelated items memorable, as it creates an association between them. This image could be a static scene, or involve some action, and it could be related to the meaning of the items, or it could be bizarre and striking. This strategy may particularly suit a visual learner.
- **Narratives:** include items in a story. This may also help if you need to remember them in a particular order, for example, a process, or add other details which you could include in some striking way. You should invent a story which incorporates each item in a memorable way, and the train of events acts as a trigger to your memory. This suits all kinds of learners.
- **Locus techniques:** 'Locus' is Latin for place, and this technique is a very old one, which especially suits visual and kinaesthetic learners. It uses the visualisation of a familiar place, around which to 'hang' information you wish to learn. You could use your house or room, or a familiar journey. As you move around this environment in your imagination, pick out places that stand out, and appear in a particular order as you proceed. These might be items of furniture, stairs, doorways or windows, or particular buildings and landmarks on a longer trip. Then mentally place items to be remembered at points along the way, taking time to visualise each one in detail in its location. Taking this mental journey will help you to remember the information in future. You can start this technique off in real terms, by placing post-it notes around your room or house, and then testing yourself as you remove them.
- **Personal associations:** the most effective way to make information meaningful is to relate it to your own life and experience. The meaning does not necessarily have to have anything to do with the information itself. If you are trying to learn terminology, it might sound like another unrelated word, or the name of a person you know, remind you of a situation you have been in. Any thing that it reminds you of, however absurd, may make it memorable.

Use a good mix of these strategies, and try not to use them too close together. For example, if you use acronyms to remember a lot of similar information, very close together in time, then the acronyms will not be as individual and therefore not as memorable. You could use strategies that suit your learning style for things that are hard to learn, and experiment with strategies that are less familiar to you for topics you find easier or know better, to challenge yourself.

Other Principles

Once you have devised a mnemonic for remembering, or 'encoding' something, you should pay attention also to the storage and retrieval stages of memory. These may include:

- **Testing.** This is one of the most powerful strategies for remembering. It keeps your learning active, rather than passive, and much more effective. Testing yourself regularly not only gives you feedback about whether you have remembered something (retrieval), it is actually part of the process of remembering it (storage). When testing yourself, you return to the information over and over, and your memory realises that it needs to make a longer term record of it. Even if you cannot remember all of it this time, it is more likely that you will do so next time. Many students neglect this important stage. You can test yourself with past papers, but index cards, making quizzes, covering information and trying to recall it, and testing yourself with another student are also effective.
- **Repetition.** Testing needs to be done repeatedly for it to be effective. You should test yourself for the first time immediately after learning something, and then after a short interval, such as an hour, or later that day. Then test yourself again at further intervals, such as a few days, a week, etc. This will ensure that it enters your long term memory, and will refresh your memory as you approach the exam. If you return to the information repeatedly, then you will not forget those things you learned at the beginning of your revision. This strategy is also often overlooked by many students.
- **Chunking.** The memory can only take in a small number of things at a time, and if you have a long list, you should break it down or 'chunk' it. Three lists of five things are easier to remember than one list of fifteen things. People often remember telephone numbers in groups of digits for this reason. You can then build these up and layer them; if you have a long list of items to learn, try learning the first three, then when you can remember them, add another three until you can remember all six, and then add another three to build it up to nine, and so on, revisiting the first items as you build in others.
- **Overlearning.** This is the principle of rehearsing something so much that it becomes second nature, and you can do it almost without thinking. Many skills that we take for granted are the result of overlearning, such as driving a car or reading, and the same principle applies to revision.

Remember that for the retrieval stage of memory, it is ultimately important to look at past papers or the kind of questions that will be set in the exam. You will rarely be asked to recall the information in exactly the same way that you have memorised it. You will need to keep your memory flexible, and practise retrieving information in a similar format to the exam itself. In this way, you will avoid losing marks through 'regurgitating' memorised information with no relation to the question, or becoming stuck if you can only remember information in a very rigid way. Exams are not simply a test of what you know, but are ultimately a test of how well you understand the material, how you apply and analyse what you know to solve questions creatively and flexibly.

When to use memorization techniques

Many students view exams as a memory test, but exams are rarely the case that they are *only* a test of memory. It is important to understand the subject, and in many cases, if you understand it well, you may not need to memorise it. Rote learning should not be used as a substitute for deeper understanding, but should only be used for those things that cannot be reconstructed from your understanding. Also consider how you might be asked to use this information. Some exams test passive recall, that is, whether you can recognise the information. Multiple choice exams work in this way. Other exams require active recall of information, where you must prompt yourself for what needs to be remembered. You should also think about how much detail will be required by the exam. Do not attempt to memorise the whole of a course; exams do not test the same level of detail as coursework, for which you are allowed to refer to books and other resources, but your *working* knowledge of the subject. Developing a good memory will aid you in building up your working knowledge, but regurgitation of facts will not gain you the best marks, and an over-reliance on memory may mean that you are not pushing yourself to understand the material. Do not overestimate the role of memory in university study.

Want to know more?

If you have any further questions about this topic you can make an appointment to see a [Learning Enhancement Tutor](#) in the [Student Support Service](#), as well as speaking to your lecturer or adviser.

- 📞 Call: 01603 592761
- 💻 Ask: ask.let@uea.ac.uk
- 🔗 Click: <https://portal.uea.ac.uk/student-support-service/learning-enhancement>

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Your comments or suggestions about our resources are very welcome.

	<p>Scan the QR-code with a smartphone app for more resources.</p>	
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